



Agenda • February 15, 2017 • Portsmouth, NH

Meeting location is the NH Coastal Program, Pease Field Office, 222 International Drive, Suite 175
 Directions & map: <http://des.nh.gov/organization/divisions/water/wmb/coastal/categories/contactus.htm>

To participate remotely, call in at 877-680-1673, passcode 1993954

9:15 AM	Arrive & Networking
9:30 AM	Welcome & Introductions <i>Brian Thompson, CT and Betsy Nicholson, NOAA</i>
9:40 AM	Updates <i>Brian Thompson, CT – State Chair</i> NROC Updates <ul style="list-style-type: none"> ▪ Executive Committee ▪ Coastal Hazards Resilience, Ocean and Coastal Ecosystem Health Partner and Audience Updates <ul style="list-style-type: none"> ▪ Partner Updates: NERACOOS, Gulf of Maine Council, Sea Grant Consortium ▪ Updates: New England Federal Partners, North Atlantic Landscape Conservation Cooperative ▪ Audience updates and comments: Meeting attendees provide updates Announcements and Opportunities <ul style="list-style-type: none"> ▪ Funding – NOAA 2017 Coastal Resilience Grants FFO ▪ HCOM
10:30 AM	Regional Resilience Grant– Regulatory Barriers <i>Jeff Willis, RI and Bruce Carlisle, MA</i> Jeff and Bruce will provide information on the status and next steps of the regulatory barriers component of the grant project, including convening a regional workshop or two.
11:00 AM	Ocean Planning <i>Betsy Nicholson, NOAA</i> Betsy will provide an update on ocean planning and RPB activities, and lead a discussion on NROC's role in implementation of the NE Ocean Plan.
11:25 AM	NE Sea Grant Consortium <i>Bill Wise, NY Sea Grant</i> Bill will lead a discussion to explore areas of common interest and potential common action between the Consortium and NROC.
11:45 PM	Lunch
1:00 PM	Project Highlight <i>Nathan Vinhateiro and Brian McKenna, RPS</i> Nate and Brian will provide an overview on RPS's work to make NACCS model data more accessible, including current status and deliverables, as part of NROC's Resilient Shorelines grant program.
1:30 PM	Using Geospatial Information to Make More Persuasive Effects Arguments <i>David Kaiser and Daniel Martin, NOAA</i> David and Daniel will provide information on how the Northeast Ocean Data Portal can be used to reinforce state coastal effects arguments. Discussion to follow.
3:00 PM	Strategy Session <i>Brian Thompson, CT and Betsy Nicholson, NOAA</i> Following an update from the NE Federal Partners, Brian and Betsy will lead a strategic check-in and discussion with NROC.
3:45 PM	Closing Business/Adjourn

Session Reference Materials

Work Plan Approval

The EC and NROC's committees hope to gain full Council approval and finalize these two work plans during the February meeting. See work plans for the Coastal Hazards Resilience and Ocean and Coastal Ecosystem Health committees on pages 9 and 13, respectively, of this packet.

Regional Resilience Grant – Regulatory Barriers

Jeff and Bruce will provide information on the status and next steps of the regulatory barriers component of the grant project, including convening a regional workshop or two. See the spreadsheet of common state barriers at the end of this packet.

NE Sea Grant Consortium

Bill Wise, from NY Sea Grant, will lead a discussion to explore areas of common interest and potential common action between the Consortium and NROC. See the NROC-Consortium MOU, as well as the NE Consortium's MOU, starting on page 19.

Strategy Warm-up

Brian and Betsy will lead a strategic check-in and discussion with NROC. Please give some thought to the following questions prior to the meeting.

Adjusting to the changing landscape

- How did the NE congressional delegation change in the last election? Who are our champions?
- What might be some resulting changes in state programs?
- How do these things impact NROC? Any new opportunities created?
- How might NROC benefit from the change in Administration (opportunity to message)?
- How are states messaging their own or regional priorities?

Longer term priorities and opportunities

- What are current gaps? What's on our "wish list" for programs and resources?
- What should we watch out for to position ourselves for success (funding, legislation, agency or CSO initiatives)?
- Anything states want to share about how other regions are functioning/moving forward?

Connecting back to federal budgets – bigger picture? Shifting priorities?

- How can federal agencies leverage their FY17 and beyond resources and programs to benefit NROC?
- In addition to the work plan items, what do we want to see happen and how to move that work forward with federal agencies and other partners?

Funding

- How financially healthy are we? Where is the next source of funding for NROC?

Roles and actions going forward

NROC Updates

Committee Update – Executive Committee

NROC 2017-2018 Work Plans

Committee co-chairs, with input from committee members, drafted 2-year work plans for the 2017-2018 period. Two committee plans (Coastal Hazards Resilience and Ocean and Coastal Ecosystem Health) have been reviewed by the Executive Committee, discussed at full Council meetings, announced on NROC's mailing list, and posted on the NROC web site for public review and comment. The EC and NROC's committees hope to gain full Council approval and finalize these two work plans at the upcoming February meeting.

Regional Sand and Dredge Teams Coordination

Following a presentation by the Regional Sand Management subcommittee (RSM) at the last NROC meeting (Fall 2016), the NROC EC and RSM held a joint call, along with members of the Regional Dredge Team (RDT). The intent of the call was to discuss, narrow down, and articulate the focus of NROC's regional sand management subcommittee, and convey that focus to the larger dredging team in order to avoid duplication and/or combine efforts as necessary. Results from the joint call included the designation of representatives to serve between the two groups (RSM and RDT) and to have a standing item to hear from the sand management subcommittee at dredge team meetings.

Science Delivery Network

As a reminder, NROC has a cooperative agreement with NALCC to deliver science to key coastal partners in the Northeast. As part of the agreement, NROC has managed the Resilient Shorelines grant program. Four of the five grant projects have been completed – Warren Pinnacle's "Advancing Existing Assessment of Connecticut Marshes' Response to SLR"; Rockingham Planning Commission's "Tides to Storms 2 – Adaptation Implementation"; Blue Urchin's "Improving Coastal Decision Making in NE Through Enhanced Spatial Data Collection, Sharing, and Analysis"; and ERG's "Living Shorelines Stacker". The final project, RPS's "Integrating NACCS Model Data into Existing NE Websites" will be presented at the February NROC meeting and is set to wrap up at the end of that month. Project results and summaries will be made available on the NROC web site.

Funding Status

NROC is currently operating on funding from three sources: a cooperative agreement with FWS/NALCC; the NOAA Regional Coastal Resilience grant; and Moore Foundation and in-kind Ocean Planning funds.

FWS/NALCC funds:

- Are active through April 2017
- Remaining funds will be used to complete Resilient Shoreline grant projects, conduct a 2-day workshop focused on tidal marsh habitat resilience, and support NROC coordination.

NOAA RCRG funds:

- Are active through April 2018
- Funds will be used to support Track 1 (Coastal Inundation Forecasting) and Track 2 (Living Shorelines) activities, including development of a state-of-the-practice report, conducting a regulatory barriers workshop, hosting a series of trainings, supporting states working with their communities on shoreline planning and assessment pilot projects, and NROC coordination.

Moore Foundation and in-kind Ocean Planning funds:

- Grant ends Dec 2017
- Funds will be used to support ocean planning staff and the Northeast Ocean Data Portal.

Committee Update – Coastal Hazards Resilience

The Coastal Hazards Resilience Committee will be scheduling a committee meeting in late February/early March to brief the Committee on status of inundation mapping activities associated with the Regional Coastal Resilience grant project. The goal of the meeting will be to review the outputs from the models and discuss the end user requirements.

CHR Committee members have provided input on the development of the MyCoast Habitat Reporter tool. After input from user group, the tool shifted to the "Coastal Resilience – Monitoring Nature-Based Shoreline Stabilization Projects" to add to the "King Tides – Capturing Highest Tides" and "StormReporter – Documenting Storm Damage" tools. There will be an opportunity to view the tool (the site will be live by 2/15/17) and to provide input on the name of the tool at the meeting.

Committee Update – Ocean and Coastal Ecosystem Health

The committee updated its work plan to reflect planned efforts for 2017-2018

Integrated Sentinel Monitoring

EPA Region 1, NERACOOS, the University of Maine/Gulf of Maine Research Institute (GMRI) and NH DES lead the joint NROC/NERACOOS OCEH committee overseeing the implementation of an Integrated Sentinel Monitoring Network (ISMN) For Change in Northeast U.S Ocean and Coastal Ecosystems.

The final ISMN Science and Implementation Plan was released in May 2016. The final plan was presented, its completion celebrated, and next steps planned at an open community workshop on June 24, 2016.

The Plan proposes to create a regional infrastructure to support effective and coordinated ecosystem monitoring across the numerous existing observing activities. NERACOOS, with the assistance of the OCEH Committee submitted a proposal for a capacity building award from the Gulf Research Program in Fall 2016 and is awaiting the results. OCEH will work to develop/revise the ISMN fact sheet and a proposal, or an “ask” to bring to funding agencies and or congressional staff during the budget process over the next year.

Habitat Classification and Ocean Mapping

In gearing up for the new HCOM workplan, the committee has partnered with GeoTools Conference to host a CMECS session geared towards developing a community of practice and creating ideas on how to move forward with connecting and training practitioners during CMECS. HCOM also continues to coordinate the sharing of mapping needs and plans via SeaSketch.

Marsh Resiliency

NROC is planning a Marsh Resiliency workshop for April 4-5 2017 in Gloucester, MA to deliver the science, tools and products from Department of Interior’s Hurricane Sandy Tidal Wetlands Resiliency funded projects, including NROC’s resilient shoreline grants, to build off NROC’s previous two workshops held in 2014 and 2015. A planning committee, including members of both OCEH and CHR committee members as well as other federal, state, and research partners have been busy developing the draft agenda and invitation lists.

Committee Update – Ocean Planning

As a reminder per the committee’s work plan, ocean planning activities supported by NROC have been led by the Northeast Regional Planning Body (NE RPB) as it worked to complete the Northeast Ocean Plan (www.neoceanplanning.org). Below are updates for the Sand Management Sub-Committee and general updates on regional ocean planning activities underway by the NE RPB with the support of NROC.

Sand Management Sub-Committee (co-led by USACE, BOEM and MA)

Update: Following the October 2016 NROC, at which the subcommittee presented, the group held a joint call with the NROC EC, along with members of the Regional Dredge Team (RDT). The intent of the call was to discuss, narrow down, and articulate the focus of NROC’s regional sand management subcommittee, and convey that focus to the larger dredging team in order to avoid duplication and/or combine efforts as necessary. The next full subcommittee call has been scheduled for March 14, 2017.

In addition to activities of the Sand Management subcommittee, BOEM has undertaken the following activities as related to regional sand management:

- BOEM executed a second round of two-year cooperative agreements at the end of FY 2016 with ME, NH, MA, and RI to assist BOEM in identifying potential sand resources in Federal waters. BOEM has been conducting kickoff meetings with the state partners.
- On October 24, 2016, BOEM announced the opening of the Atlantic Sand Assessment Project (ASAP) core storage repository at the world-renown Lamont-Doherty Earth Observatory (LDEO) at Columbia University’s campus in Palisades, New York. This includes ASAP cores collected in the New England region. Coastal managers, scientists and others will be able to access the physical core samples and the new data, which will be shared through Lamont’s System for Earth Sample Registration (SESAR) at <http://www.geosamples.org/>.
- BOEM is developing a study entitled “Assessing Processes that Drive Fisheries Productivity on New England Sand Shoals” through an Interagency Agreement with NOAA’s National Ocean Service, Office of Marine Sanctuaries. The project will also engage Boston University, USGS Woods Hole, University of Connecticut, and fishermen. BOEM hopes to get the project underway sometime this summer. The project will last 3 years and is being funded through BOEM’s Environmental Studies Program. Offshore sand features are habitat for forage fish, but the impacts that may occur to the forage fish from altering this habitat is unknown. This study would identify forage fishes that occur in potential borrow areas.

Background: The Sand Management Sub-Committee is a forum where state, tribal and federal agencies can discuss and collaborate on identifying potential sources of sand available for beach nourishment and issues associated with this use. The need for sand has been an issue for some coastal communities for years and was also discussed in the first meeting held at USACE offices in Fall of 2014. BOEM has since awarded several contracts to partner with states to investigate potential sources of sand in federal waters offshore of each coastal state. Several states are also studying sand sources within the state 3-mile limit. The March 2015 meeting of this group discussed the findings of the BOEM contractor and several relevant coastal storm damage reduction studies that are underway. An important topic is the cost of sand from offshore sites versus truck transportation of onshore sand. Once potential sand extraction areas are identified the areas will be evaluated for sensitive resources and use conflicts. Sand extraction areas will require a NEPA analysis by the lead federal agency for any identified beach nourishment projects.

The identification of offshore sand extraction sources by the BOEM investigations will be complimented by investigations within the 3 mile state waters limit. The Sand Management subcommittee has been coordinating an implementation strategy to identify state waters' sand mining areas that are shallow enough for economically viable extraction. Analysis of recent beach nourishment costs for truck delivery and estimates of regional needs will be compared to offshore sources.

The BOEM Atlantic Sand Assessment Project (ASAP) vessel has completed its survey off the Atlantic coast and is now processing data.

Ocean Planning

Plan Status

- The Northeast Ocean Plan was certified by the White House on December 1st and the approval memo was signed by all RPB members on Jan 19th. The Plan is officially in effect and implementation has begun.

RPB Status

- In this next implementation phase, the Regional Planning Body leadership will shift to EPA (Mel Cote) as Federal Co-Lead, NH DES (Ted Diers) as State Co-Lead, and for the time being, the Aroostook Band of Micmacs (Rick Getchell) as Tribal Co-Lead.
- The RPB has formally requested a member of the USACE regulatory leadership in the New England District to join the RPB. Leadership from the USACE's regulatory division, Jennifer McCarthy, has been suggested for RPB representation and is awaiting final approval..

Plan Implementation

- Initial work groups have been assembled to commence plan implementation.
 - Data Portal: (NOAA and BOEM)
 - Performance Monitoring & Evaluation: (TBD, but good group assembled)
 - Ecosystem-based Management: (NOAA)
 - Aquaculture (NOAA)
 - Offshore sand (BOEM, USACE, MA)
 - State-Federal coordination (NOAA)
- Important Ecological Areas Update
 - The RPB continues to advance the IEA framework and the development of IEA data products.
 - The Plan states that the RPB initiated the characterization of IEAs with the premise that data developed to improve our understanding of the interrelationships between ecosystem components and processes could potentially be used, like any other dataset referenced in the Plan, as one overlay to guide and inform decision-making.
 - The IEA data development effort therefore is working to develop additional representations of ecosystem processes, ecosystem functions, marine species, and habitats that build on the data currently displayed on the Northeast Ocean Data Portal and in the Plan. The Plan also states that in 2017 the RPB will further explore and obtain public input on potential uses of IEA products.
 - At our last EBM Work Group meeting in July, we presented existing data that illustrated IEA Components 1 (Areas of high productivity) and 2 (Areas of high biodiversity). At that meeting, members of the EBM Work Group and the Northeast RPB identified the need to clarify the technical and analytical approaches used to develop the data, and provided other specific recommendations ([meeting summary and outcomes here](#)). Since the meeting, we continued progress by developing an initial suite of draft data products that attempt to initially illustrate potential

methods and products for each of the five IEA Components (briefly - productivity, biodiversity, abundance, vulnerability, and rarity) for further discussion. This work is being done in collaboration with the Marine-life Data and Analysis Team, the NE Data Portal Working Group, and members of MARCO and the Mid-Atlantic Portal team.

The RPB has developed an IEA Data Evaluation Tool to obtain focused technical and scientific feedback from the RPB and the EBM Work Group on the range of methods and datasets that could be used to characterize each IEA Component. We expect to use the results of this evaluation to help identify the technical and methodological issues that require more discussion.

Next steps

- Regional stakeholder forum will be held in April to share and discuss items for RPB deliberation. These are opportunities for stakeholders to influence the meeting agenda and framing of issues, as well as have an open dialogue with RPB members. Date and location TBD.
- A formal RPB meeting will be planned for May. Date and location TBD. Agenda items may include:
 - Progress made by work groups, such as performance monitoring and evaluation, data portal, and state-federal coordination
 - Progress on Important Ecological Area data products
 - Consideration of the potential uses of important Ecological Area data products in decisions

NROC's major role in Plan

Fiscal agent for funds and contracts

- NROC continues to serve as the home for staff and funds that support the Northeast ocean planning effort.

Specific work group progress

- Sand management sub-committee resides under NROC and will be responsible for the Plan's commitments on offshore sand.

Informal Forum for Progress

- NROC can serve as a forum to discuss emerging issues, upcoming ocean and coastal projects, and expectations among partners for use of data, the plan and best practices. While the formal conversations happen around the RPB table, NROC can serve as an incubator for topics or issues ripe for discussion more formally.
- Through its ocean planning committee (which includes sand management subcommittee), NROC can organize workshops among government, industry and other partners to discuss emerging issues. As NROC co-chair, NOAA is willing to help organize and fund (modest amount) a workshop in FY17 on sand management or another emerging ocean use topic that would benefit from more in depth discussion and problem solving. We look to NROC for your feedback on this idea.

Partner Updates

Partner Update – NERACOOS

Integrated Nutrient Observatory Development

NERACOOS and its project partners continued the deployment and operation of automated nutrient sensors over the fall and winter. UMaine deployed 6 nitrate sensors at depths of 1, 20, 50, 100, 150, and 250 m on Buoy M (Jordan Basin). UConn deployed a new Western Long Island Sound Buoy that is carrying a nitrate, phosphate, ammonium, and CO2 sensor. NERACOOS is planning a nutrient observatory stakeholder workshop for the Long Island Sound region for the spring of 2017.

Northeast Coastal Acidification Network (NECAN)

NECAN continues their efforts throughout the region, working closely with government, stakeholders and industry. NECAN has also kicked off their second webinar series. To date three webinars have been hosted. Recordings of these webinars are now available on the NECAN website, found at <http://necan.org/necan-webinar-series-recent-upcoming>. If you're interested in learning more about NECAN's efforts or future presentations please sign up for the [NECAN mailing list here](#).

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

Partner Update – Gulf of Maine Council

Council and Working Group meetings

A joint Council/Working Group meeting was held December 6, 2016. Accomplishments of the 2-year work plans were highlighted during the meeting. Matt Liebman (EPA) gave a presentation of NECAN's work on ocean acidification. The next joint Council-Working Group meeting is scheduled for June 7-8, 2017 in Maine (exact location TBD). The Working Group will have a virtual meeting in spring to discuss the agenda and prepare for the June meeting.

Action Plan

During 2017 the GOMC will be working on development of its new 5-year Action Plan (2018-2023) as the 2012-2017 plans comes to an end. 2-year work plans associated with the action plan will also be developed.

Gulf of Maine Council Annual Awards

The GOMC is currently accepting nominations for its 2017 awards to recognize individuals and/or groups for outstanding efforts to protect and improve the environment in the Gulf of Maine region. The deadline for nominations is March 31, 2017. Nominations may be submitted to Joan LeBlanc, Council Coordinator (jleblanc@gulfofmaine.org). More information is available here: <http://www.gulfofmaine.org/2/gomc-home/awards/>

GOMC U.S. Science Advisor

In December Council members approved and extended an invitation to Judy Pederson, Ph.D. (MIT Sea Grant College Program) to serve as the US Scientific Representative on the Gulf of Maine Council. The Council is pleased to announce that Judy has accepted the invitation.

Climate Network

The Climate Network continues to distribute a Quarterly Gulf of Maine Region Climate Impacts and Outlook. The December issue included impacts from regional drought conditions in fall 2016 <http://www.gulfofmaine.org/2/wp-content/uploads/2016/12/GOM-fall-2016-final.pdf>. As a member of the North Atlantic Climate Services Partnership (NACSP), the Climate Network is working in partnership with US, Canada and Mexico to promote tools and data for coastal resiliency. The NACSP recently published a list of their accomplishments, available online at: <http://cpo.noaa.gov/AboutCPO/AllNews/TabId/315/ArtMID/668/ArticleID/668477/North-American-Climate-Services-Partnership-2016-Accomplishments-Report.aspx>

State of the Gulf

The State of the Gulf of Maine initiative are now complete with publication of the final theme paper on Watershed Status. <http://www.gulfofmaine.org/2/wp-content/uploads/2014/03/Watershed-Status-low-res-Final.pdf>

EcoSystem Indicator Partnership (ESIP)

ESIP released a final Fisheries fact sheet in September 2016. http://www.gulfofmaine.org/2/wp-content/uploads/2016/09/ESIPFactSheetFisheries_09Sept12_HIGHRES.pdf

Gulfwatch Program

In 2016 the program was supported by NOAA funding and in-kind contributions from jurisdictions. Samples were collected from 34 stations from sites in MA, NH, ME and NS. No samples were collected from NB because blue mussels were not found at the NB sites. A survey of mussel distribution in NB may be needed to help identify potential new sampling locations. Gulfwatch is planning a meeting in 2017 to discuss strategic direction and identify funding opportunities for the Gulfwatch Program.

Gulf of Maine Symposium

The GOMC is exploring the possibility of hosting a Gulf of Maine Symposium (2018?), possibly in collaboration with RARGOM. Hosting a Gulf of Maine Symposium would provide an opportunity for discussion on major goals for ecosystem protection, unify the scientific community around the Gulf of Maine, and promote collaboration between GOMC and RARGOM.

Update – New England Federal Partners

Co-chairs Cynthia Greene/EPA, Ellen Mecray/NOAA, Keith Robinson/USGS and William DeLong/DHS

Meeting 2/14/17 at Taunton NOAA HQs agenda

- Web presence for NEFP
- Share information on national and regional opportunities including:

- National Climate Assessment 4 – meeting 2/9
- Drought work and National Integrated Drought Information System
- EPA, NOAA, USGS and FEMA new data on sea level rise and U Mass study on temperatures
- Northeast portal for the Climate Resilience Toolkit – adding information
- DHS Regional Resilience Assessment Program on energy and Canada
- Next Steps on FEMA 5/2016 resiliency workshops with New England States

Axum Teferra from the Metro Mayors project on climate vulnerability will be the lunch time speaker

Work in 2016

- Northeast portal of CRT opened and NOAA, EPA, NPS, USGS and DHS added case studies, tools and reports to the site.
- Partners met at the Tribal meeting on the Cape in Oct

Update – North Atlantic LCC

North Atlantic LCC Staff Transitions

Mike Slattery, from the Chesapeake Bay Field Office will be the acting coordinator for the North Atlantic LCC. Bart Wilson, from the Coastal Delaware NWR Complex, will be detailing as the North Atlantic LCC Coastal Resilience Coordinator.

[Tidal Marsh Resilience](#)

The Saltmarsh Habitat and Avian Research Program (SHARP) had a recent update webinar on the progress of the project. A raster layer of the tidal vegetation community, from Maine to Virginia, will be available by early March. A saltmarsh prioritization layer for tidal marsh bird conservation (from Maine to Virginia) will also be available in March. 1,700 observation points were used to create the prioritization, for 6 obligate species. Modeling efforts by the coupled hydrodynamic/marsh equilibrium (Hydro-MEM) model group are progressing for the Plum Island, MA region. The model is in the final stages of development. A model for the Chaffee NWR, RI will be forthcoming in development.

[Beach and Barrier Island Resilience](#)

Several projects related to beach nesting bird habitat have recently been completed, with final reports in the process of being finalized. “Protection of Critical Beach-nesting Bird Habitats in the Wake of Severe Coastal Storms”, by Dr. Brooke Maslo (Rutgers University) and Todd Pover (Conserve Wildlife of New Jersey); “Inventory of Habitat Modifications to Tidal Inlets and Sandy Beach Habitat in the U.S. Coastal Breeding Range of the Piping Plover (*Charadrius melodus*)”, by Tracy Rice (Terwilliger Consulting, Inc.); and “Multiple Factor Analysis of Piping Plover and other Beach Dependent Species Habitat Use and Population Dynamics Following Storm and Human Created Changes to Barrier Island Habitats within the Fire Island National Seashore and other Select New York and New Jersey Beaches”, by Dr. James Fraser (Virginia Tech University) were recently completed with the final report and spatial data available by the end of February through databasin (<https://nalcc.databasin.org/>) and through the coastal resiliency website (<http://northatlanticlcc.org/teams/coastal-resiliency>).

[Aquatic Resiliency and Connectivity](#)

The [North Atlantic Aquatic Connectivity Collaborative](#) has submitted several abstracts for presentations at upcoming conferences on the unified protocol for assessing road stream crossings. Preparations for the 2017 field season of data collection has started. A total of 21,008 records are in the data base currently, with 13,000 collected in 2016. The conditional module has been completed, with the user’s instructional guide in development. New York State will be funding the integration of this module into the database. The terrestrial module has draft protocol that is in review, with no funds yet available to the integration into the database. The tidal module will have a draft protocol drafted by June.

Coastal Hazards Resilience Committee

2017-2018 Work Plan



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 2017-2018, 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.

- Support outreach related to NROC-NALCC Resilient Shorelines projects, including outreach with Committee on RPS-ASA's data access viewer and Blue Urchin's Habitat Reporter Tool.

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.

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 Collect examples of how federal and state agencies have used StormReporter and MyCoast resources.

- Develop a fact sheet or story template to collect examples of how federal and state agencies or other Committee members and organizations have used the suite of tools supported through MyCoast, including the StormReporter, King Tides, and Habitat tools.
- Identify opportunities to share examples through newsletters and social media and highlight agency use on the MyCoast site.

CHR-2.2 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 the NOAA Regional Coastal Resilience Grant (RCRG) tasks and deliverables related to Living Shorelines. This sub-committee is organized and facilitated by MA CZM and NOAA. NROC is listed as lead for several RCRG tasks:

- Improve understanding, capabilities, proficiency of the availability and applicability of living shoreline practices through input on fact sheets. (RCRG Track 2, Task 3)
- Assist with development and implementation of community-based living shoreline planning and assessment pilot projects that incorporate modeling results from Track 1 of the project. (RCRG Track 2, Task 4)

CHR-2.3 Leverage NERACOOS data, products, and services for coastal inundation observations and forecasting.

- Review data, model and map products developed through RCRG Track 1 to provide alignment with requirements for planning and assessment pilots. Specifically, monitor progress and quality of nearshore waves outputs. (RCRG Track 1)

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 MyCOAST End-user Examples	TBD
CHR-2.2 Living Shorelines Workgroup Coordination and Support for RCRG Track 2 tasks	MA, NOAA (Workgroup)
CHR-2.3 Leverage NERACOOS data, products, and services	TBD

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).**

2017-2018 Committee Members:

Julia Knisel, Massachusetts Office of Coastal Zone Management (State Co-chair) Kevin O'Brien, Connecticut Department 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

Rebecca French, Connecticut's CIRCA

Kirsten Howard, New Hampshire Coastal Program

Regina Lyons, EPA Region 1

Ellen Mecray, NOAA

Paul Morey, FEMA Region 1

Lisa Rector, NESCAUM

Peter Slovinsky, Maine Geological Survey

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

Whelchel, The Nature Conservancy

Ocean and Coastal Ecosystem Health Committee 2017-2018 Work Plan



The Ocean and Coastal Ecosystem Health (OCEH) Committee is one of three Northeast Regional Ocean Council (NROC) standing committees. This committee was established to help identify and coordinate regional activities to preserve and restore ecosystem health in New England. As recommended in the National Ocean Council's (NOC) *National Ocean Policy Implementation Plan*, ecosystem health and the ability to sustain those services derived from

healthy coastal ecosystems will rely heavily 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 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 NOC's Implementation Plan, guided by the five themes of 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.

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

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 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

2.1.1 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.

2.1.2 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.

2.1.3 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-2.2: Strengthen habitat classification and ocean mapping efforts in the Northeast
Lead Organizations: NOAA, Maine Coastal Program**

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.

2.2.1 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.

2.2.2 Develop a habitat classification community of practice

Create a community for sharing techniques around habitat classification mapping using CMECS. This will include training opportunities, peer to peer learning through webinars, a listserv for sharing questions and techniques, and workshops to drive how the community will work together.

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.

2.2.3 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.

**OCEH-2.3: Strengthen resilient coastal stormwater best management practices in New England
Lead Organizations: EPA, NH**

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

2.3.1 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.

2.3.2 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.

2.3.3. 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.

OCEH – 2.4 Support Regional Ecosystem Based Management (EBM) efforts including those of the Northeast Regional Planning Body (RPB)

Lead Organizations: NROC

NROC will work closely with RPB and other partner agencies and organizations to expand the capacity of EBM practices in the region to improve our understanding of implementing EBM through existing planning and management efforts.

2.4.1. Serve on RPB EBM workgroup to help ensure NROC interests are well represented

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

2.4.2 Assist with any next steps for EBM from the 2016 RPB workshops and final Northeast Ocean Plan

NROC will work with the RPB to identify any next steps appropriate for the NROC OCEH committee to take on.

2.4.3 Facilitate resources to support EBM in the region

Member agencies and institutions will try to identify and secure funding and in-kind support through relevant programs to support EBM initiatives through regional ocean and coastal planning and management efforts.

Strategy OCEH-3: Facilitate Accessibility of Data and Tools

Activities:

OCEH - 3.1 Develop a program of delivery of coastal resiliency science NROC will work with its partners and the North Atlantic LCC to develop a program to advance the application and delivery of coastal resiliency science in the Northeast Region through websites, training, workshops and grants. This activity will be a joint project of NROC's OCEH and CHR (coastal hazards resilience) committees.

3.1.1 Coordinate a program of science delivery

NROC will continue to work closely with the LCC through a project team to develop the capacity and organizational structure focused on the delivery of coastal resiliency information and tools.

3.1.2 Organize and post information and tools on ocean/coastal data portals

NROC will work with the LCC to coordinate and enhance the availability of information through existing websites and data portals including the Northeast Ocean Data Portal. The focus will be on

information available through specified DOI-Hurricane Sandy projects and is likely to include: elevation and mapping data; hurricane impact assessments; assessments of the effectiveness of marsh restoration and beach management approaches; and relevant decision support tools.

3.1.3 Organize and host a workshop for information exchange and training

NROC will organize and host a workshop and training with the LCC to exchange information and inform partners about the existing and emerging coastal resilience information and tools.

3.1.4 Manage a science delivery grant program

NROC will continue to manage its science delivery grant program to advance the application of information and tools and enhance coastal resiliency science delivery networks at the state and local level. This will include the following steps: Wrapping up contracts awarded to successful applicants; and sharing and posting of results from projects and lessons learned.

Past Accomplishments: Below is a summary of accomplishments of the Ocean and Coastal Ecosystem Health Committee and its many partners during 2015-2016.

- The joint NROC/NERACOOS steering committee and three habitat working groups completed the development of an Integrated Sentinel Monitoring Strategy for Climate Change in Northeastern Ocean and Coastal Ecosystems
- NECAN completed a series of stakeholder engagement workshops throughout the region to facilitate an exchange of information with aquaculture and other impacted industries and communities. The science workgroup also published an article titled “Ocean and Coastal Acidification off New England and Nova Scotia” in *Oceanography* magazine.
- The OCEH and Coastal Hazards Resiliency (CHR) Committee planned and conducted a workshop on tidal crossings in December 2015 to coordinate New England state efforts to understand the impacts of tidal restrictions on these wetlands systems.
- A steering committee comprised of OCEH and CHR committee members developed and organized a Request for Proposals (RFP) for states or organizations to deliver the science, tools and products from Department of Interior’s Hurricane Sandy Tidal Wetlands Resiliency funded projects and selected five successful projects.

2017-2018 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)
Matt Nixon, ME Coastal Program (HCOM state co-chair)
Ivy Mlsna, US EPA Region 1
Jeffrey Runge, Gulf of Maine Research Institute (NERACOOS OCEH Co-Chair)

Memorandum of Understanding

Northeast Regional Ocean Council &
Northeast Sea Grant Consortium
January 2011

Parties

The Northeast Regional Ocean Council (NROC) is a state and federal partnership with the goal of engaging in regional protection and balanced use of ocean and coastal resources. NROC's coordinated approach reaches across state boundaries from Maine to Connecticut to find and implement solutions to the region's most pressing ocean and coastal issues.

The Northeast Sea Grant Consortium (NESGC) is a cooperative agreement among the Northeast Sea Grant College Programs (Maine, New Hampshire, MIT, Woods Hole, Rhode Island, Connecticut and New York) to coordinate research, education, outreach and diversity programming to address problems, opportunities, and work force development in the Northeast region. It supports regional research from the Gulf of Maine Regional Ocean Science Initiative (GOM ROSI) and the Greater New York Bight Regional Ocean Science Planning Initiative (GNYB ROSPI) as well as other appropriate projects, thereby facilitating and enhancing regional scale efforts. The NESGC works closely with the region's scientists in academia, and in the independent and private sectors, and is committed to supporting focused applied research intended to address timely and relevant management issues.

Overview

Our organizations have a shared interest in providing scientific information to support the wise management of coastal and ocean resources for the benefit of current and future generations. We recognize the value of adopting an ecosystem-based management approach to sustain a healthy and resilient Gulf of Maine and Southern New England ecosystems. We share a commitment to facilitating regional collaboration to support scientific, social, and economic studies that address timely societal issues and contribute to the advancement of coastal and marine spatial planning for the region, and to support research and technology development initiatives that directly respond to coastal and ocean management imperatives.

Methods of collaboration

In general, our respective organizations understand the similarities in our missions and will work cooperatively to implement them. We commit to substantive and ongoing dialogue. We will be mutually supportive, responsive to requests for assistance and will solicit advice from each other as needed. More specifically, our organizations agree to partner on the following:

1. Coordinated Research Prioritization – As NROC prepares its annual work plan and periodic action plans, it will request that the NESGS propose a set of research priorities in each of the NROC priority areas -- Healthy Ocean Ecosystems, Balanced Ocean Energy Development, Storm-Resilient Coastal Communities and Advancing Coastal and Marine Spatial Planning. In addition, each organization in preparing and/or updating its long-range research priorities statements will consult with the other to optimize the use of available resources for research.
2. Committee and Board Activities -- Our organizations have shared priorities in two major program areas -- healthy coastal and ocean ecosystems, and climate change activities (the economic, social and environmental effects of a changing climate). NROC committee co-chairs will reach out to NESGC for members to serve on committees related to these program areas. NROC will help NESGC to identify potential members for its Advisory Board. On an annual basis, the organizations will assess their planned activities in climate change issues and

adaptation, ocean ecosystem health, areas related to human health, and coastal and marine spatial planning in order to identify points of contact for purposes of maintaining communication and sharing information and lessons learned. Further, if needed by NESGC, NROC will assist the Board of Directors in crafting regional requests for Sea Grant funding and provide relevancy review of proposals.

3. Joint Projects – subject to available funding, the NESGC and NROC will jointly support research and outreach projects of shared interest that are identified during the development of each organization’s annual work plans.
4. Progress Reports – The NESGC and NROC will add a section to action plans and annual reports on progress in implementing this MOU and make suggestions for other collaboration opportunities.
5. Fund Development and Management – When appropriate, the NESGC and NROC will work cooperatively on Congressional and other funding requests to ensure an integrated, seamless approach. In addition, the NESGC is willing to assist NROC by receiving, disbursing and accounting for funds that organization receives in support of research projects.

Duration and termination of Agreement

The duration of this MoU will be for one year with automatic renewal unless specifically cancelled. Termination of the agreement may be initiated by either party in writing with a notice period of 30 days.

Northeast Regional Ocean Council

Date

Northeast Sea Grant Consortium

Date

MEMORANDUM OF UNDERSTANDING
THE NORTHEAST SEA GRANT CONSORTIUM

This Memorandum of Understanding (MOU) is undertaken between the eight Sea Grant Programs in the Northeast:

Connecticut Sea Grant College Program, University of Connecticut
Lake Champlain Sea Grant, University of Vermont/SUNY Plattsburgh
Maine Sea Grant College Program, University of Maine
MIT Sea Grant College Program, Massachusetts Institute of Technology
New Hampshire Sea Grant College Program, University of New Hampshire
New York Sea Grant Institute, Stony Brook University
Rhode Island Sea Grant College Program, University of Rhode Island
Woods Hole Sea Grant Program, Woods Hole Oceanographic Institution

WHEREAS: The Northeast Sea Grant Programs (hereinafter the "Programs") and their Directors wish to create mechanisms to allow them to function as a regional network for the purpose of developing and conducting collaborative activities amongst the Programs and to provide a mechanism by which the Programs may articulate as a unit with other entities, activities and programs in the Northeast and elsewhere that deal with marine and coastal resources.

THEREFORE: The Sea Grant Programs in the Northeast agree to the following regarding the formation and operation of a regional consortium:

1. The consortium will be called the Northeast Sea Grant Consortium (hereinafter referred to as the "Consortium").
2. Membership in the Consortium will be limited initially to the eight Sea Grant Programs in the Northeast, with all eight Programs included as equal partners in the Consortium.
3. The eight sitting Sea Grant Directors will constitute the Board of Directors of the Consortium, and, in that capacity, develop the work plans, activities and programs of the Consortium.
4. The Chair of the Consortium will rotate among the Programs on an annual basis (January 1 – December 31) in the following sequence: (New York, Connecticut, Rhode Island, Massachusetts-WHO, Massachusetts-MIT, New Hampshire, Maine, Lake Champlain Program). The 2014 Chair will be the Director of the MIT Sea Grant College Program, to be followed in 2015 by the Director of the New Hampshire Sea Grant College Program, and so on.

5. The vision of the Consortium is for the Programs to work together to coordinate research, education, outreach and diversity programming to address problems, opportunities and work force development in the Northeast region.
6. The primary mission of the Consortium is to enhance regional cooperation and improve coordination of regional coastal and ocean program initiatives in the Northeast region, both those involving solely two or more of the Sea Grant Programs themselves and initiatives involving the Programs working with one or more external partners.
7. Under this agreement, any one of the Programs in the region can serve as the lead Institution on an activity, project or program involving the Consortium. The lead institution, in collaboration with the Board of Directors, will identify the appropriate participants in each Consortium activity, proposal or program, etc. Such participants will be referred to as Partner Institutions in any proposal, written description, publication, etc. associated with the activity, project or program.
8. The Sea Grant Director at the lead institution of a Consortium activity, project or program will serve as the Principal Investigator on any proposal seeking external financial support for the activity, project or program.
9. Should an activity, project or program of the Consortium involve the transfer of funds between two or more Programs, the respective Program Directors will work with each other and their respective host institutions to minimize the amount of administrative costs (indirect costs, subcontracting fees, etc.) applied to these transactions.
10. The Consortium will encourage projects that involve the participation of all Programs in the Consortium, which are truly regional in scope and include as much as possible education, communication, legal, outreach or diversity elements in addition to research.
11. While the Consortium will focus primarily on projects that require a regional approach involving all the Programs, it may also support/conduct projects that involve programs focusing on a single state issue or geographic area where multi-institutional participation is desired.
12. The Board of Directors will determine which projects are to be considered Consortium projects. Any funding proposal(s) associated with such projects must receive the unanimous approval of the Board of Directors prior to submission. Notwithstanding the foregoing, this agreement does not prohibit any host Institution or individual Sea Grant Program from pursuing any projects or proposals, regional in scope or otherwise.
13. This agreement supersedes an earlier consortial agreement between the Programs that went into force in 2009. It takes effect on 01 January 2014 and remains in effect through 31 December 2018. It may be renewed on the unanimous consent of the sitting Directors of the eight Sea Grant programs in the Northeast. Withdrawal by any Sea Grant program in the Northeast may be done at any time by the Director of the program giving written notice to the Chair of the Consortium, with copies to the full Board of Directors.

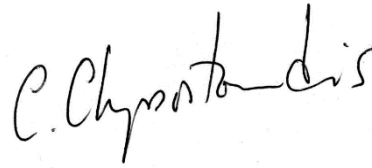
14. No Program shall use the name of any other Program in any promotional material, or other form of publicity including a public announcement or disclosure without the prior written consent of that Program's Sea Grant Director.

15. The Programs do not intend that any agency, partnership, joint venture, or exclusive relationship is created between them or their Host Institutions by this agreement. Each Program is free to pursue relationships and opportunities with others similar to those contemplated by this agreement and nothing in this agreement shall be construed as obligating any Program to enter into any subsequent agreement or relationship.

Approved:



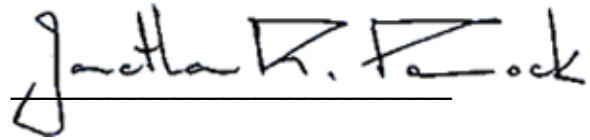
Sylvain De Guise
Director
Connecticut Sea Grant College Program
University of Connecticut



Chrysostomos Chrysostomidis
Director
MIT Sea Grant College Program
Massachusetts Institute of Technology



Breck Bowden
Director
Lake Champlain Sea Grant
University of Vermont/SUNY Plattsburgh



Jonathan R. Pennock
Director
New Hampshire Sea Grant College
Program
University of New Hampshire



Nancy E. Mathews
Dean of Rubenstein School of Environment
and Natural Resources
University of Vermont



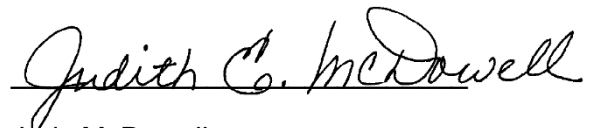
William Wise
Interim Director
New York Sea Grant Institute
Stony Brook University



Paul Anderson
Director
Maine Sea Grant College Program
University of Maine



Dennis Nixon
Director
Rhode Island Sea Grant College Program
University of Rhode Island



Judy McDowell
Director
Woods Hole Sea Grant Program
Woods Hole Oceanographic Institution

Dated: 08 December 2014

Common Barrier/Opportunity	Selected State Specific Statements on Barriers and/or Opportunities					Potential Path(s) to Solution?
	CT	RI	MA	NH	ME	
<p>Definition -- <i>Not commonly defined or consistent across region</i></p>	No legal definition leaves living shorelines option open to poor practices that do not achieve the desired effect enhancing, maintaining, creating habitat	General statement of preference but no guidance on use	Lack of a specific definition has generally not been an issue/barrier. Current language utilizes terms such as “non-structural”	No legal or official definition of "living shoreline" in New Hampshire Occasional misperception among stakeholders as to what a living shoreline is and reasons for its implementation	NRPA, DEP wetlands rules and other pertinent state regulatory authorities do not define or provide management terms specific to a "living shoreline project"	CT Working Definition: A shoreline management practice which restores, enhances, maintains or creates natural coastal or riparian habitat, functions and processes and also functions to mitigate flooding or shoreline erosion through a continuous land-water interface. Coastal and riparian habitats include but are not limited to intertidal flats, tidal marsh, beach/dune systems, and bluffs. Living shorelines may include <u>structural</u> features that are combined with natural components to attenuate wave energy and currents.
	"Structural features" component leaves door open to hard structures in coastal zone	No definition of Living Shoreline/Green Infrastructure practices or activities. Preferred method in regulations is to work landward rather than seaward	Consistency across programs on what constitutes “living shoreline” / natural infrastructure could improve consistency and understanding	Opportunity to educate on the purpose and benefits of a living shoreline, and the differences to either a restoration project or a hard bank stabilization project	No state agency has statutory responsibility for management or oversight over the “public easement” on privately-owned intertidal lands;	Maine has several possible agency-specific terms that encompass and can help define a LS/GI project, such as: "functionally water-dependent;" "de minimus project-specific and cumulative environmental effects;" "minimization of unavoidable impacts;" and "least damaging practicable alternative"
	Provides for use of living shorelines in Connecticut: "To disallow any filling of tidal wetlands and nearshore, offshore and intertidal waters ... unless it is found that the adverse impacts on coastal resources are minimal."	Fill is Prohibited on shoreline features adjacent to Conservation and Low Intensity waters; Beneficial re-use of dredged material can be a source of living shoreline material and is consistent with state law/beneficial use requirement	Concerns and/or standards about the conversion of one habitat type to another may limit or prohibit the implementation of a “living shoreline” / natural infrastructure practice (e.g., loss of intertidal habitat for beach/dune restoration; loss of shellfish habitat to restore lost salt marsh; rock or other sills to protect salt marsh banks)	Opportunity to reference, encourage, and/or prioritize living shoreline approach for bank stabilization; and/or prioritize projects that minimize adverse impacts on fish, wildlife and natural environmental values...with expected beneficial impacts	Wetlands rules do not expressly allow comparison of the overall environmental effects of conversion from one type of habitat to another that may result over time from use of a "living shoreline project" or comparison of the environmental benefits that may result in later years and offset or compensate for short-term, construction-related effects of such a project	Maine: Amend the wetlands regulations (various sections) as needed to clarify that for a living shoreline project in a suitable location conversion of one habitat-type to another (e.g., open water to fringe marsh) is not an unreasonable adverse effect and is permissible; Specify that for certain “living shoreline” projects DEP shall consider the wetlands-related functions and values created by the project adequate to offset in whole or in part the need for compensatory mitigation for functions and values affected by the project; Clarify that “living shoreline” projects in suitable sites are “water dependent” uses for which a rip-rap or other hard-structure design may not be presumed to

<p>Habitat Trade-off -- Restoration v. Fill</p>	<p>Where feasible and environmentally acceptable, to encourage the "creation of wetlands" for the purpose of (1) shellfish and finfish management, (2) habitat creation and (3) dredge spoil disposal</p>	<p>Alterations to coastal wetlands abutting Conservation Waters are prohibited except for minimal alterations associated with maintenance on approved shoreline protection structures</p>	<p>Creation of nearshore reefs may have adverse impacts on sediment transport and wave dynamics; habitat fill; among others</p>	<p>Opportunity to incentivize, encourage, and/or prioritize living shoreline implementation if shown to benefit the minimum standards necessary to protect the public waters of the state of New Hampshire</p>	<p>Wetlands rules do not expressly allow consideration of the wetlands functions and values resulting from a "living shoreline project" in determining compensatory mitigation requirements</p>	<p>be a practicable alternative; Establish a presumption that a "living shoreline" project in suitable location is the least environmentally damaging practicable alternative</p>
	<p>"Creation of wetlands" encouraged for shellfish and finfish management. Opportunity to allow living shoreline creation IF this benefit can be shown.</p>	<p>In SAV habitats designated for preservation alterations that will impact the health of SAV are prohibited</p>	<p>Marsh elevation may not be allowed under current regulations; still significant uncertainty about the practice however support exists for pilot project with robust monitoring and evaluation</p>	<p>Standards are in place for the use and development of the shorelands of NH's public waters, with prohibitions on "construction, excavation, or filling activities" unless so permitted by NHDES Wetland Bureau when "directly related to ...environmental restoration or enhancement projects."</p>	<p>The alternatives analysis requirement, coupled with the wetlands rules' focus on effects on existing habitat conditions, inhibits adoption of living shorelines project</p>	<p>CT: Living shorelines should not be regulated as fill? Living shoreline projects could be coastal restoration projects that also have the co-benefit of shoreline protection. All States and within ACOE GP: Marsh surface elevation and/or thin layer deposition appears directly or obliquely through marsh restoration allowances and could be added to living shoreline practices</p>