



Agenda • March 15, 2016 • 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>
9:45 AM	NROC Updates <i>Brian Thompson, CT – State Chair</i> <ul style="list-style-type: none"> ▪ Committee Update: Executive Committee ▪ Committee Updates: Coastal Hazards Resilience, Ocean and Coastal Ecosystem Health, and Ocean Planning
10:30 AM	Habitat Classification and Ocean Mapping <i>Rebecca Newhall, NOAA and Matt Nixon, ME</i> The HCOM co-leads will be asking partners to walk through their plans and needs in SeaSketch. Click here for WebEx. A report out will also be provided on discussions with NOAA on vessel opportunities.
11:15	Coastal Management Fellow <ul style="list-style-type: none"> ▪ Ashley Green - providing Massachusetts's coastal communities with stormwater management tools that are effective in improving both coastal water quality and resilience to climate change.
11:30 AM	Partner and Audience Updates <ul style="list-style-type: none"> ▪ Partner Updates: NERACOOS, NE Sea Grant Consortium, & Gulf of Maine Council ▪ Updates: North Atlantic Landscape Conservation Cooperative, & New England Federal Partners <ul style="list-style-type: none"> ○ FEMA – New England Climate Adaptation, Preparedness, and Resilience Workshop ○ USACE – Northeast Coastal Ecosystem Restoration Authority Audience updates and comments: Meeting attendees provide updates
12:15 PM	Lunch – local Portsmouth eateries
1:30 PM	Regional Resilience Grants <i>Betsy Nicholson, NOAA and Ru Morrison, NERACOOS</i> An overview of regional resilience grant projects, both coastal and ecosystem, followed by a discussion of potential coordination efforts.
2:15 PM	Living Shorelines <i>Adrienne Harrison, NOAA and Patricia Bowie, MA CZM</i> <ul style="list-style-type: none"> ▪ State and regional efforts –An overview of relevant efforts in the region provided by the Living Shorelines workgroup. ▪ Project Highlights - <i>Martina McPherson, ERG (Eastern Research Group)</i> <ul style="list-style-type: none"> ○ A draft of the living shorelines explainer cards developed for property owners, as part of NROC's Resilient Shorelines grant program. ○ Results of a NOAA-funded effort looking at living shoreline best practices in cold climates.
3:15 PM	Science Delivery of LCC Hurricane Sandy resilience projects <i>Regina Lyons, EPA and Adrienne Harrison, NOAA</i> The OCEH and CHR committee co-chairs will provide an overview of products resulting from LCC beach and marsh resilience projects and a proposal for related science delivery activities.
3:45 PM	Closing Business
3:50 PM	Adjourn

NROC Updates

Committee Update – Executive Committee

NROC Committee Accomplishments

In preparation for NROC's 10yr celebration at the meeting back in November, each NROC committee developed a 1-pager of their major accomplishments over the past decade. While those were available as handouts in the back of the room, we wanted to draw your attention to them again and include them in this meeting's briefing packet. Please take a chance to look at the summaries at the end of this packet. And congratulations to the Coastal Hazards Resilience, Ocean and Coastal Ecosystem Health, and Ocean Planning committees on all their great work!

NROC Organizational Chart

With so many recent changes in leadership at the co-chair, EC, and committee levels it seemed like an appropriate time to develop an NROC Organizational Chart! It is included in the attachments section at the end of this packet. It will also be posted on the NROC website.

Coastal Zone Management Programs

NROC's CZM Directors were in Washington DC in February for the Coastal States Organization's winter meeting and NOAA's CZM Program Managers' meeting. CSO represents the interests of 34 Governors in Washington DC regarding coastal issues and the Coastal Zone Management Act in particular. CZM Directors in the Northeast serve as their Governor's delegates. The NOAA Program Managers meeting brings together staff from CZM Programs from all regions of the US and US Territories for professional sharing.

CSO delegates learned that Senator Bill Nelson (D-FLA) is developing a CZMA reauthorization bill. While details were still being drafted, the bill will not include significant changes, but rather is intended to bolster states' rights regarding federal consistency, and to clarify the CZM programs play a major role in coastal resiliency. The bill could be marked up as early as mid-March. Authorization of the CZMA expired in 1999, but Congress continues to fund the program.

In addition, delegates heard updates on CSO's Community Rating System project that is focused on Ohio and Rhode Island, and participated in a session on the National Coastal Mapping Strategy with NOAA, USGS and USACE. The CSO Legal Council session focused on Living Shorelines (pending litigation regarding USACE Nationwide Permits -- not applicable in New England, state experiences with LS and new tools from the Georgetown Climate Center and the Mississippi/Alabama Sea Grant Legal Program).

The NOAA meeting included sessions on sediment management (Bruce Carlisle participated in the panel), coordination with FEMA, green infrastructure challenges and solutions, ecosystem services (Steve Couture and Kathleen Leyden were on the panel) and improving collaboration with NOAA's National Center for Coastal Ocean Science.

Science Delivery Network

As a reminder, NROC has a cooperative agreement with NALCC to deliver science to key coastal partners in the Northeast. The aim of this effort is to make decision support tools, maps and monitoring results from two Hurricane Sandy coastal resiliency projects along with other coastal resiliency information and tools easily available to decision makers at scales and formats needed; work with partners to translate and use information at the regional, state and local level; and enhance existing capacity to work with communities through the demonstration and delivery of this information. This is a joint project of NROC's Ocean and Coastal Ecosystem Health and Coastal Hazards Resilience committees. Please see the Science Delivery Table at the end of the briefing packet for a list of projects, expected products, and associated methods of science delivery. In addition, progress reports from the NROC Resilient Shorelines grant projects are included in the attachments.

Regional Coastal Resilience Grants

NOAA's Office for Coastal Management, National Ocean Service, announced approximately \$4.5 million in recommended grants designed to make our coasts and communities more resilient. This is the final part of a planned \$9 million in awards this year. Six regional projects were awarded FY 2015 funds early in February, and the recommendation of six additional projects for FY 2016 was announced in early March. NERACOOS and NROC's joint proposal *High Resolution Coastal Inundation Modeling and Advancement of Green Infrastructure and Living Shoreline Approaches in the Northeast* was among those recommended for FY 2016 funds (\$891,243). This collaborative project will document and predict coastal storm impacts and increase the

implementation of sustainable, nature-based infrastructure approaches (living shorelines). The project will also fill high-priority data and capacity gaps, develop tools for decision-making, and improve communications and outreach.

Committee Update – Coastal Hazards Resilience

The NROC Coastal Hazards Resilience Committee held a call on March 1, 2016 to focus on current status of efforts to enroll coastal communities in FEMA's Community Rating System. ME, NH, MA have active efforts to assess need of coastal communities and support community applications to the program. RI continues to see new communities apply to the program, however much of the focus in the state is on flood mitigation activities. CT does not have a current effort focused on FEMA's CRS however there continue to be communities interested. Notes from this meeting are available on the NROC website. The next Committee call will be in September. The Committee is working with Blue Urchin, RI CRMC and MA CZM to develop the Habitat Reporter, a new product for documenting impacts on habitat from storms. This product will be available in September 2016. Future Committee activities will focus on completing workplan activities, including updating website resources for 2014 CRS Grant Projects (summaries and follow up interviews) and developing a more robust Living Shorelines resource page. The Committee needs to continue discussions related to options for funding and participating in MyCoast.org. Julia Knisel with MA CZM, Kevin O'Brien with CT DEEP and Adrienne Harrison with NOAA OCM serve as the current co-chairs.

Living Shorelines

The Living Shorelines Workgroup is a sub-committee of the Coastal Hazards Resilience Committee. The Workgroup continues to meet regularly, with the last meeting on January 27, 2016. The Workgroup discussed the results of the RAE Living Shorelines Summit and priority individual and regional next steps. The Committee also reviewed and commented on the Living Shorelines Explainer Card product being developed by NROC and ERG. The notes from this call are available on the NROC website. The next call will focus on Regulatory and Permitting Barriers and Solutions. Additional activities expected in 2016 include the development of a case study template to share best practices from across the region and a regional research agenda to promote additional living shorelines research. Tricia Bowie with MA CZM and Adrienne Harrison with NOAA OCM serve as the current co-chairs.

Committee Update – Ocean and Coastal Ecosystem Health

NROC Ocean and Coastal Ecosystem Health Committee transferred co-chairmanship to Regina Lyons at EPA Region 1 and to Steve Couture and Chris Williams at NH DES. The new co-chairs and the leads for OCEH's three major projects – Marsh Resiliency, Integrated Sentinel Monitoring, and Habitat Classification and Ocean Mapping (HCOM)– held a coordination call on March 7th to kick-off the committee under its new leadership.

Integrated Sentinel Monitoring

EPA Region 1, NERACOOS, Gulf of Maine Research Institute (GMRI) and CT DEEP continue to co-chair the joint NROC/NERACOOS steering committee overseeing the development of an Integrated Sentinel Monitoring Network (ISMN) For Change in Northeast U.S Ocean and Coastal Ecosystems.

As previously reported, the major accomplishment was the release of the draft ISMN Science and Implementation Plan in August 2015, with comments received through the end of September 2015. Comments received are currently being evaluating and completion of the full document is anticipated. The goal is to celebrate the release of the document in March 2016. Some of the major changes since the review are 1) the concept of the sentinel is better defined as an adjective; 2) the integration with the NROC Regional Planning Body ocean monitoring plan is elaborated upon; 3) improved description of the goals of a proposed Center for Analysis, Prediction, and Evaluation (CAPE); and improved integration among pelagic, benthic and nearshore habitats.

The plan proposes to create a regional infrastructure (the CAPE) to support effective and coordinated ecosystem monitoring across the numerous existing observing activities. To that end, the ISMN Steering Committee submitted a proposal in January to RARGOM to hold a workshop to scope out the need for and requirements of a center for analysis, prediction, and evaluation (CAPE). Another major task is to develop a 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.

Presentations continue to be made; the most recent was at the NERACOOS Board meeting in December 2015. The PowerPoint presentation delivered by Paul Stacey of Great Bay NERR and a member of the ISMN Steering Committee is available upon request.

The steering committee has continued to hold conference calls and in person meetings to organize follow-up work; monitor progress on the Science and Implementation Plan, including decisions on content, writing assignments, and soliciting writing volunteers.

Marsh Resiliency

In fall 2015 NROC awarded a *Resilient Shorelines* grant to Warren Pinnacle Consulting to work with the State of CT to refine its Sea Level Affecting Marshes Model (SLAMM) projections to account for road and infrastructure effects and to identify potential marsh migration pathways. This project will be used as a case-study for other marsh migration modeling projects in New England. NROC is also planning a Marsh Resiliency workshop for Fall 2016 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.

Habitat Classification and Ocean Mapping

HCOM has followed up on NROC members agreement to use SeaSketch to pilot sharing mapping needs and plans, by identifying state and agency point's of connect for SeaSketch. Data from each of the states and agencies will be shown at the winter NROC meeting.

In addition HCOM hosted a meeting with NOAA to learn about the process for requesting use of a NOAA vessel.

Committee Update – Ocean Planning

As a reminder per the committee's work plan, ocean planning activities supported by NROC are currently led by the Northeast Regional Planning Body (NE RPB) as it works to complete an ocean plan by mid-2016 (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)

The Sand Management Sub-Committee is a forum where state, tribal and federal agencies can discuss and collaborate on identifying 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. Since 2014, BOEM has been partnering with the states through cooperative agreements to identify sand needs and evaluate potential sand resources in federal waters. In addition, in September 2014 in a project it has named the Atlantic Sand Assessment Project (ASAP), BOEM awarded a contract to CB&I to conduct geophysical surveys and geological sampling to investigate potential new sources of sand in federal waters offshore of each coastal state. CB&I has completed the surveys and sampling and is currently processing the geological data (vibracores and grab samples). BOEM will be working on a second round of cooperative agreements to be executed in 2016 to support evaluation of the geophysical survey data. Several states are also studying sand sources within the state 3-mile limit. The March 2015 meeting of this group discussed the ASAP survey plans, cooperative agreement progress, 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 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.

Ocean Planning

Recent events

The Ecosystem-Based Management Work Group convened a meeting open to the public on January 6, 2016 in Providence, RI and 75 people attended.

The agenda covered two topics:

- Review progress on the development of the draft Northeast Ocean Plan and associated marine life and habitat data
- Review and provide feedback on the Important Ecological Areas (IEAs) Framework, including applicable marine life and habitat data as well as science and research needs for IEAs

The IEA framework, composed of six Components, was developed using the National Ocean Policy definition of important ecological areas as a starting point, with input from the EBM Work Group since their first meeting in September 2015. Each IEA component includes a short definition and lists of existing applicable marine life and habitat data, as well as science and research needs.

1. Areas of high productivity
2. Areas of high biodiversity
3. Habitat areas and distribution of species critical to ecosystem function and resilience
4. Areas of spawning, breeding, feeding and migratory routes
5. Areas of functionally vulnerable marine resources
6. Areas of rare marine resources

Outcomes of the meeting included the following recommendations to the Northeast RPB:

1. Recommended the NE RPB conduct scientific review of draft marine life and habitat data products that will be referenced in the plan and are applicable to IEA components.
2. Provided positive feedback on the IEA Framework and recommended edits, including the suggestion that Component 3 “Habitat areas and distribution of species critical to ecosystem function and resilience” is more relevant as a general definition of IEAs.
3. Recommended that the NE RPB illustrate applicable data for IEA Components 1, 2, and 6 to enable further review and discussion.

EBM Work Group Membership: Mike Fogarty (NOAA NMFS), Mary Boatman (BOEM), Margherita Pryor (EPA), Bruce Carlisle (NE RPB Member – Massachusetts), Kathryn Ford (NE RPB Alternate – Massachusetts), Jeff Herter (New York), Chuckie Green (NE RPB Member – Mashpee Wampanoag Tribal Council), Bob Steneck (UMaine), Kathy Mills (Gulf of Maine Research Institute), Scott Kraus (New England Aquarium), John King (URI), Peter Auster (UCONN).

Schedule

The Northeast RPB and staff are working to prepare the draft Northeast Ocean Plan for release to the public this Spring. A RPB meeting will be scheduled in conjunction with the plan release to review the draft and describe a number of opportunities for the public to provide comment. The Plan will be revised and submitted to the National Ocean Council for their review and concurrence this Fall.

Northeast Ocean Data Portal is experiencing 2000+ unique visits/month. Last Fall, portal team released a rebuild of the Data Explorer with new functionality, - an interactive map that will allow user to select any combination of data from data themes and view them together on a single map. Go visit <http://www.northeastoceandata.org/> to check it out, among many other updates.

Partner Updates

Partner Update – NERACOOS

NERACOOS Annual Impact Report

We hope you enjoy NERACOOS's Annual Impact Report, [click here to view now](#). The report highlights several of NERACOOS's successes for 2015, with a special focus on the integrated nutrient observatory, the importance of NERACOOS buoy data, and the new system updates that improve accessibility to NERACOOS data and information during storms.

Integrated Nutrient Observatory Development

NERACOOS and its partners will continue to operate and deploy automated nutrient sensors in the spring and summer of 2016. Currently, nitrate sensors are deployed on buoys E and I at 50m in the Gulf of Maine. UNH plans to re-deploy the Great Bay buoy this spring with nitrate, phosphate and ammonium sensors. The University of Maine is planning to deploy additional nitrate sensors at multiple depths on buoys M and N during the summer. The University of Connecticut is planning to deploy a nitrate and phosphate sensor on the Western Sound buoy in this spring. We are also planning to hold a stakeholder workshop for the Long Island Sound region this spring. You can receive updates on this project by signing up for our [mailing list](#) or by visiting the [Integrated Nutrient Observatory webpage](#) where we will post updates. The IOOS (Integrated Ocean Observing System) OTT (Ocean Technology Transfer) program is providing funding for this project.

Northeast Coastal Acidification Network (NECAN)

[NECAN](#) has completed a series of stakeholder workshops throughout the region and is using feedback from those meetings to help develop a new NECAN website and resources, including an expanded technical document on the state of the science of ocean and coastal acidification. The NECAN Steering Committee is developing an implementation plan and welcomes your participation in any of the [NECAN working groups](#) (Science, Policy, Industry, Outreach and Education). NECAN members will also be presenting at various meeting in March including the [Maine Fishermen's Forum](#), the [Massachusetts Marine Educators High School Marine Science Symposium](#) and [Maine Environmental Education Association Conference](#). NECAN plans to post the resources shared at these meetings on the new NECAN website later this year.

Cape Cod Bay Wave Buoy

The USGS Woods Hole Science Center is working with NERACOOS and other partners to deploy a waverider buoy in Cape Cod Bay this spring. This buoy would provide real-time wave data for mariners in the Bay and would eventually be incorporated into a new Cape Cod Bay Physical Oceanographic Real-time Data System (PORTS), which is operated by NOAA and regional partners. Pilots who navigate vessels through the Cape Cod Canal initially requested the buoy and many other stakeholders including the USCG, NWS, USACE and commercial fishermen have indicated that it will provide valuable data.

NERACOOS Website Update

We are excited to announce that the new and improved NERACOOS website will be launching in March. We have listened to input from our users and updated the look and feel of the homepage to be more fresh, modern and clean; and improved overall site navigation to make it easier to access all of our data products. Check it out and let us know what you think – send feedback to info@neracoos.org.

NERACOOS Partners in Ocean Acidification and Harmful Algal Bloom Sensor Projects

In collaboration with NOAA's Ocean Acidification Program, U.S. IOOS' Ocean Technology Transfer (OTT) Project awarded the University of New Hampshire a three-year grant to expand the quantity and quality of ocean acidification monitoring across Northeastern U.S. coastal waters. In all, five different deployment platforms will be used to enhance ocean acidification monitoring within the Northeast Coastal Acidification Network (NECAN) with significant improvement in temporal and spatial coverage.

The Woods Hole Oceanographic Institution (WHOI) was awarded a three year grant from the IOOS OTT Project to expand the Imaging Flow CytoBot's (IFCB) potential for operational use by deploying it on autonomous vehicles in the Gulf of Maine and in the Gulf of Mexico. These deployments will enable high resolution plankton studies with both long duration and spatial coverage. NERACOOS will help support stakeholder engagement and data management for both of these technology transfer projects.

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: (1) A joint Council/Working Group meeting was held in December 7. At this meeting Councilors approved the GOMC Work Plans for 2015-2017. The two-year work plans are part of a recent organizational restructuring resulting in each jurisdiction holding the Council chair for two years (instead of one year), hence the two-year work plans. The goals under the current 2012-2017 Action Plan remain in effect. (2) The next joint Council-Working Group meeting is scheduled for June 7-8 in Fredericton, New Brunswick. (3) The Working Group will have a virtual meeting in April to discuss the agenda and prepare for the June meeting.

Gulf of Maine Council Annual Awards: The GOMC is currently accepting nominations for its 2016 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. Nominations may be submitted to Joan LeBlanc, Council Coordinator (jleblanc@gulfofmaine.org).

Tidal Crossings Workshop: September 10, 2015 GOMC in collaboration with the North Atlantic Landscape Conservation Cooperative (NALCC) and NROC hosted a Tidal Crossings Workshop in Portsmouth, NH. Over 40 subject matter experts from the Gulf of Maine, Southern New England, New York, and Washington participated. The workshop focused on building communities of practice around management questions associated with assessing culverts. The NH Department of Environmental Services is working with The Nature Conservancy to develop state protocols for tidal crossings by June 2017.

Climate Network: (1) The December publication of the [Gulf of Maine Quarterly Climate Impacts and Outlook](#) is available and distribution of the publication has been expanding. (2) A new product was released in October 2015 highlighting potential climate impacts and outlook associated with El Niño for the Eastern Region from December 2015 through February 2016. (3) During October 2015 the network hosted another successful King Tides event for the Gulf of Maine region and several photos were submitted for a photo contest.

Coastal and Marine Spatial Planning: Glen Herbert (Fisheries and Oceans Canada) is the new Co-Chair of the CMSP along with U.S. Co-Chair Betsy Nicholson. Glen took over from Tim Hall in September 2015.

EcoSystem Indicator Partnership (ESIP): The ESIP 2.0 working model is focused on promoting human well-being by supporting ecosystem processes and functions that are involved in providing ecosystem services. ESIP released a new smartphone app, ICUC (Seeing Change in the Gulf of Maine) in January 2016. This innovative app allows users to access monitoring data and upload photos at sites located throughout the Gulf of Maine. The first sites include: Salem Maritime National Historic Site (MA), Saugus Iron Works National Historic Site (MA), Seacoast Science Center (NH), Harborside Park (NH), Wells NERR (ME), Scarborough Marsh (ME), Wolf's Neck State Park (ME), Schoodic Institute (ME), Musquash (NB), Brier Island (NS), and River Guardian Site (NS).

Gulfwatch Program: During the 2015 summer / fall season, samples were collected from MA, NH, Maine and NB. During the survey low numbers of blue mussels were observed at many of the sites. With no new funding immediately available, Gulfwatch activities are currently focused on writing papers and reports on existing research.

GOMC GeoTour: The GeoTour officially launched in summer 2015 as part of the Council's 25th anniversary activities is continuing to be active with people of all ages participating in the tour. Feedback has been very positive with participants noting that they explored Gulf of Maine sites they would not have otherwise known about. The GOMC GeoTour will continue into the future.

Update – North Atlantic LCC

NALCC Steering Committee Meeting

North Atlantic LCC Steering Committee meeting will be held on April 6 2016 in Annapolis, MD in conjunction with the Northeast Association of Fish and Wildlife Agencies (NEAFWA) meeting. North Atlantic LCC staff and partners will provide a half day workshop prior to the NEAFWA meeting where hands-on demonstrations of the tools and products produced by the North Atlantic LCC will be delivered to practitioners such as state fish and wildlife agency staff. The sessions will also be recorded and available on the North Atlantic LCC website under the corresponding project and product pages.

Hurricane Sandy Project Extensions

The Chief Scientist for Region 5 US Fish and Wildlife Service has received permission to extend the period of performance for Hurricane Sandy projects for communications/outreach, monitoring or project oversight. Project extensions for other partners (e.g. tidal marsh monitoring by the Salt Marsh Habitat Avian Response Program, salt marsh modeling by University of South Carolina and Louisiana State University, beach modeling and habitat use by Virginia Tech and USGS) will affect the time frame for science delivery of the products and information to be facilitated by the Northeast and Mid-Atlantic Regional Ocean Councils.

Tidal Marsh Resilience

Presentations from the North Atlantic LCC tidal marsh resilience partners workshop held in Hadley on December 10 2015 are posted on the [North Atlantic LCC coastal resilience tidal marsh workspace](#). As a follow-up to the workshop, a one day symposium to examine the outputs and appropriate applications of various marsh modeling approaches for the Plum Island Ecosystem will be held at the Parker River National Wildlife Refuge headquarters on April 11 2016.

Beach and Barrier Island Resilience

Reports, metadata and google earth files summarizing the results of inventories of modifications to both tidal inlet and sandy, oceanfront beach habitats along the Atlantic coast from Maine through Virginia are available on the North Atlantic LCC [beach and tidal habitat inventory webpage](#). Three distinct time periods will be assessed: before, immediately after, and three years after Hurricane Sandy to document modifications to beaches and beach habitat in response to Hurricane Sandy. The results of phase 1 and 2 are currently available. The inventories were generated using Google Earth imagery but the outputs are also available as shapefiles on the North Atlantic LCC Conservation Planning Atlas (DataBasin) site, under the [beach resilience gallery](#). The audiences for these products span those who are using them to assess habitat modifications to their specific sites

for beach nesting bird or other natural resource management concerns to use as an information resource for an application to NOAA's Coastal Zone Enhancement Program.

Tidally Influenced Road Stream Crossings

A team from University of Massachusetts Amherst will begin literature searches for aquatic organism passage considerations for tidally influenced road stream crossings in March. A draft protocol under the NA LCC funding is not due until the end of June 2017. There is strong interest throughout the region in testing any draft protocol components for the 2016 field season. The UMass team will disseminate interim products in early summer and seek feedback from field practitioners about their utility. Click [here](#) to visit the project webpage.

Update – New England Federal Partners

FEMA

Federal Emergency Management Agency Region 1 and New Hampshire Homeland Security Emergency Management, with backing from a premier interagency planning team, are co-sponsoring a New England Climate Adaptation, Preparedness, and Resilience Seminar at UNH on May 25-25, 2016. The goal of the seminar is support state, tribal, and federal coordination, integration, and prioritization of community climate adaptation, preparedness, and resilience initiatives, and identify new opportunities for whole community collaboration and investment to enhance regional resilience. Please see the seminar 1-pager included in this briefing packet for more information.

US Army Corps of Engineers – Northeast Coastal Ecosystem Restoration Authority

The Water Resources Reform and Development Act of 2014 gave the Corps of Engineers the authority to conduct a study of aquatic ecosystem restoration projects from Maine to Virginia. The text from the Act is shown below. This authorization provides an opportunity for state and federal agencies and NGOs in the region to cooperate on the development of a comprehensively plan to identify and prioritize aquatic ecosystem restoration projects. The Nature Conservancy has been instrumental in obtaining the authorization and is currently working to clarify the cost sharing requirements through the upcoming Water Resources Development Act. The Corps of Engineers must have a letter of support to move forward with a study under this authorization. We would like to initiate discussions with the New England states on the desirability and requirements to move forward with the study.

SEC. 4009. NORTH ATLANTIC COASTAL REGION.

(a) IN GENERAL.—The Secretary shall conduct a study to determine the feasibility of carrying out projects to restore aquatic ecosystems within the coastal waters of the Northeastern United States from the State of Virginia to the State of Maine, including associated bays, estuaries, and critical riverine areas.

(b) STUDY.—In carrying out the study under subsection (a), the Secretary shall—

(1) as appropriate, coordinate with the heads of other appropriate Federal agencies, the Governors of the coastal States from Virginia to Maine, nonprofit organizations, and other interested parties;

(2) identify projects for aquatic ecosystem restoration based on an assessment of the need and opportunities for aquatic ecosystem restoration within the coastal waters of the Northeastern States described in subsection (a); and

(3) use, to the maximum extent practicable, any existing plans and data.

(c) DISPOSITION.—

(1) IN GENERAL.—The Secretary may carry out any project identified in the study pursuant to subsection (a) in accordance with the criteria for projects carried out under one of the following authorities:

(A) Section 206 of the Water Resources Development Act of 1996 (33 U.S.C. 2330).

(B) Section 1135 of the Water Resources Development Act of 1986 (33 U.S.C. 2309a). H. R. 3080—125

(C) Section 3 of the Act of August 13, 1946 (33 U.S.C. 426g).

(D) Section 204 of the Water Resources Development Act of 1992 (33 U.S.C. 2326).

(2) REPORT.—For each project that does not meet the criteria under paragraph (1), the Secretary shall include a recommendation relating to the project in the annual report submitted to Congress by the Secretary in accordance with section 7001.

Session Reference Materials

Living Shorelines Activities Summary

The purpose of this document is to broadly track living shorelines projects and programs at the state and regional levels. The information is primarily generated through quarterly calls of NROC's Living Shorelines Group.

ME Focus:

1. ME Damariscotta Green Infrastructure Project, MECP

NH Focus:

2. NH Shoreline Change Analysis, NH DES
3. NH Shoreline Management Conference (complete), NH DES/GBNERR

MA Focus:

4. MA Green Infrastructure Grants (2016), MA CZM
 - a. Town of Dennis: Evaluate and design a natural and/or non- structural approach to reduce erosion and provide storm damage protection and flood control for Dr. Bottero Road while enhancing the resilience and natural function of the barrier beach.
 - b. Town of Edgartown: Complete permitting activities for a beach nourishment and dune restoration design for Fuller Street Beach that would restore habitat, improve the natural function of the barrier beach and provide recreational benefits to the Town.
 - c. Town of Falmouth: Design and permit a beach restoration project for a critically eroded section of Chapoquoit Beach and coordinate with the U.S. Army Corps of Engineers to receive sand dredged from the Cape Cod Canal.
 - d. Town of Plymouth: Complete final designs and permitting activities for adding sand, gravel and cobble along 900 feet of an eroded barrier beach to reduce damages to public infrastructure and restore natural coastal resources and habitat.
 - e. Town of Winthrop: Evaluate natural and non-structural shoreline protection approaches and develop conceptual plans for a preferred alternative that provides the most erosion control and improved wildlife habitat along the Coughlin Park shoreline.

RI Focus:

5. RI Green and Resilient Infrastructure Project, URI CRC/SG

The project will explore landscape methods that are natural – or that mimic nature – to restore ecosystem services (habitat and stormwater filtration, for example) to developed areas. The project, funded by the National Fish and Wildlife Foundation and the U.S. Department of the Interior, is led by Pamela Rubinoff and Teresa Crean, extension specialists with the URI [Graduate School of Oceanography's Coastal Resources Center](#) and Rhode Island Sea Grant. It will look at how green infrastructure, typically used to reduce and treat stormwater, could be used in coastal areas in Newport, Warwick, and North Kingstown, to aid those municipalities' efforts to make their communities more resilient. The project kicked off with a meeting in April 2015 with project partners.
6. RI Thin-layer deposition pilot projects, RI CRMC

CT Focus:

7. CT Living Shorelines Literature Review (complete), CIRCA

Jennifer O'Donnell, UCONN, completed a literature review focused on the benefits of living shorelines, the types that would potentially be suitable in New England and the effectiveness of non-structural living shorelines for coastal protection. The manuscript is currently under review.
8. CT Living Shorelines Site Suitability Model, CIRCA
9. CT Living Shorelines Decision Support Tool, CIRCA
10. CT Living Shorelines Pilot Projects in consideration, CIRCA
 - a. Stonington, CT - coir log and plantings for erosion control in a tidal inlet
 - b. Fenwick, CT - residential project in consideration
 - c. Old Saybrook, CT - bluff stabilization project in consideration
11. CT Review of State Living Shorelines Programs, Interviews and Website, CT DEEP

NE Focus:

12. NE and GL Cold Climate Expert Interviews and Summary, NOAA OCM

NOAA contracted with ERG to interview 9 cold climate expert practitioners in the New England and Great Lake regions to identify issues of special consideration for living shorelines projects in these regions.

13. Living Shorelines Explainer Card for Property Owners, NROC/LCC

14. Living Shorelines Summit NE Workshop Summary Report, RAE

15. NERACOOS/NROC Advancing Green Infrastructure and Living Shorelines Approaches in the Northeast, NOAA FY16 RCRG

- a. RCRG Track 2, Task 1 State of the Practice Report
- b. RCRG Track 2, Task 2 Living Shorelines Regulatory & Permitting Workshops
- c. RCRG Track 2, Task 3 Communications Products & Practitioner Trainings
- d. RCRG Track 2, Task 4 Pilot Projects

Activities	Start Date	End Date
CT focus - LS Literature Review, Site Suitability Model and Decision Support Tool (NOAA CREST Grant to CIRCA)	8/1/14	4/1/16
NE & GI focus - NOAA Cold Climate Expert Interviews & Summary (Contract with ERG)	8/1/15	4/1/16
CT focus - Review of State LS Programs, Interviews & Website (CT DEEP)	9/1/15	5/1/16
MA focus - 2016 Green Infrastructure Grants (MA CZM)	6/1/15	6/1/16
RI focus - Green and Resilient Infrastructure Project (URI CRC/SG)	4/1/15	8/1/16
Explainer Card for Property Owners and Outreach (NROC/LCC contract with ERG)	9/1/15	8/1/16
NE focus - FY16 Regional Coastal Resilience Grant - Track 2 (NOAA Grant to NERACOOS)	5/1/16	5/1/18
RCRG Task 2.1 - LS State of the Practice Report		
RCRG Task 2.2 - LS Regulatory & Permitting Workshops		
RCRG Task 2.3 - LS Communication Products & Practitioner Training		
RCRG Task 2.4 - LS Pilot Projects		

NROC Resilient Shoreline Grant Projects – Progress Reports

Warren Pinnacle has been funded to refine SLAMM projections for Connecticut by accounting for road and infrastructure effects and to use spatial analysis to identify and characterize potential marsh migration pathways. To date, project efforts have focused on the collection of infrastructure and roads data and the completion of data processing in preparation for inclusion in SLAMM simulations. Infrastructure data obtained from Kevin O'Brien were reviewed and the sharing permissions considered, completing the list of data that needed to be included in SLAMM simulations. Some code improvements were required to facilitate the addition of roads and storm-surge data into the CT models and these are now completed and have been thoroughly tested. The initial model calibration simulations have been started and results are currently under QAQC. It is expected that deterministic and uncertainty will be underway this month and completed by April. Storm surge data remain difficult to pin down. WPC is still in the process of identifying the best storm surge data source covering Connecticut. WPC discussed recent USACE efforts with Nathan Vinheiro of RPS-- it was determined the data in their current format would not be sufficient for the storm surge modeling. WPC also contacted Alejandro Cifuentes-Lorenzen from UCONN to understand the wave run-up studies going on there, but their data products may not be sufficient for the modeling to be undertaken in this project. We expect to talk to Alejandro again this week to clarify. Additionally, efforts to obtain FEMA Stillwater Elevation Layers remain underway. With respect to the project schedule, assuming that the best storm-surge data set can be quickly identified and obtained, the project is expected to complete on schedule.

Blue Urchin has been funded to develop enhancements to the MyCoast suite of tools. Work on MyCoast New England is progressing on schedule. In Q1 2015, the iOS and Android MyCoast apps were released to the 5 New England states. Towards the end of 2015, the developers delivered a fully-functioning system that allows designated state leads to send in-app notifications to users registered to that state. The system allows MyCoast app users to share their location with state leads so that the leads can better geographically target users (for example, if a state is interested in the post-storm condition of a dune in a certain community, he or she can log into the site to see who is close to that dune, and send that person a notification requesting that they evaluate the dune in question). The developers are currently working with NROC-designated persons to create a habitat monitoring facet for the MyCoast app. As of the end of February 2016, MyCoast has approximately 2,700 storm and tide reports submitted by 353 users (many of these reports were submitted imported from MyCoast's predecessor).

Rockingham Planning Commission has been funded to provide direct technical planning assistance to municipalities to implement recommended actions identified in the Climate Change Adaptation sections of their Hazard Mitigation Plans. The RPC released a request for implementation project proposals to the coastal municipalities in November 2015. Following is a summary of activities underway with the 7 coastal municipalities participating in the project.

- *Portsmouth* – researching options for incorporating freeboard for various types of structures and settings, and preparing recommendations for zoning and land development standards.
- *New Castle* – partnering with an ongoing project funded by PREP to increase prime wetland designations and increase buffer protections and conduct outreach, RPC will complete a review of existing zoning and land development regulations to identify ways to incorporate standards for areas of high flood risk based on the Tides to Storms assessment; underway with a series of meetings with the Conservation Commission and Planning Board.
- *Rye* – preparing a draft Coastal Hazards and Adaptation Chapter for the town's Master Plan, including meetings with the Long Range Planning Commission (twice monthly) and Planning Board, and a public forum scheduled for April 26th.
- *North Hampton* – underway with an audit of existing buffer standards in the zoning ordinance, preparing recommendations to incorporate standards for areas of high flood risk and salt marsh migration, and conducting public outreach.
- *Hampton* – comprehensive revisions to the town's existing floodplain management ordinance, with assistance from the NH Floodplain Management staff at NH Office of Energy and Planning.
- *Hampton Falls* – using flood maps from the Tides to Storms assessment, prepare education materials about flood resiliency and preparedness, and conduct outreach to residential neighborhoods in areas of high flood risk.

- *Seabrook* –preparing a draft Coastal Hazards and Adaptation Chapter for the town's Master Plan, including meetings with the master plan workgroup (twice monthly) and Planning Board, and outreach will be conducted beginning in May through the summer with the Village Beach Precinct, civic association and coastal residents. Project will coordinate with ongoing coastal dunes protection and restoration project being conducted by NH Sea Grant.

RPS/ASA has been funded to integrate state-of-the-art computer modeling of storm surge conducted for the USACE North Atlantic Comprehensive Coastal Study (NACCS) into NROC member state websites and viewers. The scope of work includes four broad tasks: (i) conduct initial outreach meetings with representatives from each NROC state, (ii) develop of a storm surge database with summary results from the NACCS, (iii) facilitate data hosting through NERACOOS, and (iv) develop a suite of web services for access and display of the data via existing state websites.

Work to date has focused on tasks 1 and 2. Stakeholder meetings took place on November 13 and 16, 2015 with participation from all states, NROC, and NERACOOS. Meetings included a brief presentation of the NACCS study and a walk-through of the proposed API design. (Preliminary API specification with some usage examples can be viewed at <http://docs.naccs.apiary.io>.) Additional discussion focused on preferences for model products and formats for the final database.

Task 2 (database development) is currently underway. Thus far, the database includes ADCIRC and STWAVE model output, tropical storm parameters, and summary statistics at ~18,000 nearshore locations along the east coast. Additional datasets of interest (e.g. extratropical storm set, model runs with sea level rise) were identified during the stakeholder meetings and will be included in the final database if/when they become available to the public. The work is on target for completion by September 2016.

ERG has been funded to incorporating information on living shorelines in cold climates into a new education tool, "explainer" card stacks, for coastal communities and decision makers. Work on the Living Shorelines stacker is approximately two-thirds complete. Since the end of October, ERG has been working with the project team (Dani Carter, Adrienne Harrison, Julia Knisel, and Ian Yue) through multiple rounds of review to finalize content and graphics for the outreach product which will be targeting coastal property owners in New England. ERG attended the Living Shorelines Workshop hosted by Restore America's Estuaries in Hartford, Dec 1-2, 2015, to present the draft storyboards to workshop participants who provided valuable feedback to the team. Graphics and text were then updated and exported into the Stacker platform. ERG presented the draft stacker to the NROC Living Shorelines Group on January 27, 2016, and solicited feedback on both the content and graphics as well as potential outreach opportunities. Additional rounds of edits were completed after the Living Shorelines Group meeting and currently the team is deciding on how to finalize the stacker for beta testing and additional review by a coastal property owner focus group. The product and outreach plan will be finalized well before the September 2016 deadline.

Science Delivery of LCC Hurricane Sandy Resilience Projects

Project Information			Methods of Science Delivery					
Project	Location	Products	NE Ocean Data Portal	State Viewers	Presentation /Web/News/ Blog	Workshop	Training	Comments
Tidal Wetland Resilience								
Salt Marsh Modeling (USC, UCF)	Plum Island, MA Chaffee NWR, RI	Maps and data layers: forecast evolution of marsh landscapes under different SLR scenarios with or without marsh restoration and storm surge; *Optimization of marsh restoration for storm surge abatement and slr *Decision support for HS restoration and future conservation *MEM coupled with ADCIRC *Process/methodology made available to coastal managers	Yes (restoration layer, marsh migration layer)	MA, RI				Extended to Oct 2017, but preliminary results and products ready this summer
Saltmarsh Habitat and Avian Research Program (SHARP)	SHARP Network locations, throughout NE	*Elevation, tidal restrictions, and hardened structures compiled at sites across region *Assessment of effectiveness of wetland restoration projects post-HS *Comparison of field elevation data to LiDAR and generate high res high-marsh and low-marsh map *BMPs for future restoration projects *Prioritize sites for future restoration projects *Tidal marsh obligate bird demographic assessments and conservation (UConn) *Marsh vegetation layer continuous layer for the east coast(UMaine)	Maybe	Yes	Yes	Yes		Monitoring efforts being extended to Dec 2017?
Identifying resilient sites for coastal conservation (TNC)	Plum Island	*Maps identifying coastal areas that will be the most ecologically resilient to climate change *Tools to explore where conservation strategies will have the most benefit on sustaining ecological diversity *Web based training sessions to help users understand the content and use the tools		Maybe		Maybe	Request NROC members participate in planned web based training sessions	
Assessing ecological integrity of salt marshes in the NE (UMass)		*Mapping tidal restrictions and salt marsh ditches to create stressor metrics and maps to incorporate into ecological integrity assessment *Future uncertainty scenarios in 2030 and 2080 *New Index for Ecological Integrity (IEI)						NROC restoration group has expressed need for ditched versus unditched marshes layer

Beach Resilience								
Project	Location	Products	NE Ocean Data Portal	State Viewers	Presentation /Web/News/ Blog	Workshop	Training	Comments
Beach and Tidal Habitat Inventories (Terwilliger Consulting, Tracy Rice)	Atlantic coast, New England recovery unit	*Inventories, analyses, databases, and reports before and after HS *Assessment of impacts to beaches, plovers *The number and location of inlets and lengths of sandy beaches changed with the storm *BMPs for future storms **Complete: Inventory of habitat modifications to Sandy Beaches in the US Maine to North Shore of Long Island (and applicable pages of summary available)		Yes	Yes			connect states to state specific shoreline structure inventories 3 phase project, 2 are complete, results available
Field data collection in NWR using mobile devices (USGS)		iPlover, app available for download			NROC newsletter			
Impacts of SLR and Management decisions on piping plover nesting suitability in HS areas (USGS)	Possible site in NE	Peer-reviewed article that summarizes regional future-casting of the effects of SLR and future management decisions			NROC Newsletter			Parker River? MT to clarify
NROC Resilient Shorelines grants								
Project	Location	Products	NE Ocean Data Portal	State Viewers	Presentation /Web/News/ Blog	Workshop	Training	Comments
CT Marsh Migration Modeling (Warren Pinnacle)	CT	*New data layers *Share methods and lessons learned	Maybe (marsh layer)	CT viewer	Webinar or presentation at future NROC meeting	Yes, part of marsh workshop		
Living shorelines explainer card (ERG)	NE coast	Card stack for coastal property owners			Outreach			
Coastal resilience planning (Rockingham Planning Commission)	NH	Implementation of priority actions identified in local hazard mitigation plans			Sharing lessons learned Sponsoring blog?			
NACCS data (RPS/ASA)	NE coast	Database hosted at NERACOOS		Yes				
StormReporter and Habitat Tool (Blue Urchin)	MA, RI RI	Habitat tool, app and upgrades			Webinar or presentation at future NROC			how RI and MA plan to use tool

MARCO Climate Change Adaptation grants								
Project	Location	Products	NE Ocean Data Portal	State Viewers	Presentation /Web/News/ Blog	Workshop	Training	Comments
Wetland Restoration Priorities for Climate Risk Reduction (Environmental Law Institute)	Mid-Atlantic	Published handbook that includes an inventory of the planning and analytical tools that are available to aid in the identification of priorities for wetland and wetland-related NNBF restoration based on risk reduction and associated resilience outcomes, and an inventory of climate- and resilience-related data sources that can be integrated into protection and restoration prioritization plans and tools.			One or more brief articles on findings and recommendations including a framework and regional harmonization opportunities.	a webinar to help users understand the recommendations.	Demonstration of use of Tool: with the cooperation of a MARCO state (possibly Delaware), ELI will meet with and assist state staff in determining how best to demonstrate and apply a modified priority Tool to a sample location. This will take the form of cooperative application of the state's technical capacities in conjunction with the recommended approach developed by the project to show the concept in its application to sites of interest.	
Facilitation of the Improved Use and Understanding of Natural and Nature-Based Features (NNBF) in the Mid-Atlantic (National Wildlife Federation)	Mid-Atlantic	Published report of findings: Digestable for local and state action. Seeks to answer questions about barriers and best practices to implementing NNBF for coastal resilience. Provide guidance on a coordinated, regional approach to usign NNBF to build climate resilience. Build local decision makers' knowledge on the economic, ecological and societal benefits associated with the use of NNBF as climate change adaptation.			press releases to highlight the outcomes of each workshop and to report of NNBF in light of climate change. use of social media to showcase workshop highlights	2 regional workshops (1 in NY or NJ, 1 in VA, MD, or DE) to further discussions and understanding of NNBF implementation in the region		



Coastal Hazards Resilience Committee Accomplishments 2005-2015

The CHR Committee and its partners work to 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. The Committee considers the following efforts to be among its top accomplishments:

➤ **Distributed \$550,000 through 3 grant programs to communities and other partners in the NE region to build resilience to coastal storms, flooding and sea level rise.**

Municipal Coastal Resilience Grant (2012)s: 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.

- Ogunquit, Maine to assess adaptation strategies for protecting their sewage treatment plant from sea level rise & storm surge
- Portsmouth, New Hampshire to assess the impacts of sea level rise and storm surge on municipal facilities and other sensitive areas and to start integrating adaptation into municipal procedures.
- Scituate, Marshfield, and Duxbury, Massachusetts to assess the vulnerability of public infrastructure and other natural resources (salt marsh & shellfish) from impacts of sea level rise, to identify adaptation strategies, and related outreach
- Block Island, Rhode Island to assess adaptation strategies for ferry terminals and associated infrastructure and develop short and long-term engineering solutions
- Greenwich, Connecticut to compile and analyze elevation certificates as a means to improve understanding of risk and improve emergency response efforts.
- Guilford, Connecticut to develop analyze long-term impacts of sea level rise & increasing storm frequency on community, including natural resources coastal resilience action plan with short and long term strategies

Community Rating System Grants (2014): 3 grants were made to coastal communities to look at opportunities to implement activities covered in FEMA's Community Rating System.

- Dover, NH to develop informational pamphlet on living in floodplains for residents in current floodplains and 50ft buffer area.
- Milford, CT to review current participation in FEMA's CRS program and develop strategy for increasing points for maximum participation.
- Westerly, RI to develop a residential training program on floodplains and options for decreasing flood risk.

Resilient Shorelines Grants (2015): In partnership with the North Atlantic LCC and NROC's Ocean and Ecosystem Health Committee, 5 grants were made to support resilient shorelines in NE. The projects will be complete in September 2016.

- Assessment of transportation infrastructure impacts on marsh migration in Connecticut. Warren Pinnacle
- Improving access to NACCS data for coastal management partners. RPS
- Communicating Living Shorelines concepts to property owners and municipal officials. ERG
- Taking action to improve flood resilience in coastal New Hampshire. Rockingham RPC
- Enhancing StormReporter to capture storm impacts to coastal habitats. Blue Urchin Consulting

➤ **Served as regional hub for coastal hazards, climate adaptation, and coastal resilience discussions for coastal management partners through regular conference calls, webinar series, and topic specific workshops on coastal hazards, sea level rise and marsh migration.**

➤ **Created MyCoast interface for StormReporter and King Tide photos.**

➤ **Responded to emerging issues and regional needs through development of funding proposals, organizing of workshops and trainings, and creation of workgroups, including coastal LiDAR, marsh migration, and living shorelines.**



Over the past 10 years, the OCEH Committee has successfully engaged with key partners and an extended membership numbering in the hundreds towards the goal of protecting and restoring coastal and ocean ecosystems in the northeast. The Committee has focused its efforts on two primary strategies:

- 1) *Support research and monitoring that enhances our understanding of ecosystem structure and function, 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.*

The Committee's many accomplishments include, but are not limited to:

- Developed a Coastal America priority restoration project list (2009) that served as the basis for current (2015) Regional Planning Body restoration/conversation efforts
- Conducted two successful Regional ecosystem-based marine spatial planning workshops (also see Ocean Planning Committee) (2009)
- Established a working group for Coastal Land Conservation Initiative (2010)
- Supported the successful expansion of the Gulf of Maine Ocean Data Partnership to include southern New England (2010)
- Established the Environmental Indicators Community of Practice (2010)
- Assisted with identification of regional ocean and coastal ecosystem health priorities through the New England-Canadian Maritime Collaboration and Planning Initiative (2011)
- Conducted an Ecosystem Health Indicators Conference (2011)
- Submitted a successful funding proposal for a coastal climate change land conservation demonstration project (2011)
- Supported the development of a regional ocean data portal and network for regional coastal and marine spatial data (also see Ocean Planning Committee) (2011)
- Merged NROC/NERACOOS OCEH committees (2012) to oversee development of a science and implementation plan for an Integrated Sentinel Monitoring Network for Ecosystem Change (2015)
- Conducted a Marsh Resiliency/Migration workshop, produced a guidance document, and established a community of practice (2014-2015)
- Created the Habitat Classification and Ocean Mapping Subcommittee to facilitate increased coordination and data sharing throughout the region (2014-2015)
- Participated in the Northeast Coastal Acidification Network (NECAN), which held 16 webinars that led to a "state of the science" workshop (2013-2014) and conducted a series of stakeholder engagement workshops (2014-2015)
- Conducted a Regional Tidal Crossing Assessment workshop and established a community of practice through a joint collaboration with the GOMC and NALCC (2015)





Ocean Planning Committee Accomplishments 2005-2015

The Ocean Planning Committee and its partners work to assist in the development of a regional ocean plan to support ecosystem-based management of the Northeast's marine environment and its human uses. The Committee considers the following efforts to be among its top accomplishments:

➤ **Led Northeast region in organizing partners and an early vision for regional ocean planning**

NROC convened three regional Ocean Planning Workshops (2010, 2011, 2012) to discuss with partners the development of a framework for regional ocean planning. These events helped prime the region for establishment of the first Regional Planning Body in the U.S. in November 2012.

➤ **Secured funding to support NROC's support role in advancing regional ocean planning**

NROC has been awarded five separate grants totaling over \$7M from public and private sources, and has leveraged significant in-kind resources, in support of its regional ocean planning work. These funds have supported NROC's highly talented ocean planning staff, enabling the Northeast to lead as a national model.

➤ **Launched and supported the Northeast Ocean Data Portal**

The Northeast Ocean Data Portal Working Group (a collection of NROC agencies, staff and key partners) formed in early 2010, and in collaboration with NROC, launched the initial version of the portal in mid-2011. Now, a robust Northeast Ocean Data Portal provides access to thousands of data layers of integrated ocean information (ocean use patterns, administration and cultural information, habitat, and physical/oceanographic information), and experiences over 2000 unique visits/month. The portal has become the underpinning of the Northeast ocean plan and its success going forward into implementation.

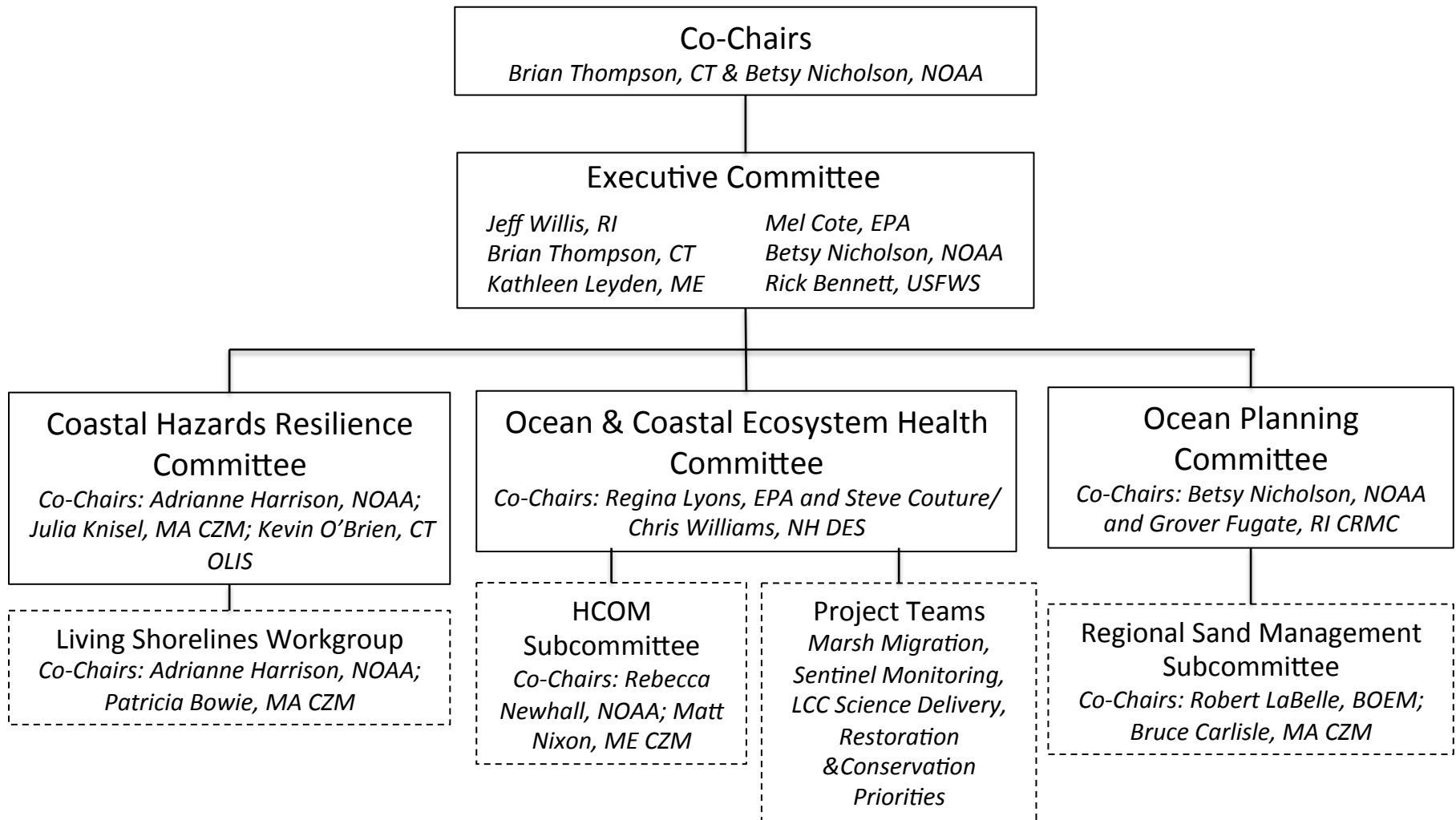
➤ **Sustained progress towards Northeast Regional Ocean Plan**

Through its support role for the Northeast Regional Planning Body, NROC members and staff have enabled:

- Publicly approved 'Framework for Ocean Planning in the Northeast,' which includes principles, engagement strategy, goals, objectives and work plan.
- A robust baseline assessment of the Northeast economy and ecology, and characterization of human activities, cultural resources and marine life and habitats in base and summary products.
- Establishment of multiple interagency work groups to support human use and marine life characterization projects, creating relationships and consensus products.
- Progress towards specific recommendations for improving effective decision making, which include:
 - Enhancing effectiveness of pre-application best practices among agencies, with project proponents and stakeholders;
 - Developing agency guidance for use of plan under existing authorities, particularly for review and permitting actions; and
 - Use ocean plan and interagency guidance to support state and federal objectives under the CZMA.



Organizational Chart



New England Climate Adaptation, Preparedness, and Resilience Seminar - Overview

Co-Sponsor	Federal Emergency Management Agency Region I and New Hampshire Homeland Security Emergency Management with backing from a premier interagency planning team.
Goal	Support state, tribal, and federal coordination, integration, and prioritization of community climate adaptation, preparedness, and resilience initiatives, and identify new opportunities for whole community collaboration and investment to enhance regional resilience.
Objectives	<ol style="list-style-type: none"> 1. Examine methods to better integrate existing and emerging actionable information into current and pending federal regional planning in order to enhance management and/or adaptation of climate risks and vulnerabilities. 2. Identify collaborative and sustainable whole community approaches to advance climate adaptation, preparedness, and resilience programs, policies, and strategies within Region I, consistent with seven recommendation themes from the State, Local, and Tribal Leaders Task Force on Climate Preparedness and Resilience. 3. Examine community coalition research and investment opportunities to support climate adaptation and resilience initiatives. 4. Capitalize on existing regional community climate adaptation champions and centers and support broader engagement by whole community partners in their efforts and initiatives.
Key Outcomes	<ol style="list-style-type: none"> 1. Enhanced understanding and integration of existing and proposed community initiatives with a focus on resiliency and mitigation strategies. 2. Support state, tribal, and federal interagency climate adaptation information-sharing processes geared toward inter-agency and inter-disciplinary coordination throughout the entire region. 3. Establish cohesive framework for continued dialogue among whole-community partners to build and sustain regional community activities.
Format	<ul style="list-style-type: none"> • Customized to goals and capabilities of New England states • One and a half day event (Day 1: 10:00am – 5:00pm, Day 2: 8:00am – 3:00pm) • Features interactive seminar presentations, facilitated discussions, and brainstorming sessions that identify actionable next steps for regional resiliency efforts • Presentation, case study, and focus areas include: research and investment opportunities; existing and proposed plans and coalitions; context for climate narrative based on effects to infrastructure (4 critical lifeline sectors), health and social vulnerabilities, and natural resources; regional challenges; and actionable next steps
Scenario	Scenario is based on documented and projected climate-related threats and hazards to New England communities.
Audience	Approximately 200 state, tribal, and federal interagency partners and other stakeholders.
Presenters	<ul style="list-style-type: none"> • Senior government officials and climate/infrastructure subject matter experts. • State, tribal, and federal subject matter experts • Out briefs during plenary sessions addressing priorities, challenges, and solutions identified by their group for their assigned focus areas
Location	University of New Hampshire's Holloway Commons at 75 Main Street in Durham NH on 24-25 May 2016. Light refreshments and lunch will be provided on both days courtesy of NH HSEM.
Points of Contact	<div> Matt McCann Deputy Federal Preparedness Coordinator FEMA Region I 617-956-7594 matthew.mccann@fema.dhs.gov </div> <div> Marc Tagliento Chief, Federal Activities Section National Exercise Division 202.786.9685 marc.tagliento@fema.dhs.gov </div>