# National Environmental Science Program

## Marine and Coastal research plan 2026



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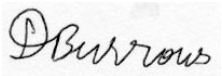
# Certification of research plan

## Hub Leaders certification

As the Hub Leaders we certify that:

- the research projects contained in the research plan are linked to the Activity Outcomes for the Marine and Coastal Hub as outlined in the funding agreement
- funds are available to meet all projects included in this research plan
- this research plan was prepared in consultation with the hub steering committee.

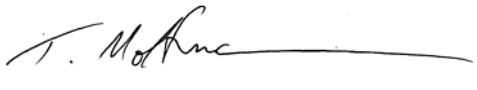
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| Date: | 19/09/2025 |

## Hub Steering Committee Chair certification

As the Hub Steering Committee Chair, I certify that:

- this research plan was prepared in consultation with the hub steering committee
- any issues of concern or matters raised during steering committee meetings or by the department during its assessment process have been adequately resolved, amended or incorporated into this research plan
- this research plan was endorsed by the steering committee on 3rd September 2025.

| | |
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| Signature: |  |
| Name: | Tim Moltmann |
| Position: | Independent Chair |
| Date: | 19/09/2025 |

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# Introduction

## The National Environmental Science Program

The National Environmental Science Program (NESP) is a long-term commitment by the Australian Government to environment and climate research. The program:

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

The first phase of NESP invested over **$145 million** (2014–15 to 2020–21) into 6 research hubs and emerging priority research projects. The second phase is investing **$149 million** (2020–21 to 2026–27) into 4 new research hubs. These hubs are:

- Resilient Landscapes Hub
- Marine and Coastal Hub
- Climate Systems Hub
- Sustainable Communities and Waste Hub

NESP is administered by the Department of Climate Change, Energy, the Environment and Water (the department). More information on NESP is available at www.dcceew.gov.au/science-research/nesp

## Department role

The 4 NESP hubs have been formed to conduct applied research within their specific themes and lead a cross-cutting functional initiative in their area of expertise. Each activity year the department will work with the minister, the hubs and other key stakeholders to identify and refine research priorities and develop projects that align with these priorities.

This annual review and evaluation of current and future research outputs and impact provides the flexibility needed for the hubs to engage in new themes of research, in an adaptive manner, and ensures that the focus is on the delivery of relevant and practical research. Hubs are responsible for co-design of the research projects in consultation with research-users and in partnership with relevant Indigenous researchers and communities. Hubs are also responsible for monitoring and evaluating the research project outcomes during the life of the hub in line with the NESP program evaluation framework.

The research prioritisation is a rolling process and will be informed by key milestones in each activity year, such as the annual progress report and submission of the following research plan.

## Hub role

The NESP assists decision-makers in understanding, managing, and conserving Australia's environment by funding world-class research on biodiversity and the environment. The NESP Marine and Coastal Hub will research applied issues related to Australia's marine and coastal zone. In close collaboration with the Department and stakeholders, the Marine and

Coastal Hub will focus on research that supports decision-makers in addressing environmental protection needs, while planning for the nation's future needs and mitigating the overwhelming impact of key pressures.

The Hub works annually with partners and research users to identify and prioritise research needs for marine and coastal systems in Australia. Each annual research plan funds a portfolio of projects that addresses these needs and concerns, with a focus on applied use by research users. Each Research Plan includes the consideration of cross-cutting Hub research, where appropriate, as well as research that responds to the Protected Places Management Initiative.

The national Marine and Coastal Hub delivers applied scientific products and advice to meet end-user requirements 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, and
- long-term foundational science to support end-users in understanding and adapting to our climate.

The Hub supports the two-way communication of this research, and research needs to research users via knowledge brokers and communication officers. The Hub collaborates with the Indigenous Facilitator to maximise the inclusion of Indigenous peoples and Traditional Owners in the co-creation, co-design, and co-delivery of research needs, as well as the repatriation of this knowledge to communities. The Hub, through the Data Wrangler, ensures the longevity of this data and information by delivering outputs into publicly available data portals.

## Purpose of research plan

This research plan was developed by the Marine and Coastal Hub, in consultation with the department and other key stakeholders.

The purpose of the research plan is to outline:

- the research priorities the hub is funded to investigate, including those related to the cross-cutting initiative the hub is funded to lead
- the research projects that will address these priorities
- how the research projects will be co-designed and delivered to research-users
- how the outputs of the research will be communicated with key stakeholders
- how hubs will work collaboratively within and across hubs.

This research plan also provides summary information on the management and governance of the hub, including the broad funding profile, key staff and research organisations, and the risks that need to be monitored to ensure success.

**Initiatives**

In addition to its hub-level research projects, each hub is also responsible for delivering a cross-cutting initiative and contributing research to other initiatives where appropriate. The

initiative includes cross-hub collaboration and may include multiple projects to deliver management options, data and information for the themes listed below.

The 4 initiatives are:

| Initiative | Lead hub |
|---|---|
| Protected place management | Marine and Coastal |
| Threatened and migratory species and threatened ecological communities | Resilient Landscapes |
| Waste impact management | Sustainable Communities and Waste |
| Climate adaptation | Climate Systems |

**Emerging priorities**

Each year, specific emerging priorities (EP) may be identified by the department, hubs or third parties for delivery as research projects. If endorsed by the department, the hub will develop research project/s to address the emerging priority.

Hubs will be flexible and adaptable, responding to EP with the ability to rapidly scale output, bring in external expertise, or respond if additional resources are made available. Hubs were required to set aside 10% of NESP funding spent per calendar year, up to and including RP2025, so they could respond to EP; these funds can be rolled into subsequent years if not used.

EP funding extending across 2025 and 2026 is proposed to support research into aspects of the harmful algal bloom in South Australia, and project proposals are currently in development by Hub partners following prioritisation of pre-proposals by DCCEEW. In RP2026, hubs will not be required to set aside funds in 2026 and 2027 for EP projects, except to cover projected expenditures on EP projects already approved.

There is a separate process for any EP project proposals. EP projects approved during that process will then need to be added to future research plans and Attachments A and C. EP projects must also be included in subsequent annual progress reports.

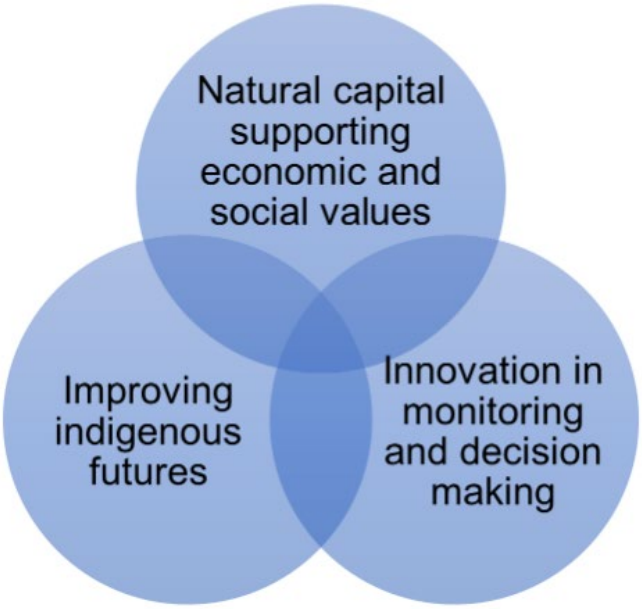
# Research

# Strategic Research Areas

The Marine and Coastal Hub has defined three key integrating areas of strategic focus to describe the Hub's 'narrative'. This narrative links the range of research projects across the lifetime of the Hub to ensure impact in key areas for Australia's marine and coastal systems. It also broadly reflects the objectives of the NESP program. These strategic research areas are:

- Natural capital supporting economic and social values,
- Improving Indigenous futures, and
- Innovations in monitoring and decision-making.

All Hub projects aim to address at least two, if not all, of these strategic research areas as a way of 'scaling up' the Hub's research impact.




## Research priority areas

The Marine and Coastal Hub is committed to a body of activity that includes short- to long-term research projects, initiatives and emerging priorities.

In response to the needs of research users and stakeholders, the Hub's narrative has provided a framework for identifying several priority research areas that have guided the development of Research Plan 2026 and those preceding it. Broadly, the research priority areas that support the two-way communication of this research Hub are:

## Natural capital supporting economic and social values

### #1 Improve regional planning in Northern Australia by assessing the extent, condition and vulnerability of key environmental resources at regional scale

This research area aims to support effective regional planning, which requires an understanding of the abundance and distribution of key resources. To support this process, our aim is to provide an understanding of the distribution of key resources at relevant regional or national scales and improve regional capacity for managing these.

This research area was initially funded in RP2021 as scoping project 1.32 on supporting regional planning in Northern Australia. This project examined current planning frameworks; interviewed planners and land managers with specific interests; identified information deficits; assessed data storage and access issues; and reviewed planning case studies. This resulted in the development of Project 3.1 in RP2023, which aimed to build a community of practice and generate knowledge via consultation with practitioners and stakeholders to collate ideas and experience and provide input into the design of knowledge management systems.

In RP2024, we expanded our work under this strategic foci to include: producing a consolidated inventory of seagrass across northern Australia (Project 4.1); assessing the entire Australian population of dugong (Projects 4.2 in the Gulf of Carpentaria and 4.6 in the Kimberley); assessing the condition of mangroves across the Gulf of Carpentaria (Project 4.12); conducting an inventory of shellfish reefs across northern Australia (Project 4.13); and measuring for the first time, the population size of sawfish populations across Qld and NT (Project 4.18).

The RP2025 investment, making marine data ‘investment ready’ (Project 5.9), was national in scope and focused on making large data sets more readily available, in usable formats, for a range of decision-makers. This project plays a crucial role in enhancing the data available for environmental assessment and reporting.

There are no new RP2026 projects proposed for the priority research area, although further investment focused on synthesizing data and research findings within existing projects 3.5 – seagrass and 3.10 – dugong are presented here in this package, and additional investment for Project 3.17 – reef mapping has been approved as a project variation. The additional funding to these projects focuses on ensuring user-ready outputs for decision-makers and land managers.

### #2 Offshore windfarms and renewable energy impacts – progress research on values and pressures, data standards and delivery to support sustainable development of offshore renewables and other emerging marine industries

Current projects in RP2023 and RP2024 in this area include: cataloguing existing environmental data to inform decision making for development of Australia’s offshore wind farm (OWF) industry (Projects 3.3 and 3.21), estimating risks or offshore renewable energy development to priority cetaceans, pygmy blue whales (Project 4.8), and southern right whales and blue whales (Project 4.9), and a comprehensive regional modelling and risk assessments to inform offshore renewable decision-making (project 4.7). A number of other projects provide supporting information to understanding risks, including Project 3.15 (southern right whales), Project 4.15 (grey nurse shark), Project 4.3 (Indigenous knowledge of sea-kin), and Project 4.23 (eDNA in Bass Strait region).

The RP 2025 investment (Project 5.3) was based on gaps identified in Hub OWF projects 3.3 and 3.21, specifically for priority species of birds and cetaceans listed as threatened or migratory under the EPBC Act. It directly seeks to improve the quality of data required to support the assessment of offshore wind farm proposals and inform management and mitigation strategies for this rapidly developing industry.

There are no RP2026 projects proposed for this priority research area, although a variation is proposed for Project 4.9 (*Assessing the vulnerability of southern right whale and blue whale populations to disturbance from windfarm developments*) to further progress collation, management and delivery of the priority southern right whale data and data products required to support decision making related to offshore wind assessments. It is proposed to submit this variation for approval in early November 2025.

## Improving Indigenous Futures

### #3 Continue to advance identified Indigenous research and monitoring priorities for Sea Country and approaches for coordinated monitoring across regional groups

Indigenous Australians own or have other rights over 60% of Australia's land, and large tracts of ocean. This vast resource should bestow great economic, social and cultural advantage. However, for many communities, this is not the case. Progress is hampered by inadequate research into Country and culture-based economic opportunities, and relevant ecosystem science.

The Marine and Coastal Hub supports a collaborative and inclusive approach to Indigenous research needs and coordination by supporting the development and implementation of the National Indigenous Environmental Research Network (NIERN) (Project 1.31, 3.2). The NIERN, comprising a community of Indigenous-led practitioners, is considered the best way to advance, enable and prescribe research participation, influence the Australian research agenda, and oversee relevant governance for Indigenous Futures. Other research investments in this area include: supporting the development of Indigenous led Healthy Country Planning in north-east Tasmania (Project 4.4), collating and sharing Indigenous ecological knowledge of threatened and migratory whales and dolphins in relation to human and kin (Project 4.3), and our work toward developing an Integrated Pest Management framework for feral pigs (Project 4.5), which is one of the highest priorities of Indigenous groups in northern Australia and which is Indigenous led by the Northern Australian Land and Sea Management Alliance - NAILSMA.

The investment in Indigenous monitoring methods in RP2025 (Project 5.2) built upon the extensive work the Hub has undertaken with Indigenous communities on seagrass and benthic habitat assessments. This project will provide standardised monitoring and assessment methods for Indigenous groups, to ensure that the data they collect in the future is comparable with extensive existing datasets. Another investment in RP2025 (Project 5.1) is mapping Sea Country and investigating conservation and restoration opportunities along the coast of Kakadu National Park and Garig Gunak Barlu National Park, which share the same embayment. This builds upon our extensive seagrass and benthic habitat work and comes out of our previous investment (Project 3.19) in developing a strategic research plan for Kakadu National Park, which involved extensive engagement with Traditional Owners and Parks Australia on research priorities for Kakadu National Park. The Hub is also deepening its partnership with the Esperance Tjaltjraak Native Title Aboriginal Corporation (ETNTAC) in

southern Australia to include collaboration to improve understanding about the location of white shark nursery areas in Western Australia (Project 5.7). This builds existing Hub collaborations with ETNTAC to monitor Australian Marine Parks and Australian Sea Lions.

Investment in this priority research area continues in RP2026 (Project 6.1) with an Indigenous-led project that will identify key nesting areas along the Kimberley coastline for key turtle species, and identify key Biologically Important Areas, ultimately improving planning and regulatory decision-making for these species. In addition, a variation is proposed for Project 3.2 to further develop the NIERN to ensure the greatest possible support for this concept from Indigenous communities and maximise its chances of becoming a functioning entity. This variation is provided as part of the RP2026 package on the variations template.

## Innovations in monitoring and decision-making

### #4 Review the barriers to implementation of coastal and marine restoration and nature-based solutions, with an aim to increase the coordination and transparency of restoration and facilitate uptake and adoption of best practice across all tiers of governments and stakeholders

Large-scale restoration is necessary and is prominent in high-level declarations such as CITES, the UN Sustainable Development Goals (2030), and the UN Decade of Ocean Science for Sustainable Development (2020-2031). Marine restoration projects in Australia, as in most countries, have typically been small-scale, experimental, and lacking coordination. The Hub investments in restoration research in RP2021 included several smaller investments (Project 1.6,1.7, 1.8, 1.10, 1.15), with investments in RP2023 (Project 3.7) focusing on understanding barriers to effective restoration. Investments in RP2024 focus on de-risking Australian nature repair activities in coastal and marine ecosystems (Project 4.10), including identifying metrics for successful restoration. RP2024 also includes specific restoration case studies, all of which build on related work in this and previous NESP Hubs – evaluating impacts, recovery and intervention options 10 years after the world's largest mangrove dieback (Project 4.12) - creating an inventory of shellfish reefs in northern Australia in collaboration with recreational fishers (Project 4.13), and options for reversing seagrass and turtle health decline in Pulu-Keeling National Park (Project 4.11). Other projects on feral pig control and seagrass are relevant to this priority area.

The RP2025 investments in restoration focused on coral reefs, with a project to improve the efficiency of crown-of-thorns starfish control through adaptive management and develop reef resilience planning (Project 5.4) and another project assessing the restoration needs of coastal benthic habitats after the Cyclone Jasper floods of December 2023 (Project 5.5).

There are no RP2026 projects proposed for this priority research area, although a variation is proposed for Project 3.8 (carbon method development for ungulate control) that aims to develop remote sensing methods for calculating how much carbon is saved from implementation of feral animal control assessing the benefits to carbon release of feral animal control has been submitted for approval. A variation for Project 4.10 was provided to DCCEEW in late August and has been approved.

### #5 Develop better, more cost-effective approaches to monitoring priority threatened and migratory species and ecological communities to improve reporting on condition and trend

Australia has 1890 threatened species and ecological communities listed as Matters of National Environmental Significance (MNES). There are also additional species listed because of Australia's responsibilities under migratory species and bilateral agreements. Whilst most of these are terrestrial, hundreds occur in the marine and coastal environment. The program of work will focus on researching priorities, needs, and gaps, such as those outlined in the Australian Government Threatened Species Strategy, to help focus the efforts of the Australian Government and partners on threatened species recovery actions.

This research priority area encompasses the largest number of projects approved in RP2022, RP2023, RP2024, and RP2025, with the majority of these projects strongly related to other priority areas, specifically Northern Australia, Indigenous Futures, Offshore Renewables, and the protection and recovery of marine mammals. The Hub is making a major contribution to the Threatened and Migratory Species and Ecological Communities Initiative led by the Resilient Landscapes Hub.

RP2025 included investment to improve knowledge of white shark populations and biologically important areas in southern Australia (Project 5.7), building on substantial past NESP investments to estimate status and trends of Australia's white shark populations. Investment was also made to enhance knowledge of the distribution of key threatened species that are expected to interact with developing offshore wind infrastructure and activities (Project 5.3). As part of identified emerging priorities funding, DCCEEW identified the need for further immediate investment in Maugean skate, and the new emerging priorities proposal is based on advice from the Maugean skate Taskforce (EP Project 4.25).

There are no RP2026 projects proposed for this priority research area, although a variation is proposed for Project 3.10 to synthesize national data on dugong and produce maps of Biologically Important Areas for better species protection planning. A variation is also proposed for the seagrass Project 3.5 to synthesize all seagrass data for northern Australia into a single digital layer and develop a fragmentation indicator to more accurately represent seagrass meadow mapping. Variations for projects 3.5 and 3.10 are provided as part of the RP2026 package on the variations template.

### #6 Develop approaches to determine status of values and pressures and measure effectiveness of marine protected places. Includes the Protected Places Initiative

The Hub has established a long-term research collaboration with Parks Australia to progress knowledge systems that support the effective management of Australian Marine Parks. These collaborations are evident in research investments in all previous research plans. Current investments in RP2024 included several projects aimed at supporting the evaluation of the management effectiveness of the Australian Marine Park network (Project 4.20) - delivery of science to support the implementation of a National Marine Park Management Effectiveness system, and assessing the key natural values within priority temperate Australian Marine Parks to evaluate management effectiveness (Project 4.21). Outcomes defined within the Cross-Hub Protected Places Initiative are also identified in the deliverables of Project 4.20.

Other investments in protected places are relevant to this priority area, e.g. shallow reef and seagrass projects in Northern Australia (see above), and the proposed assessment of the ecological and cultural values of reefs in the southern Gulf of Carpentaria, including the Gulf of Carpentaria Marine Park (Project 4.24).

The RP2025 investment strengthened collaboration with Parks Australia by providing AMP network knowledge syntheses for natural values and pressures to support the 2027 statutory review of management plans required under the EPBC Act (Project 5.6). It also facilitated the repeat and enhancement of the national-scale socio-economic, attitudes, and practices (KAP) surveys of AMPs (Project 5.10). This research is crucial for understanding how KAP has shifted since 2019 to inform the upcoming statutory review of management plans.

There are no RP2026 projects proposed for this priority research area, although variations are proposed for Project 4.21 to conduct field surveys within the Kimberley Marine Park, Project 5.10 to survey users within priority marine protected areas and provide training for selected Indigenous groups to conduct these surveys, and Project 5.4 to extend the reef modelling and reef resilience developmental work for improved management of the Great Barrier Reef. Variations for projects 4.21 and 5.4 are proposed to be submitted for approval by November 2025, with project 45.10 approved on Oct 31.

### #7 Cross-cutting issue: New approaches to marine monitoring and data delivery

There are no RP2026 projects proposed for this priority research area, although a variation is proposed for project 4.22 that aims to provide pollutant reporting to support direct reporting through the National Outfalls Database and to conduct additional analysis of contaminants sampled during recent Brisbane River flooding. This variation is proposed to be submitted for approval by mid-November 2025.

## Hub research projects for Research Plan 2026

Research projects proposed for the Marine and Coastal Hub RP2026 are listed below and can also be found in Attachment A – research project list. For more details on projects funded in previous research plans, please refer to the hub website www.nespmarinecoastal.edu.au.

**Research Plan 2026 projects**

| Project no. | Project partners | Project title | Priority research area as numbered above |
|---|---|---|---|
| 6.1 | ISWAG - Wunambal Gaambera Aboriginal Corporation | Cumulative spatial risk assessment of marine turtles at a regional scale- prioritising protection in the face of climate change | 3,1,5 |

## Project variations

Research project variations proposed for the Marine and Coastal Hub are listed below. For more details on the projects proposed for variations funded in previous research plans, please refer to the hub website www.nespmarinecoastal.edu.au. Those in italics (projects 3.2, 3.5 and 3.10) are provided as part of the RP2026 package on the variations template.

| Project no. | Project purpose | Project title | Project output |
|---|---|---|---|
| **1 Improve regional planning in Northern Australia** | | | |
| *3.5* | *Part synthesis, part research analysis of data* | *Supporting regional planning in northern Australia: Building knowledge, skills and partnerships for understanding seagrass distribution* | *Collate all available seagrass mapping data for all of northern Australia, check and clean the data and make it available for national reporting.*<br>*Synthesis to produce a complete, fully publicly available and consistent seagrass dataset.*<br>*Also, develop a fragmentation indicator to improve the usability of mapping outputs.* |
| *3.10* | *Part synthesis, part new analysis of existing data* | *A partnership approach to filling key knowledge gaps on dugong in northern Australia using novel technologies* | *Synthesise all available historical dugong data across its full national range to ensure it is secure, publicly available and analysed for national reporting.*<br>*Use synthesised data to identify Biologically Important Areas.* |
| 3.17 | Part synthesis, part improving the quality and national consistency of mapping produced to date | Locating Unidentified Reef and Habitat Features in the Northern Australian Seascape | Synthesis of reef mapping data across of northern Australia at the highest quality and fully integrated with national classification standards. |
| **2 Advance Indigenous research and monitoring priorities** | | | |
| *3.2* | *Project extension with additional effort to secure the original intended outcome* | *Developing a National Indigenous Environmental Research Network* | *Additional consultation with Indigenous groups to ensure acceptance of the proposed National Indigenous Environmental Research Network (NIERN)* |
| **3 Offshore windfarms and renewable energy impacts** | | | |
| 4.9 | Project extension to undertake additional research | Assessing the vulnerability of southern right whale and blue whale populations to disturbance from windfarm developments | Progress collation, management and delivery of the priority southern right whale data and data products required to support decision making related to offshore wind assessments. |
| **4 Progress implementation of coastal and marine restoration and nature-based solutions** | | | |

| | | | |
|---|---|---|---|
| 3.8 | Project extension to conduct additional research | Carbon abatement and biodiversity enhancements through controlling disturbances in wetlands from feral ungulates | Verify techniques that enable the reporting of changes in wetland condition and carbon storage resulting from ungulate management across Australia. |
| 4.10 | Part synthesis, part additional analysis of existing data | De-risking nature repair activities in Australian coastal and marine ecosystem restoration | Further quantification of risks associated with coastal restoration and integration with quantitative information on knowledge on habitats, restoration actions and known outcomes. Update and re-design the Australian Coastal Restoration (ACRN) database on coastal restoration projects and support enhanced communication and engagement on coastal and marine restoration, particularly within the 2025 and 2026 ACRN symposia. |
| **5 Status of values and pressures and measure effectiveness of marine protected places** | | | |
| 4.21 | Project extension to conduct additional research | Assessing the condition of natural values within priority temperate Australian Marine Parks to evaluate management effectiveness | Conduct field surveys within the Kimberley Marine Park to inform management plan reviews. |
| 5.4 | Project extension to undertake additional research | Improved modelling of flood and thermal events in the Great Barrier Reef and: Developing Resilience Planning for Reefs | Improved modelling of water quality. |
| 5.10 | Project extension to conduct additional research | Improving socio-ecological understanding of natural values of the Australian Marine Parks | Survey users within priority marine protected areas and provide training for selected Indigenous groups to conduct these surveys. |
| **7 Cross-cutting issue: New approaches to marine monitoring and data delivery** | | | |
| 4.22 | Part synthesis, part additional analysis of existing data | Environmental concentrations of emerging contaminants in coastal stormwater | Provide reporting on pollutants to support direct reporting through the National Outfalls Database, and conduct additional analysis of contaminants sampled in recent Brisbane River flooding. |

### Synthesis rationale and expected outputs

The Hub will create a range of synthesis products to effectively communicate its achievements, outputs and outcomes to a broad range of organisations and people. Investment in synthesis will focus on four main areas:

A - Six thematic syntheses - communicating key messages about the Hub's achievements and impact at the theme level. The six themes are those listed above (starting on page 4) under Research priority areas. Graphically designed full-colour outputs that can be used as

either digital or hard copy outputs will be produced. These are expected to be approximately 4-6 pages in length for each theme. The investment for this synthesis will be included in the administrative–communication budget for those already employed by the Hub.

B - Targeted project-level syntheses – these are project-specific synthesis products. The form of outputs will vary depending on the needs of research-users. Some of these syntheses that will occur at the project level will be funded via the RP2026 project variations, which are outlined in the table above, and some were funded via investments in RP2025.

C - Hub website - to include synthesis information on achievements and impacts for all the Hub's main research themes (via the topics menu on the home page). This is targeted to those readers who browse the Hub website. The website provides an enduring, one-stop shop providing access to all the Hub's outputs, including synthesis products.

D **-** Cross-Hub Protected Places Management Initiative – The Hub will provide a final initiative report in early 2027, aiming to address the defined outcomes of the initiative. The Hub will also produce an initiative synthesis on Managing Protected Places in coastal and marine environments. This will follow a similar format and design as proposed for the thematic synthesis outputs.

The Hub is also expecting to contribute relevant information to the other Hubs' cross-Hub initiatives so they can complete their final reports (e.g. Climate Adaptation, etc).

**Initiative projects**

The Marine and Coastal Hub is leading the Protected Places Management initiative.

Broadly, the research priorities of the initiative are:

- improve support for Indigenous communities and organisations to determine, lead and disseminate Indigenous knowledge and science.
- increase the evidence base through consistent approaches to collect, analyse and report relevant data for adaptive management of protected places.
- increase understanding of options for effective interventions and approaches to management.

A large number of projects support the delivery of the identified outcomes across RP 2021 to RP 2025, and now with the additional project proposed in RP2026, as identified below:

| Initiative Outcomes | Relevant projects for Marine and Coastal Hub |
|---|---|
| To improve support for Indigenous communities and organisations to determine, lead and disseminate Indigenous knowledge and science | RP 2021<br>- Scoping study: Indigenous partnerships and research needs<br>- RP 2023<br>- Developing a National Indigenous Environmental Research Network<br>- RP 2024<br>- An Indigenous-led approach to advance health and wellbeing of Tebrakunna Country, Coastal Plains nation, North-east Tasmania<br>- Unbroken whispers – The ripples connecting sea kin<br>- RP2025 |

| | |
|---|---|
| | - Mapping sea country and investigating conservation and restoration opportunities along the Kakadu coast and Garig Gunak Barlu National Park<br>- A toolkit for ranger-led seagrass monitoring in northern Australia sea country<br><br>RP2026<br><br>- A spatial risk assessment of marine turtles along the Kimberley coast to prioritise protection in the face of climate change |
| To increase the evidence base through consistent approaches to collect, analyse and report relevant data for adaptive management of protected places. | RP 2021<br>- Characterising values and identifying indicators and metrics of fish and benthic assemblages within the SW Corner Marine Park<br><br>RP 2022<br>- Mapping continental shelf seabed habitats across southern Australia<br>- Advancing national standards and best practices to monitor key marine values and pressures<br>- Status and condition of values in Australian Marine Parks and development of information systems to evaluate management effectiveness<br><br>RP 2023<br>- Eastern Grey Nurse Shark population abundance and trend<br>- Assessing changes in black rockcod abundance and size<br><br>RP 2024<br>- Development of regional modelling and risk assessments to inform offshore renewable decision-making<br>- Potential impacts of offshore wind developments on eastern Indian Ocean pygmy blue whales (*Balaenoptera musculus brevicauda*)<br>- Enhancing monitoring approaches to evaluate the abundance, life history and critical habitats of the endangered Australian sea lion<br>- Grey Nurse Shark Aggregations<br>- Coastal seagrass of the Gulf of Carpentaria: building knowledge and capacity as a foundation for long-term monitoring<br>- Assessing dugong distribution and abundance across the southern Gulf of Carpentaria<br>- Developing Traditional Owner community-led dugong monitoring in the Kimberley region<br>- Supporting recovery and management of migratory shorebirds in Australia<br>- Assessing the condition of natural values within priority temperate Australian Marine Parks to evaluate management effectiveness<br>- Environmental DNA for measuring offshore marine biodiversity: what can DNA in water collected from the RV Investigator tell us?<br>- Towards assessing the values of reefs in the southern Gulf of Carpentaria<br><br>RP2025<br><br>- Improving socio-ecological understanding of natural values of the Australian Marine Parks |
| To increase understanding of options for effective interventions and | RP 2021<br>- Support for Parks Australia's Monitoring, Evaluation, Reporting and Improvement System for Australian Marine Parks<br><br>RP 2022 |

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| approaches to management | - Evaluation of recreational fishing behaviour, use, values and motivations that relate to compliance<br>RP 2023<br>- Progress research on values and pressures, data standards and delivery to support sustainable development of offshore renewables and other emerging marine industries<br>- Addressing Kakadu's strategic marine research needs<br>RP2024<br>- Developing an Integrated Pest Management framework for feral pigs in coastal environments<br>- Delivery of science to support the implementation of a National Marine Park Management Effectiveness system<br>RP2025<br>- Assessing impacts of extreme events on inshore benthic habitats in the northern Great Barrier Reef<br>- Synthesis of environmental values information to support review of Australian Marine Park Management Plans<br>RP2026<br>- A spatial risk assessment of marine turtles along the Kimberley coast to prioritise protection in the face of climate change |

Research projects falling under the initiatives are also identified in Attachment A – research projects list. Some projects will be initiative-specific and some hub research projects will contribute partly to an initiative; these are distinguished in Attachment A. For more detail on each specific project, please refer to the hub website - www.nespmarinecoastal.edu.au.

# Expected outcomes and outputs

The expected outcomes of NESP are to produce research that:

- enhances our understanding of Australia's environment and climate
- is communicated clearly to relevant stakeholders and the public
- is discoverable and accessible
- informs decision-making and addresses environmental priorities.

Research under NESP is expected to inform the department's policy and program delivery. More broadly, it will engage and inform key stakeholders with an interest in the outputs of environmental and climate science research, including state and local governments, business and industry, community groups, Indigenous and non-Indigenous land managers, Indigenous communities and education institutions.

## Hub outcomes and outputs

To assist in understanding the proposed project portfolio in line with the MaC Hubs' strategic guidance, the expected high-level outcomes and outputs for the one new project in Research Plan 2026 and the eleven project variations/extensions have been categorised by strategic research area.

# Improving Indigenous Futures

- Project 6.1 (new project): Traditional Owners have identified a desire for participatory research along the Kimberley coastline to better document and understand risk to sea turtles from climate change, to inform and improve future management decisions.
- Project 3.2 (project variation): Undertaking further consultation with Indigenous leaders and communities on the finalisation of the NIERN concept.
- Project 5.10 (project variation): Provide training for Indigenous groups in selected regions across Australia to implement targeted boat-ramp surveys to assess human use of marine protected areas.

### Natural capital supporting economic and social values

- Project 3.8 (project variation): Building upon previous investments in developing a carbon-market funded Integrated Pest Management Program for feral animal control, this project extension will develop a remote-sensing based method for assessing the level of carbon saved from implementation of feral animal (ungulate) control.
- Project 5.4: (project variation): Building upon previous investments to improve the development of reef resilience planning and modelling in the Great Barrier Reef and integrating this with management decisions.
- Project 4.9 (project variation): Progress collation, management and delivery of the priority southern right whale data and data products required to support decision making related to offshore wind assessments.
- Project 4.10 (project variation): Further evaluate risks associated with coastal restoration and integration with quantitative information on knowledge of habitats, restoration actions and known outcomes. Update and re-design the Australian

Coastal Restoration (ACRN) database on coastal restoration projects and support enhanced communication and engagement.

- Project 4.21 (project variation): Conduct field surveys within the Kimberley Marine Park to inform management plan reviews.

### Innovations in monitoring and decision-making

- Project 3.5 (project variation): Build upon previous investments in seagrass mapping to bring together all available mapping data for northern Australia into a single digital dataset.
- Project 3.10 (project variation): Build upon previous and current investments in dugong population surveys to synthesise the data over their range and identify biologically important areas.
- Project 3.17 (project variation): Build upon previous investments in aerial mapping of reefs to improve the mapping dataset to nationally consistent standards.
- Project 4.22 (project extension): Build upon previous and current investments to provide reporting on pollutants to support direct reporting through the National Outfalls Database and conduct additional analysis of contaminants sampled in recent Brisbane River flooding.

These projects deliver outcomes to a wide range of Australian Government research users, as well as relevant State agencies, stakeholders and the broader community. A number of projects are nationally focused (variations to projects 3.5, 3.10 and 3.17), developing approaches that can be applied in different regions (Project 6.1 and variations to projects 3.2 and 3.8) or focused regionally, reflecting the distribution of the environmental assets (Projects 5.4, 4.9, 4.21, 4.22, 5.10).

# Collaboration and partnerships

NESP encourages a collaborative, multi-disciplinary approach to environmental and climate research. Key to the success of the hub will be the capacity to foster partnerships across hubs and with a wide range of decision-makers across the Australian community, including Indigenous communities, to achieve positive environmental, social and economic outcomes.

Multi-disciplinary and multi-institutional teams from the following research institutions will contribute to the Hub as research partners: James Cook University, University of Tasmania, Reef and Rainforest Research Centre, CSIRO, Australian Institute of Marine Science; Integrated Marine Observing System, Deakin University, University of Wollongong, University of NSW, University of Technology Sydney, University of Sydney, Museums Victoria, Sydney Institute of Marine Science, University of Melbourne, Bureau of Meteorology, NSW Department of Primary Industries, NSW Department of Planning, Industry and Environment, Geoscience Australia, Macquarie University, University of Queensland, Griffith University, Central Queensland University, Charles Darwin University, Murdoch University, Edith Cowan University, University of Adelaide, Flinders University, SARDI, University of Western Australia, and Bioplatforms Australia. Other management and research institutions, such as the North Australian Indigenous Land and Sea Management Alliance (NAILSMA), Clean Ocean Foundation and Western Australian Department of Primary Industries, Resources and Development, are included where their expertise is relevant to specific priorities.

The Hub's partners represent key national and regional research institutions in Australia and possess the necessary capabilities and resources (including personnel, time, and access to major equipment) to deliver across the identified Hub priorities at both national and regional scales, as well as across all regions.  Some of the key skills, capabilities and infrastructure that will be available to support projects include field technologies, laboratory and aquarium facilities, computer technologies and socio-economic tools.

The Hub's partners have continued to engage throughout the program's life through regional partnerships facilitated by existing arrangements, such as the Sydney Institute of Marine Science, Marine Innovations SA, and the Indian Ocean Marine Research Centre. The Hub is also represented on the National Marine Science Committee which includes representation from many of the Hub's partners. The knowledge brokers, communication managers and data wranglers will also work across all partners to ensure ongoing engagement and consistency of approach for all aspects of Hub engagement and outputs.

The partners contributing to projects in the Marine and Coastal Hub Research Plan 2026 are listed in the project table above and reflect the specific skills and capacities required for co-investment to deliver the outcomes across the diverse range of projects. Several of the research projects also involve contributions from external collaborators, who provide specific skills and co-invest in the projects. For more details on Hub partners and external collaborators for each specific project, please refer to the Hub website - www.nespmarinecoastal.edu.au.

The Hub continues to develop and implement a co-create, co-design and co-delivery approach to research collaboration and partnerships that includes the following features: 1) developing a shared understanding of research-user needs and priorities; 2) engaging

research-users involved in the design and implementation of research projects; and 3) delivering fit-for-purpose research outputs. Central to the overall approach is the development and maintenance of networks and trusted relationships with researchers and research end-users, including Indigenous communities and organisations.

The Hub continues to develop a shared understanding of research needs and priorities to inform the development of annual research plans. Regional Reference Groups and the Indigenous Facilitators Network provide essential mechanisms for understanding regional information needs and priorities. The understanding of national and regional research needs will be updated annually to ensure it remains current and responsive. The project leaders and knowledge brokers will work closely to ensure that the Hub implements effective participatory approaches to engage research users in project design and implementation. The Hub will work with research end-users and project leaders to identify project contacts. The project leaders will be the default Hub project contact. Project leaders will identify contacts for relevant research-users and stakeholders.

# Indigenous engagement

The Hub continues to undertake significant engagement and co-design with Indigenous people and Traditional Owner groups across the country. The Marine and Coastal Hub has developed an Indigenous Partnership Strategy, which was reviewed in mid-2023. This document outlines our approach to Indigenous engagement and participation in more detail (Marine and Coastal Hub - www.nespmarinecoastal.edu.au). Each annual research plan provides for engagement with Indigenous groups, where appropriate, across the country to develop high-priority research directions, ensuring co-creation, co-design and co-delivery of relevant project funding under current and future research plans. Wherever possible, this engagement will be undertaken collaboratively with other NESP Hubs, especially the Resilient Landscapes Hub. This is important to avoid engagement fatigue and to gain the benefit of cross-Hub fertilisation of ideas.

Through the Hub's leadership and other networks, we already possess many, though certainly not all of the required contacts. During the Marine and Coastal Hub bid, there was formal support of >40 Indigenous organisations around the country. We will activate and utilise this extended network as part of our Indigenous engagement and help other Hubs with Indigenous engagement where required.

The key elements of our Hub Indigenous engagement and participation aim to:

- Provide support to the Hub Indigenous Facilitators with research brokering, development and implementation for identified Indigenous research needs.
- Drive adoption of best practice Indigenous engagement (United Nations Declaration on the Rights of Indigenous Peoples – UNDRIP/ Free, Prior and Informed Consent-FPIC) to ensure the research is relevant, innovative, measurable, and delivers enduring economic, social and cultural benefits that are currently being missed.
- Ensure the research paradigm is compatible with culturally based (collective consensus) decision making and is ethical and recognises the ownership of natural resources (land, biota, cultural, Indigenous knowledge and IP).
- Create efficient governance reflecting local and regional input into program co-design, co-implementation and knowledge repatriation.
- Amplify the recognition, use and value of Traditional knowledge, customs and practice while increasing the opportunity for intergenerational knowledge transfer in the Indigenous community.
- Create succession and leadership pathways for the Indigenous research sector, including training early-career researchers.

Specific details on the level of Indigenous consultation and engagement on the project in Marine and Coastal Hub Research Plan 2026 are provided in the individual project proposals available in Attachment B and on the Hub website (Marine and Coastal Hub - www.nespmarinecoastal.edu.au).

# Knowledge brokering, communication and data management

The department expects each hub to engage with and communicate research outcomes to research users and the wider public, facilitating uptake and adoption. As part of this, the program is committed to promoting open access to public sector and publicly funded information, including optimising the use and reuse of data. The department expects each hub to implement its data management plan, providing timely and open access to data products and research outputs.

### Knowledge Brokering and Communications

In the Marine and Coastal Hub knowledge brokers facilitate the exchange of information between researchers, policy makers, managers and Indigenous organisations to generate shared understanding and to capture and transfer knowledge about:

- information needs and priorities of targeted research users
- available research options for meeting the needs of research users
- requirements for co-design of projects, including research-user engagement and participation to maximise research impact
- packaging research outputs to ensure knowledge is effectively captured and transferred to meet the specific needs of research-users.

Knowledge brokering in the Marine and Coastal Hub is a team effort involving Hub co-leads, initiative leaders, project leaders, Indigenous facilitators, communication and media specialists and data wranglers. Specialist knowledge brokers are tasked with developing and coordinating the delivery and periodic review of the strategy. The Marine and Coastal Hub has developed a Knowledge Brokering Strategy which was reviewed in mid-2023 (Marine and Coastal Hub - www.nespmarinecoastal.edu.au).

The Communication Strategy provides high-level information on the Hub's approach to communicating our research approach, outcomes and impacts to research end-users and other stakeholders. For communications, the Hub will implement five broad actions to enable knowledge sharing and engagement via:

- Working with researchers, knowledge brokers and other members of the hub executive team to identify and prioritise communication needs.
- Developing and using the right mix of content, activities, channels and tools to address communication priorities.
- Encouraging, enabling and building the capacity of Marine and Coastal Hub researchers and partner agencies to participate in Hub communication activities.
- Developing, maintaining and implementing an annual schedule of communication priorities and activities.
- Modifying the communication strategy where required in response to the monitoring, evaluation and reporting process.

The Marine and Coastal Hub's Communications Strategy will be reviewed annually (Marine and Coastal Hub - www.nespmarinecoastal.edu.au). The Hub also produces a

Communication Plan designed to provide more specific direction for the Hub's investments in communication. The Communication Plan is a living document that is regularly reviewed and updated.

# Data Management

The Marine and Coastal Hub has produced a Data Management Strategy which was reviewed in mid-2023 (www.nespmarinecoastal.edu.au). This Strategy enables the Hub to take a systematic and standards-based approach to identifying, cataloguing, packaging, and presenting its research outputs to stakeholders and the public. The strategy is a living document that describes:

- who will be responsible for data management related activities
- data management practices used
- who owns and can access and use the Hub's data and products
- metadata standards used
- products and data storage, security, privacy and unique identifiers
- product legacy planning
- facilities and equipment used or required.

The Strategy is supported by resources and infrastructure, such as:

- Hub Data Wranglers, who have a role to work with the Hub researchers, the Department and other stakeholders, to translate data and information into relevant outputs that align with these guidelines.
- allocation of resources to support data management, from the initial data capture through to ongoing delivery and curation.
- information technology infrastructure: hardware, software and other facilities that underpin data-related activities.
- support services: resources allocated to support the implementation of metadata management so that data records can be used for both internal and external purposes.

The Hub has two Data Wranglers. Their activities include collaborating with Hub researchers, the Department, and other stakeholders to translate data and information into relevant data products and tools, and to help integrate research outputs into national information repositories, digital systems, and decision-support tools. This includes ensuring data management aligns with the FAIR data principles to maximise the use and reuse of public data. The Data Wranglers are responsible for coordinating and conducting data discussions with research projects, providing guidance on best practices in data management, reviewing project data management plans, tracking data management milestones, and reviewing final datasets. The Data Wranglers have also produced guidance for researchers working on Hub-funded projects. The guidance outlines the Hub's expectations for data management and provides general guidance on how research data should be managed and published, in accordance with the Australian Code for the Responsible Conduct of Research.

To ensure its long-term sustainability, the Hub will leverage and contribute to existing institutional and national data management infrastructure. This will function as a distributed data network, making Hub information publicly and freely accessible via automated workflows.

The Australian Research Data Commons (ARDC) provides a helpful overview of data management plans and the FAIR data principles. Many Australian Universities have data management policies and tools available for use by researchers to create a data management plan at the start of a research project. All data (via metadata records) will be aggregated to the AODN and Research Data Australia (RDA) national information repositories to maximise discoverability and access. Linked Hub- and Project-level metadata records will be created to facilitate organisation of Hub content and will follow ARDC's best-practice for linking publications and grants.

NESP aligns with the objectives of the Global Indigenous Data Alliance (GIDA) regarding Indigenous data, particularly in terms of access to data by non-Indigenous users. Although the *NESP data and information guidelines* follow the FAIR data principles, when working with Indigenous data, these guidelines require the complementary use of GIDA's CARE principles for data governance, which consider both people and purpose as part of open data and information.

Knowledge held by Indigenous peoples will be recognised, valued, and protected throughout any partnerships established with First Nations people in the operations of the Marine and Coastal Hub. This will be guided by the CARE principles for Indigenous data governance: Collective benefit, Authority to control, Responsibility, and Ethics.

Specific details on the approach and expected data outputs on each project in Marine and Coastal Hub Research Plan 2026 are provided in the individual project proposals available in attachment B and on the hub website - www.nespmarinecoastal.edu.au.