



NROC Meeting
Tuesday, April 2, 2019
9:15 AM – 3:00 PM

NH Department of Environmental Services
222 International Drive, #175, Portsmouth, NH

Meeting Briefing Packet

Call-in and Webex Information, p. 2

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Conference Call and WebEx Information for the Meeting

Conference Call Access Information

Call In: 1 877-680-1673

Passcode: 1993954#

WebEx Information

Meeting Number: 744921075 Meeting Passcode: 4927573

Meeting Host: MS ADRIANNE R HARRISON Join Instructions for Instant Net Conference:

1. Join the meeting now:

<http://www.mymeetings.com/nc/join.php?sigKey=mymeetings&i=744921075&p=4927573&t=c>

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4. Click on Proceed. Audio is through the conference line.

Northeast Regional Ocean Council Meeting Agenda Tuesday, 2 April 2019 NH DES, 222 International Drive, #175, Portsmouth, NH 03801	
9:15 AM	Arrive and Networking
9:30 AM	Welcome and Introductions <i>NROC Co-Chairs: Steve Couture, NH DES and Regina Lyons, EPA</i>
9:40 AM	News from NROC Executive Committee <i>Steve Couture, NH DES</i> <ul style="list-style-type: none"> NROC Funding Status, (p. 4)
9:50 AM	NROC Partners <i>Highlights and opportunities for collaboration</i> <ul style="list-style-type: none"> NERACOOS – <i>Ru Morrison, NERACOOS (p. 5)</i> Northeast Sea Grant Consortium – <i>Erik Chapman, NH Sea Grant</i> Gulf of Maine Council – <i>Prasde Vella, MA CZM (p. 6)</i> North Atlantic Landscape Conservation Cooperative – <i>Rick Bennett, USFWS (pp. 7-8)</i> New England Federal Partners – <i>Rick Bennett, USFWS (p. 8)</i> Project Update: Increasing Resilience and Reducing Risk Through Successful Application of Nature Based Coastal Infrastructure Practices in New England – <i>Eric Roberts, TNC (p. 9)</i>
10:30 AM	Roundtable Discussion and Updates <ul style="list-style-type: none"> NROC member organizations highlight priority projects, and opportunities for funding or collaboration Other audience news / updates
11:10 AM	Integrated Sentinel Monitoring Network (ISMN) Update <i>Jeffrey Runge, Gulf of Maine Research Institute / NERACOOS (p. 10)</i>
11:30 AM	NROC Ocean Planning Committee - Draft Work Plan <i>Ted Diers, NH and Mel Coté, EPA (pp. 11-16)</i>
12:00 PM	Lunch Break – on your own
1:00 PM	NROC Ocean and Coastal Ecosystem Health Committee - Draft Work Plan <i>Steve Couture NH, Regina Lyons, EPA and Jeffrey Runge, GMRI / NERACOOS (pp. 17-24)</i>
1:30 PM	NROC Coastal Hazards Resilience Committee - Draft Work Plan <i>Julia Knisel, MA CZM and Adrienne Harrison, NOAA (pp. 25-28)</i>
2:00 PM	Offshore Wind Overview and Discussion <ul style="list-style-type: none"> <i>Darryl Francois, Bureau of Ocean and Energy Management</i> – Update on the status of wind energy planning, leasing and development activities, and stakeholder engagement from the New York Bight to offshore Massachusetts with a look ahead to the rest of 2019. (15 min.) <i>Mel Coté, EPA and Nick Napoli, NROC</i> - Links to ocean planning data, process and best practices. (5 min.) <i>State Partners</i> – Recent activities and lessons learned. (30 min.)
2:50 PM	Other Business
3:00 PM	Adjourn

NROC Executive Committee - Update

NROC Funding Status - NROC is currently operating on funding from the following sources:

1. FY2016 NOAA Regional Coastal Resilience Grant Award
 - Project: *High Resolution Coastal Inundation Modeling and Advancement of Green Infrastructure and Living Shoreline Approaches in the Northeast*. Remaining funds are focused on project close-out and development of outreach / summary materials related to Track 2 – Living Shorelines.
 - Total Award: NERACOOS \$891,243 (includes \$44,550 for NROC – product support + general NROC coordination)
 - Funding Period: Extended through April 2019.
 - Lead: NERACOOS
 - Partners: NROC, UMaine, NH DES, UNH, UMass Dartmouth, URI, UConn / CIRCA, ME Coastal Program, MA CZM, RICRMC, The Nature Conservancy, GMRI and others

2. FY2017 NOAA Coastal Resilience Grant
 - Project: *Increasing Resilience and Reducing Risk through Successful Application of Nature-based Coastal Infrastructure in New England*
 - Total Award: \$999,999 (includes \$50,687 for NROC – project support + general NROC Coordination)
 - Lead: The Nature Conservancy
 - Partners: NROC, ME Coastal Program, NH Coastal Program, NH DES, MA CZM, RI CRMC, UConn / CIRCA, and local partners
 - Funding Period: October 2017 to September 2020

3. FY2018 NOAA / NOS / NCCOS
 - Project: *Developing Generic Predictive Model of Ocean and Coastal Acidification Thresholds from Long Island Sound to the Nova Scotian Shelf*
 - Total Award: \$498,000 (includes \$20,000 for NROC – project support + collaboration with NROC)
 - Lead: NERACOOS
 - Partners: NROC, UMass Dartmouth, UNH, GMRI, Wells NERR, NH Sea Grant, UMaine, others
 - Funding Period: September 2018 through August 2021

4. Moore Foundation
 - Project: Regional ocean planning activities
 - Award: \$2.2 million
 - Lead: NROC (via Coastal States Stewardship Foundation as fiscal sponsor)
 - Funding Period: January 2018 – December 2020

5. Bureau of Ocean and Energy Management
 - Project: Operations and maintenance of the Northeast Ocean Data Portal
 - Award: \$230,000
 - Lead: NROC (via Coastal States Stewardship Foundation as fiscal sponsor)
 - Funding Period: October 2018 – September 2019

NERACOOS - Highlights

Observing System

NERACOOS is continuing to fund observations, modeling, and data management efforts in the Gulf of Maine, Southern New England and Long Island Sound. As previously noted, new funding from NOAA IOOS has enabled NERACOOS to continue the deployment of nutrient sensors in the Gulf of Maine and the deployment of gliders to monitor nutrients and baleen whale occurrences.

Integrated Nutrient Observatory Development

The NERACOOS Integrated Nutrient Observatory project has officially come to a close. NERACOOS hosted a series of webinars in early 2019 that highlighted the successes, lessons learned and data collected by this technology transition project, recordings are available on NERACOOS website, <http://www.neracoos.org/nutrients/resources>. Many of the nutrient sensors that were tested and deployed during this project will continue to operate with support from NERACOOS and EPA.

Northeast Coastal Acidification Network (NECAN)

NECAN's efforts continue throughout the region. As a result of a series of webinars and workshops for citizen science monitoring in spring 2018, NECAN and the Education and Outreach Working Group will be hosting 'Shell Day', a one-day citizen science monitoring event in the summer of 2019 that will generate a snapshot of coastal conditions in the Northeast from Maine to Long Island Sound. The NECAN Industry webinar series was concluded in December 2018, all six webinar recordings are available on the [NECAN website](#) and NECAN is now planning for a new series in 2019. In late 2018, the Industry Working Group hosted a survey for industry members and is now working on generating a survey report which will be shared with state and federal resource managers and funding agencies to help guide priorities for monitoring and funding in the Northeast. The NECAN Steering Committee is revising and updating the Implementation Plan which will be available in late 2019. To learn more about NECAN or become involved in the working groups please contact Emily Silva (emily@neracoos.org).

Also, if you're interested in ocean and coastal acidification be sure to check out the OA Information Exchange, www.oainfoexchange.org. This collaborative website is a great place to learn more about ocean and coastal acidification and to connect with others in the field. For more information contact Julianna Mullen, julianna@neracoos.org.

Integrated Sentinel Monitoring Network (ISMN)

ISMN, which is a joint project of NROC and NERACOOS, is moving forward with efforts as outlined in the [Science and Implementation Plan](#) to establish the Center for Analysis Prediction and Evaluation (CAPE). A more detailed update has been provided by Jeffrey Runge.

New Projects - Inundation and OA forecasting

NERACOOS and their partners were recently awarded two new grants. The first is from the IOOS Coastal Ocean Modeling Testbed program. The goal for this 3-year project is to deliver improved ocean and coastal inundation forecast products to key end users in the Northeast where severe weather events cause coastal inundation, flooding, erosion and other damages. The second award is from NOAA's National Centers for Coastal Ocean Science and NOAA's Ocean Acidification Program for development of a predictive model for ocean acidification thresholds in the Northeast. Efforts began in the fall of 2018 for both projects and will include a significant stakeholder engagement component.

For more information about NERACOOS and any of these projects please contact Ru Morrison ru.morrison@neracoos.org

Gulf of Maine Council on the Marine Environment - Update

Working Group and Council meetings: A joint Council and Working Group meeting was held on December 4, 2018. Meeting highlights included: 1) updates and progress reports from the 2018-2020 GOMC Work Plans; 2) GOMC plans for the first half of 2018; 3) updates and discussion on the Gulf of Maine 2050 international symposium (November 2019); and 4) a presentation on status of North Atlantic Right Whale population in the Gulf of Maine by Stormy Mayo. Upcoming meetings include a Working Group Teleconference on April 17, and a two-day in-person meeting on July 10-11, 2019 in Halifax, Nova Scotia. The July meeting will be hosted by NS Department of Intergovernmental Affairs.

GOMC Awards: GOMC is hosting a 2019 Awards Program. Nominations are being accepted through April 5, 2019. An awards reception will be held on the evening of July 10 in Halifax, NS. For more info: <https://gulfofmaine.org/public/gulf-of-maine-council-on-the-marine-environment/awards/>

GOMC Framework for Action and GOMC Work Plans: A new GOMC Framework for Action was developed and adopted by GOMC in June 2018. The framework will guide GOMC's work for the next five years. GOMC is currently developing its next two-year Work Plan for the period July 2019 through June 2021. The work plan will be presented to the Council for consideration at the July 2019 meeting.

Gulf of Maine 2050 International Symposium: Gulf of Maine Council is co-hosting Gulf of Maine 2050, a 5-day international symposium scheduled for November 4-8, 2019, at The Westin Portland Harborview, Portland, Maine. Partner organizations, including GOMC, GMRI, NERACOOS, RARGOM, and Huntsman Marine (New Brunswick), are working on planning and coordination of this event. In advance of the symposium, Huntsman Marine hosted a workshop during March 2019 to begin developing scientific scenarios for the major drivers of change in the Gulf of Maine over the next 30 years – warming waters, sea level rise, and ocean acidification. The symposium will include plenary speakers, breakout sessions, poster sessions, and expert presentations. A dedicated website for the event will soon be available soon at www.gulfofmaine2050.org and registration is expected to open in April 2019. There may be opportunities to create synergy between GOMC and NROC during the planning of the symposium, particularly around the government perspective on mitigation of climate impacts.

Gulfwatch Monitoring Program: With no current funding, routine sampling, archiving and analysis have come to an end. In 2016, Gulfwatch worked with NOAA's Musselwatch program. More recently much of these activities have been on hold due to budget constraints. GOMC assisted with field work and received in-kind analytical support for Gulfwatch samples in return. Results are being analyzed. Gulfwatch will continue to pursue NOAA in-kind support to measure contaminants of emerging concern in mussels collected by the program.

EcoSystem Indicator Partnership (ESIP): ESIP activities are focused on 1) completing ECCC Gulf of Maine Initiative in 2019 looking at eutrophication and contaminants in the Bay of Fundy, 2) supporting GMI projects in the future, 3) working with St. John River Society to set up additional ICUC sites, and 4) continuing to monitor and support ESIP's Indicator Reporting Tool. GOMC is concerned about ESIP indicator tool becoming irrelevant if data are not kept up to date. Potential opportunities include linking with the NROC portal and utilizing ICUC sites to monitoring living shorelines projects.

1. Northeast Region Priorities

The Northeast Region established 3 categories of priorities for the Service, supporting our Workforce; Connecting People to Nature; and Strategic Conservation. Specific areas of focus under Strategic Conservation include Landscape Conservation, Aquatic Connectivity, At-Risk Species and Coastal Resilience. For more information click the following links:

https://www.fws.gov/northeast/pdf/NE_Region_Priorities_2016_and_Beyond.pdf

2. Science Applications/North Atlantic Landscape Conservation Cooperative

Nationally, the Service no longer provides dedicated staff, administrative functions and funding for the Landscape Conservation Cooperatives (LCCs), however, we continue to support efforts to gather data, identify and pursue science tools, and form and engage partnerships to address shared conservation priorities for the 21st century. Our partners include federal, state and local government agencies, private landowners, conservation groups, industry, tribes and academic institutions.

Science Applications (SA) will build on existing partnerships and emphasize State-Federal and Tribal-Federal co-led applied science acquisition and delivery on priority issues of joint concern. Efforts will focus on issues that cross jurisdictions of individual State Fish and Wildlife Agencies and Sovereign Tribal Nations respecting the individual and shared trust management authorities for wildlife species. SA will also collaborate internally with other programs to provide scientific support on priority science and landscape issues, and assist with guidance and support in the development of partnerships outside the Service. We will seek and fulfill the best opportunities to deploy SA staff and funding to support:

- collaborating with States, Tribes, and other partners on landscape conservation issues, science needs, and co-developed conservation solutions;
- addressing science needs of species-at-risk;
- regulatory streamlining, and species-at-risk management.
- agency wide data management; and
- other DOI and Service priority issues and their science needs.

Specific examples in the Northeast Region include:

- Partnering with 14 Northeast states through [Nature's Network](#), a regional conservation design focused on cooperative, landscape-scale conservation of at-risk species.
- In the Northeast, SA will coordinate species status assessment work internally and with states and partners, conservation outcomes for these priority species, including precluding listing under the ESA where possible, and they will serve as the catalyst for large-scale conservation coordination with states, landowners, and industry using the best science and information/data. Three species in particular (Wood turtle, Frosted elfin butterfly, Saltmarsh sparrow), are high priority for the Service and the northeast states. They are widespread and serve as surrogates for important habitat systems in the northeast (forested riparian, open canopy pollinator, and high coastal marsh systems respectively).

- Working peer to peer with state fish and wildlife agencies through the Association of Fish and Wildlife Agencies (AFWA) and the states' regional associations to identify shared priorities and science needs, coordinate actions, inform decision-making, and uphold our respective public trust responsibilities.
- Through AFWA, state fish and wildlife agency directors passed a resolution in September 2018 identifying guiding principles for landscape conservation partnerships and science planning that also recognized the special relationship between state agencies and the Service.

New England Federal Partners

Major Topics discussed:

- **National Water Model** - regional meetings are being held on National Water model, a partnership with USGS, NOAA, and USACE, based at the National Water Center in Tuscaloosa, AL. Regional scenario workshops are being planned including one on the Penobscot Watershed, meeting is scheduled for May 8, 2019 in Bangor, ME. Contact: Ellen Mecray, NOAA.
- **Drought/NIDIS** - [Northeast Drought Early Warning System](#), [strategic plan](#)—implementation plan, activities—website, soil moisture—coordinator, hiring, [drought.gov](#), US Drought Monitor
- **Heat Health/NIHHS** - October in-person meeting focused on decision-calendars and development of a new tool to overlay heat forecasts with health information on a county scale. The tool is being developed in a partnership between NOAA and CDC. Additionally, a webinar on heat health is scheduled for May 30, 2019. A model for heat-health website for North Carolina—[Convergence](#)—is the goal for NOAA's work in the northeast.
- **South Atlantic Coastal Study** - Planning for coastal storm risk management, drawing on lessons from the North Atlantic Coast Comprehensive Study. Working with all states in footprint from NC through the Gulf of Mexico and Puerto Rico and territories. Focused on using the North Atlantic tools. Identifying areas that still need forward-looking plans. Contact: Roselle

Future meeting suggestions to focus on:

- Develop strategic priorities, next 2-5 years
- How could NEFP best work together in event of a major storm? Plan for this.
 - Explore connecting via [Silver Jackets](#)
 - Science at regional scales and long-term planning

Project Update - Increasing Resilience and Reducing Risk Through Successful Application of Nature Based Coastal Infrastructure Practices in New England

Prepared by: Eric Roberts, Coastal Resilience Specialist at The Nature Conservancy

Project partners (NROC, state Coastal Zone programs in Maine, New Hampshire, Massachusetts, Rhode Island, and Connecticut/the Connecticut Institute for Resilience and Climate Adaptation, and The Nature Conservancy) convened in person and via phone to refine the Draft New England Living Shorelines Monitoring Metrics and Protocols Guide (the draft guide). As initially conceived and drafted, the intent of the draft guide was to provide guidance to a range of audiences (from citizen scientists to state and federal permitting staff to professional staff in engineering, ecology, landscape architecture, etc.) on site characterization, as-built, and performance monitoring for a range of living shoreline project types. Although the current version of the draft guide has been useful to project partners while developing monitoring plans for the demonstration projects, the project partners determined that current version would be too complex for a wider audience. Revisions are underway to align the guidance to specific living shoreline project types (e.g. coastal bluff, dune restoration, marsh restoration, etc.). Audience-specific products may be created in the future. Ongoing project team discussions will determine the set of common metrics to be collected across all projects of a specific type (e.g. marsh elevation change for marsh restoration projects), and common data points (e.g. ice observations, maintenance actions, etc.) that will be collected across all projects that are part of the regional project.

Demonstration project updates:

- Maine and Rhode Island: Demonstration project construction had been anticipated for spring 2019 in both Maine and Rhode Island; however, longer than expected contracting processes delayed contractor selection and onboarding. Now onboard, contractors are advancing design tasks in both states. Pending permitting process timelines, construction of all three sites is anticipated by the late summer/early fall.
- New Hampshire: Permitting for Wagon Hill Farm in Durham, NH is nearly complete; construction is anticipated in spring 2019.
- Massachusetts: four projects in Massachusetts will be monitored using the regional monitoring guidance. The projects include Gray's Beach in Kingston, Collins Cove in Salem, Coughlin Park in Winthrop, and Duxbury Beach in Duxbury. The Gray's Beach and Duxbury Beach projects have been constructed. Spring construction is anticipated for the Collins Cove and Coughlin Park projects.
- Connecticut: The Stratford Point Living Shoreline Project was constructed before the start of the current regional project. Wave data for two storms were collected and preliminary analysis of the data was presented at the Long Island Sound Conference in March.

The project partners continued to explore opportunities for publicly sharing the monitoring data once it is collected. Additional conversations were held with representatives of NERACOOS and The Nature Conservancy's Coastal Resilience Program to explore the possibility of housing the data on their websites (previous conversations occurred with NROC and MyCoast) or jointly creating a data sharing platform. Next steps for the project team include identifying the data sharing platform's intended audience and the minimum and desired functionalities of the platform.

For additional information, please contact Eric Roberts (eric.roberts@tnc.org) or Joan LeBlanc (jleblanc@northeastoceancouncil.org).

Integrated Sentinel Monitoring Network - Update

The Integrated Sentinel Monitoring Network (ISMN) got its start in 2012 with the establishment of the joint NROC-NERACOOS Ocean and Coastal Ocean Health Committee. After a series of open regional workshops, the ISMN Science and Implementation (S&I) Plan was published in 2016. The overall goal of the ISMN is regional facilitation of integrated, sustained observing across pelagic, benthic and nearshore and estuarine ecosystems to inform ecosystem-based decision making.

In 2018, with NROC funding, building of the infrastructure for the ISMN began. J. Runge was appointed ISMN director. With support of the NERACOOS staff, nominations were solicited for participation in the ISMN Oversight Committee, which will advise the director in the implementation of ISMN activities. The Oversight Committee will be formed this spring and will hold regular meetings initially to establish governance procedures for the Center for Analysis, Prediction and Evaluation (CAPE) and determine priorities for enhancement of present observing activities.

Through NERACOOS, the ISMN is engaged in convening the U.S. Northeast Biological Observations Workshop (at UNH, May 6-7), which will address regional observation needs and capabilities of the U.S. Animal Telemetry Network (ATN), the U.S. Marine Biodiversity Observing Network (MBON), and the Canadian Ocean Tracking Network (OTN). A data facilitation and management workshop is planned for later in the year. In December, 2018, NERACOOS submitted a proposal to the National Ocean Partnership Program (NOPP) entitled “MBON expansion into the Gulf of Maine: the NERACOOS/NROC Integrated Sentinel Monitoring Network”. An award from NOPP would fund the development of the ISMN over the next three years, including enhancement of regional ecosystem observing, data management capability and a CAPE demonstration project predicting changes in North Atlantic Right whale distribution in relation to shipping and fishing activities.

For more information, go to: <http://neracoos.org/sentinelmonitoring>

The Ocean Planning Committee (OPC) is one of three Northeast Regional Ocean Council (NROC) standing committees. The committee was established to support and coordinate activities related to ocean planning in New England. The OPC originally convened when individual New England states were developing ocean plans in response to proposals for new offshore activities, including offshore LNG terminals and renewable energy installations. In 2009, NROC and several partners, established the Northeast Ocean Data Portal (www.NortheastOceanData.org) to inform planning, permitting, siting, and other regulatory and management activities throughout the region. In 2010, the OPC began supporting activities related to the 2010 National Ocean Policy under the Obama Administration, including supporting the establishment of the Northeast Regional Planning Body (RPB) in 2012 and the development and implementation of the 2016 Northeast Ocean Plan.

In 2018, the OPC was re-established to continue advancing regional priorities for ocean planning and management as a result of a new federal Executive Order that eliminated the RPB and pointed to Regional Ocean Partnerships (ROP), including NROC, as the appropriate forum for establishing and advancing regional priorities. The OPC now includes voluntary participation from NROC's member states and federal agencies, additional state and federal agencies, federally recognized tribes, and the New England Fishery Management Council. In the fall of 2018, the OPC sought stakeholder input to consider regional ocean planning and data priorities that were then sent to the federal interagency Ocean Policy Committee in December to inform the federal implementation of EO 13840. The OPC continues to provide a forum, information, and support for offshore planning activities and issues as they arise.

Goal: Provide a forum, data and information, best practices, and opportunities to coordinate offshore planning, regulatory, and siting activities to improve ocean and coastal ecosystem health, enhance decision making, and ensure compatibility among human activities.

Need for Action: There is an increasing need for data and information, multi-jurisdictional coordination, and effective stakeholder engagement as new activities continue to be proposed in state and federal waters.

The number and type of new activities in New England's ocean continue to increase and move into areas where potential impacts to ecological resources and existing human activities need to be better understood. For example, offshore wind lease areas in federal waters are moving closer to construction, new areas are being contemplated for development, and deeper water technologies are being actively considered by developers and researchers. Other renewable and non-renewable energy developments and research activities are also being considered. The need for cable runs and cable landings are increasing as offshore wind farms are installed and internet and telecommunications networks are expanded.

Offshore sand resources are being characterized for potential use in coastal protection and restoration projects, as well as for addressing emergency restoration or replenishment needs after a disaster. Aquaculture activities continue to increase in state waters and are also being increasingly considered in federal waters. New proposals and activities need to be considered and coordinated within the dynamic landscape of existing activities, such as fishing, maritime transportation and shipping, and recreation. As

such, there is a need to share data and information, and to identify, share, and implement best practices to inform existing decision-making processes. Within this dynamic landscape there are also opportunities for coordination and identification of emerging offshore issues.

Strategies: The OPC has identified four strategies for working toward its goal to support and coordinate ocean planning:

1. Provide a regional forum for a broad range of interests to engage in offshore planning and management issues
2. Engage stakeholders in the development of peer-reviewed geospatial data products characterizing human activities and ecological and cultural resources
3. Enhance existing regulatory and management processes with specific improvements around using best available information, coordination across jurisdictions, pre-application consultations, and engaging the public
4. Determine long-term capacity and funding needs to support these activities and identify options to sustain the Northeast Ocean Data Portal and the capacity to support regional coordination around offshore management issues and ocean planning

Strategies and activities: Each of the strategies below are in the process of being implemented. Strategies are supported by individual activities that committee members and partners will implement.

Strategy OPC-1: Provide a regional forum for a broad range of interests to engage in offshore planning and management issues

Activities:

OPC-1.1 Host two public ocean planning meetings per year

Public ocean planning meetings will be held in the spring and fall of each year. These meetings are one way that the OPC will ensure communication and coordination across agencies and jurisdictions. Meetings also represent an important mechanism for obtaining stakeholder input on OPC activities. OPC meetings will also be used to coordinate with federal activities under EO 13840. Meeting agendas will include, but are not limited to, opportunities for OPC member discussion of/coordination on offshore management issues, stakeholder input, and updates on work group activities.

OPC-1.2 Identify and advance regional ocean planning and management priorities

The OPC will obtain input from stakeholders in the region to understand potential regional ocean planning and management priorities, establish regional priorities, and communicate those priorities to the federal Ocean Policy Committee and related subcommittees established under EO 13840.

OPC-1.3 Establish work groups or subcommittees to support regional ocean management and planning priorities

The OPC will initially establish two work groups: a Regional Data Work Group to guide and assist with the development of regional data products to inform decision-making and ensure the long-term maintenance and sustainability of the Northeast Ocean Data Portal; and a Best Practices Work Group to develop specific recommendations and frameworks for improving stakeholder engagement, agency and interjurisdictional coordination, the use of data and information, and pre-application practices in regulatory and management decisions. Other work groups may be established as needs arise,

particularly if there's interest in better understanding a specific current or emerging ocean management issue. In the past, there have been work groups or subcommittees working on Restoration and Offshore Sand. These groups may continue, and others will be considered.

OPC-1.4 Enable and initiate discussions, forums, and workshops for emerging or important regional ocean management and planning issues

The OPC will identify emerging or important regional ocean management and planning issues and serve as a convener for discussions around those issues. The OPC will also consider the appropriate role for NROC in advancing those issues. For some issues, the NROC OPC may simply provide opportunities for coordination and communication during existing meetings. For other issues, the NROC OPC may decide to host a workshop, establish a subcommittee or work group, and develop a work plan. The following initial list of priority issues reflects OPC and stakeholder input provided in the last several years and will be the starting point for OPC discussions about which issues to address first.

- Aquaculture
- Cumulative impacts
- Climate change
- Offshore wind
- Sand
- Tribal interests
- Monitoring
- Regional science and research priorities

Strategy OPC-2: Engage stakeholders in the development of peer-reviewed geospatial data products characterizing human activities and ecological and cultural resources

Activities:

OPC-2.1 Implement and update the 2019 Northeast Ocean Data Portal Work Plan

The 2019 Northeast Ocean Data Portal Work Plan is available online: <https://neoceanplanning.org/wp-content/uploads/2019/03/Northeast-Ocean-Data-Portal-Work-Plan-3.25.19.pdf>

The OPC will facilitate implementation of the main objectives of this work plan:

1. Maintain and develop products for regional ocean data priorities
2. Maintain and enhance applications and tools for visualizing and utilizing regional data products
3. Maintain website and IT infrastructure
4. Conduct outreach and communications to enhance user understanding of the Portal and to communicate its various uses

The Portal Work Plan will be updated to reflect progress and regional ocean data priorities.

OPC-2.2 Establish Regional Data Work Group to support and inform the development and maintenance of the Northeast Ocean Data Portal

The OPC will establish and convene a Regional Data Work Group composed of core members from OPC organizations to ensure the long-term utility and sustainability of the Northeast Ocean Data Portal by supporting and informing a range of tasks:

- Ensure timely updates and maintenance of existing geospatial data products and inform the development of new data products and analyses for regional data priorities
- Facilitate a greater role for data providers, agencies, and stakeholders in data development, updates, and maintenance
- Connect regional data efforts with federal and state efforts, including efforts by the [Federal Interagency Ocean Policy Committee](#) to publish federal geospatial data that address regional needs
- Inform the identification and acquisition of funding sources for regional geospatial data product development and maintenance

The OPC will establish ad-hoc subgroups to support the development of and updates to specific data themes (e.g., fishing, aquaculture, energy and infrastructure) and the engagement of related stakeholders. Subgroups will be formed and meet on an as-needed basis. The OPC will develop a Terms of Reference that will include more detail on membership and activities for the Regional Data Work Group.

Strategy OPC-3: Enhance existing regulatory and management processes with specific improvements around using best available information, coordination across jurisdictions, pre-application consultations, and engaging the public

Activities:

OPC-3.1 Establish Best Practices Work Group to develop specific recommendations to advance best practices

The OPC will establish and convene a Best Practices Work Group composed of core members from OPC organizations to develop specific recommendations and potential frameworks for improving stakeholder engagement, agency and interjurisdictional coordination, the use of data and information, and pre-application practices in existing regulatory and management processes. Best Practices Work Group responsibilities will include:

- Identify potential best practices by reviewing agency guidance, stakeholder comments, the Northeast Ocean Plan, and other documents, and through engaging government and non-government representatives
- Develop a set of potential best practices, including specific mechanisms and frameworks for implementing those practices
- Communicate, educate and advise on the use of best practices
- Track and report on the use of best practices

The OPC and Work Group will determine the need for and establish ad-hoc subgroups for specific topics or purposes. The OPC will develop a Terms of Reference that will include more detail on the membership and activities of the Practices Work Group.

OPC-3.2 Develop a set of potential best practices

The OPC, informed by the Best Practices Work Group, will first identify potential best practices by reviewing existing agency guidance, researching stakeholder comments on recent planning and management actions, reviewing the Northeast Ocean Plan, and engaging government and non-government representatives through the Best Practices Work Group and other mechanisms.

The OPC will then develop a set of potential best practices, with continued agency and stakeholder input, and identify specific frameworks for potentially implementing those best practices.

OPC-3.3 Communicate and track the use of potential best practices

Once best practices are selected, the OPC will communicate and educate agencies and stakeholders on the use of those practices to ensure they are considered in pertinent regulatory and management processes. In addition, the OPC will provide opportunities for OPC members and the public to transfer knowledge, ideas, and experience across the region. The OPC will also develop methods to understand the use of best practices and obtain feedback on refining those practices and potential frameworks for using them.

Strategy OPC-4: Determine long-term capacity and funding needs to support Ocean Planning Committee activities, the Northeast Ocean data Portal, and regional coordination of offshore management issues and ocean planning

Activities:

OPC-4.1 Identify and secure funding to support the Northeast Ocean Data Portal and core ocean planning functions in the near-term

The OPC will identify and secure funding to support core regional ocean planning functions, including the development of regional data products and maintenance of the Northeast Ocean Data Portal. This will include exploration of governmental and non-governmental funding sources, in-kind capacity, and other types of partnerships and opportunities to leverage existing funding or obtain additional resources.

OPC-4.2 Identify potential funding and capacity for maintaining the Northeast Ocean Data Portal over the long-term

The OPC will develop a set of options for supporting the Northeast Ocean Data Portal over the long-term that considers state and federal capacity and the potential for obtaining funding through grants and partnerships.

Specifically, the OPC will first assess the capacity and funding required to maintain core elements of the Portal. Next, the OPC will determine the impacts of any potential improvements to federal and state agency provision of core data streams to Portal capacity and funding needs. Finally, the OPC will identify funding mechanisms and consider the benefits and potential issues with each, including federal and state grants, private grants, and potential opportunities for support from or partnerships with industry and advocacy groups.

OPC-4.3 Identify potential funding and capacity for supporting ocean planning activities over the long-term

The OPC will develop a set of options for supporting ocean planning functions in the region over the long-term.

Specifically, the OPC will first conduct a review of NROC core ocean planning activities and functions other than maintaining the Portal. Next, the OPC will determine the level of funding and capacity necessary to support these core ocean planning functions. Finally, the OPC will identify funding mechanisms and consider the benefits and potential issues with each, including existing OPC and stakeholder capacity, federal and state grants, and private grants.

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 0.4° yr⁻¹, approximately four times 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 2: Jan.–March 2019
 - Deliverables: Selection of 1-3 sentinel themes; CAPE governance structure and workplan
4. Host Data Integration Workshop
 - Quarter 3: April –June 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 a virtual 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

OCEH-2.2 Promote regional marsh resiliency through coordination of marsh migration modeling, monitoring and restoration techniques 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.

2.2.2 Explore next steps and evaluate effectiveness of projects

Consideration and initial exploration of relevant follow-up projects will be conducted. 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.

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

Promote tidal crossing (ex. culverts) polices that incorporate 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.

Strategy OCEH-3: Facilitate Accessibility of Data and Tools

Lead Organization(s):

Activities:

OCEH-3.1: Establish a regional database of salt marsh surface elevation tables

OCEH-3.2: Establish a regionally consistent methodology for salt marsh monitoring

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)

The Coastal Hazards Resilience Committee is one of three NROC standing committees. This committee was established to inform and recommend to the Council how best to approach regional issues and coordinate activities related to coastal hazards in New England.

Goal: Build hazards resilience to impacts of coastal erosion, flooding, storms, and climate change through region-wide dissemination of data, tools, and case studies, as well as fostering collaborative actions.

Need for Action: New England coastal communities have experienced coastal storm events that have led to loss of life and major damage to homes, businesses, infrastructure and shorelines.

Coastal hazards information and tools can assist state and local officials to better plan for impacts of storms and sea level rise and implement strategies to prevent recurring future damages. Data such as detailed terrestrial contours, shallow water bathymetry, and mean high water positions are needed throughout the region to support efforts to identify potential inundation zones from storm surge, erosion and sea level rise. A companion to data is the need to develop user-friendly tools to access and analyze data and support management decisions and recommendations.

Strategies: The committee has determined two strategies for working toward its goal. During 2019-2020, the committee will:

1. Promote regional dialogue on broad-scale adaptation strategies for responding to the effects of sea-level rise.
2. Facilitate data acquisition and user-friendly tools to support planning for and responses to coastal hazards.

Strategies and activities: Each of the two strategies has specific associated activities that the committee members will implement.

Strategy CHR-1: Promote regional dialogue on broad-scale adaptation strategies for responding to the effects of sea-level rise.

Activities:

CHR-1.1 Committee communications. Co-chairs will convene regular Committee calls and organize an annual meet-up events as part of an NROC Meeting or other regional meetings or workshops. The Committee will continue to monitor membership and assess emerging needs related to coastal hazards and climate adaptation.

- Use the Committee to continue building connections between coastal science and coastal research programs in the region with coastal managers.

CHR-1.2 Organize a regional roundtable on an emerging issue related to coastal hazards assessment and management as identified by the Committee. The Committee will organize and convene a regional roundtable event that enables state and local agencies to share information, lessons learned, research needs, etc. focused on an emerging issue identified by the Committee. The Committee will identify federal partner support for the event.

- Peer to peer discussion of approaches to developing policies, communication products, and options for retreat. Focus on results and discussions from RAE Summit and Georgetown Conference as well as lessons and experiences from ongoing work in NH. Use roundtable to identify regional needs that can be shared with federal, state and foundation partners.
- Review of recent SLR projections and guidance incorporating newest projections. Compare approaches, projections, and guidance across NE states. Share lessons.

CHR-1.3 Develop regional funding proposals. Assess opportunities to partner with other organizations on funding proposals for climate adaptation and hazards resilience related projects. The Committee has specific interest in proposals that:

- Assessment of innovative approaches to coastal hazards management and climate adaptation;
- Continue the Municipal Coastal Resilience Initiative small grants program focused on building resilience to a number of coastal hazards including sea level rise, storm surge, and erosion;
- Facilitate review of federal, state, and municipal coastal management policies and their ability to manage for climate change;
- Workshop on **Regional (multi-community) Approaches for Climate Adaptation**

Strategy CHR-2: Facilitate data acquisition and user-friendly tools to support planning for and responses to coastal hazards.

Activities:

CHR-2.1 Support regional efforts to advance green infrastructure and living shoreline management approaches. The Committee will maintain a Living Shorelines Group to provide input and feedback to NOAA Coastal Resilience Grant with TNC through 2020.

- Assist with development and implementation of NOAA Coastal Resilience Grant with TNC, including support for developing and communicating monitoring protocols as well as developing and communicating lessons learned.

CHR-2.2 Leverage NERACOOS data, products, and services for coastal inundation observations and forecasting.

- Continue to identify opportunities for connecting coastal management data needs with capabilities and assets of regional observing system.

Implementation Leads:

The following table shows the lead agency responsible for implementing each activity. While all committee member agencies are encouraged to participate in the implementation of activities, the lead agency is responsible for coordinating, monitoring, and reporting on designated activities.

Strategies and Activities	Agency Lead(s)
CHR-1: Promote regional dialogue on broad-scale adaptation strategies for responding to the effects of sea-level rise.	
CHR-1.1 Committee Communications	Co-chairs (MA, CT, NOAA)
CHR-1.2 Organize a Regional Roundtable	TBD
CHR-1.3 Develop regional funding proposals	All
CHR-2: Act on data acquisition priorities and user-friendly tools needed to support planning for and responses to coastal hazards.	
CHR-2.1 Living Shorelines Workgroup Coordination and Support for NOAA CRG with TNC	
CHR-2.2 Leverage NERACOOS data, products, and services	MA, NOAA, NERACOOS

Past Accomplishments:

Below is a summary of past accomplishments of the Coastal Hazards Resilience Committee.

- **Hazards Resilience Workshop (November 2007)** Thematic areas included determining impacts of past hazard events, learning the effects of climate change on the intensity and frequency of future events, and understanding the region’s current resiliency to better gauge existing preparedness and improve future capacity. Nearly 60 stakeholders from diverse backgrounds participated in the workshop. Presenters provided important inspiration and background on issues like storm events and climate change impacts, as well as valuable opportunities and lessons learned from specific efforts to improve coastal hazards resiliency.
- **LiDAR Workshop (May 2009)** NROC and USGS sponsored a workshop to discuss regional LiDAR data needs and requirements.
- **New England LiDAR Proposal to USGS (2009)** New England states (data managers and data users) collaborated to submit a regional proposal for the USGS ‘ARRA’ Funding Opportunity for LiDAR acquisition. The NE states used the results of the May 2009 LiDAR workshop to inform the proposal.
- **Climate Adaptation Proposal to NOAA (September 2010)** NROC Hazards Committee Co-chairs worked with the Gulf of Maine Council’s Climate Change Network to identify regional climate adaptation planning needs and submitted a successful collaborative proposal to NOAA’s Climate Program Office.
- **Coastal Climate Adaptation Training (October 2010)** NROC identified the need for a regional Climate Adaptation Training for state managers. NOAA’s Coastal Services Center and the Northeast States for Coordinated Air Use Management (NESCAUM) organized a training with additional support from EPA’s Region 1, New England Interstate Water Pollution Control Commission, and Rhode Island Sea Grant. More than 25 state agencies and regional organizations received training on coastal climate adaptation planning.
- **Development of the StormSmart Coasts New England Network (June 2011)** State pages available for Rhode Island, Massachusetts, and New Hampshire.
- **StormSmart Coasts New England Webinar Series (September 2011 - October 2012)** NROC organized 6 webinars on topics related to impacts of coastal hazards, emergency preparedness, community resilience, and climate adaptation as well as specific case studies

or pilot projects from New England. An average of 20 to 50 state and local officials participated in each webinar.

- **Northeast LiDAR and Sea Level Rise Impacts Workshop (July 2012)** 75 federal, state and local data managers and users participated in a 2-day workshop to discuss use of high resolution LiDAR in sea level rise and inundation mapping efforts.
- **Municipal Coastal Resilience Grants Program (2012).** Six grants were made to coastal communities to assess vulnerabilities, create resilience plans, and look at options to adapt to impacts of sea level rise. The results of the Municipal Coastal Resilience Initiative Grants Program have been summarized and are made available through the Northeast Climate Change Adaptation website <http://necca.stormsmart.org/>.
- **Adaptation Case Studies (2012).** The Rhode Island Sea Grant Legal Program was funded to develop case studies of New England coastal communities working on adaptation. The case studies are made available through the Northeast Climate Change Adaptation website <http://necca.stormsmart.org/>.
- **Media Toolkit (2012).** A media toolkit was created to help climate adaptation efforts work with local media outlets. The model toolkit is made available through the Northeast Climate Change Adaptation website <http://necca.stormsmart.org/>.
- **Commuting Rating System Grants Program (2014).** NROC made 3 grants to coastal communities to look at opportunities to implement activities covered in FEMA's Community Rating System. The results have been summarized and are made available through the NROC website.
- **Created MyCoast interface for StormReporter and King Tide databases (2015).**

2019-2020 Committee Members:

Julia Knisel, Massachusetts Office of Coastal Zone Management (State Co-chair)

Kevin O'Brien, CT Dept. of Energy and Environmental Protection (NERACOOS/State Co-chair)

Adrienne Harrison, NOAA (Federal Co-chair)

Patricia Bowie, Massachusetts Office of Coastal Zone Management

Steve Couture, New Hampshire Coastal Program

Stephen Dickson, Maine Geological Survey

Sherry Godlewski, New Hampshire Department of Environmental Services

Edward Fratto, Northeast States Emergency Consortium

Janet Freedman, Rhode Island Coastal Resources Management Council

Kirsten Howard, New Hampshire Coastal Program

Katie Lund, Connecticut's CIRCA

Regina Lyons, EPA Region 1

Ivy Mlsna, EPA Region 1

Ellen Mecray, NOAA

Paul Morey, FEMA Region 1

Peter Slovinsky, Maine Geological Survey

Tonna-Marie Surgeon-Rogers, Waquoit Bay National Estuarine Research Reserve

Adam Whelchel, The Nature Conservancy

Meeting Summary – NROC November 15, 2018 Meeting
University of Southern Maine, Portland, ME

Attendees

Deerin Babb-Brott; US Office of Science and Technology Policy; Robert Ballou, RI DEM; Ellen Bartow-Gillies, ME Coastal Program, DMR; Rick Bennett, US FWS (NROC Federal Chair); Leann Bullin, BOEM; Mel Coté, EPA Region 1; Bruce Carlisle, MA CZM; Steve Couture, NH DES; Sylvain DeGuise, CT Sea Grant; Michele DesAutels, USCG D1 (remote); Ted Diers, NH DES; Nathan Dill, Ransom Consulting, Inc.; Lisa Engler, MA CZM; Claire Enterline, Maine Coastal Program, ME DMR; Jennifer Felt, Conservation Law Foundation; Kathryn Ford, MA DMF (remote); Darryl Francois, BOEM; Peter Francis; CT DEEP (remote); Grover Fugate, RI CRMC; Adrienne Harrison, NOAA; Julia Knisel, MA CZM; Kelly Kryc, New England Aquarium; Joan LeBlanc, NROC; Kathleen Leyden, ME Coastal Program, ME DMR; Alison Lorenc, Conservation Law Foundation; Rebecca Love, NOAA; Regina Lyons, US EPA; Tony MacDonald, Monmouth Urban Coast Institute; Meredith Mendelson; ME DMR; Kate Morrison, MARCO; Ru Morrison, NERACOOS; Ivy Mlsna, US EPA; Nick Napoli, NROC; Becca Newhall, NOAA; Betsy Nicholson, NOAA; Matthew Nixon, ME Coastal Program, ME DMR (NROC State Chair); Larry Oliver, USACE; Hillary Renick, BOEM; Dan Sampson, MA CZM; Judie Talbot, Observer (remote); John Truscinski, CIRCA / UConn; Chris Williams, NH DES; Jeff Willis, RI CRMC

NROC Executive Committee

- NROC Funding Status: NROC State Co-Chair Matt Nixon provided an Executive Committee update regarding the status of NROC funding from the following three sources: 1) FY2016 NOAA Regional Coastal Resilience Grant – NERACOOS, 2) FY2017 NOAA Coastal Resilience Grant – TNC, 3) FY2018 NOAA / NOS / NCCOS – NERACOOS, and 4) funding for ocean planning and the NE Ocean Data Portal from the Moore Foundation and BOEM. *Additional detail is included in the meeting Briefing Packet.*
- NROC Representatives to NERACOOS Board: NROC approved nominations for NROC seats on the NERACOOS Board. The following members were approved for reelection: Carl Wilson (Maine DMR), Todd Callaghan (MA CZM), Janet Freedman (RI CRMC), and Steve Couture (NH DES). Phillip Trowbridge (CT DEEP) was approved to replace Mr. Lyman as CT DEEP’s representative.

NROC Partner Updates

NERACOOS

Ru Morrison provided updates regarding NERACOOS’ ongoing and new activities. NERACOOS will hold their annual meeting on December 6th in Portsmouth, NH. NERACOOS is in their third funding year for the main award supporting observations, modeling, and data management efforts in the Gulf of Maine. With new funding, NERACOOS will continue to deploy its nutrient observatory. As NERACOOS wraps up sensor deployment activities supported by the IOOS Ocean Technology Transition funding, they will host a series of webinars in 2019 to highlight successes, lessons learned, and data collected. NERACOOS and their partners were recently awarded a grant from IOOS Coastal Ocean Modeling Testbed program to deliver improved ocean coastal inundation forecasting products, and a grant from NOAA’s National Centers for Coastal Ocean Science and NOAA’s Ocean Acidification to develop a predictive model for ocean acidification thresholds in the Northeast. Updates related to the Northeast Coastal Acidification Network (NECAN) and the Integrated Sentinel Monitoring Network (ISMN) were provided separately

under the NROC Ocean and Coastal Ecosystem Health Committee. *Additional detail regarding NERACOOS activities is included in the meeting Briefing Packet.*

Northeast Sea Grant Consortium

Sylvain DeGuise provided an update regarding the Northeast Sea Grant Consortium. Funding for the Sea Grant program was added back into the federal budget by both the House and Senate. The consortium's work has been energized by involvement from several new people. A new funding opportunity will be available soon to support lobster research in the Northeast region. The focus will be on understanding changing environmental conditions and their impact on the lobster fishery. Funding amount and eligibility will be announced with the funding opportunity in December or January.

Gulf of Maine Council (GOMC)

Joan LeBlanc provided an update regarding Gulf of Maine Council activities. GOMC is working with several partners (Gulf of Maine Research Institute, NERACOOS, RARGOM, Huntsman Marine, and others) to plan an international symposium, *Gulf of Maine 2050*, scheduled for November 4-8, 2019 at the Westin Portland Harborview in Portland, ME. The event will address climate-related impacts such as acidification, warming, and sea level rise, which will drive change in the Gulf of Maine over the next 30 years. The symposium will integrate environmental, economic, social, and institutional perspectives on emerging climate challenges and opportunities. GOMC recently approved a new 2018-2022 Framework for Action, and plans for 2019 include coordination of a Gulf of Maine Awards program. *Additional detail regarding GOMC activities is included in the meeting Briefing Packet.*

North Atlantic Landscape Conservation Cooperative (NALCC)

Rick Bennett provided an update regarding the NALCC. LCCs received no funding in the President's FY18 and FY19 budgets. While Congress may restore funding, the structure and function of the LCCs are being reviewed in an effort to reinvent them in a manner that would gain support from the administration. Current priorities include informing conservation planning around energy development and overseeing agency-wide data management.

Living Shorelines – Project Update

Eric Roberts of The Nature Conservancy (TNC) submitted a written update (included in the meeting Briefing Packet) regarding the NOAA funded project, *Increasing Resilience and Reducing Risk through Successful Application of Nature-based Coastal Infrastructure Practices in New England*. Joan LeBlanc and state partners provided input about ongoing efforts. Key highlights since April 2018 include:

- TNC finalized the contract with NROC Coordinator for project support.
- Convened May 2018 workshop on metrics for site suitability assessment, as-built, and performance monitoring of living shoreline projects.
- Information from the workshop and a literature review are informing development of the Draft New England Living Shorelines Monitoring Metrics and Protocols Guide.
- Outreach activities include presenting at conferences and meetings, convening workshops, and preparing a two-page issue and project overview.
- State partners are in various stages of pilot project design / permit / build tasks. Jeff Willis reported that Rhode Island is in the final stages of coordinating with the City of Providence. Kathleen Leyden reported that Maine released an RFQ for engineering support for the Casco Bay

sites. Julia Knisel noted that Massachusetts is focused on determining which approaches / parameters can best be used to monitor living shoreline projects. Steve Couture reported that New Hampshire is focused on monitoring and assessment of constructed living shoreline sites and developing a reference for determining site suitability.

Key Points from Roundtable Updates / Announcements / Opportunities

- Matt Nixon reported that Maine received funding from NOAA through a Project of Special Merit competition to select several working waterfronts in Penobscot Bay (10 sites, 10 towns), where a consultant will assess the vulnerability of publicly funded water infrastructure to sea level rise and increased storm surge. They will also look at socio-economic vulnerability to those communities should they lose some or all of their access.
- Rick Bennett reported that USFWS' current broad-based focus areas are aquatic connectivity, species at risk, and coastal resiliency. Rick is also preparing final reports for completed Hurricane Sandy Projects - they will be posted on the website when complete. DOI will also prepare an assessment report on the NFWF funded projects.
- Mel Côté noted that EPA's Region 1 Administrator Alexandra Dunn has been nominated to serve as Assistance Administrator for Chemical Safety and Pollution Prevention at EPA headquarters and will move on from her current position if confirmed (Ed. Note: She had a successful confirmation hearing on November 29 but still awaits confirmation). EPA is also undergoing an organizational restructuring so that headquarters and the regions will all have the same divisions.
- Regina Lyons reported that the EPA budget includes \$4 million in funding for coastal watershed grants through the National Estuary Programs (NEP). A Request for Applications is available at <https://www.epa.gov/nep> and applications are due by December 20, 2018. Applications should focus on addressing relevant environmental issues outlined in Comprehensive Conservation Management Plans for NEP watersheds.
- Betsy Nicholson provided an update regarding NFWF and NOAA funding awards in the region. In November 2018, NOAA, NFWF (along with funding partners – Shell Oil Company and TransRe) announced 35 new National Coastal Resilience Fund grant awards totaling \$28.9 million, leveraging \$38.3 million in matching funds for a total conservation impact of \$67.2 million. The goal of the program is restoring and enhancing natural resource infrastructure to reduce vulnerability of coastal communities to storms, floods and other detrimental natural events. Funding for next year is not certain. A complete summary of 2018 grants awarded is available at: <https://www.nfwf.org/coastalresilience/Documents/2018grantslate.pdf>. Grants were awarded to the following projects in the Northeast:
 - MA - \$1.2 million to National Wildlife Federation for the project - *Restore New England's Largest Saltmarsh for Resilience and Ecological Enhancement* (25,000-acre Great Marsh)
 - ME - \$250,000 to Kennebec Estuary Land Trust for the project - *Back River Creek Saltmarsh Restoration for Coastal Infrastructure Resilience*
 - NH - \$136,242 to The Nature Conservancy for the project - *Tidal Crossing Replacements for a Resilient Coastal New Hampshire*

- RI - \$280,140 to the RI Coastal Resources Management Council for the project – *Rhode Island Shoreline Adaptation and Habitat Enhancement Project Inventory*
- Darryl Francois reported that BOEM will host an online lease auction on December 13, 2018 to develop commercial wind power off the coast of Massachusetts for three lease areas totaling 390,000 acres. A preview will be provided during a November 28 meeting in New York. BOEM is also working on a white paper to be finalized in March 2019 on the cumulative impacts of projects, and developing a long-term fisheries strategy. BOEM will host an Atlantic Ocean Energy and Mineral Science Forum on January 23 and 24 in Sterling, Virginia to highlight various studies throughout the Atlantic region. In terms of sand management, BOEM is close to launching a marine minerals system that will integrate into the NE Ocean Data Portal.
- Ivy Mlsna of EPA reported that she is focused on water quality monitoring as well climate vulnerability in the Piscataqua region. She will provide a report out at a future NROC meeting.
- Dan Sampson reported that MA CZM is creating a repository for seafloor mapping data.
- Lisa Engler noted that MA CZM is developing a resilience blueprint to help assess how degraded a salt marsh is, evaluate vulnerability to sea level rise, and assess restoration. This project will have a regulatory and science group to determine if current regulations would allow the pilot project or if policy changes are needed. Massachusetts is also convening a new ocean acidification commission established by the legislature. NECAN's policy and management group helped inform the legislation and the first meeting will be scheduled soon. Massachusetts is also starting to review the Massachusetts Ocean Management Plan.
- Adrienne Harrison reported that NOAA is focused on training and education and has released several new training courses, including: 'Estimating the Marine Economy – Telling Your Story', 'Social Science Basics for Coastal Managers', and 'Building a Framework for Ecosystem Services Projects'. Information about these and other training courses and resources is available at: <https://coast.noaa.gov/digitalcoast/training/>
- Michele DesAutels reported that Julia Lewis is no longer working with USCG D1 as she has taken a position working in the private sector.
- Larry Oliver noted that public comments are due today (November 15) on the Draft Integrated Feasibility Report and Environmental Impact Statement for the deepening of New Haven Harbor in Connecticut. The project includes 78 acres of salt marsh creation at Sandy Point and would also create winter flounder habitat by filling in burrow pits. Other ongoing projects include the flood risk study for Narragansett Bay, looking at salmon passage for the Cherryfield Dam, and environmental assessment of alternatives for repair and / or replacement of Cape Cod Canal bridges. A series of public meetings on the Cape Cod Canal will take place in December.
- Steve Couture reported that projects in New Hampshire include: 1) continuation of the tidal crossing assessment and development of protocols (including cross training with Maine), 2) updating SLR, storm surge and extreme storm surge regulations, and 3) implementing a marsh resiliency pilot project similar to the initiative in Massachusetts. New Hampshire is also updating and creating new groundwater maps that will be applied to management – this effort incorporates University of New Hampshire research regarding risks to roads.
- Grover Fugate and Jeff Willis provided the following updates for Rhode Island. There are currently four offshore wind projects in various stages of planning including Revolution Wind

(400MW off Block Island and Martha's Vineyard), Deepwater Wind South Fork (100 MW serving New York), Bay State Wind (400MW off Martha's Vineyard), Vineyard Wind (8MW off Martha's Vineyard). RI CRMC is also creating a shoreline management plan with new base flood elevation maps that correct errors in the FEMA maps. RI CRMC is also engaged in restoration projects with several partners including dredging projects in the Providence River, and helping municipalities to integrate sea level rise into comprehensive plans.

- Kathleen Leyden reported that Maine is in transition with the recent election of new Governor Janet Mills. Maine's recent initiatives include 1) funding \$250,000 in coastal community grants with focus on priority shellfish growing areas and climate adaptation, 2) implementing a pilot shellfish collection program for reuse in living shorelines and coastal ocean acidification remediation, and 3) \$2 million in funding is being targeted toward protecting working waterfront access through purchases and / or development covenants. Kathleen also noted that Maine's interagency climate change group has been looking at coastal, environmental, and public health impacts including increases in ticks, temperature impacts etc. A compilation of climate change related work completed by all state agencies will be finalized soon.
- Bruce Carlisle announced that he is leaving his position as Director of MA CZM for a new position working on offshore wind with the Massachusetts Clean Energy Center. Lisa Engler will become Acting Director of MA CZM and will represent the agency on NROC.
- Kathryn Ford reported that MA DMF has produced a report on recommended fisheries studies for offshore wind. The agency is also taking an 'environmental impact statement' approach to inshore aquaculture to help determine how these proposals fit in with permitting.
- Rick Bennett reported that the New England federal partners group recently identified the following areas of common interest: 1) determining how to share information on regional disaster resilience planning, 2) ocean planning, and 3) coordinating on efforts such as the USGS Northeast drought early warning system.

NROC Committee Initiatives

Ocean Planning Committee

Ted Diers, Mel Coté, and Nick Napoli provided an overview of recent activities of the ocean planning committee. In response to federal Executive Order 13840, which eliminated Regional Planning Bodies and established a federal Ocean Policy Committee, NROC's Ocean Planning Committee has been working to identify regional ocean planning priorities to forward to the administration and recommend a regional structure for advancing those priorities. The Ocean Planning Committee held an all-day meeting in Rhode Island in June, conducted interviews with and engaged agencies and stakeholders throughout the summer and fall, and held an all-day meeting on November 14 in Portland, Maine. NROC was identified early on as a potential organizational option for advancing regional ocean planning priorities going forward. The Committee recommended that NROC approve use of its Ocean Planning Committee to advance regional ocean planning and management priorities that were described in the Northeast Ocean Plan and identified by agencies and the public since the plan was finalized. Committee membership would include state and federal agencies, tribes, and the New England Fisheries Management Council. Leadership would include state and federal co-chairs as well as a potential tribal co-chair. Stakeholder engagement strategies would be flexible as needed to inform regional priorities. Nick provided an update regarding regional ocean planning priorities identified through targeted

outreach calls and discussion during the November 14 ocean planning meeting. The agenda and materials from the November 14 ocean planning meeting are available at: <https://neooceanplanning.org/event/fall-2018-ocean-planning-meeting/>. Regional ocean planning priorities include:

- **Convening:** Providing a regional forum for a broad range of interests to engage in offshore management issues. Would include one or two in-person meetings each year and regular updates to NROC. Committee would convene discussions, forums or workshops on priority issues such as aquaculture, cumulative impacts, climate change, offshore wind, blue economy, sand, tribal interests, and regional science and research priorities.
- **Data:** Continuing to engage stakeholders in development of peer-reviewed geospatial data products of the ecosystem and human activities.
- **Best Practices:** Enhance existing regulatory and management process with specific improvements around using best available information, coordination across jurisdictions, and engaging the public

Nick also provided an update regarding recent NE Ocean Data Portal activities, including: conducting trainings and outreach, documenting use of the portal through case studies, updating data and conducting related stakeholder engagement, maintaining the site, developing the 2019 work plan, and identifying funding opportunities and options to promote long-term sustainability. A copy of Nick's presentation on ocean planning is available with the Council Meeting materials at: <http://northeastoceancouncil.org/library/>.

Key points raised during discussion about ocean planning priorities and NROC's role in advancing them:

- Proposed role / structure for NROC Ocean Planning Committee:
 - NROC members recognize the need to engage stakeholders - the best process will be determined over the next year.
- Advancing regional priorities:
 - Deerin Babb-Brott provided insights from the perspective of the national Ocean Policy Committee. Deerin noted that it's important for NROC members to communicate needs 'up the line' to their federal agencies as they are looking for guidance from the regions.
 - NROC members discussed various approaches for submitting regional priorities via written letter – final decision noted below.
- NE Ocean Data Portal:
 - Fishermen have an interest in going to one source for ocean planning data. NE Ocean Data Portal is well positioned to provide this benefit.
 - In terms of maintaining the portal, it is critical to get commitments from data managers to provide both accurate and up to date information.
 - NROC had a data information and sharing agreement with GOMC, perhaps a similar 'data sharing agreement' could help determine what data is needed and help ensure regular updates from source agencies.

Funding the NE Ocean Data Portal:

- NROC members noted that a long-term funding plan for the portal is needed. Nick reported that the portal is currently funded through 2020. A long-term plan for funding and maintaining the portal is being developed. Part of the long-term plan is ensuring that datasets derived from federal and state data sources are increasingly maintained at the source. The portal work plan identifies those datasets and those dependencies. The new Executive Order provides an opportunity to ensure data are increasingly maintained and available from source agencies. Additional funding will also be necessary for portal management and stakeholder outreach.
- Concerns were raised about capacity for maintaining the portal and state's being stuck with the bill. An MOU might help agencies to target budget resources toward funding for the portal.
- The existing Work Plan for the portal could be updated to include funding needs and then provided to federal agencies. New funding from BOEM is an important step in the right direction.

Key Decisions

- NROC Ocean Planning Committee. NROC members affirmed support for reestablishing its Ocean Planning Committee with an expanded membership (including additional federal and state agencies, tribal representatives, and the New England Fisheries Management Council). Over the next year, the role of the committee would be to provide guidance, establish work groups, and convene discussions / forums on priority topics.
- NROC Ocean Planning Committee - Leadership. NROC members agreed by consensus that Ted Diers and Mel Coté would continue in their current roles as co-chairs of the committee to provide valuable continuity during the transition.
- NROC letter to federal Ocean Policy Committee. NROC members agreed by consensus to prepare and submit a letter to the federal Ocean Policy Committee outlining regional priorities for ocean planning. The letter will reflect priorities identified during the November 14 Ocean Planning Committee meeting as well as additional input provided during the November 15 NROC meeting. The letter will be signed by NROC co-chairs with an attached list of NROC members.

Ocean and Coastal Ecosystem Health Committee (OCEH)

Steve Couture provided an overview of OCEH Committee structure and activities. Presentations at the November meeting focused on NECAN, ISMN, and HCOM. Committee work on marsh migration also continues to move forward and will report out at a future meeting.

Northeast Coastal Acidification Network (NECAN)

Ru Morrison provided an update regarding NECAN activities. NECAN hosted a series of citizen science workshops (ME, MA and CT) in the spring of 2018 to better assess and integrate water quality monitoring efforts throughout the region. NECAN is currently hosting a series of webinars focused on industry. A list of upcoming webinars and recordings of previous webinars are available on the NECAN website at: <http://necan.org/resources/>. The NECAN Steering Committee ongoing implementation plan is available at: http://necan.org/sites/default/files/Implementation%20Plan_Final.pdf. The working

groups of NECAN (Policy, Education and Outreach, Industry, and Science) have also been very active in recent months.

Integrated Sentinel Monitoring Network (ISMN)

Ru Morrison provided an update regarding ISMN, a joint project of NROC and NERACOOS. ISMN is moving forward with efforts outlined in the [Science and Implementation Plan \(available at: \[http://www.neracoos.org/sites/neracoos.org/files/documents/ISMN_Plan_Edition1_final_2.pdf\]\(http://www.neracoos.org/sites/neracoos.org/files/documents/ISMN_Plan_Edition1_final_2.pdf\)\)](http://www.neracoos.org/sites/neracoos.org/files/documents/ISMN_Plan_Edition1_final_2.pdf) to establish the Center for Analysis Prediction and Evaluation (CAPE). ISMN recently circulated a call for candidates to serve on its oversight committee. Jeffrey Runge is the initial director for ISMN. A data integration workshop will be held in the spring of 2019.

Habitat Classification and Ocean Mapping (HCOM)

Becca Newall provided the following updates regarding ongoing HCOM activities:

- Maine, Massachusetts, and NOAA, in communication with University of New Hampshire, are working to develop a regional habitat map.
- Plans are underway for a workshop this winter on classifying habitats using videography.
- HCOM's work in New England may be highlighted during a special interest meeting at Geotools in February that will focus on developing compatible maps within regions.

Coastal Hazards Resilience Committee (CHRC)

Julia Knisel and Adrienne Harrison provided an overview of activities of the CHRC. Several members will be presenting at the Restoring America's Estuaries Conference in California in December. Presentations will focus on diversity of coastal landforms eroding in New England and the range of approaches being used. Presenters will highlight Maine's efforts to use natural features to mimic natural landform elements to attenuate coastal flooding. Other project highlights from Rhode Island and Connecticut will inform discussions about how to characterize 'living shorelines' and the sequencing of projects. Claire Enterline noted that Maine is looking at sand transport throughout the system. With funding from a NOAA Project of Special Merit, an APP is being developed to provide geographic information for sites.

CHRC co-chairs expressed interest in expanding committee membership and getting feedback from NROC members about potential committee work such as providing lessons learned from academic and private sector projects, connecting more with USGS, and framing methods on retreat policies. During discussion, NROC members provided the following key points of feedback:

- Workshops could highlight work of a few core researchers.
- Nuisance tides and living shorelines are potential research topics.
- University of New Hampshire recently invited the research community to talk with policy folks in an effort to align research with policy needs – this approach may be worth pursuing.
- On the topic of retreat, Consensus Building Institute recently hosted a workshop on retreat. NH, RI, and MA all have interest in convening discussions / workshops on issues related to retreat. Grover Fugate and Larry Oliver noted that houses in areas impacted by retreat are starting to be raised because residents don't want to move. Buy-outs are being considered in retreat impacted areas. Another option is building homes that can be relocated in the future.
- Determining how to measure progress in resilience is an important issue in the region. Maine has a coastal resilience check-list created by a fellow. Regional planning commissions have been

trained to use the tool. One of the challenges is determining what is meant by ‘resilience metrics’.

CoastWise: Developing Science-based, Climate Resilient Practices for Community-based Replacement of Tidal Road Crossings that Support Coastal Wetland Restoration

Ellen Bartow-Gillies, Coastal Management Fellow for the Maine Coastal Program, provided an overview of her project to restore coastal wetlands by improving tidal exchange. The ‘CoastWise’ concept promotes tidal road crossing practices that help restore tidal wetland functions. Benefits include lower maintenance costs, long-lasting structures, reduced public safety risk, and increased resilience to SLR. Maine is creating an outreach program for tidal crossing standards. Ellen is also focused on developing a tidal crossing map / database to identify potential targets for restoration. A third element of the project is measuring sediment accretion along Maine’s coast. A copy of Ellen’s presentation is available at: <http://northeastoceancouncil.org/library/>. The following points were noted during discussion:

- ME engineering standards for tidal crossings are building upon the protocol develop in NH.
- Additional information is available from Maine DOT, USACOE, NOAA LIDAR data.
- There may be interest in convening a future workshop to follow up on the tidal crossings work in the region – last one was co-sponsored by NROC and GOMC.

Sand Management Committee Update

Grover Fugate and Jeff Willis provided an overview of recent activities of the Sand Management Committee. The group recently met in NH. One of the key priorities is handling emergency projects that are needed after major coastal storms as it costs \$3 million to \$5 million just to mobilize for a big project. The next step is developing a matrix and identifying study profiles. The committee should be ready to report on the matrix at the next NROC meeting. One of the challenges to identifying sources for sand is that many of the potential locations are also prime fishing resources.

NROC Leadership Transition

NROC Co-Chairs Matt Nixon and Rick Bennett ‘passed the rock’ to incoming State Co-Chair Steve Couture, NH DES, and incoming Federal Co-Chair Regina Lyons, US EPA.

Meeting adjourned at approximately 3:00 PM

Meeting summary prepared by Joan LeBlanc, NROC Coordinator

Briefing Packet and presentations are available under Council Meeting Materials at:
<http://northeastoceancouncil.org/library/>