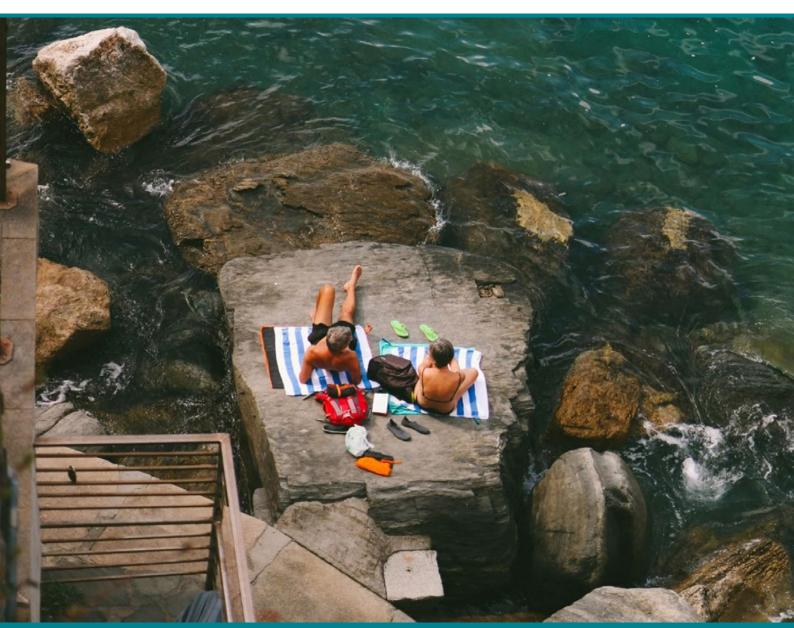


# **Marine Estate Management Strategy Triannual Snapshot**

Reporting period Nov 2023-Feb 2024 Marine Estate Management Authority

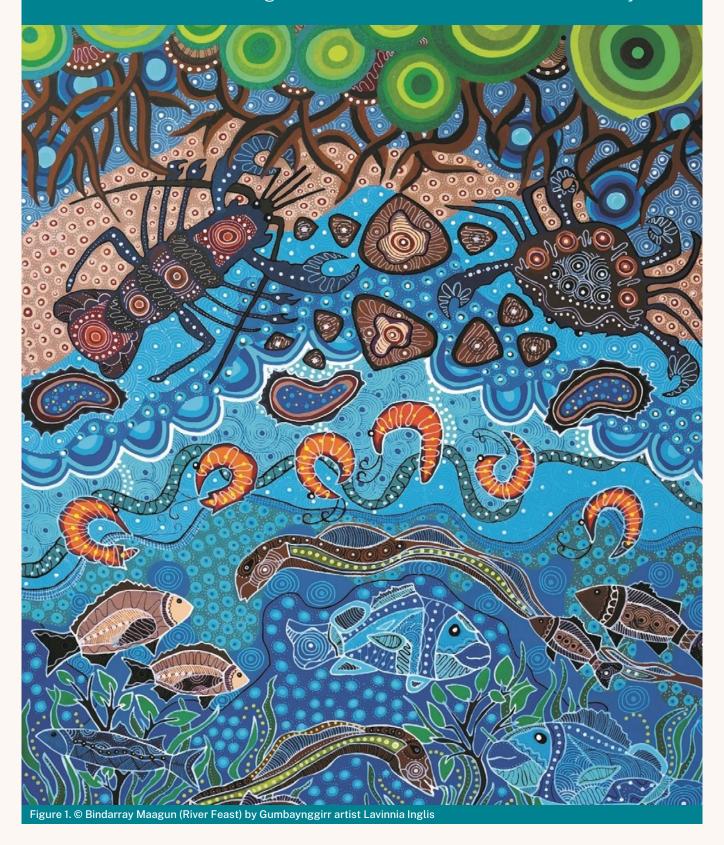
May 2024



Cover image: Unrecognisable couple chilling on stony seashore © Tanya Satina on pexel.com

Published by the Department of Regional NSW regional.nsw.gov.au

# Aboriginal people are the Traditional Owners of the NSW marine estate and have a continuing connection to their Land and Sea Country



Title: Marine Estate Management Strategy Triannual Snapshot Subtitle: Reporting period November 2023-February 2024

First published: May 2024

Department reference number: PUB24/367

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# Part A: Strategy snapshot

### Purpose of this snapshot

This Snapshot Report provides stakeholders and the community with regular updates on the implementation of the Marine Estate Management Strategy (Strategy). It includes updates on notable project highlights and informs stakeholders of key deliverables in the second trimester of Year 6 period (1 Nov 23-29 Feb 24) of the Strategy. Additionally, activities planned for the next reporting period (1 March -30 June 24) are highlighted in the 'What's next' sections.

For more updates follow us on <u>Instagram</u>, visit the <u>Marine Estate website</u>, or subscribe to the <u>Marine Estate Newsletter</u>. This snapshot should be read in conjunction with the <u>Strategy</u> Implementation Plan 2022-2024.

### Delivering long-term outcomes

The Strategy is a 10-year strategy, 2018-2028. The Strategy's 9 initiatives contribute to improving water quality, reducing marine litter, improving the health of coastal habitats, reducing threats to marine wildlife, ensuring sustainable foreshore development, ensuring sustainable land use practices, planning for climate change, protecting Aboriginal cultural values of the marine estate, delivering sustainable boating and fishing, enhancing social, cultural and economic benefits, and delivering effective governance. Additionally, program management, monitoring, reporting, and evaluation are overarching components of the Strategy, embedded to assure the community and stakeholders that the program is implemented and monitored effectively and in an integrated and transparent way.

Continued investment for the remaining 5 years of the Strategy will help to improve water quality by reducing pollution, to ensure our coastal habitats can thrive under the effects of climate change and to increase Aboriginal peoples' role in protecting cultural values and managing Sea Country. Long-term funding also ensures the NSW marine estate is resilient and managed sustainably for future generations.

Detailed information on the Strategy is available on the <u>Strategy's website</u> and should be referred to when reading this document.

# Program highlights this trimester

This trimester is the second reporting period for the 2023-2024 financial year, the sixth year of the Strategy implementation. Good progress has occurred throughout the program with continuous delivery of close to 100 projects this year. In this snapshot, we focus on some of the most notable achievements across the 9 initiatives of the Strategy.

A selection of highlights illustrating the extent of work and achievements during this period are presented below. Communications and engagement activities during the period are summarised in Appendix B.

### Key highlights during November 2023 - February 2024

Below is a selection of key highlights across the 9 initiatives of the Strategy, further information is available in the specific initiative sections of the report.



# Review of the NSW Water Quality Objectives

Statewide

Statutory Documents 'values and uses check' complete. All coastal catchments now have draft NSW Water Quality Objectives (WQOs) attributed to them in consideration of community feedback, statutory documents check, or professional feedback supplied through workshops in 2022.



# Clean coastal catchment monitoring

Statewide

A community workshop was held in Tilba Tilba in November 2023, providing local community with information on the on-ground works and monitoring being undertaken in the Victoria Creek and Tilba Tilba Lake catchment, and communicating the benefits this has on water quality and the environment.



#### Coastal design guideline review

Northern Beaches council

The final NSW Coastal Design Guidelines 2023 were publicly released on 10 November 2023. The Guidelines aim to improve decision-making, built outcomes and environmental performance in coastal places through strategic planning and urban design. The guidelines give best-practice advice to support the preparation of planning proposals, place strategies and local planning controls. They also aim to shape good urban design outcomes within coastal settlements. Supporting materials including case studies and worked examples were released on the Coastal Design Guidelines webpage, to demonstrate how the guidelines can be applied in practice. A webinar was held on 20 February 2024 (view the slides here), focusing on how the guidelines can be applied in a range of applications.



# Estuarine habitat monitoring and threat assessment

Statewide

In the Mid-Coast, Clarence Valley, Shoalhaven areas of focus this trimester, estuarine habitats and disturbance maps were created for 17.5 ha of habitat in Smiths Lake. Preliminary maps were prepared for 6 other estuaries (Corindi River, Sandon River, Moonee Creek, Wolli Wolli River, Shoalhaven River, Crookhaven River) which are pending field validation before final release.



# Sea Country rangers

Statewide

Support of Sea Country Ranger activities are on track with Initiative 4 collaborating with Green Heroes on the Sea Country Summit Heron Island project. Sea Country rangers from the north and south coast of NSW attended the Summit and networked with industry practitioners and experts in the field of Sea Country management from around Australia.

#### Key highlights during November 2023 - February 2024



#### Estuary general fishery observer survey

Statewide

Trained scientific observers have monitored more than 300 fishing trips across 14 estuaries from Lake Illawarra in the south to the Tweed River in the north.



#### Aquaculture socio-economic research

Statewide

The Binder Dijker Otte company completed the (BDO) <u>socio-economic valuation of the aquaculture</u> industry report published in December 2023. Shellfish Committee, industry newsletters notified.



#### Vessel environmental standards

Statewide

The Marine Pollution Regulation 2014 review is complete. The Marine Pollution Regulation 2024 will commence on 25 March 2024. Website updates and communication for stakeholders are in progress. Information for staff to support implementation of the Sewage Pollution Prevention Certificate Scheme (SPPC) is being prepared.



#### **Economic benefits monitoring and research**

Statewide

Economic contribution and Market Insights (ECMI) report and associated communications material were finalised and endorsed by MEMA. The report estimates the market-based value of the marine estate to the NSW economy and investigates drivers for economic changes in individual industries and regions, as well as broader trends in the marine estate over the last 5 years, and into the future.



### Improved marine protected area planning and management

Marine parks and aquatic reserves.

In the Cook Island Aquatic Reserve, all tour operators using the Aquatic Reserve, National Parks and Wildlife Service (NPWS) and Green Heroes volunteer group have provided feedback on a draft Code of Conduct. Participants have reported that they are already implementing the Code and communication materials for the public are being developed.



# Strategy program management

Statewide

Publication of the Snapshot report <u>July-October 2023</u> and the <u>2022-2023 implementation annual report</u>. This provides an update to stakeholders and the community on the implementation of the Strategy.



# Better geographic information system (GIS) for the marine estate

Statewide

Added information about new offshore artificial reefs to public. Educational material including the FishSmart app and DPI webmaps. Remnant Oyster Reef mapping completed for the Hawkesbury River.

# **Part B: Initiative summaries**

Initiative summaries include updates on notable project highlights from the reporting period as well as what is planned for the next reporting period. A full update on all projects is reported in the <a href="Strategy">Strategy</a> Implementation Annual Report for the 2022-2023. More information can also be found in <a href="Strategy">Strategy</a> Implementation Plan 2022-2024 or to 'find projects' visit Our projects page on the marine estate website.

#### **Initiative 1**

Improving water quality and reducing litter

#### **Initiative summary**

Initiative 1 aims to improve water quality and reduce marine litter for the benefit of marine habitats, wildlife and the community through delivering three outcomes over the long term: improved water quality and waterway health in the marine estate in alignment with community values reduction in input of litter to the marine estate in alignment with community values and maintained or improved biodiversity and marine habitats.

This period, Initiative 1 has demonstrated continued progress in delivering meaningful work. Some DCCEEW-led projects faced challenges due to understaffing, weather and funding. Key outputs included the finalisation of the Sydney Harbour water quality monitoring fieldwork. Related data analysis started, and a marine debris and litter database is being created that will enable recording data across NSW catchments over time. DPI-led research shows that the implementation of on-ground work across multiple projects and locations is having positive effect on reducing threats and impacts to water quality in rivers and estuaries of the marine estate. Face-to-face community engagements events occurred and information tools were delivered during the period that highlight progress, share knowledge, build capacity and relationships, and maximise the reach and impact of team efforts.

# Triannual progress and key highlights



#### **Review of the NSW Water Quality Objectives** Statewide

**Project summary:** Review NSW Water Quality Objectives (WQOs) for each coastal catchment in NSW to assess whether they reflect contemporary values and expectations.

**Progress this trimester:** Statutory Documents 'values and uses check' complete. All coastal catchments now have draft WQOs attributed to them in consideration of community feedback, statutory documents check, or professional feedback supplied through workshops in 2022.



# Marine debris research and management program Statewide

**Project summary:** Convene the Marine Debris Working Group composed of agency representatives and academic experts to oversee a marine debris risk assessment and coordinate research, monitoring and analysis activities associated with marine debris actions.

Progress this trimester: First year of microplastic samples completed and analysed from Sydney Harbour, with significant progress towards gaining insights into risk distribution, sampling seeking to detect variability in temporal microplastic contamination, for example the relationship with rainfall and microplastic density. Continuation of statewide microplastic assessment in estuaries to fill Marine Debris Threat and Risk Assessment knowledge gaps as part of the program.



**Project summary:** Monitoring and reporting on water quality and ecosystem health in estuaries and relevant catchments to track broadscale condition over time. Develop new indicators where relevant.

**Progress this trimester:** Fieldwork completed in Sydney Harbour which constitutes a dataset that will provide a baseline for future monitoring. This will provide a validated monitoring program for managers to assess impacts of broadscale processes and local management actions on Sydney Harbour. Completed laboratory analysis of stable isotopes, metals and microplastics in fish tissues to determine potential impacts of coastal catchment outflows on the open coast and coastal waters within the marine estate.



#### Mapping outflow events

Statewide (mapping) Sydney-metro region (riverine overflows)

**Project summary:** Mapping subtidal habitats and monitoring coastal outflow events to quantify impacts on coastal and marine waters.

**Progress this trimester:** Work focused on the Hunter and Metropolitan Sydney regions this period. Publication of scientific paper: 'Quantifying coastal freshwater extremes' in journal Nature Communications (Jan 2024).



#### Oyster reef restoration and research

Statewide | Wagonga Inlet | Botany Bay | Brisbane Waters | Wallis Lake | Tweed River

**Project summary:** Facilitate increased protection and restoration of oyster reef habitat in NSW through provision of planning information, contributions to on-ground works, education, engagement and ongoing research and monitoring.

Progress this trimester: : In the Eurobodolla region, Soil Conservation Services (SCS) have completed all living shoreline bank restoration works. 16,000 saltmarsh plants have been planted by the Joonga revegetation crew. Contractor engagement and detailed designs for community infrastructure are progressing. Further participation of the local Aboriginal community is continuing with beautiful artwork created by Nigel Stewart being incorporated into signage which is now finalised and in production. The Citizen Science program with Nature Coast Marine Group and OzFish is progressing well with over 160 volunteer survey hours recorded and significant Sydney Rock oysters recruiting to the intertidal reef. Early positive results for the DPI-led monitoring and evaluation of the oyster reefs with 15 fish species observed on the subtidal reefs during the first post-seeding survey. Luderick abundance higher on both of the restored reefs compared to natural adjacent reefs. Further seeding is being considered. Wagonga Inlet Living Shoreline (WILS) was awarded the Coastal Management Award for Innovation at the Coastal Conference. Statewide, Bidhiinja: Restoring Our Oyster Reefs has been launched! This new exhibition developed by the Australian National Maritime Museum in collaboration with DPI, tells the forgotten history of oyster reefs in New South Wales and the work now underway to restore these important ecosystems. The exhibition's beautiful design features oyster-inspired artwork from Yaegl artist Frances Belle Parker and details the cultural significance of oyster reefs for Aboriginal communities, and the benefits that healthy and robust reef habitats bring to our communities. Bidhiinja was launched in Nelson Bay in February at the Port Stephens Visitor Information Centre with support from Tomaree Museum Association and Port Stephens Shire Council. DPI provided a talk at the venue which attracted a full house of community members and students from all ages. The exhibition moved to Ulladulla in early March and will travel to 10 regional locations across the marine estate in 2024/25.



**Project summary:** Conduct applied research in coastal catchments to refine and promote best management practices that reduce nutrient and sediment losses in the berry, greenhouse vegetable, macadamia and livestock industries.

Progress this trimester: Berry wastewater treatment in the Ballina region progressed with a Wollongbar Bioreactor and Reedbed preliminary results summary article published in the Autumn 2024 edition of the Australian Berry Journal. The first season of measurements for the macadamia integrated orchard management (IOM) versus pre-IOM in the Ballina region show the benefits of IOM intervention over pre-IOM. Large reductions in nutrient and soil loss are being observed. These findings were presented by our Southern Cross University partner on 3 November to the NSW Coastal Conference in a presentation titled 'Healthy profits and healthy waterways—can macadamias achieve both?'. Livestock nutrient research and engagement in the Bega region progressed with the Dairy Nitrogen Trial field day held at Jellat (Bega) on 20 February. This event was delivered in collaboration with Southeast Local Land Services and Department of Primary Industries Agriculture and attracted 25 participants. Presentations covered soil test results and pasture performance, irrigation scheduling and a case study on the challenges and benefits of installing pivot irrigation systems.



#### Riverbank vegetation improvements

Richmond River | Manning River | Myall Lakes | Karuah River | Wallis Lake | Wollongong | Kiama | Shellharbour | Shoalhaven | Eurobodalla | Bega Valley

**Project summary:** Plant new riverbank vegetation, maintain previous revegetation work, undertake weeding, erect fencing and implement other improvements to enhance the health of waterways and their foreshores.

Progress this trimester: On-ground works at Ballina and Byron LGA: Contractors have undertaken 5.34 ha of weed control over the summer months in preparation for Autumn planting season. 843 plants planted on a community planting day and some additional plants being put in on sites that had weed control actions between July and October 2023. The remaining fencing has been installed to protect 0.99 km of riverbank from stock. A field day activity was organised with the community and resulted in over 800 trees being planted in Byron LGA. In Ballina LGA, the three-year riparian monitoring project was concluded. Exciting results showed that at a 200 m2 riparian restoration site near Alstonville, approximately 15 m<sup>3</sup> of sediment were conserved or prevented from entering the stream over the three-year period. This indicates the effectiveness of restoration efforts in reducing sediment runoff and improving water quality in the surrounding area. In Ballina LGA, bank stabilisation monitoring showed that at an 800 m long mangrove nursery restoration site located at Teven, Emigrant Creek, an impressive 589 tonnes of sediment were captured over three years. Additionally, during floods, the restoration site captured and stored 92 kilograms of phosphate, 1.5 tonnes of nitrogen (fertilizer) and 11 tonnes of Blue Carbon. These findings highlight the crucial role of mangrove ecosystems in trapping sediments and capturing various pollutants, contributing to the overall health and resilience of coastal environments. In Shoallhaven LGA, 18 landholders attended a community engagement event on Equiculture, Healthy Land, Healthy Horses workshop at Berry NSW. They learnt about methods to protect waterways, water quality and soil health through pasture management, water management, manure management and grazing practices.



#### Improving roads and tracks

Kempsey | Tweed River | Manning River | Kiama | Clarence Valley | Richmond | Tweed | Mid-Coast

Project summary: Seal gravel roads and undertake other works to reduce sediment entering waterways.

**Progress this trimester:** Three road and drainage work sites in Ballina Shire Council LGA.Completed: Old Bagotville road segment 1, Old Bagotville road segment 2 and Convery Lane.



#### Coastal wetland rehabilitation

Richmond River | Manning River | Myall lakes | Kiama | Shellharbour | Shoalhaven

**Project summary:** Undertake assessments, plan for future rehabilitation activities (including priority wetland purchases to add to NPWS and council reserve estates) and contribute to wetland restoration onground works in priority locations.

**Progress this trimester:** In the Kempsey region, monitoring cameras were installed at Clybucca. Live images from these cameras can be viewed by land managers and soon by the public via the Strategy's website and UNSW website.



# Clean coastal catchment monitoring

Statewide

**Project summary:** Assessing the benefits of multiple projects in Initiative 1 delivering on-ground works, using water quality monitoring and ecosystem health assessment methodologies, to measure the success of targeted works and achievement of outcomes.

**Progress this trimester:** A community workshop was held in Tilba Tilba in November 2023, providing local community with information on the on-ground works and monitoring being undertaken in the Victoria Creek and Tilba Tilba Lake catchment, and communicating the benefits this has on water quality and the environment.

#### What's next?

Work that is planned to occur in the following reporting period is highlighted below, although unexpected changes to scheduling can occur and will be communicated to affected stakeholders.



# Risk-based framework for regional waterway health

Richmond River

**Project summary:** Develop and trial a governance framework for the Richmond River catchment to coordinate management, reduce diffuse source runoff and improve waterway health, and contribute to the development of the Richmond River Coastal Management Program.

**Anticipated progress:** Capacity building with grazing industry peak body in Kyogle, Lismore and Richmond Valley: Training for landholders in the grazing industry, with seed funding to start changes in land management practices to improve water quality, and continuation of off-stream water projects.



**Project summary:** Strengthen provisions in the NSW planning system to improve the management of water quality by building stakeholder capacity to implement the Risk-based Framework.

**Anticipated progress:** Scoping and planning of works required to update Blue Book (Managing Urban Stormwater: Soils and Construction). Tender complete and contractors selected. Work on Phase 1 to commence soon.



# Review of the NSW Water Quality Objectives Statewide

**Project summary:** Review NSW Water Quality Objectives (WQOs) for each coastal catchment in NSW to assess whether they reflect contemporary values and expectations.

Anticipated progress: Draft WQOs for every coastal catchment will be taken first to the Technical Advisory Committee for endorsement for public exhibition and then for approval through DCCEEW, Water, Wetland and Coastal Science Branch, and then public exhibition early in 2024/25 financial year.



# **Estuarine water quality monitoring** Statewide

**Project summary:** Monitoring and reporting on water quality and ecosystem health in estuaries and relevant catchments to track broadscale condition over time. Develop new indicators where relevant.

Anticipated progress: Delivery of technical report for the Sydney Harbour water quality monitoring program. This will provide a validated monitoring program for the receiving waters of Sydney Harbour, a baseline dataset for future trend analysis, and a technical report outlining uses of this dataset to describe the current condition of Sydney Harbour. Analysis of bioaccumulation data to determine zones of impact for Sydney estuarine outflows on coastal fish populations, with a report to follow in the 2024/25 financial year. This is a collaboration with DPI-Fisheries scientists.



#### Oyster reef restoration and research

Statewide | Wagonga Inlet | Botany Bay | Brisbane Waters | Wallis Lake | Tweed River

**Project summary:** Facilitate increased protection and restoration of oyster reef habitat in NSW through provision of planning information, contributions to on-ground works, education, engagement and ongoing research and monitoring.

Anticipated progress: The next community infrastructure phase of the Wagonga Inlet Living Shoreline (WILS) will progress, led by project partners Eurobodalla Shire Council. Additional follow up reseeding of the subtidal Ostrea angasi (Angasi) reef being discussed and considered by project partners (subject to funding availability). Works in motion to support reseeding including engagement of local volunteers in shell cleaning activities to prepare cultch, if funding secured for reseeding. WILS Aboriginal community engagement and on-site signage - Aboriginal artwork and key Elder shared stories and language incorporated into on-site signage, designs finalised and signs in production. Cultural sculpture concept also in development. WILS Citizen Science intertidal reef monitoring support for Nature Coast Marine Group (NCMG) and Ozfish who are co-leading surveys for determining Sydney Rock Oyster growth and recruitment. WILS subtidal reef monitoring support for Joonga Dive team who are assisting with determining Angasi growth and recruitment. Australian National Maritime Museum Bidhiinja exhibition hosted at Ulladulla Library and Visitor Information Centre and will then move to new south coast venue. DPI will support the exhibition with talk(s)

on the Strategy's oyster reef restoration project, where available. The exhibition will continue to 8 other coastal regional venues in 2024/25. Complete draft updates to NSW shellfish reef restoration project planning guidelines in relation to revisions to relevant legislation. Develop new case studies on Port Stephens, Botany Bay and WILS projects. Draft update will be reviewed internally, and by other agencies of the Strategy and partners, where relevant. Next stage to publish including designer costs-subject to funding. Co-hosting of the Australasian Coastal Restoration Network Symposium in Sydney.



#### Clean coastal catchments research

Ballina | Coffs Harbour | Manning | Kiama | Eurobodalla | Bega Valley

**Project summary:** Conduct applied research in coastal catchments to refine and promote best management practices that reduce nutrient and sediment losses in the berry, greenhouse vegetable, macadamia and livestock industries.

Anticipated progress: Macadamia Demonstration farms (Ballina): completion of intervention works on Plateau demonstration farm and commencement of intervention works on Floodplain demonstration farm. Macadamia IOM vs Pre IOM and Macadamia Soil Amendment Research (Ballina): Progress to industry field walk on June 14 at Centre for Tropical Horticulture, Alstonville. Blueberry Nutrition Experiments (Ballina): Statistical analysis for data collected on blueberry plant responses to nitrogen nutrition at 3 stages of growth completed by biometrician. Provide report at Wollongbar field day on the effect of plant pruning on nitrogen uptake and in drainage from blueberry. Cover Wollongbar tunnels with bird netting to protect crop and permit data collection on fruit harvest. Berry Demonstration farms (Coffs Harbour): Preliminary data available for the sampling program established to assess nutrient movements in recirculation system at Corindi demonstration farm. Livestock (Bega): Collect and analyse final soil samples and publish articles outlining the research findings on Nitrogen. Autumn-winter phosphorus focused pasture trial with indicative start date of late March early April. DPI CCC and SE LLS collaboration funding a GrowLove video of dairy demonstration site work on south coast.



#### Riverbank vegetation improvements

Richmond River | Manning River | Myall Lakes | Karuah River | Wallis Lake | Wollongong | Kiama | Shellharbour | Shoallhaven | Eurodobolla | Bega Valley

**Project summary:** Plant new riverbank vegetation, maintain previous revegetation work, undertake weeding, erect fencing and implement other improvements to enhance the health of waterways and their foreshores.

Anticipated progress: Complete monitoring of bioreactors in summer and winter in the Coffs Harbour LGA.



#### Improving roads and tracks

Kempsey | Tweed River | Manning River | Kiama | Clarence Valley | Richmond | Tweed | Mid-Coast

**Project summary:** Seal gravel roads and undertake other works to reduce sediment entering waterways.

**Anticipated progress:** Round 2 improving roads & tracks grant applications received and assessed by mid-May 2024 for Bega Valley, Eurodoballa, Shoallhaven and Kiama LGAs. Completion of on-ground works at Smith Lakes (MidCoast LGA adjacent to Port Stephens Marine Park).

#### More information

More information on Initiative 1 projects is on the marine estate website <u>here</u>.

#### **Initiative 2**

Delivering healthy coastal habitats with sustainable use and development

### **Initiative summary**

Initiative 2 aims to protect coastal and marine habitats and associated species and enhance the health of the marine estate by improving the design, quality and ongoing management of foreshore development, use and waterway infrastructure. The two long-term outcomes are improved design and management of foreshore and coastal land use and development, balancing social and economic benefits of development with enhanced coastal and marine habitats, and maintained or improved biodiversity and marine habitats.

This period, multiple key outputs were delivered. These outputs are a result of strong interagency collaborations, which is critical to beneficial outcomes underpinned by mitigation of complex and multifaceted threats and risks that Initiative 2 addresses. Additionally, project teams actively engaged and communicated with a broad range of stakeholders including an initiative webinar on November 8th where eleven project representatives provided updates to over 80 participants on project progress and plans. Leads addressed questions and followed up with participants to maximise reach and outcomes..

#### Triannual progress and key highlights



# Coastal design guideline review

Statewide

**Project summary:** Finalise the review of the Coastal Design Guidelines, develop case studies and promote best practice designs in coastal urban environments.

Progress this trimester: The final NSW Coastal Design Guidelines 2023 were publicly released on 10 November 2023. The Guidelines aim to improve decision-making, built outcomes and environmental performance in coastal places through strategic planning and urban design. The guidelines give best-practice advice to support the preparation of planning proposals, place strategies and local planning controls. They also aim to shape good urban design outcomes within coastal settlements. Supporting materials including case studies and worked examples were released on the Coastal Design Guidelines webpage, to demonstrate how the guidelines can be applied in practice. A webinar was held on 20 February 2024 (view the slides here), focusing on how the guidelines can be applied in a range of applications.



#### **Domestic waterfront structure strategies**

Tweed | Byron | Ballina | Richmond Valley | Lismore | Wollongong | Shellharbour | Shoalhaven | Eurobodalla

**Project summary:** Develop estuary-wide strategies that reduce red tape and inform the assessment of domestic waterfront structures, such as pontoons and boat ramps, spanning intertidal foreshores.

**Progress this trimester:** Seven strategies completed covering Batemans Bay Marine Park North and South, Bega River, Bermagui River, Curalo Lagoon, Merimbula Lake and Pambula River. Links to these seven strategies are available on project profile page.



**Project summary:** Review and improve the regulatory framework for coastal agricultural drainage works and activities, aiming to reduce the impact of these works and activities on downstream water quality, aquatic ecosystems, communities and industries, as well as addressing the complexity, time and costs associated with the approvals process.

Progress this trimester: An Options Report to reduce complexity of the approvals process and reduce impact of coastal floodplain drainage works on the marine estate is available online. Community consultation including two webinars (5 and 8 March) and an online survey is underway through 21 April.



# Reconnecting fish habitats

Statewide

**Project summary:** Provide fish passage at priority weir and road crossing barrier sites in coastal catchments.

**Progress this trimester:** Two educational products explaining the secret life of fishways produced and widely publicised online. The secret life of fish(ways)-Vertical Slot Fishways and The secret life of fish(ways)-Rock Ramp Fishways



#### Threats to estuarine fish assemblages

Greater Sydney region

**Project summary:** Research to quantify the influence of boating infrastructure, stormwater drains and natural habitats on fish assemblages and better understand potential human impacts.

**Progress this trimester:** Assessing the effectiveness of eDNA in sampling estuarine fishes: this activity is comparing baited underwater video and eDNA in surveying estuarine fishes. Completed all the fieldwork (Wagonga Inlet, Shoalhaven River and Hastings River). Approximately 66% of the underwater videos have been processed. This data will help inform fish monitoring in estuaries. The project is in collaboration with CSU and OzFish., Impacts of multiple stressors on fish in Gamay (Botany Bay): the team is contributing to a research project in collaboration with USYD and UNSW that has been awarded an Australian Research Council (ARC) linkage grant to assess if disruptions to fish connectivity have occurred due to large-scale infrastructure, shoreline modification and habitat loss in Gamay (Botany Bay).



#### Subtidal reef monitoring

Greater Sydney region

**Project summary:** Research on the diversity, abundance and size of fishes and the distribution of kelp and sessile invertebrates across the Greater Sydney region's deep rocky reefs.

**Progress this trimester:** A total of 160 sites have now been surveyed using baited remote underwater stations (BRUVs) throughout the Greater Sydney Region. These data are being examined to assess the condition of the fish assemblages and potential threats from human impacts.

#### What's next?

Work that is planned to occur in the following reporting period is highlighted below, although unexpected changes to scheduling can occur and will be communicated to affected stakeholders.



# Aquatic biodiversity

Statewide

**Project summary:** Develop and implement policy to protect high-value fish habitats through the use of biodiversity offsets.

Anticipated progress: Update the Aquatic Biodiversity Offsets project webpage on the Strategy's website to include a video profiling three key fish habitat offsets and the report: Key Fish Habitat Offsets: An Ecosystem Services Approach.



# Coastal floodplain drainage management

Statewide

**Project summary:** Review and improve the regulatory framework for coastal agricultural drainage works and activities, aiming to reduce the impact of these works and activities on downstream water quality, aquatic ecosystems, communities and industries, as well as addressing the complexity, time and costs associated with the approvals process.

Anticipated progress: Finalise community consultation on the 6 options presented in the Options Report by 21 April through a publicly available 'Have your say' survey. Host two virtual webinars to present the Options report. Face-to-face meetings are available on request via email at water.enquiries@dpie.nsw.gov.au.



#### Threats to estuarine fish assemblages

Greater Sydney region

**Project summary:** Research to quantify the influence of boating infrastructure, stormwater drains and natural habitats on fish assemblages and better understand potential human impacts.

**Anticipated progress:** Impact of multiple stressors on fish in Gamay (Botany Bay). Begin baited remote underwater video sampling in Gamay.



#### Subtidal reef monitoring

Greater Sydney region

**Project summary:** Research on the diversity, abundance and size of fishes and the distribution of kelp and sessile invertebrates across the Greater Sydney region's deep rocky reefs.

**Anticipated progress:** Complete the analysis of the 2023 Greater Sydney region baited underwater videos for rocky reef fishes.

#### More information

More information on Initiative 2 projects is on the marine estate website here.

#### **Initiative 3**

# Planning for climate change

#### **Initiative summary**

Initiative 3 aims to understand, adapt and increase resilience, to help mitigate the impacts of climate change on the NSW marine estate with expected long-term outcomes being adaptation planning, strategies and decision making across the marine estate that incorporate the likely future impacts of climate change.

During this period Initiative 3 progressed well in both DPI-F and DCCEEW projects, remaining on track to deliver planned activities this financial year. DCCEEW-led blue carbon projects focused on project planning, finalising scoping studies and seeking project partner support. The Facilitating Climate Adaptation in NSW Marine Parks project is now complete. The second-pass, statewide assessment of mangrove and saltmarsh to sea level rise and climate change remains on track. The Estuarine Habitat Monitoring and Threat Assessment project mapped 17 hectares of estuarine macrophyte habitat in Smiths Lake and preliminary habitat maps were created for another 6 estuaries (Corindi River, Sandon River, Moonee Creek, Wolli Wolli River, Shoalhaven River, Crookhaven River). The Climate Change Research project undertook kelp health and growth surveys that were completed between Coffs Harbour and Eden under the monitoring component of the DPI Marine Heatwave Response Plan. The Climate Change Citizen Science project is progressing with the design of 'playing cards' to engage people of all ages on the effects of climate change on the NSW marine estate.

#### Triannual progress and key highlights



# Estuarine habitat monitoring and threat assessment

Statewide

**Project summary:** Monitoring threats to, and extent of seagrasses, mangroves and saltmarshes to fill knowledge gaps, assess the effectiveness of management actions, and inform blue carbon storage estimates and predictive models (new project).

**Progress this trimester:** In the Mid-Coast, Clarence Valley, Shoalhaven areas of focus this trimester, estuarine habitats and disturbance maps were created for 17.5 ha of habitat in Smiths Lake. Preliminary maps were prepared for 6 other estuaries (Corindi River, Sandon River, Moonee Creek, Wolli Wolli River, Shoalhaven River, Crookhaven River) which are pending field validation before final release.



# Blue carbon demonstration on National Parks land

Statewide

**Project summary:** Progress a demonstration site at Everlasting Swamp near Maclean, one of the largest coastal wetlands in NSW, delivering on Action 2.5 in the NSW Blue Carbon Strategy 2022-2027

Progress this trimester: This trimester, several key reports were finalized. Ecological Values Assessment: this report provides a summary of the ecological values of Everlasting Swamp and a preliminary analysis of potential impacts and opportunities associated with hydrological management at the site. Everlasting Swamp Hydrological Assessment including hydrodynamic sea level rise assessment: the Water Research Laboratory (WRL) of the School of Civil and Environmental Engineering at UNSW Sydney was engaged by DCCEEW to complete a hydrological assessment and refine a model of Everlasting Swamp National Park and State Conservation Area. The study provided a baseline understanding of potential inundation patterns and will inform a future Options Assessment. Determining vertebrate diversity in the Clarence River catchment using environmental

DNA metabarcoding: Environmental DNA (eDNA) methods are being used routinely to monitor aquatic animals including fish, amphibians and mammals across waterways, estuaries and wetlands throughout Australian catchments. This report used an eDNA metabarcoding assay to screen 75 samples from 6 sites throughout the Clarence River catchment region in NSW, with samples collected at low and high tide at each site to provide an assessment of vertebrate biodiversity present at the sites. Overall, 103 vertebrate taxa were detected among the sites. This data, along with other environmental monitoring can help us to understand the ecosystem values at the site.



# **Informing the Climate Change Adaptation Strategy**Statewide

**Project summary:** Developing and consolidating marine estate information to contribute to the NSW Climate Change Adaptation Strategy, promoting alignment of actions between the NSW Climate Change Adaptation Strategy with Marine Estate Management Strategy, ensuring innovative onground climate adaptation actions are delivered.

Progress this trimester: The project Facilitating climate adaptation in NSW marine parks was completed. For the NSW marine park network and Solitary Islands Marine Park (Mid North Coast), the final report was delivered and approved by the Marine Estate Agency Steering Committee in February 2024, including final climate risk registers for the marine park network and Solitary Islands Marine Park. A toolkit of potential resilience and adaptation actions in response to priority risks was also developed. This information will be provided to internal NSW Government managers and can be integrated into future management plans / upcoming statutory review of marine park management rules. For the Sydney area, an overview of the project was presented as part of the marine adaptation session at the Adapt NSW conference held in Sydney in December 2023. An additional Initiative 3 project led by DPI on the impact of increasing temperatures on marine park vulnerability was also presented in the session. This was a great opportunity to increase exposure of the climate change work happening under the Marine Estate Management Strategy.



# Climate change research

Statewide

**Project summary:** Targeted experimental research to fill priority knowledge gaps about probable climate change impacts on environmental assets in the marine estate.

Progress this trimester: Next generation sequencing of all known populations of the endangered sea-grass *Posidonia australis* has been completed. Analysis of statewide population structure is complete. A manuscript that analyses wide-ranging population connectivity with a view to identifying broadscale patterns is in preparation. This will aid managers in identifying connectivity patterns in populations of *Posidonia* to aid any management strategies such as transplantation. Publication of 'Genomic analyses indicate resilience of a commercially and culturally important marine gastropod snail to climate change'. This scientific paper relates results on the NSW-wide population genetic analysis of the commercially harvested marine snail *Turbo militaris*.



# Climate change monitoring

Statewide

**Project summary:** Monitoring the condition and resilience of priority environmental assets at most risk from climate change.

**Progress this trimester:** Kelp health and recruitment diving surveys were conducted at 5 locations: Eden, Batemans Bay, Sydney, Port Stephens and Coffs Harbour.



Project summary: Mapping marine species redistributions due to climate change using community data.

**Progress this trimester:** Submission of the manuscript titled 'Continental-scale assessment of climate-driven marine species range extensions using a decade of citizen science data' to the journal Global Environmental Change. This paper demonstrates the high value associated with marine citizen science observations for tracking the movement of species around the Australian continent, including throughout the NSW marine estate, under climate change.

#### What's next?

Work that is planned to occur in the following reporting period is highlighted below, although unexpected changes to scheduling can occur and will be communicated to affected stakeholders.



# **Estuarine habitat monitoring and threat assessment** Statewide

**Project summary:** Monitoring threats to, and extent of seagrasses, mangroves and saltmarshes to fill knowledge gaps, assess the effectiveness of management actions, and inform blue carbon storage estimates and predictive models (new project).

Anticipated progress: Estuarine habitat and disturbance mapping: Finalisation of habitat and disturbance maps for Corindi River, Sandon River, Moonee Creek, Wolli Wolli River, Shoalhaven River, Crookhaven River. Estuarine habitat and disturbance mapping: Preliminary map for habitats in Clarence River. Public release of estuarine habitat and disturbance maps: Release maps for Smiths Lake and Clarence Valley estuaries on the Estuarine Habitat Dashboard and Fisheries Spatial Data Portal.



# Climate change research

Statewide

**Project summary:** Targeted experimental research to fill priority knowledge gaps about probable climate change impacts on environmental assets in the marine estate.

**Anticipated progress:** Completion of a paper examining the potential impacts of climate change on bull kelp holdfast fauna.



# Climate change monitoring

Statewide

**Project summary:** Monitoring the condition and resilience of priority environmental assets at most risk from climate change.

Anticipated progress: Completion of a paper examining the impacts of climate change on manta ray and leopard shark movements along the NSW coastline. Completion of an interim report calculating the total kelp biomass in NSW will be completed. This will feed into Blue Carbon estimates for NSW.

#### More information

More information on Initiative 3 projects is on the marine estate website here.

#### **Initiative 4**

# Protecting the Aboriginal cultural values of the marine estate

### **Initiative summary**

Initiative 4 aims to work with Aboriginal communities in the management of Sea Country to reduce threats and risks to Aboriginal cultural heritage through delivery of 4 long-term outcomes: greater appreciation of the significance of Sea Country for Aboriginal people by the broader NSW community, greater economic benefits from the marine estate to Aboriginal people, reduced threats to Aboriginal cultural heritage and use in the marine estate, and improved Aboriginal satisfaction with Sea Country management.

The focus of this period was to continue the consolidation of marine skills projects in the southern and northern regions. A key highlight was the Sea Country Summit at Heron Island project. This project was coordinated by Green Heroes and proved to be a wonderful opportunity for Sea Country Rangers/Divers to attend and take part in the network events and activities. This project highlighted the importance of working on country, healthy sea country, healthy living and social and cultural emotional wellbeing and its connections to Land and Sea country. Another highlight was the successful cultural fishing clinics held in collaboration with Kinchela Boys Home Aboriginal Corporation and Strong Spirit Aboriginal Consultancy. The clinics were held at Hat Head and Lake Cathie and had over 30 Aboriginal youth attended and took part in the fishing activities. The days involved local Aboriginal elders attending and talking to the young people about fishing and the importance it plays in Aboriginal culture.

#### Triannual progress and key highlights



**Project summary:** Work with Aboriginal communities to design and deliver a Caring for Sea Country ranger model and activities across the marine estate.

**Progress this trimester:** Support of Sea Country Ranger activities are on track with Initiative 4 collaborating with Green Heroes on the Sea Country Summit Heron Island project involving Sea Country rangers from the north and south coast of NSW attended the Summit and networked with industry practitioners and experts in the field Sea Country management from around Australia.



**Project summary:** Evaluate current arrangements of Aboriginal peoples' participation in Sea Country management and establish an effective Aboriginal Engagement Framework.

Progress this trimester: In the Hastings area, support was provided for a fishing clinic held in collaboration with Kinchela Boys Home Aboriginal Corporation. Activities included fishing, kayaking, beach games and talking with elders about sustainable fishing and the important role it plays in Aboriginal Culture. On the South Coast, support was provided to the Bermagui Survival Day held on the 26th January 2024 which had an attendance of over 500 people showcasing the strength and resilience of small Aboriginal communities' post covid and bushfires. The day included cultural dance, choir cultural language performance, a smoking ceremony and spear making workshop. This was the first Bermagui Survival Day event held in the last 3 years with almost double the attendance since the previous event in 2019.



**Project summary:** Identify and expand opportunities for economic development across the marine estate.

**Progress this trimester:** In the Hastings area, 12 community members from Kempsey were supported to complete and obtain their general boat licence. So far, more than 220 Aboriginal community members have completed their general boat licence through 18 courses facilitated up and down the coast by Initiative 4 in partnership with Transport for NSW.

#### What's next?

Work that is planned to occur in the following reporting period is highlighted below, although unexpected changes to scheduling can occur and will be communicated to affected stakeholders.



#### **Sea Country Rangers**

Statewide

**Project summary:** Work with Aboriginal communities to design and deliver a Caring for Sea Country ranger model and activities across the marine estate.

**Anticipated progress:** In the Tweed/Byron area, support the delivery of a new Tweed Dolphin research project in collaboration with the Tweed Byron Local Aboriginal Land Council.



#### **Aboriginal Engagement**

Statewide

**Project summary:** Evaluate current arrangements of Aboriginal peoples' participation in Sea Country management and establish an effective Aboriginal Engagement Framework.

**Anticipated progress:** In the Coffs Harbour area, sponsor and support the Saltwater Freshwater Festival in collaboration with other business units within the Department of Regional NSW.



#### **Cultural Economic Development**

Statewide

Project summary: Identify and expand opportunities for economic development across the marine estate.

**Anticipated progress:** Deliver another Coxwain Grade 3 course as well as further general boat licence courses in Kempsey and nearby areas as there is genuine interest from local Aboriginal community members and groups.



#### Pipi Harvest

North Coast

**Project summary:** Integrate research and monitoring into the Monitoring Program to address key knowledge gaps and to assess management effectiveness in reducing threats and risks to Aboriginal cultural heritage.

**Anticipated progress:** Commence Stage 2 of the safe and sustainable seafood project by selecting a few locations in the NSW north coast region and engaging local Aboriginal community in those areas to trial a program that could provide for the safe harvest of pipis for Aboriginal people's consumption.

#### More information

More information on Initiative 4 projects is on the marine estate website here.

#### **Initiative 5**

# Reducing impacts on threatened and protected species

#### **Initiative summary**

Initiative 5 aims to understand and mitigate threats to threatened and protected species in NSW to improve or maintain conservation status and health of targeted threatened and protected species in the wild. The long-term outcome is an improved or maintained conservation status and health of targeted threatened and protected species in the wild.

The focus this trimester has been the progression of numerous projects investigating health and habitat of protected and threatened species. Partnerships are being formed and/or reinvented with non-profit organisations and other government agencies to address identified gaps. Training has been provided to government staff on marine fauna response procedures to optimise outcomes through improved education and collaboration. Multiple cross initiative projects are underway including working with Initiative 4 and traditional owner groups to investigate the health of waterways and resident dolphins on the north coast, examining the impacts of climate driven weather events on atypic marine fauna events and assessing the water quality in estuaries proximal to known sea turtle habitat. A combination of scientific publications, community events and educational resources, along with direct community training and engagement, are being used to deliver messages on stewardship of the marine environment and associated fauna.

# Triannual progress and key highlights



**Project summary:** Improve strategic planning and coordination for threatened and protected species programs across NSW, including implementation of the Marine Wildlife Management Manual to address priority threats.

**Progress this trimester:** Prepared a detailed project plan and briefed NPWS Directors on a proposal to hold a mass whale stranding preparedness exercise in Winter 2024. This will include partner organisations and will examine response capabilities and post-release tracking options for released animals to assess efficacy of response procedures.



**Project summary:** Observer-based survey of the Estuary General mesh net fishery to address threats to fish assemblages (harvest and bycatch).

**Progress this trimester:** Trained scientific observers have monitored more than 300 fishing trips across 14 estuaries from Lake Illawarra in the south to the Tweed River in the north.



**Project summary:** Understand and reduce impacts of habitat modification on threatened and protected species.

Progress this trimester: North Coast acoustic tracking of sea turtles: Sea turtles being released following rehabilitation with acoustic tags to assess the efficacy of the Integrated Marine Observing System (IMOS) hydrophone network to track post rehabilitated sea turtles. Five sea turtles have been released and the interim data received. Some adhesion complications between acoustic tags and turtle plastron. Partner organisations include Coffs Coast Wildlife Sanctuary and Australian Seabird and turtle rescue. Outcomes of the project will aid in determining habitat use. Community training for shorebird management on the North Coast: monitoring was completed across 3 sites including the Clarence Estuary and 2 sites in Yuraygir National Park. No fledglings were recorded.



**Project summary:** Undertake research and monitoring to help fill key knowledge gaps identified in the statewide TARA, and to address cumulative threats to marine wildlife, monitor trends in threats and the health and condition of their habitats.

**Progress this trimester:** Penguin dietary analysis on the South Coast: Identification of foraging behaviour and target prey species of little penguins to assess climate driven impacts. This project is being conducted with the University of Newcastle and will complement findings from the Seabirds to Seascapes project and will assist in investigations around the observed decline in penguin numbers in NSW.

#### What's next?

Work that is planned to occur in the following reporting period is highlighted below, although unexpected changes to scheduling can occur and will be communicated to affected stakeholders.



**Project summary:** Strengthen partnerships for marine threatened and protected species conservation response, to ensure effective wildlife management, incident response and rehabilitation.

Anticipated progress: Tweed Byron Local Aboriginal Land Council Healthy Waterways Healthy Dolphins: This activity will be implemented in collaboration with Initiative 4. The Initiative 5 contribution will support scientific survey, data collection and data analysis (as part of a wider project) in partnership with local Aboriginal community and will be reported separately to the Initiative 4 project. Assessment of sea turtle nesting distribution: Working with NSW turtleWatch, we plan to review the nesting frequency and distribution of sea turtles in NSW to assess trends over time and against future climate conditions. This will identify key nesting habitats to allow for future protective measures. NSW Sea turtle Summit: Initiative 5 will host a Summit for all relevant sea turtle researchers in NSW to facilitate collaborative opportunities and streamline concurrent projects. This summit will aim to identify key knowledge gaps and optimise scientific and animal welfare outcomes.

**Project summary:** Observer-based survey of the Estuary General mesh net fishery to address threats to fish assemblages (harvest and bycatch).

**Anticipated progress:** Trained scientific observers will continue to monitor estuary general meshnet fishing trips on major estuaries from Lake Illawarra in the south to the Tweed River in the north.



**Project summary:** Understand and reduce impacts of habitat modification on threatened and protected species.

Anticipated progress: Estuarine water quality monitoring on the North Coast: Working with the Department of Climate Change the Environment, Energy and Water (DCCEEW) Biodiversity Conservation, Economics and Insights Division, water quality is being assessed in numerous estuaries that have a high incidence of sea turtle stranding events. This data will complement existing projects looking at the health impacts on sea turtles from anthropogenic pollutants and will aid in the development of mitigation recommendations.

#### More information

More information on Initiative 5 projects is on the marine estate website here.

#### **Initiative 6**

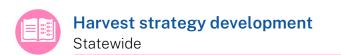
# Sustainable fishing and aquaculture

### **Initiative summary**

Initiative 6 aims to ensure fishing and aquaculture is managed consistently with ecologically sustainable use while providing health, cultural and social benefits of fishing and seafood consumption by the community and stakeholders. The long-term outcomes are improved ecological sustainability, economic viability and community wellbeing of fishing and aquaculture in the marine estate.

This trimester, Harvest strategy development has been progressing well with the spanner crab harvest strategy recently being adopted by the department and the Total Allowable Fishing Committee (TAFC) subsequently using the harvest strategy to inform their spanner crab Total Allowable Catch (TAC) determination. Development of additional strategies is well progressed, with the draft Mulloway Harvest Strategy nearing completion, and the Line & Trap harvest strategy working group progressing Snapper and Kingfish harvest strategy development, as well as considering overarching strategy structure in complex fisheries. The responsible crab fishing program continues to progress as crab nets and traps are being replaced with more environmentally responsible fishing gear. Promotion and roll out of the hook and line bin initiative continues. Community clean-up events run through a partnership with Fish for Life-12 events and close to one tonne of litter removed and reported at fishing hotspots. The fisheries enhancement project has started consultation and planning for new artificial reefs off Ballina and Coffs Harbour coasts and purchased dusky flathead fingerlings to stock into south coast esturies (St Georges Basin, Lake Conjola and Burrill Lake) in March 2024. The Marine biosecurity awareness project has also awarded the monitoring and evaluation component of this project and the report is underway.

# Triannual progress and key highlights



**Project summary:** Expand the harvest strategy framework by continuing development and implementation of harvest strategies for key NSW species and fisheries consistent with the NSW Harvest Strategy Policy and Guidelines.

**Progress this trimester:** The Line and Trap Fishery Harvest Strategy Working Group (HSWG) was appointed in March 2023 following a call for interest undertaken in September 2022. The HSWG met two times in 2022/23 and has held three meetings to date during 2023/24.



# Recreational fishing environment assessment Statewide

**Project summary:** Develop an environmental assessment of recreational fishing (saltwater), prepare a Recreational Fishing Management Strategy and commence implementation of key recommendations.

**Progress this trimester:** The Fish for Life Project, supported by MEMS and in collaboration with OzFish, is driving the 'Keep it clean campaign' to combat marine debris. This initiative targets recreational fishers, urging them to dispose of litter properly and adopt techniques to prevent gear loss. High-quality digital content, including images and videos, has been distributed on various social media platforms and websites, reaching hundreds of thousands of people. The campaign has achieved a combined reach of 773,477 on Instagram and Facebook, with 1.5 million impressions.

Twelve clean-up events have been organised statewide since September, nine of which occurred this trimester, resulting in over a tonne of rubbish collected. These events, promoted on social media, aim to engage recreational fishers and the community, fostering a sense of responsibility and stewardship toward local fishing areas. Besides removing litter from hotspots, these clean-ups facilitate positive behavioural change and maintain social approval for recreational fishing.

The responsible crab fishing program, ongoing this trimester, focuses on pop-up events and social media campaigns. These events encourage fishers to exchange less eco-friendly crab gear for environmentally safer alternatives and promote responsible fishing practices through face-to-face discussions and advisory distribution. The trimester's social media campaign emphasised responsible crab fishing, offering tips and demonstrations for using environmentally friendly gear and modifying equipment for minimal environmental impact. These posts, shared on the 'Fisheries NSW' Facebook page with 75k followers, encouraged regular trap checks and proper gear placement to prevent environmental damage.



# Aquaculture socio-economic research

Statewide

**Project summary:** Undertake a socio-economic valuation of the aquaculture industry in the marine estate, filling key social and economic knowledge gaps.

Progress this trimester: The Binder Dijker Otte company completed the (BDO) <u>socio-economic</u> <u>valuation of the aquaculture industry report</u> published in December 2023. Shellfish Committee, industry newsletters notified.



#### Fisheries enhancement

Statewide

**Project summary:** Undertake marine fish stocking and artificial reef installation at key locations to improve fishing access.

**Progress this trimester:** Marine stocking in Shoalhaven: Production of dusky flathead underway by a commercial supplier for stocking into south coast systems (likely St Georges Basin, Lake Conjola and Burrill Lake) during March 2024.

#### What's next?

Work that is planned to occur in the following reporting period is highlighted below, although unexpected changes to scheduling can occur and will be communicated to affected stakeholders.



# **Cultural fishing monitoring**

Hastings

**Project summary:** Explore potential pathways to enable assessment of cultural fishing in NSW in terms of participation, catch and effort, and relate these to access arrangements within current resource management decision making processes, including harvest strategies.

**Anticipated progress:** Cultural fishing report will progress towards finalisation by late 2024 and will be available to the public once the report has been reviewed internally.



**Project summary:** Project summary: Undertake marine fish stocking and artificial reef installation at key locations to improve fishing access

Anticipated progress: Marine stocking in Shoalhaven: Stocking of dusky flathead into south coast estuaries complete. Offshore artificial reefs in Coffs Harbour/Ballina areas: Completion of environmental assessment and submission of application for sea dumping permit from Commonwealth Department of Climate Change, Energy, the Environment and Water for Ballina and Coffs reef projects.



# Fishing industry marine stewardship

Statewide

**Project summary:** Develop information and training package in partnership with key fishing sectors and assist in delivery.

**Anticipated progress:** Animations on harvest strategy and fisheries management components: The animations are currently in development and a draft version is anticipated for next trimester.

#### More information

More information on Initiative 6 projects is on the marine estate website here.

#### **Initiative 7**

# Enabling safe and sustainable boating

## **Initiative summary**

Initiative 7 aims to balance protection of coastal and marine habitat and species with ongoing access and safe and sustainable boating. The long-term outcome is that boating provides increased social and economic benefits for NSW communities while supporting sustainable social, economic, cultural and environmental benefits of the marine estate.

### Triannual progress and key highlights



#### **Environmentally friendly moorings**

Port Stephen | Sydney Harbour | Shoalhaven

**Project summary:** Establish a performance-based standard for Environmentally Friendly Moorings (EFM) and review policy and regulatory options for improving adoption and maintenance of EFM.

Progress this trimester: Deployment of 12 Environmentally Friendly Moorings in Port Stephens, Sydney Harbour and Jervis Bay. This includes sea floor monitoring including biodiversity and carbon sampling. CSIRO Literature Review of Environmentally Friendly Moorings: Environmental and Engineering Performance, encompassing environmentally friendly mooring assessment science, evaluation of the performance and market availability of different systems, and identification of environmentally friendly mooring designs for in-water trial has been published. An article on the EFM trial was published in the January 2024 MEMS newsletter and on social media which received considerable interest.



#### Vessel environmental standards

Statewide

**Progress this trimester:** Continue to enforce environmental standards and regulations among domestic commercial vessels and recreational vessels.

**Progress this trimester:** The Marine Pollution Regulation 2014 review is complete. The Marine Pollution Regulation 2024 will commence on 25 March 2024. Changes to Commercial and Recreational Vessels will apply. Website updates and communication for stakeholders are in progress.

Implementation of the Sewage Pollution Prevention Certificate Scheme (SPPC) is planned to begin April 2024. Information for Staff to support these changes is being prepared.

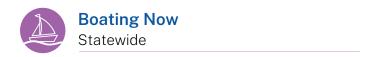


# Vessel monitoring

Statewide

Progress this trimester: Identify available data and undertake gap analysis.

**Progress this trimester:** The Marine Pollution Regulation 2014 review is complete. The Marine Pollution Regulation 2024 will commence on 25 March 2024. Website updates and communication for stakeholders are in progress. Information for staff to support implementation of the Sewage Pollution Prevention Certificate Scheme (SPPC) is being prepared.



**Project summary:** Work with partners to deliver projects funded through Round 3 of the Boating Now Program.

Progress this trimester: NSW Government continues to implement the Maritime Infrastructure Plan by investing in maritime infrastructure to improve access to our waterways through programs such as the Boating Now program and the Maritime Infrastructure Stimulus Program. These programs invest in boating access infrastructure such as boat ramps, jetties and pontoons, regional harbour improvements, navigational dredging and ferry wharf upgrades.



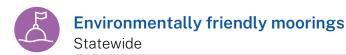
**Project summary:** Collaborate with key stakeholders in the implementation of the Maritime Infrastructure Plan 2019-2024 that sets out an overarching strategy to support maritime infrastructure in priority areas in NSW.

**Progress this trimester:** NSW Government continues to implement the Maritime Infrastructure Plan by investing in maritime infrastructure to improve access to our waterways through programs such as the Boating Now program and the Maritime Infrastructure Stimulus Program. These programs invest in boating access infrastructure such as boat ramps, jetties and pontoons, regional harbour improvements, navigational dredging and ferry wharf upgrades.

Recreational boater education: TfNSW undertakes ongoing education of recreational boaters to improve compliance with environmental regulations. Educating boaters and the community includes communications via targeted social media posts, information distributed via Maritime's bi-annual newsletter, as well as ad hoc education to local councils. Boating Education Officers also discuss environmental-related queries with recreational boaters at boat ramps and outreach via attendance at community events and presentations to community groups.

#### What's next?

Work that is planned to occur in the following reporting period is highlighted below, although unexpected changes to scheduling can occur and will be communicated to affected stakeholders.



**Project summary:** Establish a performance-based standard for Environmentally Friendly Moorings (EFM) and review policy and regulatory options for improving adoption and maintenance of EFM.

**Anticipated progress:** Ongoing evaluation and assessment of performance of EFMs and collection of relevant environmental data.

	Mooring strategy
	Statewide

**Project summary:** Review and modernise the strategy for mooring management and administration to improve access to moorings.

Anticipated progress: Public reporting on results of end-of-life vessel public consultation outcomes.



**Project summary:** Continue to enforce environmental standards and regulations among domestic commercial vessels and recreational vessels.

**Anticipated progress:** Publication and commencement of Marine Pollution Regulation 2024. Begin implementation of Sewage Pollution Prevention Certificate Scheme.



**Project summary:** Work with partners to deliver projects funded through Round 3 of the Boating Now Program.

**Anticipated progress:** Ongoing delivery of Boating Now projects, together with continued maintenance of existing boating infrastructure and response to damage caused by severe weather events.

#### More information

More information on Initiative 7 projects is on the marine estate website here.

#### **Initiative 8**

# Enhancing social, cultural and economic benefits

#### **Initiative summary**

Initiative 8 aims to improve the social, cultural and economic benefits that the NSW community derives from the marine estate by responding to priority threats. The 2 long-term outcomes are improved social, cultural and economic benefits of the marine estate that contribute to the wellbeing of the NSW stakeholders and community and increases stakeholder and community adoption of safe and sustainable use of the marine estate.

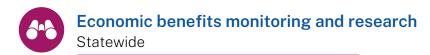
Initiative 8 has continued to improve the incorporation of social, cultural and economic values into marine estate planning and management. This has included utilisation of new statewide monitoring data on these elements to inform the mid-term evaluation of the MEMS, and the finalisation of an Economic Contribution and Market Insights report which details drivers for economic changes in the marine estate over the last 5 years, and into the future. Achievement of education-related outcomes has been progressed through the continuance of the Local Government MEMS webinar series and the development of new webpages tailored for educational institutions and the general community.

### Triannual progress and key highlights



**Project summary:** Implement the NSW Marine Estate Education Strategy and curriculum-based school package.

Progress this trimester: The MEMS webinar series was continued to address actions in the Marine Estate Education Strategy related to connecting with and informing Local Government on current MEMS work and opportunities for further integration and involvement. Two webinars focused on Initiative 1a (Improving water quality and reducing litter) and Initiative 2 (Delivering healthy coastal habitats with sustainable use and development) were delivered, complementing webinars on Initiative 1b and 3 delivered in the previous period. Webinars were delivered in collaboration with the MEMS education and stakeholder liaison team, Initiative leads and the development DCCEEW. Preparatory work has been finalised to establish a Marine Estate Education Working Group with an expression of interest process planned for commencement in March 2024.



**Project summary:** Monitor the economic benefits dimension of the community wellbeing framework of the NSW marine estate.

**Progress this trimester:** Economic contribution and Market Insights (ECMI) report and associated communications material were finalised and endorsed by MEMA.

The report estimates the market-based value of the marine estate to the NSW economy and investigates drivers for economic changes in individual industries and regions, as well as broader trends in the marine estate over the last 5 years, and into the future.

#### What's next?

Work that is planned to occur in the following reporting period is highlighted below, although unexpected changes to scheduling can occur and will be communicated to affected stakeholders.



**Project summary:** Implement the NSW Marine Estate Education Strategy and curriculum-based school package.

Anticipated progress: A new education page specifically designed for educational institutions and the wider community on the marine estate website will be available (Marine Estate Education Hub). It will host resources such as Marine Estate Agents schools' materials and NSW marine estate career videos, along with information about marine estate threats, benefits, and safe and sustainable use practices. A Safe and Sustainable Use education campaign will commence. This campaign involves distributing resources to councils, to share with coastal residents, businesses and industries.



# Social and cultural benefits monitoring and research Statewide

**Project summary:** Design and implement statewide surveys to monitor community benefits, impacts, and inform the evaluation of the Strategy's effectiveness, as identified in the community wellbeing framework. Undertake research to improve understanding of statewide survey results or additional aspects of wellbeing related to the marine estate.

Anticipated progress: The NSW Marine Estate Community Wellbeing Survey Reports for coastal residents, coastal visitors and coastal youth (Wave 1), and associated communications materials will be publicly released. The NSW Marine Estate Connections to Sea Country Survey Reports for Aboriginal people of coastal NSW (Wave 1), and associated communications materials will be publicly released.



# **Economic benefits monitoring and research**

Statewide

**Project summary:** Monitor the economic benefits dimension of the community wellbeing framework of the NSW marine estate.

**Anticipated progress:** Economic Contribution and Market Insights (ECMI) report and associated communications material planned for public release.

#### More information

More information on Initiative 8 is on the marine estate website here.

#### **Initiative 9**

# Delivering effective governance

#### **Initiative summary**

Initiative 9 aims to improve governance arrangements across the marine estate to support coordinated, transparent, inclusive and effective decision making through the delivery of 2 long-term outcomes: improved coordination, transparency, consistency and inclusiveness of managing the marine estate and improved efficiency and effectiveness in managing the marine estate.

This trimester, Initiative 9 projects continue to deliver important work to improve marine protected area planning and management statewide and compliance in Greater Sydney region. The draft Code of Conduct for Cook Island Aquatic Reserve was developed with local tour operators and has been well received with participants reporting that they are already implementing the Code. New Cabbage Tree Bay Aquatic Reserve webpages and signage for the reserve are close to completion. The Greater Sydney compliance squad spent 1608 hours patrolling aquatic reserves and intertidal protected areas this period and reported an increased compliance rate of 84% of those fishers inspected.

#### Triannual progress and key highlights



#### Improved marine protected area planning and management

Marine parks and aquatic reserves

**Project summary:** Work is underway to improve planning and management for marine parks and aquatic reserves. This work aims to balance coordination and consistency across the network of marine protected areas with tailored local solutions where required. This will result in improved governance and improved management of marine protected area values.

**Progress this trimester:** In the Cook Island Aquatic Reserve, all tour operators using the Aquatic Reserve, National Parks and Wildlife Service (NPWS) and Green Heroes volunteer group have provided feedback on a draft Code of Conduct. Participants have reported that they are already implementing the Code and communication materials for the public are being developed.



### Greater Sydney region compliance focusing on marine protected areas Greater Sydney

**Project summary:** Increased fisheries compliance outcomes focusing on addressing priority threats to environmental assets. Increased community and stakeholder education and awareness of fisheries and marine protected areas rules and regulations.

Progress this trimester: In the Hawkesbury bioregion the Greater Metropolitan Fisheries Mobile Squad completed 773 inspections and interactions with fishers over 1608 field patrol hours of marine protected areas within the Hawkesbury bioregion. Officers reported an increased compliance rate of 84% of those fishers inspected this reporting period. There were 183 penalty infringement notices issued with a total value of \$18,200 and 104 written cautions issued. A number of these offences were recorded in Cape Banks Aquatic Reserve, Long Bay Intertidal Protected Area (IPA) and Towra Point Aquatic Reserve. There were 4,301 fish seized, which were mainly invertebrates collected from the intertidal zone, and returned to the water. The largest apprehension was at Kurnell where 2,704 cockles were seized and returned to the water. The Mobile Squad coordinated compliance activities across the Greater Sydney region from the Central Coast to the Illawarra focusing on marine

protected areas, working with Marine Area Command, local Councils and NPWS and conducted educational activities with local recreational fishing groups.

The Operation Turbo Reef extended from Narrabeen Head Aquatic Reserve in the north to Bushrangers Bay Aquatic Reserve in the south. Operation Turbo Reef was undertaken over the Australia Day long weekend which targeted illegal intertidal collecting to increase education, awareness and deterrent of illegal fishing activity and minimise damage to the marine ecosystem. More than 200 offences were detected, and thousands of invertebrates seized from marine protected areas and returned to the water alive. The operation was an opportunity to interact and educate thousands of fishers and the general community about the value of marine protected area as well as size and bag limits.

#### What's next?

Work that is planned to occur in the following reporting period is highlighted below, although unexpected changes to scheduling can occur and will be communicated to affected stakeholders.



# Improved marine protected area planning and management

Marine parks and aquatic reserves

**Project summary:** Work is underway to improve planning and management for marine parks and aquatic reserves. This work aims to balance coordination and consistency across the network of marine protected areas with tailored local solutions where required. This will result in improved governance and improved management of marine protected area values.

**Anticipated progress:** New signs installed showcasing the subtidal marine habitats in Cabbage Tree Bay Aquatic Reserve and the plants and animals that utilise those habitats. The signs also include information on how to take care of the aquatic reserve. These signs link with the new webpages for this aquatic reserve.

#### More information

More information on Initiative 9 is on the marine estate website here.

# Part C: Additional program requirements

Program management, monitoring, reporting, evaluation and education

#### **Initiative summary**

Program management aims to improve governance, monitoring, evaluation and reporting across the marine estate to support coordinated, transparent, inclusive and effective decision making. The 3 long-term outcomes are: improved coordination, transparency, consistency and inclusiveness of managing the marine estate, improved efficiency and effectiveness in managing the marine estate, and improved coordination and implementation of the Marine Integrated Monitoring Program for the marine estate.

This trimester Program management is progressing well with reporting requirements being fulfilled and work initiated to streamline these processes. The 2022-2023 implementation annual report and July-October 2023 snapshot report were published on the MEMS website. Support continues for program staff to deliver major procurements, agreements and projects to add capacity at the project level and enable the delivery of priority MEMS work. Staff have been closely involved in collecting and collating data for mid-strategy reviews, supported key communication pieces including webinars for councils, and provided spatial support to improve management of NSW Aquatic Reserves, including updated interactive webmaps for the website.

All previous triannual reports and Marine Strategy Implementation Annual Reports are available on the marine estate website.

# Triannual progress and key highlights



### Strategy program management

Statewide

**Project summary:** Implementation of a governance structure and project management framework to support delivery of the Strategy statewide to be reviewed periodically to improve efficiency and effectiveness.

Progress this trimester: Publication of the Snapshot report <u>July-October 2023</u> and the <u>2022-2023</u> implementation annual report. This provides an update to stakeholders and the community on the implementation of the Strategy.



# Strategy education, communication, and stakeholder liaison

Statewide

**Project summary:** Implementation of communication tools, including website and e-newletters to support and enable engagement, education and stakeholder liaison across the Strategy. Includes delivery of existing projects including the Marine Estate Education Strategy and understanding nongovernment stakeholders.

Progress this trimester: Publication of 3 targeted stakeholder newsletters with a readership of 1,492. We have seen a 12.4% increase in subscribers in this reporting period. The Marine Estate Stakeholder newsletter is a vital communication tool for MEMS. Its primary role is efficiently sharing consistent and accurate information about our programs and deliverables with stakeholders. It provides us with a regular opportunity to publish program updates, achievements, and progress to those keenly interested.

Successful delivery of 2 webinars for local councils. Initiative 1 (DCCEEW-led projects) addressed water quality and litter, while Initiative 2 focused on promoting healthy coastal habitats through sustainable practices and development. These webinars garnered participation from over 120 local government representatives and 90 state government representatives. The objective aimed at offering updates on the progress of ongoing initiative projects and highlight their outcomes to key stakeholders. Additionally, a platform was provided for direct interaction with staff working on these projects, ensuring stakeholders could access the most up-to-date information.



# Better geographic information systems (GIS) for the marine estate Statewide

**Project summary:** Providing GIS support including developing, obtaining and publishing datasets, map production, spatial planning advice and spatial data analysis.

**Progress this trimester:** Added information about new offshore artificial reefs to public educational material including the FishSmart app and DPI webmaps. Remnant Oyster Reef mapping completed for the Hawkesbury River.

#### What's next?

Work that is planned to occur in the following reporting period is highlighted below, although unexpected changes to scheduling can occur and will be communicated to affected stakeholders.



# Strategy program management

Statewide

**Project summary:** Implementation of a governance structure and project management framework to support delivery of the Strategy statewide to be reviewed periodically to improve efficiency and effectiveness.

**Anticipated progress:** Publication of the Snapshot report November-March 2023. Development of the 2024-26 MEMS Implementation Plan.



# **Strategy education, communication and stakeholder liaison** Statewide

**Project summary:** Implementation of communication tools, including website and e-newletters to support and enable engagement, education and stakeholder liaison across the Strategy. Includes delivery of existing projects including the Marine Estate Education Strategy and understanding nongovernment stakeholders.

**Anticipated progress:** Monthly MEMS stakeholder newsletter March, April, May/June. Conclusion of the project to improve website functionality by organising content into audience-specific categories and optimising the website's effectiveness as the primary platform for communicating and engaging with marine estate information.



#### Project summary:

Project summary: Implementation of a governance structure, framework and program management to support delivery of the Marine Integrated Monitoring Program to monitor, evaluate and report on Strategy progress, the condition of environmental assets and community benefits, and fill knowledge gaps.

**Anticipated progress:** Contributions from the MIMP PM team to the 5-year Health Check, with a focus on improving outcomes culture and monitoring processes. Environmental Condition Framework is set for public release. The mid-term evaluation of the Marine Estate Management Strategy following 5 years of implementation finalised and endorsed internally.

#### More information

More information on Program management, monitoring, reporting, and evaluation is on the marine estate website here.

# Appendix A – List of abbreviations

Abbreviation	Definition
Authority	Marine Estate Management Authority
CSIRO	Commonwealth Scientific and Industrial Research Organisation
DCCEEW	Department of Climate Change, Energy, the Environment and Water, formerly known as EHG
DPI-Ag	Department of Primary Industries – Agriculture
DPI-F	Department of Primary Industries - Fisheries
DCCEEW-EH	Department of Climate Change, Energy, the Environment and Water – Environment and Heritage
DPHI-CL	Department Planning, Housing and Infrastructure-Crown Lands
DPHI	Department Planning, Housing and Infrastructure - DPHI Planning
DCCEEW-W	Department of Climate Change, Energy, the Environment and Water
GIS	Geographic Information System
Knowledge Panel	Marine Estate Expert Knowledge Panel
LGA	Local Government Area
LLS	Local Land Services
MASC	Marine Estate Agency Steering Committee
MEAM	Marine Estate Activity Mapping
MIMP	Marine Integrated Monitoring Program
MoU	Memorandum of Understanding
NPWS	DPE-DCCEEW: National Parks and Wildlife Service
NSW	New South Wales
SEED	Sharing and Enabling Environmental Data
Strategy	Marine Estate Management Strategy
TARA	Threat and Risk Assessment
TfNSW	Transport for NSW
UNSW	University of New South Wales

# Appendix B - Communication and engagement

# Marine Estate Instagram - #nsw\_marineestate

TOP POSTS VIA LIKES: November 1 2023 - 29 February 2024



Aboriginal culture virtual excursion

**110** likes

View post

Imagine taking your class on a virtual excursion to learn how Aboriginal people have lived and cared for Sea Country on the NSW south coast for thousands of years?



Marine heatwave declared off coastal NSW

82 likes

View post

A marine heatwave is a distinct and prolonged occurrence of unusually warm water in one area.



Today, February 2 is World Wetlands Day

74 likes

View post

This year the focus of World Wetlands
Day is the human connection to our
wetlands. In keeping with this theme,
some of our scientists working on wetland
projects were asked why they think
wetlands are important to people.



**2,112** followers - an increase of **7.7%** compared to previous reporting period.

During this time, we chared **68** Instagram posts and **3** stories, reaching **3,961** accounts. Our organic reach grew by **2.4%**, but without paid ads, our total reach fell by **25.3%**.

#### TOP VIDEO VIEWS: November 1 2023 - 29 February 2024



Question? What is so special about this video?

**1513** views

Watch video

Answer: It features an endangered species living on another endangered species in the only place in the world where they are found together.



Have you ever seen Pineapple Fish?

**610** views

Watch video

by David Harasti

These aptly named fish are fantastically yellow and hard to come by, so a very popular with underwater photographers. They can be sometimes found hiding under ledges or artificial structures.

Just another awesome critter of our NSW marine estate to keep an eye out for while snorkelling, diving or spearfishing.



Improving water quality and litter – <b>7</b>
Improving coastal and marine habitat – <b>13</b>
Responding to climate change – <b>13</b>
Working with Aboriginal communities – <b>2</b>
Threatened and protected species -2
Sustainable fishing and aquaculture – <b>7</b>
Enabling safe and sustainable boating -1
Promoting social, cultural and economic benefits – <b>6</b>
Delivering effective governance – 1
Marine Protected Areas-6
Other-10

# Marine estate newsletter - Connect with us (nsw.gov.au)

4 newsletters were published during the reporting period.

#### **STATISTICS**

**1,489** contacts increased by **4.2%** compared with the previous reporting period.

#### TOP STORIES IN EACH NEWSLETTER: November 2023 – February 2024



Nov-Dec

Marine heatwave predicted this summer

**105** opens

View story



January

New research to make boating 'moor' seagrass safe

98 opens

View story



#### **February**

The secret life of fish(ways)

**81** opens

View story

# Marine Estate Management Strategy webinars

Initiative and Project leads from Initiative 1A Water quality and litter and Initiative and 2 Delivering coastal habitats with sustainable use and development presented during these webinars.

#### Webinar Initiative 1A Water quality and litter



Total registration: 111

NSW State Government: 44% | Local Gov: 50% | Other: 6%

#### Webinar Initiative 2 Delivering coastal habitats with sustainable use and development



Total registration: 111

NSW State Government: 59% | Local Gov: 36% | Other: 5%

#### Marine Estate Website - marine.nsw.gov.au

#### Top 3 pages visited: 1 November 2023 – 29 February 2024

- **1.** Marine estate management strategy (nsw.gov.au) (630 users)
- **2.** Knowledge centre and news section (452 users)

Specifically a story 'Applying to install jetties and pontoons on estuaries just got easier'. This story was published 8 April 2022.

**3.** Domestic waterfront structure strategies (268 users)

#### **Top 3 visited Project Pages**

- 1. Domestic waterfront structure strategies (nsw.gov.au) (275 users/ 430 views)
- 2. Coastal floodplain study (222 users / 532 views)
- 3. Oyster reef restoration and research (213 users / 365 views)

#### Top 3 visited news articles

- **1.** Applying to install jetties and pontoons on estuaries just got easier! (452 users / 561 views)
- 2. New research to make boating 'moor' seagrass safe (user 239 / views 332)
- 3. Heatwave predicted this summer our scientist explains why we should be concerned (user 239 / views 332)

#### STATISTICS - November 2023 - 29 February 2024

**5,770** USERS (total number of active users)

**11,583** SESSIONS (number of times sessions began on the website – new or following timed out - after 30mins)

**19,954** VIEWS

(total number of web pages our users saw)

VIEWS PER USER 3.46

(average number of web pages viewed per user)

**71.98%** ENGAGEMENT RATE (percentage of engaged sessions)

AVERAGE ENGAGEMENT TIME **1MIN 38 SECONDS** (average length of time user focused on a page)



**28.9%\***BOUNCE RATE

\*Bounce rate is the percentage of people who land on a page, then leave without clicking on anything or visiting a second page.



**11,753** \* CONVERSIONS

\*The conversion rate shows the percentage of website visitors that reached their desired action. For example, signed up to the newsletter, watched a video, downloaded a report, or clicked through to more information.