

Ocean and Coastal Ecosystem Health Committee 2019-2020 Work Plan



The Ocean and Coastal Ecosystem Health (OCEH) Committee is one of three Northeast Regional Ocean Council (NROC) standing committees. This committee was established to help identify and coordinate regional activities to preserve and restore ecosystem health in New England. As recommended in U.S. federal statutes and resolutions adopted by the New England Governors and Eastern

Canadian Premiers, ecosystem health and the ability to sustain those services derived from healthy coastal ecosystems must rely on an ecosystem-based management (EBM) approach. In an EBM context, NROC and the OCEH Committee believe that we have the best prospects for integrating management efforts that crosscut most if not all of the most pressing issues related to ocean and coastal ecosystem health. Further, an EBM framework automatically incorporates other national priority objectives for supporting data and science, spatial characterizations, and program integration that will foster better decisions and management that can help achieve the overarching goal of healthy and resilient coastal and ocean ecosystems.

The NROC OCEH Committee combined with the Northeast Regional Association of Coastal and Ocean Observing Systems (NERACOOS) Ecosystem Health Committee to develop an integrated, regional sentinel monitoring plan to document the effects of climate change and other stressors on northeast ocean and coastal ecosystems, and formation of a regional network to advance scientific understanding of ocean acidification and its impacts on marine-dependent industries. This coordination is essential to implement a regional monitoring network that will support an effective EBM approach and the indicators that are derived from monitoring data that will guide and chart their progress.

Goal: Enhance region-wide coordination and collaborative actions on shared ocean and coastal ecosystem health priorities including those affecting water quality, habitats, and living resources and their derived social and economic benefits.

Need for Action: The Northeastern U.S. coastal ocean is a rich and diverse place, from the near-shore sounds of southern New England to the beaches of Cape Cod, and the rocky shores and complex circulatory patterns of the Gulf of Maine.

These ecosystems have abundant resources and have supported coastal communities for generations. But these valuable ecosystems are vulnerable. The impacts of increasing human uses, including many new industrial uses, and the effects of fragmented, single-sector management are showing in degraded water quality, depleted fish stocks, and damaged habitat that have diminished our lifestyle and economy alike. Over the past several decades, the water temperature in the Northeastern coastal ocean has been rising at an average rate of 0.06° C yr⁻¹, approximately three times faster than the global average. Predictions from climate models project indicate that this warming rate will continue to exceed the global average in the future. The effects of warming and other pressures are widespread, often linked to common causes, as evidenced by documented "dead zones" in Long Island Sound, shifting and unbalanced natural communities and diminished fisheries in the Gulf of Maine. The New England states also have identified causal links to human activity such as development on land and use of fossil fuels with the health of our coastal waters and estuaries.

Many people, agencies, and organizations are already working to protect and restore coastal and ocean ecosystem health in the Northeastern U.S. NROC's role is to support the priorities of

the New England Governors, guided by the themes of their adopted resolutions as well as those provided in EO13840, "Ocean Policy to Advance the Economic Security, and Environmental Interests of the United States." Generally, these themes are 1) adopting EBM; 2) improving resiliency; 3) obtaining, using and sharing the best science and data; 4) promoting efficiency and collaboration; and 5) strengthening our regional effort. These themes are well-suited to NROC's and to the OCEH Committee's construct and strategy to enhance communication and collaboration, advocate for collectively-determined priority regional actions, and help articulate a common vision for management and restoration. To implement this strategy, NROC has identified three areas of focus within coastal and ocean ecosystem health:

- Link observations to management decision-making,
- Enhance data collection, integration and dissemination, and
- Improve governance, coordination and communication.

Strategies: The committee has identified three broad strategies for working toward its goal of protecting and restoring coastal and ocean ecosystems in the Northeast:

1. Support research and monitoring that enhances our understanding of ecosystem structure and function as related to human impacts, improves utility of social, economic and environmental indicators, and leads to effective EBM implementation
2. Strengthen regional coordination to promote efficiency and collaboration by building partnerships, sharing resources, and reducing redundancy of efforts and ensuring full public and professional participation in the decision-making process
3. Facilitate the accessibility of data and decision support tools needed to support restoration, conservation, and resiliency of coastal habitats, through coordination, technical and financial assistance.

Activities listed below are underway or in the development phase and will begin the process of implementing the strategies. While far from complete with respect to the goal of implementing an EBM framework throughout the region, many of these actions provide a start, or even a cornerstone towards achieving that goal.

Strategies and activities: Each of the strategies and activities have specific associated steps that the committee members and their partners will implement over the next two years.

Strategy OCEH-1: Support Research and Monitoring

Activities:

OCEH – 1.1 Implement "Integrated Sentinel Monitoring Plan for Ecosystem Change in Northeastern Ocean and Coastal Waters"

Lead organizations: EPA, GMRI, NERACOOS

NROC will work closely with NERACOOS and other partner organizations to implement the science and implementation plan for an integrated regional climate change sentinel monitoring network for the Northeast region (from the Canadian Maritimes to Long Island Sound). The ISMN is envisioned as a regional entity with infrastructure that will sustain an adaptive sentinel monitoring network, with five major functions: 1) provide coordination support for existing observing activities; 2) further develop, integrate, and coordinate regional capacity for data management and distribution; 3) enhance and expand current monitoring efforts by supporting needed supplemental measurements; 4) create and sustain a data management, analysis and

interpretation system and communication strategy to inform researchers, managers and the public; and 5) support an integrated, ecosystem-based management framework for adaptive responses to change.

Over the past two years, the OCEH has provided oversight to: (1) appointment by NERACOOS of J. Runge as the first ISMN Director, (2) submission by NERACOOS of a proposal to the NOPP 2019 Broad Agency Announcement (Topic 2: Sustained observations of marine biodiversity for improved understanding of marine ecosystem responses to changing environmental conditions), (3) Nominations and selection process for the establishment of the ISMN Oversight Committee (4) online organization of the regional observing meta-database (<http://www.neracoos.org/sentinelmonitoring/database>), a project that is ongoing. These activities are aligned with objectives 1.1.1-1.1.5 in the 2019-2020 Work Plan.

1.1.1 Update and disseminate the plan as guidance on the region's need for sentinel indicators and enhancements that can be identified in proposals for funding

NROC will host the plan on their website under "current activities" for the OCEH workgroup

1.1.2 Write letters of support to proposals that directly address sentinel monitoring needs

NROC will write letters of support for proposals which will fill sentinel monitoring data collection gaps in present monitoring activities

1.1.3 Provide guidance on collection protocols and other technical issues to promote standardization and accuracy of data and hence it's utility for broader integrated and comparative analyses

NROC will provide a forum for discussion to agree upon data collection protocols – this could include workshops, surveys and/or formation of an expert panel. Agreed-upon standardization will be written up in the form of a guidance document for dissemination to NROC partners and the greater public.

1.1.4 Develop data management capacity and guidelines to ensure that data produced by these observing activities are conserved and entrained in integrated analysis

NROC will work closely with NERACOOS to ensure all relevant data is captured in a centralized metadata-database.

Milestones, timeline, and deliverable(s):

1. Establish the ISMN Steering Committee and Oversight Committee (as referred to in the Science and Implementation Plan)
 - Quarter 4: July-Sept. 2019
 - Deliverables: Selection of 1-3 sentinel themes; CAPE governance structure and workplan
2. Hold committee calls on a regular interval, as determined by the committees (likely bi-monthly or monthly).
 - Ongoing: Oct. 2018 –Sept. 2019
 - Deliverables: Call notes
3. ISMN Oversight Committee to governance structure for the CAPE (Center for Analysis, Prediction and Evaluation) and priority themes for future focus working groups.
 - Quarter 4: July-Sept. 2019
 - Deliverables: Selection of 1-3 sentinel themes; CAPE governance structure and workplan

4. Host Data Integration Workshop
 - Quarter 3/4: April –Sept 2019
 - Deliverables: Workshop report
5. CAPE & Sentinel Indicators White Paper explaining rationale and function, for distribution on the ISMN
 - Quarter 4: July –September 30, 2019
 - Deliverables: Finalized white paper
6. Contingent upon receipt of an award from NOPP to fund the ISMN-MBON: (A) re-establish the CMTS (Coastal Maine Time Series) and WBTS (Wilkinson Basin Time Series) stations for plankton and environmental observing in the Gulf of Maine; (B) Support the first CAPE priority working group to develop modeling tools for prediction of North Atlantic right whale foraging patterns; (C) expand ISMN data management and website capabilities.
7. Seek additional funding for long-term support of the ISMN infrastructure and observing and interpretation activities

1.1.5 Identify and pursue funding opportunities to implement the plan

NROC, NERACOOS, and partner organizations will coordinate to identify potential funding sources to fill gaps identified in the plan, increase spatial or temporal coverage of key sentinel sites, and increase the observing, data management, and modeling capacity of the northeast region.

OCEH – 1.2 Support Northeast Coastal Acidification Network (NECAN)

Lead Organizations: NERACOOS, EPA

NROC will work closely with NERACOOS and other partner agencies and organizations to expand the capacity of NECAN to improve our scientific understanding of ocean and coastal acidification and work with stakeholders to adapt to the effects of acidification.

1.2.1 Serve on NECAN Steering Committee to help ensure NROC interests are well represented

NROC will participate in regular steering committee conference calls, periodic meetings, technical workshops, and stakeholder outreach workshops.

1.2.2 Facilitate funding to support monitoring and research on ocean and coastal acidification

Member agencies and institution will try to identify and secure funding through relevant programs to support these activities.

1.2.3 Facilitate funding to support outreach and education to external stakeholders from ocean-dependent industries, such as the shellfish aquaculture and fishing industries

Member agencies and institution will try to identify and secure funding through relevant programs to support these activities.

Strategy OCEH-2: Strengthen Regional Coordination

Activities:

OCEH-2.1 Hold an OCEH committee meeting

Lead Organizations: EPA, NH Coastal Program

2.1.1 Update OCEH committee roster, define subcommittee rosters

2.1.2 Exchange information on partner programs and activities relevant to OCEH committee goals

- Activities related to marsh resilience; further data and information needs for the region
- Activities related to stormwater; further data and information needs for the region

2.1.3. Offer a NOAA Coastal Management training opportunity on applying ecosystem service framework to current projects

OCEH-2.2 Promote regional marsh resiliency through understanding existing salt marsh condition, coordination of marsh migration modeling, implementation of salt marsh management techniques, and evaluation of project effectiveness and their use in New England Coastal Zone Policy

Lead Organizations: EPA, NOAA, NH Coastal Program

2.2.1 Continued support of marsh migration projects in the region

Building off the 2014 NROC marsh migration project, which included a workshop and development of a guidance document through a contract, OCEH will work to distribute the guidance, implement the recommendations, and continue the dialog among practitioners. Meetings of the technical and policy community of practice around marsh migration will be held as needed to move forward the state of understanding of New England marshes as sea level rises.

2.2.1: Establish a regionally consistent methodology for salt marsh monitoring and data management.

Convene regional partners to consider unified salt marsh monitoring methodologies and data management practices. Advance consensus-based monitoring methods and database through publication.

2.2.3 Explore next steps and evaluate effectiveness of projects

Consider and explore relevant marsh management techniques to improve salt marsh resiliency. This may include conducting similar projects at other locations in the region using tools currently under development. As projects in the region move forward, promote measurement, monitoring and evaluation of the effectiveness of the techniques used then translate and communicate lessons learned throughout the region. Funding opportunities to support this work will be sought after by member agencies and partner institutions.

2.2.4 Integrate marsh resiliency efforts with regional road crossing and culvert assessments and aquatic connectivity projects.

Promote tidal crossing (ex. culverts) activities that incorporate policy, assessment, design standards and construction guidelines that make systems more resilient and allow for aquatic connectivity and assist in marsh migration. In addition, NROC will promote and coordinate as appropriate projects that increase connectivity through removal of obstructions such as dams and seawalls.

OCEH-2.3: Strengthen habitat classification and ocean mapping efforts in the Northeast Lead Organizations: NOAA, Massachusetts Coastal Zone Management

Coordinate with NROC Ocean Planning Committee, NROC Ocean Planning Staff/Contractors and Habitat Classification and Ocean Mapping (HCOM) subcommittee members to strengthen collaboration between and compatibility of habitat classification methods and efforts in the New England Region. The work of the Habitat Classification and Ocean Mapping Working Group will be continued through shared knowledge and regional mapping coordination to effectively meet mapping needs in New England, particularly northeast submerged lands and outer continental shelf lands.

2.3.1 Regional mapping coordination

Through the use of SeaSketch, NROC partner members will continue to share their mapping plans and needs in an effort to find opportunities to leverage resources among NROC partners working in New England. This information will be presented during NROC meetings.

HCOM members will receive an update on mapping plans and recent activities.

2.3.2 Develop a habitat classification community of practice

Foster ongoing community activities for sharing techniques around habitat classification mapping using CMECS. Will use peer to peer learning, for example listserv for sharing questions and techniques, and workshops to expand knowledge and collaboration, in order to build on regional best practices, to foster enhanced understanding and management of New England waters.

Improve ability to utilize data in different habitat classification schemes through creating crosswalks to CMECS.

Connect with efforts going on in other regions (e.g. Great Lakes Aquatic Framework) for cross regional mapping learning opportunities.

2.3.3 Identification of new resources and collaboration opportunities

HCOM members will actively seek new regional financial resource opportunities and help to facilitate partnerships and collaborations between partners with regards to Habitat Classification and Ocean Mapping initiatives in the Northeast, looking specifically at how mapping and classification can continue to support ocean planning, resiliency, and ocean and ecosystem health.

HCOM will develop standard regional language around the application of ocean data, which can be used for funding requests.

2.3.4. Foster the development of innovative products that advance regional ocean science and planning.

Development of derived datasets and habitat maps, to improve management decision making. Products will be adaptable as new data becomes available.

OCEH-2.4: Strengthen resilient coastal stormwater best management practices in New England

Lead Organizations: EPA, state partner TBD

Coordinate regional efforts that are addressing the complex issue of managing stormwater in the coastal zone at the freshwater and tidal interface with additional pressures of sea level rise and the increase of extreme precipitation events

2.4.1 Provide a forum for information exchange

Facilitate a community of practice of NROC member agencies and other interested parties to discuss challenges, opportunities, design standards, BMP selection, communication/outreach and other issues of regional relevance.

2.4.2 Promote adoption of improved stormwater practices and policies, including green infrastructure

Support efforts to improve stormwater and water quality BMPs, including green infrastructure practices, to reflect enhanced understanding of climate impacts on water quality, and help institutionalize them into stormwater and water quality management programs at all levels of government.

2.4.3. Explore funding opportunities to further research, pilot projects, measurement and monitoring of coastal stormwater systems and other needs identified by the regional community of practice on this topic.

Member agencies and institution will try to identify and secure funding through relevant programs to support these activities.

Past Accomplishments: Below is a summary of accomplishments of the Ocean and Coastal Ecosystem Health Committee and its many partners during 2017-2018.

- In the spring of 2018 NECAN held a series of webinars and workshops for community and citizen science monitoring programs to consider approaches for monitoring OCA influenced by freshwater input and eutrophication processes. Read more about this effort on the [NECAN website](#).
- As regional collaboration entities, NECAN and NROC partnered together to host a workshop in December 2017 to bring together ocean and coastal acidification (OCA) experts, coastal managers and industry members to address the OCA monitoring needs of the Northeast region. Check out the [workshop summary](#).
- Through a partnership with North Atlantic Landscape Conservation Cooperative, and funding from the U.S. Fish and Wildlife Service, the NROC OCEH and CHR committees developed and implemented a [Resilient Shorelines Grant Program](#) to make decision support tools, maps and monitoring results from Hurricane Sandy resiliency projects, and other coastal resiliency information readily available to decision makers at scales and formats needed to effectively demonstrate and deliver the information in our region
 - A 2-day science delivery workshop, titled “Using Technology and Emerging Practices to Improve Tidal Marsh Habitat Resiliency”, was also conducted as part of this partnership agreement. The workshop agenda and PowerPoints are available on the [NROC Marsh Migration Group webpage](#).

2019-2020 OCEH Steering Committee Members:

Steve Couture, NH Coastal Program (State Co-chair)

Chris Williams, NH Coastal Program (Alternate State Co-chair)

Regina Lyons, US EPA Region 1 (Federal Co-chair)

Becca Newhall, NOAA (HCOM and Alternate OCEH Federal Co-chair)

Dan Sampson, MA Coastal Zone Management (HCOM state co-chair)

Todd Callaghan, MA Coastal Zone Management (HCOM state co-chair)

Ivy Mlsna, US EPA Region 1

Jeffrey Runge, Gulf of Maine Research Institute (NERACOOS OCEH Co-Chair)