Meeting Agenda • April 8, 2009 • NOAA Office in Gloucester, MA

9:15 am	**Arrive**
9:30 am	**Welcome and Introductions** Kathleen Leyden, Maine – State Chair and Mel Coté, EPA – Federal Chair
9:35 am	**Quarterly Updates** Kathleen Leyden, Maine – State Chair Quarterly updates are intended to provide Council members with information on recent NROC activities, state or federal initiatives of interest, and other items of regional significance. The Council is encouraged to review the updates and come to the meeting with questions, suggestions for NROC action, etc. Approximately 20 minutes will be set aside for discussion of updates at each meeting. Please review items before the meeting. Content: ▪ Revised NROC State and Federal Member Contact Lists [Page 4] ▪ Measuring Success: NROC Assessment and Evaluation [Page 8] ▪ Sea Grant Research Plan Summary and Workshop [Page 10] ▪ CZ09 Sessions – EBM/ROG sessions [Page 13] ▪ Federal Partners Activities (Mel and Betsy) ▪ Summer NEGC Meeting (Kathleen) ▪ NERR Coastal Training Program Support for NROC (Kathleen)
9:55 am	**NROC Committee Progress** Committee Chairs and David Keeley, NROC Contractor Committees will report out to NROC members on activities for 2009. Committees will be asked to report back to NROC on their progress with highlighted activities at the Spring meeting. Desired decision(s) or other outcome: ▪ Councilors are aware of what the committees will work on in the next 3-6 months ▪ Councilors recommend staff, organizations, or related efforts that Committees should engage in NROC activities Content: ▪ Committee highlights (45 minutes – 15 minutes/committee) ▪ Progress to date, 3-6 month timeline for continued progress, and share Committee rosters. ▪ Request suggestions for organizations/individuals that need to be involved with Committee/activities Materials: NROC Committee rosters [Page 14], 2009 Work Plans [Page 16]
10:45 am	**Decision-making Protocol Recommendation from the Executive Committee** David Keeley, NROC Contractor Desired decision(s) or other outcome: ▪ Councilors review and accept decision-making protocol Content: ▪ Review and discuss draft protocol for EC decision-making (20 minutes) Materials: Draft protocol [Page 37]

11:15 am	**Appropriations Strategy** Kathleen Leyden, Maine – State Chair Desired decision(s) or other outcome: ▪ Councilors commit to support appropriations strategy Content: ▪ Review and discuss current appropriations strategy (20 minutes) Materials: NEGC congressional request: priority ocean issues [Page 40]
11:35 am	**Marine Spatial Planning in New England** Betsy Nicholson, NOAA and Deerin Babb-Brott, Mass EOEEA Desired decision(s) or other outcome: ▪ Councilors are aware of MSP activities in New England ▪ Address potential follow-on actions to the TNC workshop Content: ▪ Update on MSP activities in the New England (5 minutes): ▪ Recap NROC's 09 MSP activity ▪ Update on TNC workshops including goals of workshops and role of NROC ▪ Understand NROC level of support for MSP in the region (5 minutes) ▪ Assess need for future session to refine expectations and content of MSP activity (5 minutes)
12:00 pm	**Lunch** Please feel free to bring your own lunch or $ for a lunch order.
12:45 pm	**LiDAR Discussion** Susan Russell-Robinson, USGS Desired decision(s) or other outcome: ▪ Councilors are aware of recent LiDAR acquisition requests made for the NROC footprint ▪ Participants understand opportunities available to set NE LiDAR acquisition priorities ▪ NROC provides support for upcoming LiDAR workshop and the tasks of the 2009 work plan for Data Acquisition Content: ▪ Briefing on NH/ME LiDAR proposal referenced in the NROC appropriations request (25 minutes) ▪ Clarification of USGS LiDAR Stimulus Call for Proposals (10 minutes) ▪ Discussion on elements of regional priority setting process for LiDAR workshop (10 minutes) Materials: LiDAR workshop description [Page 44], LiDAR Proposal from UNH and Great Bay NERR [Page 45]

1:30 pm	**Collaboration between NROC and NERACOOS** Mel Coté, EPA and Malcolm Spaulding, President - NERACOOS Desired decision(s) or other outcome: ▪ Councilors are aware of possible synergies between NROC and NERACOOS ▪ Provide advice on ways to sustain strong interaction between the two organizations Content: ▪ NERACOOS offers recommendations for ways to advance NROC work plan priorities
2:15 pm	**NROC Activities and Perspectives in Climate Change** David Russ, USGS Desired decision(s) or other outcome: ▪ Council members are aware of other New England climate initiatives including responses to the NEGC Climate Resolution and the Federal Partners Interagency Climate Workshop. ▪ Council discusses role of NROC in facilitating a regional strategy for coastal and ocean climate adaptation ▪ Councilors agree to mechanism to communicate its role in regional climate change strategies Content: ▪ Review of climate activities in the NROC work plan (5 minutes) ▪ Engagement of other regional ocean governance groups in climate activities (5 minutes) ▪ Updates from regional climate initiatives – NEIWPCC, NESCAUM, Federal Partners (30 minutes) ▪ Discuss and outline NROC's role in facilitating a regional coastal and ocean climate adaptation strategy in light of partner initiatives (20 minutes) ▪ Review and discuss options for expressing NROC's role including draft NROC statement on climate change (15 minutes) o Statement on climate change o More formal inclusion in committee descriptions and work plans o Other Materials: Gulf of Maine Council Climate Network Update [Page 46], NEGC Resolution on CC [Page 47], Revised NROC statement on climate change [Page 49]
3:30 pm	**Closing Business & Adjourn** Mel Coté, EPA – Federal Chair and Kathleen Leyden, Maine – State Chair

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Submitted by Adrianne Harrison, NOAA

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Note on Changes in NROC Membership for 2009:

1. Due to staff changes, Deerin Babb-Brott will serve as the Council member for Massachusetts' Executive Office of Energy and Environmental Affairs. Bruce Carlisle and Julia Knisel will serve as alternates. Greg Watson remains the second Council member for Massachusetts.

2. Due to budget limitations, Vermont will not be sending a representative to quarterly Council meetings. Vermont will continue involvement at the Standing Committee level. Additionally, the Executive Committee will communicate with Vermont through quarterly updates on NROC's progress and upcoming activities.

3. Due to staff changes, the Minerals Management Services NROC participant will be Bob LaBelle with Erin Trager serving as the alternate and member of the Energy committee.

4. Due to staff changes, the US Department of Agriculture Natural Resource Conservation Service participant will be Pooh Vongkhamdy with Andrew Lipsky serving as the alternate and member of the Ecosystem Health Committee.

Measuring Success: NROC Assessment and Evaluation

Submitted by David Keeley, NROC Contractor

Background: Formed in 2005 by the six New England Governors the Northeast Regional Ocean Council is a state – federal partnership that addresses ocean and coastal issues that require or significantly benefit from a regional response. It is timely to develop and apply some ongoing evaluation to help the Council record and assess its progress. The following are drawn from the Council's Terms of Reference and should form the basis of an evaluation strategy.
Mission: To assist the region's Governors identify coastal and ocean management priorities that require a coordinated regional response and to foster collaboration that effectively addresses these issues.

Defining & Measuring success

- You can't manage what you can't measure (or track) *Peter Drucker*
- What gets measured gets done / improved
- If you don't know where you're going, every road takes you there

Council Purpose: The Council provides a forum for the six New England states, federal agencies, and interested regional groups to address ocean and coastal issues that require a regional response. NROC was formed to augment the functions and authorities of existing regional entities. To the maximum extent possible it will build upon current state, multi state, and federal governance and institutional mechanisms to manage ocean and coastal resources.

NROC may convene working groups, when appropriate, to identify actions and develop recommendations for approval by NROC. NROC will make recommendations to the New England Governors, the NEGC-ECP Oceans Working Committee and appropriate federal agencies on regional priority issues. NROC will produce an annual statement of priorities and an annual work plan. NROC shall execute actions and activities identified in annual work plan.

Measurement methods: The Council has a variety of ways to measure its progress and thus it needs to decide what is sufficient for it purposes. Measurement methods, ordered from least to most rigorous, include:

- Subjective & anecdotal
- Systematic subjectivity
- Objective performance indicators (either point in time/snapshot assessments or continuous tracking for continuous improvement)
- Internal and external data gathering and assessment

Recommendation: It seems that #2 above (e.g., systematic subjectivity) is sufficient at this time. Attached is a simple 1-page "early-warning " diagnostic template that could be completed twice a year by the Committee co-chairs and the Executive Committee (on behalf of the Council) to gauge their collective progress in achieving the Council's mission and to determine if modifications are necessary.

The concept of an assessment and evaluation process should be discussed by the Executive Committee. These materials could be amended as appropriate and provided to the full Council for their consideration at the April 8th meeting.

Assessing NROC Performance: Bi-annual evaluation template

	Inputs	Score	Outputs	Score	Outcomes
Committees (Completed for Hazards, Energy, Ecosystem Health)	State & federal agency participation Membership representative of interests Quality & frequency of interaction (e.g., level of participation, follow through, active, etc.) Active leadership Cash & in-kind support for work tasks Web presence (e.g., current, active, etc.)		Steady progress on work plan tasks Products completed (e.g., workshop, report, proposal, etc.)		
Council	Participation by Councilors before, during and after meetings (e.g., commitment to mission, etc.) Steady, helpful advice from Ex. Committee Quality & frequency of interaction (e.g., progressive agendas, follow through, active, etc.) Interaction with key partners (e.g., NEGC, sub-regional organizations, etc.) Secure in-kind and cash support for work plan implementation Good recordkeeping (e.g., decisions, rosters, in-kind/cash match documented, etc.)		Guidance and interaction with committees Growing list of important Council accomplishments Partner awareness and support of NROC		

Scoring System – 1=poor, 2=fair, 3=good
Outcomes - long-term outcomes (physical changes/results of an activity that are likely decadal changes), mid-term outcomes (behavior changes) and short-term outcomes (impacts of a project that occur immediately—changes in understanding of the end-user, etc

Gulf of Maine Regional Ocean Science Plan Executive Summary

Submitted by Judy Pederson, MIT Sea Grant

Introduction

The Gulf of Maine Regional Ocean Science Initiative evolved from an awareness of the importance of integrated approaches to addressing ecological, environmental, and social influences in coastal and marine ecosystems at the regional level. In response to a call for regional coordination of research by the U.S. Commission on Ocean Policy, the National Sea Grant Office initially funded eight projects to develop regional ocean research plans, one of which was awarded to the Gulf of Maine region.

A Gulf of Maine Regional Ocean Science Council was appointed to oversee the development of a Strategic Regional Ocean Science Plan. The members include the Northeast Sea Grant College Program Directors, ten appointed members representing diverse areas of expertise from government, academia, and industry, and two Canadian representatives. Recognizing the importance of integrated approaches, this Gulf of Maine Strategic Regional Ocean Science Plan responds to the call for identifying priority themes that enhance ecosystem-based management and support coordination and collaboration of ongoing efforts.

Identification and Selection of Priority Concerns for the Gulf of Maine

A bottom-up approach was used to solicit broad-based input from stakeholders (broadly defined as the users, industry, government, academia, educators and the public). This information was used to identify research and monitoring needed to address priority concerns. In addition, information from previous and current surveys and reports were reviewed for gaps or other areas that are timely and relevant for this planning initiative, including the priorities of the governors and Canadian agencies and organizations for the Gulf of Maine.

Keeping a focus on the priorities identified by the stakeholders, the Regional Ocean Science Council reviewed the concerns of stakeholders and identified those that (1) were relevant to the region, (2) were important societal issues, (3) address managers and decision-makers needs for information and technical support, and (4) indicate research that will support ecosystem-based management approaches.

Thematic Priorities for the Gulf of Maine

Five areas were chosen as representative of issues of concern in the Gulf of Maine. These are:

- Climate Change and the Role of the Oceans
- Human Health and Ocean
- Human Activities and the Oceans
- Coastal Resiliency, and
- Management and Governance

Two factors identified as drivers are climate change and humans. Although global climate change research is not a regional issue, climate change impacts, the response of the ocean and its role in mitigating effects are viewed as a critical thematic area for the Gulf of Maine ecosystem. The concerns on climate change expressed by stakeholders were (1) the need to understand extreme scenarios for coastal communities, (2) addressing changes brought about by global climate change, (3) examining the biotic alterations in the face of changing climates, and (4) developing models with a high predictive capability. Reducing uncertainty in components of climate change that affected the Gulf of Maine was seen as a priority.

Humans are a driver of change in ecosystems and will adapt to environmental changes and respond to environmental events. In addition, humans may restore and seek to preserve ecosystems. Broadly speaking, stakeholders identified concerns related to stressors (e.g., contaminants, pollutants, diseases, seafood safety, and safe use of the coastal and ocean waters) and the need to protect and sustain ecosystems. These issues are addressed in relation to the thematic area of Human Health and the Oceans, reflecting concern for impacts from

harmful algal blooms, diseases, and seafood safety. Research focus is needed on causes of harmful algal blooms and prevention of introduced species that impact human health, and improved understanding of cumulative impacts of pollutants and contaminants.

For the Gulf of Maine, the importance of fisheries to the area, activities that promote development, and use of natural resources in conjunction with protection to habitats and important species reflect the need to balance use of ecosystem goods and services with protection of resources to ensure sustainability. Federal agencies in both Canada and the U.S. focus on fisheries and environmental and human health. The agencies support science to improve management that balances development and protection of ocean resources and are adopting or have adopted ecosystem approaches to management. Specific issues include habitat alteration, impacts that alter native communities and biodiversity, protecting marine mammals, and cumulative impacts of uses, pollutants and contaminants on ecosystems.

Recommended research needs focus on integrating traditional physical, chemical, geological, and biological oceanographic information into useful products and tools to address challenges of moving towards ecosystem-based management. This may include improving our understanding of cumulative impacts, conducting socio-economic studies, and developing new technologies.

Coastal resiliency implies an ability of the system to rebound from disturbances. This implies there a commitment to smart growth along the coast to prevent major impacts and that sufficient information on sea level rise and increased frequency and duration of storms and other disturbances exist to predict associated changes in erosion and coastal damage. Threats to infrastructure from coastal zone changes will be costly and may endanger human health and safety. Similarly, higher temperatures and other oceanographic changes are likely to impact fisheries, natural communities that support living resources of value, and facilitate introductions of disease-causing organisms. Research should identify areas at risk, provide information on socio-economic damages, and use this information to identify benefits of planning wisely.

Policy makers respond to public concerns, balancing development with environmental protection. Rarely are these issues reviewed or evaluated to see if they achieved the intended goals. The questions of how to bring science to policy makers and to identify critical needs and tools to assist policy makers and managers serve as a framework for ecosystem approaches to management. Canada is poised to pass new legislation but also is taking a practical approach to ecosystem management. The U.S. has adopted ecosystem approaches to management for fisheries, but federal-level ocean policy reform has lagged in implementation. Managers need data that evaluates impacts of activities, often requiring new tools that translate scientific data into valid useful information. These tools may include manager-friendly maps, scientifically-based models that are easy to use and transparent, and integration of decision-making options for specific activities.

Cross-Cutting Issues

For each of the themes identified above as topics of scientific concern, several other cross-cutting issues were raised throughout the discussions. The issues include technology development of new tools, improved data management (e.g., integration and access), enhanced collaboration and cooperation, incorporation of scalar considerations, technology transfer, engagement of stakeholders, and development of outreach and educational materials. In addition, implementation of science to support ecosystem-based management will depend on sustainable funding.

Implementation and funding are necessary if the Gulf of Maine Regional Ocean Science Initiative is to continue. The Northeast Sea Grant College Programs support regional research projects. In addition the types of research currently funded by Sea Grant are relevant to nearly all thematic areas and support management concerns. The Northeast Sea Grant College Programs have developed outreach and advisory networks for several thematic areas, e.g. fisheries, aquaculture, introduced species and coastal development.

Future Directions

The public identified four major areas of concern in a survey where they were asked to rank the thematic priorities. The four major areas of concern were: sustainable fisheries, cumulative impacts, balancing sustainability of ocean resources with development, and impacts of climate change on ecosystems and coastal areas. Although research funding is available for ocean research, often it is has not always provided comprehensive information to managers in support of overarching concerns such as cumulative impacts, sustainability, and climate change in the context of ecosystem-based management. Future implementation should support collaboration and cooperation to address issues that will support research needs to address complex problems.

CZ09 Session Update

Submitted by Adrianne Harrison, NOAA

The preliminary program for the Coastal Zone 2009 Conference in Boston, MA includes three sessions devoted to region ocean governance discussions. These sessions will highlight NROC, the Gulf of Mexico Alliance, the West Coast Governor's Agreement, and several other regional entities as an example of governance structures developing in the US. The three sessions are summarized below:

1. Challenges of Regional Collaboration - The purpose of this two and a half hour conversation is to bring together representatives from the full spectrum of regional ocean governance initiatives: from the more mature efforts in the Great Lakes and Gulf of Maine to the active efforts in the Gulf of Mexico, West Coast, Northeast, Puget Sound and the Chesapeake, and finally, the newer alliances in the South Atlantic and Mid-Atlantic, as well as others. We invite representatives of these efforts and their partners to discuss the specific challenges with working across geographic, cultural, political and agency jurisdictions, as well as to develop strategies for moving forward with regional or ecosystem scale alliances. *Note: NROC is the actual host for this session and will be asking for support from members to organize and facilitate this session.

2. Lessons Learned Comparative Panel – The purpose of this one and a half hour panel is to bring together representatives from the four regional ocean governance groups formed in response to the US Commission on Ocean Policy Report (West Coast Governors Agreement, Great Lakes Commission, Northeast Regional Ocean Council, and the Gulf of Mexico Alliance) to share lessons learned. This panel will ask each group to describe their structure, process for mobilizing to action, and outcomes of the partnership.

3. Ocean Governance in Practice – The purpose of this one hour panel is bring together representatives from ocean governance groups not included in the comparative panel that can offer lessons learned and new approaches as regional efforts continue to grow around the country. This session will include groups from outside the US.

The official CZ09 technical program will be available in April.

NROC Committee Rosters

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Paul Currier	NH DES
Verna Delauer	COMPASS
Steve Halterman	MA DEP
Christian Krahforst	Mass Bays Program
Betsy Nicholson	NOAA Coastal Services Center
Judy Pederson	MIT Sea Grant
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Ocean and Coastal Ecosystem Health 2009 Work Plan

The New England Governors' *Coast and Ocean Action Plan* (2007) establishes the following ecosystem goal:

> *The importance of ocean and coastal ecosystem health is recognized as critical to the long-term sustainability of our region. All levels of government have access to and utilize comprehensive information to manage ocean and coastal resources.*

Described below are nine activities, drawn from the 2007 *Coast and Ocean Action Plan* that the Council will support in 2009-2010. The first three activities are high priorities.

Activity #1: Increase the visibility of state-federal work groups

Description: There are a number of existing state-federal partnerships in New England that are working to restore and protect ocean and coastal ecosystem health. The following are working on issues of priority to NROC.

- Water Quality Standards Work Group and a Nutrient Criteria Regional Technical Advisory Group (RTAG) – NEIWPCC coordinates the work of these groups on the development and adoption of state nutrient criteria as part of their water quality standards. The effort has been phased, first focusing on lakes and ponds, then rivers and streams, and finally marine and estuarine waters.
- New England Regional Dredging Team (NERDT) – This federal-state partnership is working to improve the dredging process in New England. It consists of three entities:
  - Mid-Level Managers Group – It consists of EPA, the Corps, National Marine Fisheries Service, and the Fish and Wildlife Service and meets 2-3 times per year to discuss policy issues related to dredging and wetlands management.
  - Sudbury Group -- It is chaired by EPA and the Corps and meets 2-3 times per year to address technical issues associated with dredging and dredged material placement that have regional implications.
  - State Dredging Teams -- Each New England state has formed a state dredging team that deals with both technical and policy issues at the state and project level.
- Coastal America – This federal-state-private partnership promotes collaboration across the federal government on the restoration of coastal habitats and on outreach and education about ocean and coastal issues. The New England Regional Implementation Team (NERIT) is chaired by the U.S. Army Corps of Engineers, and includes EPA, NOAA/NMFS, USFWS, Department of Defense, U.S. Coast Guard, and state coastal zone management and fisheries agencies. Several states have established Corporate Wetland Restoration Partnerships through which private companies provide financial and in-kind technical assistance to match federal and state funding for restoration projects.
- Atlantic Coastal Fish Partnership – This pilot effort under the National Fish Habitat Action Plan (NFHAP) brings together fishery and non-fishery associated organizations (governmental (federal, state, local) and non-governmental organizations (academic, non-profit, professional, etc.) to work cooperatively for the benefit of coastal habitats along the Atlantic seaboard. The partnership promotes the sustainability of Atlantic coast diadromous and other estuarine-dependent fishes and their essential habitats through on-the-ground habitat protection and restoration projects. Key issue areas will be focused on regional, watershed, or ecosystem scales looking at ecological connectivity, water quality and quantity, and habitat alterations and modifications, and implemented through on-the-ground projects. Linking these actions with established partnerships such as the Natural Resources Conservation Service (NRCS) and the reauthorized Farm Bill, the Fish and Wildlife Services' (FWS) Partners for Fish and Wildlife and the National Fish Passage Programs/Fish Passage Engineering capacity offers NROC partners a unique platform to highlight critical habitat solutions in the Northeast and meet multiple agency and program

goals and objectives.

Activity Lead for Council: Mel Cote, EPA – Region 1

Potential Partners: New England Interstate Water Pollution Control Commission (NEIWPCC); EPA; Corps; NOAA/NMFS; USFWS; ASMFC; state water quality, coastal zone management, and fisheries management agencies

Deliverables:

- NROC, with assistance from the Nutrient Criteria RTAG, will report on progress toward development of estuarine nutrient criteria and on the NH DES incorporating a numeric nitrogen criterion into the state's Consolidated Assessment and Listing Methodology for determining estuarine water quality impairments.
- NROC, with assistance from the NERDT's Sudbury Group will diseminate a regional protocol for determining time-of-year (TOY) restrictions on dredging to protect fishery resources.
- The Coastal America NERIT will complete 4-5 multi-agency salt marsh or fish passage restoration projects and NROC will increase the visibility of the Corporate Wetlands Restoration Partnership as they work to increase the amount of private funds donated to federally sponsored projects.
- Identification of several pilot habitat restoration projects that showcase habitat types and categories which provide the greatest amount of benefits for multiple fish and wildlife species.

Work Tasks:

1) NROC will periodically engage these groups to ensure there is active participation by the pertinent state and federal agencies.
2) NROC will request these initiatives to provide annual progress reports. They will identify obstacles to achieving their mission and describe how NROC can assist them.
3) NROC will increase the visibility of these groups by communicating with the Governors and cabinet officials about the results of these groups.
4) The FWS and NRCS leadership in the New England States will meet with the NGO, academic, government and private sectors in 2009 to discuss opportunities to utilize these existing programs and maximize the resource outcomes in support of and complementing NROC priorities. They will produce regional prioritization matrices for all identified ACFHP applicable conservation and restoration projects (e.g., where, how many, costs, and project leads, etc.); review November 8, 2008 Strategies “Final Interim Strategies and Targets for NFHAP” and discuss how each partner and entity will contribute to the adopted goals; develop work plan for Northeast efforts based on interest and capacity of interested partners

Schedule and Resources:

Timing:

- Ongoing

Resources needed:

- NA

Resources available:

- In-kind support by the agencies involved in these initiatives

Activity #2: Convene ocean ecosystem health workshop

Description: Organize and convene a workshop that assembles policymakers, managers and scientists to:

- Create a regional definition of ecosystem health;
- Identify what indicators are most pertinent to and can be integrated to measure marine ecosystem health over time; and
- Initiate discussions about the degree of specificity that key metrics must contain for future statutory and regulatory applications.

Activity Lead for Council: Mel Cote, EPA – Region 1

Potential Partners: Communication Partnership for Science and the Sea; Fisheries and Oceans, Canada; NOAA National Marine Fisheries; U.S. Fish and Wildlife Service; The Nature Conservancy; The Ocean Conservancy; state coastal zone management and fisheries management agencies; RI SAMP, MOP, Sea Grant Programs, NEP

Deliverables:

- Assessment of how responsive current ecosystem indicator initiatives are in enabling marine ecosystem-based management.
- A voluntary regional consensus statement among policymakers, managers and scientists that defines ecosystem health and identifies key metrics needed to effectively describe the viability and resilience of the region's marine ecosystem.
- Recommendations for follow-up discussions related to:
  - integrating and strengthening regional indicator initiatives; and
  - engaging legal experts to develop legal standards for implementing marine EBM.

Work Tasks:

1) OEH works with partners to form workshop steering committee.
2) Assess regional work done to date to move toward an ecosystem approach to coastal ocean management – what is the problem we're trying to fix, where are we now and where are we going.
   - Prepare two whitepapers:
     a. Collation and synthesis of definitions of ecosystem health appropriate to the northeast
     b. Organization and categorization of current regional indicator initiatives – using the current inventory of indicator programs created by ESIP, adding to it and assessing their goals and objectives, intended user groups, and degree of stakeholder involvement
3) Convene policymakers, managers and scientists in a two-day workshop – described above.
4) Report out results to NROC and other NE decision-makers with next steps.

Schedule and Resources:

Timing:

- January 2009 – Form steering committee
- February – Assessment of regional work-to-date
- March and April – Creation of two whitepapers
- May or June – Two-day workshop
- July – Report out

Resources needed:

- Preparation of whitepapers $15,000
- Meeting venue, accommodations and travel $10,000

Resources available:
- COMPASS could potentially put some funding toward scientist travel and meeting costs

Activity #3: Conduct regional ecosystem-based marine spatial planning workshop

Description: Organize and convene a one-day workshop for policy-makers, managers and scientists that educates them about the ability of marine spatial planning to lend structure and a degree of integrated management that has previously been lacking in the marine environment.

Marine Spatial Management (MSM) seeks to organize and regulate patterns of space use for the benefit of users, the environment and society as a whole. A sound understanding of the space use patterns and spatial behaviors of the multiple stakeholders must serve as a basis for the management strategy. MSM is both a framework and a process for more integrated decision making about uses of marine space. Its goal is a fully comprehensive, integrated, plan-led system of management for the sustainable development of marine resources and for the use of contested marine space. There are five basic elements of marine spatial management:

1. Establishing the context within which the management process will be implemented;
2. Analysis and plan preparation;
3. Implementation;
4. Monitoring of plan performance; and
5. Evaluation and adaptation.

The objectives of marine spatial management typically focus on five main themes:

- Sustainable use of resources;
- Marine conservation;
- Optimization of space use;
- Avoidance and resolution of spatial conflicts; and
- Enhancing the living standards and quality of life of coastal communities.

MSM can create an institutional framework in which decisions can be taken not simply for the immediate gain of those directly affected, but also for the longer term benefit of society as a whole. It should facilitate the declaration of agreed strategic objectives to which all stakeholders agree and provide a sense of direction through the ranking of objectives for given areas. Through the assessment of cumulative spatial impacts arising from different forms of activity and development, it can begin to identify options for the mitigation of such effects. And in certain circumstances, it can establish a sound basis for spatial allocation or zoning of activities.

Activity Lead for Council: TBD

Potential Partners: NOAA, MA, TNC, MOP, OceanVisions, state coastal management and fishery agencies, TOC

Deliverables:
- Workshop for policy-makers, managers and scientists
- "Next steps" document on how this approach could be used on a regional basis

Work Tasks:

1) Form workshop steering committee

2) Distribute product: Inventory planning frameworks from around the world (MOP is contracting the production of this evaluation in Fall 08 for use in MA Ocean Management

Planning effort)

3) Develop a strawman workshop goals/objectives statement including draft workshop agenda and invitation list
4) Convene policymakers, managers and scientists in a one-day event
5) Report out results to NROC and other New England decision-makers with a "next steps" document on how this approach could be used on a regional basis

Schedule and Resources:

Timing:

- Meeting – May 2009
- Report - July 2009

Resources needed:

- Meeting Substance Planning (staff or in-kind) - $5,000
- Meeting venue, accommodations and travel - $10,000 (OceanVisions staff time and travel as well as meeting venue/food, etc)

Resources available:

- MOP will fund inventory of planning frameworks for MA and will be directly used in this workshop ($50K)
- Agency/NROC member could absorb meeting substance planning ($5K)

Activity #4: Develop a vision for spatially explicit regional ocean governance in New England waters

Description: This activity will build on the results of the regional ecosystem-based marine spatial planning workshop (see above). The development of spatial sea use scenarios is a key-step in marine spatial management. There is a need for the northeast region to develop a regional vision that protects the future use of marine space based on a core set of mutually agreed on goals, objectives and assumptions about current conditions and the future. The development of a vision and future scenarios and a vision is both a communication and a planning tool and often a first step to realizing/leveraging cooperative action. This activity assumes that there will be differences within and among each state but that articulating the range of visions will be a helpful activity for informing regional ocean stewardship.

There are various reasons why it is important to develop alternative MSM scenarios:

1. To clarify possibilities and future conditions of the maritime area. In this regard the visual aspect of the development of scenarios is very important. The purpose of this step is to visualize future conditions. Therefore, the development of alternative MSM scenarios is an important communication tool;
2. To clarify the connection between basic assumptions, objectives and future conditions. In each scenario, there is a different emphasis on the basic "key values" of the marine area. This different emphasis leads to a different vision of the future of the marine space. The spatial and temporal consequences of each vision are shown, and alternatives are pointed out. Developing alternative scenarios makes the policy choices explicit;
3. To visualize what will happen if no management interventions are made. It can be useful to develop a 'trend scenario', based on current knowledge of the demand for space and extrapolation of trends. This scenario can help to question the current trends and spatial use. This is what can be characterized as the 'predictable' future. The spatial planner predicts what the future will look like if present trends continue;
4. To show new possibilities that can be generated from innovative actions and technologies. Alternative scenarios need the spatial planner to be more 'active' and creative: in these scenarios it is important to find new ways to optimize current and future activities and to think about innovative forms of current and new activities. To develop these scenarios, the spatial planner is

more 'designer' than 'predictor'.

Activity Lead for Council: TBD

Potential Partners: COMPASS, MOP, Ocean Visions, state coastal management and fishery agencies, MGS/UMass Boston

Deliverables:
Based largely on the Belgian North Sea (GAUFRE) project approach, in year 1, a planning document that describes the process that will be used to address the following steps:

- Step 1: Determine the time frame for planning;
- Step 2: Define current trends, demands for space and conditions;
- Step 3: Define "key values" of the marine area;
- Step 4: Define general goals and objectives for the marine area;
- Step 5: Develop general '"decision rules";
- Step 6: Develop alternative spatial sea use scenarios;
- Step 7: Define the significance of each spatial sea use scenario for the different functions and activities in the marine area; and
- Step 8: Evaluate each scenario.

In year 2, NROC will have facilitated the development of a common vision for sea use in New England via partners in the region.

Work Tasks:

1) Write and submit grant proposal to interested funders and secure funding (Approx $200K)
2) Contract out the development of a project management document
3) Facilitated meetings in each state and at a regional level to work through the steps listed below by convening policymakers, managers and scientists
4) Preparation of the graphical representation of each future scenario. Note that developing alternative marine sea use scenarios is not a scientific process but rather a flexible way of dealing with possible futures, based on gathered anecdotal and scientific data. The document should, more than extrapolating the future ("trend scenario"), try to reveal future possibilities and innovative thinking about the future.

Schedule and Resources:

Timing:

- Project Management Planning – June-December 2009
- Facilitated meetings in each state – January-March 2010
- Vision Document Preparation – April-June 2010

Resources needed:

- A budget needs to be developed for project management planning, facilitation of scenario building and document preparation.

Other Council Priorities

Activity #5: Participate in the development a consensus-based schema and register metadata for regional datasets; work with GOM ODP and NERACOOS to broaden the effort to the rest of New England, including Long Island Sound

Description: NROC will work to enhance collaboration amongst three complimentary efforts including:

1. The Northeastern Regional Association of Coastal and Ocean Observing System and Mid-Atlantic Coastal Ocean Observing Regional Association are working to expand existing observing and prediction capacities of institutions and agencies throughout the mid-Atlantic, New England and Maritime Canada.
2. The Gulf of Maine Ocean Data Partnership (GoMODP) facilitates discovery, accessibility, and interoperability of physical, biological, chemical, and geologic datasets for the Gulf of Maine watershed. The GoMODP Portal of the Global Change Master Directory provides access to information or metadata for datasets. Publicly available ocean data can be identified through the Portal. Data can then be downloaded or requested from the source agency or group. The Partnership has an EPA grant to develop a regional data exchange with a consensus-based schema.
3. The Federal Geographic Data Committee (FGDC) Marine Boundary Working Group (MBWG) is working to address issues pertaining to legal and technical aspects of marine boundaries. They provide a venue for communicating on and coordinating marine boundary activities. The marine cadastre data portal provides users access to digital marine boundary data distributed by various agencies.

Activity Lead for Council: Paul Currier, NH Department of Environmental Services

Potential Partners: Gulf of Maine Ocean Data Partnership, NERACOOS, MACOORA, Federal Geographic Data Committee (FGDC) Marine Boundary Working Group (MBWG) NASA Global Change Master Directory, GoMOOS, COINAtlantic

Deliverables:

- A network of regional data providers with metadata registered in a national directory (GCMD, FGDC, or GeoConnections) with robust, searchable discovery metadata that can be accessed through the GCMD Gulf of Maine portal.
- A regional, consensus-based schema for data interoperability.

Work Tasks:

1) Develop a white paper that addresses regional and subregional needs and presents case studies illustrating the importance of enhanced data management and applications to improve state and federal decision making on environmental issues. Engages national, international, and regional partners.
2) Convene a workshop to identify keep pilot datasets, develop the common schema and application to environmental management.
3) NROC engages GoMODP and encourages state data providers to participate in registering metadata.
4) NROC monitors progress of NERACOOS in defining data needs and protocols.
5) NROC monitors progress of GoMODP Exchange Network project.

Schedule and Resources:

Timing:

- White Paper Draft – February 2009
- Meeting – April 2009
- Strategic Framework – July 2009
- Schema implementation – December 2009

Resources needed:

- Workshop (meeting venue, accommodations and travel) – $10,000
- Contract for portal services and database scientist - $!5K?
- Schema development – in kind work from committee members

Resources available:

- In-kind agency resources

Activity #6: Accelerate research on priority coastal and ocean issues

Description: The Gulf of Maine Regional Ocean Science Plan identifies five areas of concern including:

- Climate change and the Role Oceans
- Human Health and Ocean
- Human Activities and the Oceans
- Coastal resiliency, and
- Management and Governance

Global climate change has the potential to change the chemistry, hydrology and biology of our oceans and coastal waters. Current research is generally focused on trying to predict the changes in any number of measurable endpoints and extrapolating what these changes may mean to the ocean ecosystem. More recently, the research focus has shifted to management or adaptation strategies.

Over-enrichment of coastal waters has been an area of intensive academic research since the 1970s. Nearly 30 years later, the regulation of nutrients, primarily nitrogen, is still in its infancy. Development of state water quality criteria for nutrients has moved ahead in some of the New England states, but has not made much progress in others.

Coastal development, dredging, fishing, global climate change, and eutrophication all result in habitat degradation and loss. The effect of the cumulative loss of habitats on marine biological communities or even on individual species has not received significant research attention. This issue needs to be addressed on multiple scales, from the individual inlet, cove, and stream to the open-ocean. Most New England states have begun mapping coastal habitats on GIS based systems.

Activity Lead for Council: Ellen MeCray, NOAA

Potential Partners: Sea Grant Programs, MOP, Coastal Zone Programs, National Estuary Programs, Research Reserves,

Deliverables:

- Annual progress reports and requests for assistance from these initiatives

Work Tasks:

1) The committee will identify current research initiatives pertinent to this activity.
2) NROC will facilitate collaborative research proposals or efforts and regional analysis of data to allow for more efficient use of scarce research funds.

Schedule and Resources:

Timing:

- Ongoing

Resources needed:

- NA (Congressional support of $1.5M to implement Ocean Science Plan)

Resources available:

- NA

Activity #7: Develop a New England social network analysis to better enable effective communication and collaboration

Description: Social network analysis is used to collect, analyze, and graphically represent data that describe the relationships within and between groups of people or organizations. It can also be used to represent how people interact with specific resources.
A typical social network map includes nodes, which represent individuals, organizations, or resources. These nodes are connected with flow indicators, which may represent the flow of information, energy, or money. The strength or importance of particular relationships is often depicted by varying thickness of lines and arrows.

Activity Lead for Council: Kathleen Leyden, Maine Coastal Program

Potential Partners: NOAA/ Coastal Services Center

Deliverables:

- An assessment of NE social networks and recommendations to improve communication and collaboration.

Work Tasks:

1) Engage NOAA/CSC to develop a proposal for a NE social network analysis including products, costs and methods to perform the work
2) Present proposal for NROC consideration

Schedule and Resources:

Timing:

Resources needed:

- TBD

Resources available:

- None

Activity #8: Promote existing regional ocean and coastal ecosystem health reporting initiatives: increasing awareness

Description: NROC is in a unique position to promote the use/application of coastal and ocean ecosystem health reporting initiatives within New England by state legislators, agency decision-makers, members of Congress and the region's Governors. Examples of these initiatives include *State of the Sounds/Bays* efforts conducted by National Estuary Program partners and others, the National Coastal Assessment, the Gulf of Maine Ecosystem Indicator Partnership, NW Atlantic Bioregional Assessment, Ecology and Oceanography of Harmful Algal Blooms, ocean observing systems, and Global Ocean Ecosystem Dynamics.

Activity Lead for Council: Susan Russell Robinson, USGS (Kathleen Leyden – Task #3)

Potential Partners: National Estuary Program; state coastal zone management agencies; Gulf of Maine Council; The Ocean Conservancy; The Nature Conservancy/NW Atlantic Bioregional Assessment; University of Southern Maine/WHOI; Communication Partnership for Science and the Sea, GOM ROSI, etc.

Deliverables:

- New England perspective on coastal and ocean ecosystem health
- Forums for state legislators, agency decision-makers and the region's Governors
- Whitepaper on the value and costs of a "Ocean's Return on Investment" report

Work Tasks:

1) Federal and state partners within NROC will build on existing coastal and ocean ecosystem health reporting initiatives to organize an abbreviated (e.g., 2-4 pages) New England region perspective and the implications of report results on human and ecosystem health as well as the region's economy.
2) Promote the value of forums within each state for state legislators, agency decision-makers, members of Congress and the region's Governors to increase awareness about the implications of changes in coastal and ocean ecosystem health.
3) Explore the benefits with end-users/target audience about producing and communicating the "Ocean's Return on Investment" that frames the economic, environmental and human health benefits of ecosystem services that the region's coasts and oceans produce. It will also address the consequences of degrading ecosystems and the loss/diminishment of those "services". (This initiative will draw on the results of the National Ocean Economic Project and similar efforts.)

Schedule and Resources:

Timing:

- 12-months

Resources needed:

- $40,000 (contractual time to assemble and prepare "print on demand" materials)

Resources available:

- In-kind support from NROC entities currently producing ocean health materials

Activity #9: Promote existing regional ocean and coastal ecosystem health initiatives: work with Governors' on a regional invasive species proclamation

Description: The Northeast Aquatic Nuisance Species Panel was formed in 1991 to addresses issues and concerns relative to the freshwater and marine resources of the states of Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, and New York, and the Canadian provinces of Quebec, New Brunswick, and Nova Scotia. It identifies issues, conducts workshops, brings in specialists and communicates about

introduced species issues to the public. It is developing a proclamation for consideration and action by the Premiers/Governors that has two major thrusts:

- Provincial and state agencies with natural resource management responsibilities will collaborate within the NEANS Panel framework to the extent practicable to address their current and future aquatic invasive species priorities through their annual work plans, budgets, and other mechanisms. They will cooperate with the region's First Nations and tribal authorities, federal agencies, nongovernmental organizations, businesses, and individuals to implement these plans where applicable.
- Appropriate agencies will work together, to the extent practicable, within their states or provinces, and to coordinate throughout the region to:
    1) Seek those areas where regional cooperation in programs and funding could be enhanced, including AIS policies, regulations and education outreach;
    2) Develop early detection and rapid response capability for new invasions of AIS;
    3) Prevent introductions of AIS, control or where feasible eradicate established AIS; and,
    4) Minimize introductions of AIS through Ballast Water and other shipping vectors.

Activity Lead for Council: TBD

Potential Partners: Northeast Aquatic Nuisance Species Panel, state and federal departments of transportation, U.S. Coast Guard, MIT Sea Grant

Deliverables:

- Approval of a Governors' invasive species proclamation

Work Tasks:

1) Assist members of the Northeast Aquatic Nuisance Species Panel make connections with state agencies and Governors Offices.

Schedule and Resources:

Timing:

- Governors' action at 2009 summer meeting of NEGC/ECP

Resources needed:

- NA

Resources available:

- Support from the NEANS Panel

Coastal Hazards Resilience 2009 Work Plan

The New England Governors' *Coast and Ocean Action Plan* (2007) establishes the following goal for Coastal Hazards:

> *Render New England a "Coastal Hazards Ready" region by providing existing federal, state, and municipal programs with state-of-the-art data and tools to advance planning and response to storms, shoreline erosion, and coastal inundation due to projected sea-level rise from global warming*[1].

Described below are four activities, drawn from the 2007 *Coast and Ocean Action Plan* that the Council will support in 2009-2010. The first activity is the highest priority.

Activity #1: Promote regional dialogue on broad-scale adaptation strategies for responding to the effects of sea-level rise
Description: The Committee will coordinate discussions, provide technical assistance and promote communication among state and federal agencies, regional organizations, and others working to enable better human adaptation responses to sea level rise.
Activity Lead for Council: Betsy Nicholson, NOAA
Potential Partners: NESCAUM*, FEMA; ICLEI; CSO – Climate Change Initiative
Deliverables: • Selected recommendations from November 2008 coastal hazards resilience workshop for coastal and emergency managers are acted on. • Web page of key adaptation programs, initiatives, and pilot projects in the region. • Ongoing communication with NESCAUM and NEIWPCC on climate change initiatives as directed by the New England Governors Conference. • Integration of regional sea-level rise initiatives such as EPA's Climate Ready Estuaries, ICLEI, and FEMA's re-evaluation of National Flood Mapping. • Web portal that contains regionally and topically pertinent adaptation information. • Robust hazards resilience web resource in collaboration with StormSmart Coast Network. • Six state specific adaption strategies, scenario planning and integrated New England approach to hazards resiliency.
Work Tasks: 1) Serve as a resource and facilitate partner engagement in NROC activities and with related coastal hazard initiatives. 2) Distribute November 2008 NROC workshop summary that provides state and local coastal managers with information on the impacts of significant historical storms, demonstrates relevant hazard planning and visualization tools, presents information on climate impacts on storm intensity, and proposes methods to increase resilience and storm preparedness efforts in the region. Assess the value in holding at least one more workshop in the Gulf of Maine sub-region. 3) Build on the federal partners' Climate Change Inventory and information gathered at the coastal hazards workshop, and compile and post an inventory of the key programs, initiatives, and pilot projects in the region related to coastal hazards resilience and

[1] For the purposes of this work plan NROC confines physical natural hazards to wind, inundation, waves, surge, fire in diked and drained tidal marshes, and seismic activity.

adaptation.

4) Identify opportunities to connect regional sea-level rise initiatives. Identify and advocate for programs that could be expanded to the region such as EPA Climate Ready Estuaries Program, U.S. DOT Center for Climate Change and Environmental Forecasting (e.g., transportation-climate vulnerability assessment) and the US Climate Change Science Program.
5) Develop climate adaptation scenarios in each of the states or through community-based competitive pilots conducted in each of the states. (Work collaboratively with Canadian maritime provinces as they develop comparable approaches.)
6) Support a web portal that contains state and federal information on coastal hazards, coastal resiliency, and tools for managers, planners and decision-makers. Conduct user tests to ensure labeling and chunking of content is effective. Frequently update and revise web links and text tags. (Committee will work with the Storm Smart Coasts Network and others to develop resilience resource for the Northeast.)

Schedule and Resources:

Timing:

- Distribute by mid-January 2009
- Ongoing

Resources needed:

- In-kind resources to synthesize results from federal climate inventory and hazards workshop
- $350,000 for pilot projects in each state

Resources available:

- CSC is developing a web page, supporting StormSmart Coastal national roll-out & begin work in NE in Jan-March

Activity #2: Act on data acquisition priorities and user-friendly tools needed to support planning for and responses to coastal hazards

Description: To render the region coastal hazards ready, it is necessary to have adequate data, such as detailed elevations to assess inundation and the tools to apply/interpret the data. Many New England states have historic shoreline data that can be used to interpret historic shoreline change. Predicting shoreline change under accelerated sea level rise requires models and shallow, detailed bathymetric maps.

NROC will provide support for the acquisition of data and development of tools that will improve regional planning for coastal hazards resilience. The committee will collect and synthesize existing needs assessments and engage stakeholders to identify regional data acquisition priorities and user-friendly tools needed to plan for and support responses to coastal hazards. (Examples include LIDAR, and seafloor bathymetry.) (The coordination of data acquisition amongst the states and federal agencies will minimize the cost and time needed to acquire essential data.) The committee will prepare and act on a data acquisition strategy that leverages state and federal partnerships.

Activity Lead for the Council: Susan Russell Robinson, USGS

Potential Partners: State Hazard Management Officers, Northeast States Emergency Consortium, Coastal Management Programs, NERACOOS, MACOORA, TNC, NOAA/Digital Coast, MANOMET, RI Map Coast, USGS Center for LIDAR Information Coordination and Knowledge (CLICK), and others.

Deliverables:

- Data acquisition priorities and tools inventory.
- Strategic plan to guide the acquisition of data and development of user friendly analytical tools.
- Acquisition of priority data needs.

Work Tasks:

1) Determine purpose and scope for an inventory of existing data and describe available tools from government, academia, private sector, etc. Then compile a consensus list of regional data and tools needs from existing needs assessments and identify priorities.
2) Develop a regional strategy to obtain priority data and tools, including recommendations for a federal-state approach to leveraging funding and support.
3) Pursue priority data acquisition and disseminate to end-users.
4) Support New England LIDAR Conference (May 2009).

Schedule and Resources:

Timing:

- Compile priority end-user data needs and develop a methodology for cataloguing existing data – Month 3
- Participate in USGS sponsored New England LIDAR Conference – Month 5
- Verify and prioritize list of needs with regional stakeholders and produce data acquisition strategy – Month 6
- Obtain data – Months 12-24

Resources Available:

- In-kind

Resources Needed:

- $250,000 for data acquisition

Activity #3: Methodology and Framework for regional storm surge database

Description: In 2008, CT DEP, UCONN, and the U.S. Army Corps of Engineers (ACOE) collaborated on the development of a historical storm surge to database and GIS coverage from data compiled by the ACOE for the publication entitled *Tidal Flood Profiles of New England*. The ACOE has tidal flood profiles and compiled information about the elevation of surge for hurricanes (southern New England) and Nor'easters (Gulf of Maine) for all of New England. The storm data for CT are for the hurricanes of 1938 and 1954. The purpose of this pilot effort is to evaluate the accuracy of new storm surge models being developed by the University of Connecticut of historical storm surge elevation data for CT. In 2009, the Committee will present the methodology for the data collection and hind-casting results as part of a recommendation on how to expand this pilot to the rest of the region.

Activity Lead for the Council: Ron Rozsa, Connecticut DEP

Potential Partners: UConn – LISICOS will collaborate on the development of the deliverables and will make a presentation to the Committee. The committee will make recommendations to NROC regarding the development of a regional database.

Deliverables:

- GIS coverage for Connecticut (2008).
- Report to NROC on transferring this approach (e.g., the time and cost of compiling the

remaining data for New England and evaluating the value of these data to refine/test inundation models).

- Methodology and framework for regional database (considering lessons learned from CT pilot).

Work Tasks:

1) Present methodology for data collection and hindcasting results for CT.
2) Engage GoMOOS and the Weather Service in related storm surge discussions. Produce report on transferring to approach to the remainder of NE including possible recommendations for a technical assistance program to enable other states to implement the reports recommendations.

Schedule and Resources:

Timing:

- Months 1-6

Resources needed:

- UCONN-LISICOS to present methodology and hindcasting results
- Work group to create report

Resources available:

- Conn/CSC Coastal Fellow to prepare methodology by year-end
- Conn DEP to write the report on transferring to NROC states with in-kind support from Hazards Committee and make presentation to NROC in summer 2009

Activity #4: Partner with academia, industry and public agencies to develop a plan for an Integrated Ocean Observing System (IOOS) that supports storm, storm surge and inundation forecasting and response

Description: The two Regional Associations for ocean observing in New England have established coastal hazards as a priority. The RAs have conducted aspects of coastal hazard end-user needs assessments. During the coming year, the committee will work with RAs to identify components needed for a Coastal Hazards OOS and assist with advocating for resources.

Activity Lead for Council: Kevin O'Brien, Conn DEP

Potential Partners: Form a Work Group which will include representatives from MACOORA, NERACOOS, LISICOS and select coastal hazard managers/end users in the region.

Deliverables:

- Requirements for Coastal Hazards OOS (i.e. products and services).

Work Tasks:

1) Strengthen interaction with the Regional Associations to ensure Coastal Hazards OOS materials meet managers coastal resilience needs .
2) Identify and pursue ways for NROC to assist with advocating for resources.

Schedule and Resources:

Timing:

- Dependent on Regional Association timelines

Resources needed:

- In-kind

Resources available:

- Regional Associations have resources for end-user engagement on OOS needs assessments

Ocean Energy Planning and Management 2009 Work Plan

The New England Governors' *Coast and Ocean Action Plan (2007)* establishes the following goal:

> *The planning, siting, authorization, and operation of coastal and ocean energy generating and distribution facilities should be made in accordance with a regional strategic context via improved coordination, communication and responsible stewardship of the public trust, so that these facilities help to meet the region's energy needs as part of a diverse portfolio of energy sources.*

The Northeast Regional Ocean Council (NROC) established the Ocean Energy Planning and Management Committee to help the northeast U.S. attain this goal for ocean renewable energy development and for the maritime transportation and handling of fossil fuel energy supplies. The committee serves as a dynamic forum for the exchange and analysis of information among the northeast states and with the federal government. It will help to create a shared ocean energy vision for the northeast U.S. and aid in the collaborative specification of project development and review processes identifying key considerations for facility design, planning, and site review regarding renewable ocean energy resources and maritime transportation and handling of fossil fuel energy supplies. The committee's initial focus will be on renewable ocean energy resources, pursuing the following five activities in the next two years:

1) Identify the types and sources of contextual and baseline data and knowledge essential for ocean energy facility development, impact mitigation, and operations.

2) Build on key state planning initiatives and propose a regional ocean energy governance framework.

3) Develop and maintain an inventory of projects devoted to renewable ocean energy resource development and maritime transportation and handling of fossil fuel supplies.

4) Propose guidelines for assessing and mitigating the environmental and economic impacts, use conflicts, and safety concerns related to renewable ocean energy development.

5) Promote communications among public, non-profit and private sector interests.

Described below are five activities, drawn from the 2007 *Coast and Ocean Action Plan* that the Council will support in 2009-2010.

Activity #1: Identify the types and sources of contextual and baseline data and knowledge essential for ocean energy facility development, impact mitigation, and operations
Description: While considerable information and experience in assessing renewable ocean energy facility development and design is accumulating through pilot project implementation and comprehensive ocean planning (Rhode Island and Massachusetts), significant controversies and uncertainties remain regarding scientific assessment and differences in use priorities. The committee will develop and communicate voluntary guidelines for assessing environmental and economic impacts, use conflicts, and safety concerns when siting and designing coastal and ocean energy facilities, including recommendations for critical data, its collection, archiving, and analysis. Such assessments need to better address the differences between offshore renewable electric generation facilities (wave, wind, and tidal), and fossil fuel facilities such as liquefied natural gas terminals, cables and pipelines, as well as incorporate climate change and sea-level rise considerations. Key data and information needs pertain to bathymetry, seafloor geology and biota, current and hydrodynamics, wind patterns, distribution of living and habitat resources, current and potential human uses, historic vessel track-line data, fish landing data, and recreational use statistics.

Activity Lead for Council: Ames Colt, Rhode Island

Potential Partners: MMS, FERC, USCG, EPA, NOAA, Navy, state coastal management programs, TNC

Deliverables:

- Documentation of managers' contextual and baseline information requirements.
- A strategy to obtain priority data requirements and methods to streamline the permitting process (e.g., require similar data, similar data acquisition processes, centralized filing, etc.).

Work Task:

Identify data and information that state mangers and key stakeholders consider essential in state and federal review and permitting of ocean energy facilities. (Examples included environmental response, vessel traffic, living marine resources, human use data, engineering, benthic habitats, wind and current data, air quality, risk assessment, etc.).

The committee will:

Survey state ocean and coastal managers' priorities for contextual and baseline information.

Review existing EIS documents and FERC filing requirements to identify data requirements and information needs for assessment, planning and management. Also identify the adequacy of the information required and the completeness of these documents. Assess the documentation for projects that do not complete EIS as well.

Gather this information, via the NOAA Coastal Services Center Marine Cadastre Project, and from other sources as appropriate and make it accessible.

Schedule and Resources:

Timing:

- Twelve months

Resources needed:

- 240 hrs (in-kind or contractual @10 hrs/week)

Resources available: TBD

Activity #2: Build on key state planning initiatives and propose a regional ocean energy governance framework

Description: Current approaches to the siting, construction, and operation of coastal and ocean energy infrastructure are fragmented and contentious in part because there is no shared regional vision for these uses in the coastal and marine environment. A regional assessment and management framework would enable managers and policymakers to address coherently impacted resources, ecosystems, other human uses, energy market conditions and other issues related to both ongoing and future energy development.

Activity Lead for Council: Ames Colt, Rhode Island

Partners: MMS, USCG, NOAA, State coastal management programs, state National Estuary Programs

Deliverables:

- Routine exchange of information between RI and Mass and with the other New England states

Work Tasks:

1) Rhode Island and Massachusetts will exchange materials to other states developed through Rhode Island's Ocean SAMP process and Massachusetts' comprehensive ocean management planning initiatives via the NROC web site and routine emails to list serves.
2) Rhode Island and Massachusetts will promote and facilitate interactions and linkages between their planning initiatives via staff exchanges, workshops and electronic means.

Schedule and Resources:

Timing:

- Ongoing - multi-year

Resources needed: NA

Resources available:

- In-kind contributions by the states, CSC Marine Spatial Planning project team

Note: Rhode Island's Coastal Resources Management Council expects to complete the Rhode Island Ocean SAMP by 2010

Activity #3: Develop and maintain an inventory of projects devoted to renewable ocean energy resource development and maritime transportation and handling of fossil fuel supplies

Description: Create a GIS database of all ocean energy projects in the northeast. Database would include information on: project status, developer, send-out, tank capacity, operational date, images and location. This GIS database will enhance understanding of regional projects and their interconnection to energy infrastructure in the northeast. In addition, project will be beneficial in continuity of operations efforts and response operations.

Activity Lead for Council: Ron Beck, First Coast Guard District

Potential Partners: FERC, MMS, state energy offices

Deliverables:

- Draft Project Report: January 2009
- Final Project Report: May 2009

Work Tasks:

1) Produce draft project report.
2) First Stage Completion (TBD) – Review and update information/system.
3) Second Stage Completion (TBD) – Review and update information/system.
4) Final Project Report – Project completed and operational.

Schedule and Resources:

Timing:

- Final Project Report: May 2009

Resources:

- Arc GIS (Editor) Software provided by USCG

Activity #4: Propose voluntary guidelines for assessing and mitigating the environmental and economic impacts, use conflicts, and safety concerns related to renewable ocean energy development

Description: Considerable information and experience in assessing renewable ocean energy facility development and design is accumulating through pilot project implementation and full-scale project planning. However controversies and uncertainties remain regarding how to balance renewable ocean energy resources development with existing and traditional uses of the marine environment. Regionally agreed on methods for assessing the environmental and socio-economic impacts of renewable ocean energy resource development will address these uncertainties and controversies.

The committee will develop and communicate voluntary guidelines for assessing environmental and economic impacts, use conflicts, and safety concerns when siting and designing coastal and ocean energy facilities, including recommendations for critical data, its collection, archiving, and analysis. These guidelines will address the differences between offshore renewable electric generation facilities (wave, wind, and tidal), and fossil fuel facilities such as liquefied natural gas terminals, cables and pipelines, as well as incorporate climate change and sea level rise considerations.

Activity Lead for Council: Greg Watson, Massachusetts; Ames Colt, Rhode Island

Potential Partners: MMS, FERC, USCG, EPA, NOAA, state coastal management programs

Deliverables:

- Voluntary guidelines for assessing environmental and economic impacts, use conflicts, and safety concerns when siting and designing coastal and ocean energy facilities.
- Strategy to disseminate guidelines within the region and elsewhere.

Work Tasks:

1) Solicit and analyze input from the northeast states, federal agencies and other states on their approaches to assessing renewable ocean energy facility development and design.
2) Prepare draft voluntary guidelines and convene regional workshop for state and federal coastal and ocean energy project managers. Amend guidelines accordingly.
3) Develop 6-month strategy to disseminate guidelines within the region and elsewhere.

Schedule and Resources:

Timing:

- Solicit input – months 1-3
- Produce draft guidelines and convene workshop – months 3-12
- Produce dissemination strategy – months 13-18

Resources needed:

- $100,000

Resources available: 0

Activity #5: Promote communications among public, non-profit and private sector interests

Description: Promote learning and foster mutual understanding among different interests and governmental entities about the planning, siting, authorization, and operation of coastal and ocean energy generating and distribution facilities. Better interorganizational communications will deepen shared understanding of the environmental impacts, use conflicts, market forces, the tax incentives, the benefits and safety concerns that these facilities will engender.

Activity Lead for Council: NROC Communications Committee

Potential Partners: New England Governors Conference's Northeast International Committee on the Environment

Deliverables:

- Report that documents and assesses current mechanisms;
- Prepare and release regional strategy

Work Tasks:

1) Document and assess current public, non-profit and private communication mechanisms to share information about the planning, siting, authorization, and operation of coastal and ocean energy generating and distribution facilities.

2) Prepare a regional strategy that effectively communicates the environmental impacts, use conflicts, market forces, the tax incentives, the benefits and safety concerns that these facilities will engender.

Schedule and Resources:

Timing:

- Document and assess current mechanisms – months 1-3
- Prepare and release regional strategy – months 3-12

Resources needed:

- .5 FTE ($30,000)

Resources available: 0

NROC: Making decisions in an interstate context

Submitted by David Keeley, NROC Contractor

NROC: Making decisions in an interstate context

Background: In 2005 the New England Governors' Conference brought together the six New England states to address ocean concerns and opportunities that require a regional response. The states then invited eleven federal agencies with ocean and coastal mandates to join the Northeast Regional Ocean Council. Given the complementary and diverse interests of these parties it is important to determine:

- What the scope of decision-making is for the three committees (Hazards, Energy and Ecosystem health), the Executive Committee, and the full Council; and
- How those decisions are made and reported-out.

Decision Tree
Identify the decision;
Get the facts;
Develop and assess alternatives; and
Make the decision.

Status: The Council's Terms of Reference states the following "*NROC will develop recommendations on a consensus basis. When consensus cannot be achieved, the concerns of abstaining or opposing members will be made known to appropriate agencies".* Additional guidance (see italics below) on committees and how they have performed include:

1. **Issue Committees** – *NROC may form working groups. Each working group shall have representatives from pertinent state and federal agencies and may include representatives from NGOs, academia and industry. Each working group shall elect a representative to call and chair meetings.* (In practice the committees have designated a state and federal co-chair.) The committees developed and the Council approved 18-month work plans that identify committee deliverables. Completion of the deliverables is dependent on leadership, effective participation and resources.
   Scope of decision-making – It is most common for committees to meet electronically and by conference call. (Committees have generally met face-to-face once a year.) The Council has empowered the committees to advance the activities within their approved work plan. As a result they are responsible for making decisions about priority tasks, scheduling/timing, securing and deploying resources, and reporting out progress.
   How are decisions made – The co-chairs have generally lead discussions and called for agreement by those present. This consensus-based approach seems to be favored over majority voting. For substantive policy and funding issues (e.g., pursuit of funding proposals, etc.) it is necessary for the co-chairs to coordinate their decision-making within the Council.
2. **Ad-hoc Appropriations work group** – NROC formed an ad-hoc work group to organize and advance the NEGC's appropriations request. Participants include Leyden, Diers, Carlisle, Thompson, and Colt. This group has received advice from TNC's Yozell.
   Scope of decision-making – Committees provide advice on funding required to implement their work plan. It then develops and implements strategies to advance the request (e.g., requests of House and Senate members, coordinate with federal programs slated for NROC funding, etc.). It does not set policy.
   How are decisions made – They use a consensus-based approach. Key decisions affecting the Council should be communicated to the full Council on a periodic basis.
3. **Executive Committee** – *The Executive committee will consist of the NROC chair and vice-chair, with an additional state and federal member. Examples of Executive Committee duties include attending to administrative matters between meetings, developing recommendations to Council on projects and partnerships, etc.*
   Scope of decision-making – This committee uses bi-weekly conference calls to attend to administrative matters between meetings, provides advice to the issue committees and pursues tasks assigned to it by the full Council. Generally attendance and engagement is good. ("Administrative matters" are routine organizational and secretarial issues.)
   How are decisions made – The committee collects information as required, works by consensus, and makes unanimous decisions for those present.

4. **Council** – The Council's Terms of Reference make it clear the Council's scope of decision-making is broad and that decisions are made by consensus.

Recommendations

1. Committee co-chairs should notify the Executive Committee of pending, important substantive and funding issues and partnership offers so that an intra-organizational perspective of the issues is considered.
2. The Council should adopt an interim "thermometer measure" to further inform its consensus-based decision-making process. Either during or at the conclusion of a discussion requiring a Council decision, the co-chairs will request Councilors to indicate whether they support the decision (3), do not fully embrace the decision but can agree with it (2) or cannot agree with it and urge further discussion or the item be tabled (1).
3. The Council should have a decision-making process for important issues that cannot wait until the next regularly scheduled meeting. The Executive Committee should develop an electronic voting method. Explicit in this voting scheme would be "silence is consent".
4. The Council's Terms of Reference should be amended (Current language is "The Executive committee will consist of the NROC chair and vice-chair, with an additional state and federal member.") It is recommended that "Membership on the Executive Committee will consist of the most recent past, present and incoming NROC state and federal chairs.")
5. The Executive Committee should monitor committee activities and discuss partnership offers, funding opportunities, correspondence from existing partners and suggestions for sub-regional pilot projects. If they are substantive, policy-oriented matters they should be presented to the Council for their consideration. Items requiring an NROC response within a short turn around time will be brought to the Council via e-mail or web-based voting tool.
6. The Council should discuss and establish processes to ensure Councilors conduct adequate internal coordination with their institution, including state contact with the respective Governor's offices.
7. Executive committee meeting notes should be posted in a folder on the NROC website for use by the full Council.
8. The Council should request the Executive Committee to clarify the Council process used to formalize partnerships. It should draw on the Strategic Alliances brief and related Council comments from the October 2008 meeting.

2009 NEGC Appropriations Request: Priority Ocean Issues

Submitted by David Keeley, NROC Contractor

Background: In February 2009 the New England Governors' Conference requested federal assistance to address the region's coast and ocean priorities. This document identifies the activities and deliverables, the amounts requested and specific federal programs that will receive and disburse new funding, and the corresponding Senate Appropriations Committees. (A House version is available.)

Summary

Agency	Programs	Amount
NOAA	Integrated Ocean Observing System Program, Coastal Services Center, National Sea Grant Program, Office of Coast Survey/Joint Hydrographic Center,	$4,890,000
DOI	USGS - National Geospatial Program	$1,200,000

NOTE: Of the amount listed above NOAA will grant $1,890,000 to the states

Detailed Request for Senate Action

1. Improve federal and state policy, planning and regulatory decision-making		
Activity	Federal Program	Committee
Coastal and ocean decision-makers need access to physical, biological, chemical and geologic information and metadata for existing datasets		
Accelerate the data management activities of the Northeastern and Mid-Atlantic Regional Associations of Coastal and Ocean Observing, COIN Atlantic and the Ocean Data Partnership. Deliverables: A regional, consensus-based schema for data interoperability; A network of regional data providers with metadata registered in a national directory (GCMD, FGDC, or GeoConnections) with robust, searchable discovery metadata that can be accessed through portals on the Global Change Master Directory Amount Required: $200,000 Service Provider: NERACOOS (lead)	NOAA Integrated Ocean Observing System Program	Commerce, Justice, Science and Related Agencies
Develop data delivery tools responsive to managers needs including implementation of the prototype web-based GOM Habitat Monitoring Data System (HMDS). This system enables the sharing, integration, and use of coastal habitat monitoring data. It provides standardized data entry, centralized data storage, synthesis and dynamic visual display of coastal and estuarine habitat monitoring results from around the Gulf of Maine. It enables monitoring programs to safely store their data, while facilitating simultaneous use of information from multiple sources. The data can be displayed in maps, graphs, and reports that describe habitat conditions and trends regionally and at individual sites. The HMDS data synthesis and visualization tools provide answers to two questions of importance to resource managers: (a) what are "natural" (i.e. reference) conditions of critical habitats in the Gulf of Maine and (b) how do habitats change over time following restoration activities relative to reference conditions? Deliverable: Gulf of Maine Habitat Monitoring Data System Amount Required: $125,000	NOAA Coastal Services Center	Commerce, Justice, Science and Related Agencies

Recipient/Service Provider: US Gulf of Maine Association/Gulf of Maine Council		
Address priority coastal & ocean research issues		
Commence implementation of the 2009 Regional Ocean Science Plan that focuses on climate change, human health and human activities as they relate to the ocean; coastal resiliency; and management and governance. Deliverable: Peer-reviewed research that responds directly to priority coastal and ocean management issues in New England Amount Required: $1,500,000	NOAA National Sea Grant Program	Commerce, Justice, Science and Related Agencies
Respond to managers needs for high resolution LiDAR and seafloor mapping		
Accurate, high resolution surface elevation data support a variety of public and private sector needs. Elevation data are available at various resolutions that are often inadequate to support priority coastal decision-making. LiDAR (Light Detection and Ranging) can provide seamless high resolution (1- to 3-m spacing) elevation data over large spatial areas. In 2009, NROC will determine the regions LiDAR priorities and costs. Deliverables: LiDAR maps for coastal communities (i.e., towns with elevations below 10 meters), LiDAR data with 1-meter point spacing and 9 cm RMSE vertical resolution would support 1-foot contours within the gradual topography of the coastal zone) Amount Required: $1,200,000 Service Provider: National Geospatial Program	DOI/USGS National Geospatial Program	Interior, Environment and Related Agencies
Produce high resolution bathymetric, geological, and ecological seafloor maps for designated priority areas to support sound alternate energy facilities, identification of suitable routes for cables and pipelines, to identify ecologically significant habitats, and assist states that are implementing ocean management programs. Deliverables: High resolution bathymetric, geological, and ecological seafloor maps Amount Required: $1,500,000 Service Provider: NOAA/UNH Joint Hydrographic Center	NOAA Office of Coast Survey/Joint Hydrographic Center	Commerce, Justice, Science and Related Agencies
The States are uniquely able to provide services to our Federal agency partners and others (e.g., providing access to local contacts, facilitating coastal community input, priority setting, contract management, leveraging state resources, etc.). Building the capacity and support for these services within each state is urgently needed to fully capitalize on the strengths of the NROC and GOMC. Deliverables: Effective state-federal partnerships and accomplishment of annual work plans Amount Required: $300,000 Recipient/Service Provider: US Gulf of Maine Association/Northeast Regional Ocean Council	NOAA Coastal Services Center	Commerce, Justice, Science and Related Agencies
	Sub-total	$4,825,000

2. Develop a New England ocean governance framework		
Activity	Federal Program	Committee
To both protect and grow the New England economy the states will engage public and private interests in the development of a marine governance framework that is based on a core set of mutually agreed on goals, objectives and assumptions about current conditions and the future.	NOAA Coastal Services	Commerce, Justice, Science

Deliverables: Establish marine spatial baselines (e.g., determine the timeframe for planning, describe current uses and demands for space, document economic and environmental conditions and threats, define key values of the marine area, etc.); Create governance framework (e.g., define general goals and objectives for the marine environment, develop general decision-making processes, create alternative use scenarios, describe the significance of each spatial sea use scenario for the different functions and activities in the marine area, evaluate each scenario, etc.); Broaden engagement (e.g., develop and implement extensive communication and outreach tools, etc.) Amount Required: $350,000 Recipient/Service Provider: US Gulf of Maine Association/Northeast Regional Ocean Council	Center	and Related Agencies

3. Improve decision-making about ecosystem health		
Activity	Federal Program	Committee
Produce and disseminate New England specific communications and outreach materials that describe the conditions and trends of the coastal and marine environment. Deliverables: Web and print materials (e.g., fact sheets, brochures, reports, etc.), meetings and work sessions Amount Required: $40,000 Recipient/Service Provider: US Gulf of Maine Association/Northeast Regional Ocean Council	NOAA Coastal Services Center	Commerce, Justice, Science and Related Agencies
Accelerate state of the environment reporting in the Gulf of Maine. Complete the compilation of indicator datasets, display this information via the web and other communication tools, and assist the target audiences through training and education efforts through the Gulf of Maine Times and other mechanisms. Deliverables: Indicators of ecosystem health by the Ecosystem Indicator Partnership (ESIP), State of the environment materials, Training sessions for target audiences, Production of two editions of the GOM Times Amount Required: $300,000 Recipient/Service Provider: US Gulf of Maine Association/Gulf of Maine Council	NOAA Coastal Services Center	Commerce, Justice, Science and Related Agencies
Support implementation of the Gulf of Maine Environmental Monitoring Plan by conducting Gulfwatch -- a monitoring program (circa 1991) that measures chemical contaminants Deliverables: Produce annual data report on chemical concentrations, Produce and disseminate outreach and communication materials for managers Amount Required: $125,000 Recipient/Service Provider: US Gulf of Maine Association/Gulf of Maine Council	NOAA Coastal Services Center	Commerce, Justice, Science and Related Agencies
	Sub-total	$465,000

4. Work at the community level to adapt to sea level rise		
Activity	Federal Program	Committee
Showcase successful sea level rise adaptation strategies, strengthen networking and communication among the	NOAA	Commerce,

coastal hazards community in New England, and make measurable progress in addressing the adverse effects of rising sea levels. Deliverables: Five pilot projects at the municipal level that demonstrate how to implement successful adaptation approaches to sea level rise; Dissemination of adaptation techniques, case studies and other resources that enable other communities to act; Amount Required: $300,000 & $50,000 Recipient/Service Provider: US Gulf of Maine Association/Northeast Regional Ocean Council & Gulf of Maine Council	Coastal Services Center	Justice, Science and Related Agencies
	Sub-total	$350,000

5. Strengthening our response to renewable and traditional energy activities		
Activity	Federal Program	Committee
Strengthen the planning, permitting and operation of renewable and traditional energy projects is a top priority for New England by addressing the controversies and uncertainties regarding how to balance renewable ocean energy resources development with existing and traditional uses of the marine environment. Deliverables: Voluntary guidelines for assessing environmental and economic impacts, use conflicts, and safety concerns when siting and designing coastal and ocean energy facilities, State and regional meetings to disseminate guidelines Amount Required: $100,000 Recipient/Service Provider: US Gulf of Maine Association/Northeast Regional Ocean Council	NOAA Coastal Services Center	Commerce, Justice, Science and Related Agencies

USGS LiDAR Workshop Purpose and Description

Submitted by Susan Russell-Robinson

A “NE Airborne LiDAR Workshop” will be held at the USGS Science Center for Coastal and Marine Geology, Woods Hole, MA during May 5-7, 2009.

Local, state and federal Government agencies, the community and industry are driving significant increases in the demand for high quality elevation data. LiDAR and other acquisition technologies are also developing at a rapid rate. This USGS – Northeast Regional Ocean Council (NROC) sponsored workshop will provide an overview of the current state of Lidar acquisition technologies and discuss applications and availability of high-resolution topographic data for meeting local and regional coastal needs in the NE.

Collection of Regional LiDAR Data in New Hampshire and Maine

Submitted by Kathy Mills, Fay Rubin, and Cameron Wake

Need for improved elevation data

The resolution of elevation data available for much of New Hampshire and southern Maine is inadequate to support many important uses, including transportation engineering, habitat restoration planning, and accurate floodplain delineation. Needs for enhanced elevation data are currently addressed on a project-by-project basis, with small-scale acquisitions of LiDAR data being conducted for specific purposes. This approach involves significant inefficiencies in collection and management costs, and yields an incremental set of products that are difficult to compile for large-area studies. Both New Hampshire and Maine have identified developing statewide high resolution topographic data as a high priority in their strategic planning activities. The need for high resolution elevation data becomes more imperative in the face of climate change, as it is critical for assessing flood and inundation risks associated with increased precipitation and sea level rise.

Broad multi-agency support

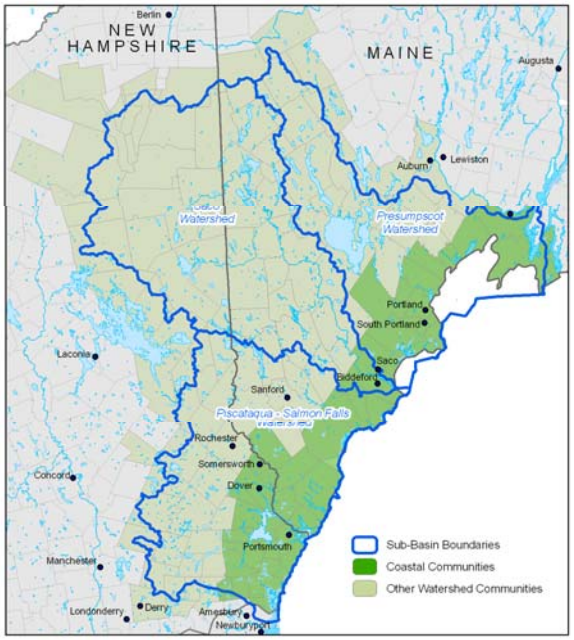
The initiative has the support of a wide array of federal programs, state agencies, municipalities, and regional resource management groups, including the following:

Great Bay National Estuarine Research Reserve
University of New Hampshire
NH Coastal Program
NH Fish and Game Department
NH Geological Survey
NH Office of Energy and Planning
NH Department of Resources and Economic Development
ME Coastal Program
ME Geological Survey
ME Floodplain Management Office
ME Department of Marine Resources
ME Department of Transportation
Wells National Estuarine Research Reserve
Strafford Regional Planning Commission
Rockingham Planning Commission
Southern Maine Regional Planning Commission
The Nature Conservancy
New England Interstate Water Pollution Control Commission
Piscataqua Region Estuaries Partnership
Great Bay Resource Protection Partnership
Casco Bay Estuaries Project
Friends of Casco Bay
Southeast Land Trust of NH
US Geological Survey
EPA Region 1
NOAA Restoration Center
Natural Resources Conservation Service
Great Bay National Wildlife Refuge
Rachel Carson National Wildlife Refuge
NOAA Northeast River Forecast Center
10 Local Municipalities

Proposed LiDAR acquisition

To develop improved elevation data in a way that is more cost efficient and seamless than the current project-by-project approach, a broad-scale acquisition of LiDAR data for coastal watersheds of New Hampshire and southern Maine is proposed. Data will be FEMA-compliant and will exceed FEMA standards in coastal communities, where smaller contours are needed in gently sloping areas. The cost is $1.2M for the coastal communities and $4M for the upper watershed, for a total of $5.2 million.

Area of proposed LiDAR acquisition



Contact information

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Gulf of Maine Council Climate Network Update

Submitted by Gary Lines, Environment Canada

The Gulf of Maine Council Climate Change Network has several activities planned for 2009-2010 that may be of interest to NROC and the three standing committees.

1. Conduct risk analysis and prioritize the vectors of invasive species and understand the effects of climate change. (**Related to OCEH**) The GOMC will only play a minor role in this activity – seeking to encourage those assessing the risk of marine invasive species to consider how a changing climate will affect the future spread of such species.

2. Convene stakeholder workshops to identify and promote mitigative and adaptive strategies for dealing with sea-level rise and changes in water quality related to climate change. (**Related to CHR and OCEH**) The GOMC seeks to build on existing regional efforts (e.g., Environment Canada, EPA, state coastal programs, etc.). The GOMC will compile and assess existing reports and documents on this topic. To assist in the creation of individual adaptation plans by local experts, the Climate Change Network will convene experts and stakeholders in two separate one-day workshops to address sea level rise and extreme precipitation and discuss and detail ways of addressing threats to freshwater, storm water, wastewater treatment systems, and clean water.

3. Enhance the climate change module of the Council's on-line KnowledgeBase by compiling programs, best practices, and other information. (**Related to CHR**) This is a regional activity, which is relevant to the entire Gulf of Maine Region. The Council needs to partner with other organizations to accomplish this.

4. Investigate and propose regional climate change adaptation strategies. (**Related to CHR**) A pilot study location will be chosen based on an analysis of vulnerability assessed in preceding tasks. Using a workshop format, an adaptation strategy could be developed with stakeholders in the targeted community. The results could then be promoted to other communities to encourage them to undertake similar efforts.

5. Prepare regional criteria to identify coastal habitats at risk from sea-level rise and other climate change impacts; integrate into habitat restoration decision-making. (**Related to OCEH**) Regional criteria to identify coastal habitats at risk from sea level rise, extreme precipitation and other climate change impacts will have been prepared. The results will then be presented to decision makers responsible for coastal habitat restoration as one way to increase their knowledge about the need to restore and monitor coastal habitats.

The full GOMC work plan can be found at
www.gulfofmaine.org/council/internal/docs/apwprevisions.pdf.

NEGC-ECP Climate Resolution

Thirty-second Conference of the New England Governors and the Eastern Canadian Premiers
Bar Harbor, Maine
September 15 & 16, 2008

Trente-deuxième Conférence des gouverneurs de la Nouvelle-Angleterre et des premiers ministres de l'Est du Canada
Bar Harbor (Maine)
Les 15 et 16 septembre 2008

RESOLUTION 32-5

RESOLUTION CONCERNING CLIMATE CHANGE ADAPTATION

WHEREAS a growing number of studies anticipate that adverse impacts of climate change will have a negative impact on the economy in a number of key areas including agriculture and food security, water resources, coastal zones, public health, climate-related disaster risk management, buildings and infrastructure, and natural resources management; and

WHEREAS the New England states and Eastern Canadian provinces are already experiencing the impacts of climate change; and

WHEREAS the Climate Change Steering Committee is implementing the recommendations from the *2007 Ministerial Forum on Energy and the Environment* with a focus on energy efficiency and conservation, and adaptation strategies; and

WHEREAS the *Climate Change Action Plan* calls for the reduction of GHG emissions and adaptation to negative social, economic and environmental impacts of climate change, within the context of the region's sustainable development; and

WHEREAS the majority of the region's population and infrastructure reside in areas that are vulnerable to sea-level rise and increasingly severe and frequent storms, adaptation planning and implementation is becoming an urgent priority; and

WHEREAS working in partnership on adaptation would allow the region to understand impacts more fully, share resources, develop sustainable and robust adaptation strategies.

NOW THEREFORE BE IT RESOLVED THAT the Conference of New England Governors and Eastern Canadian Premiers (NEG/ECP) recognize the importance of adapting to climate change in our region; and

New England Secretariat
New England Governors' Conference, Inc.
76 Summer Street, Boston, Massachusetts 02110-1226
(617) 423-6900 FAX (617) 423-7327
e-mail: negc@tiac.net
Internet: http://www.negc.org

Eastern Canadian Secretariat
P.O. Box 2044, Halifax, Nova Scotia B3J 2Z1
(902) 424-5905 FAX (902) 424-8976
e-mail: info@cap-cpma.ca
Internet: http://www.cap-cpma.ca

BE IT FURTHER RESOLVED THAT the NEG/ECP commits to use and share data and information to clearly identify and further refine assessments of vulnerable areas; and

BE IT FURTHER RESOLVED THAT the NEG/ECP Climate Change Steering Committee be directed to improve communications and knowledge sharing on adaptation; and

BE IT FURTHER RESOLVED THAT the NEG/ECP encourages all governments to ensure that information about climate-related risk, vulnerability, and options for adaptation are incorporated into planning and decision making in key sectors, such as agriculture, water, health, disaster risk management, urban planning, coastal development and transport; and

BE IT FURTHER RESOLVED THAT the NEG/ECP shall work with appropriate agencies and organizations to promote the establishment of long-term monitoring programs to allow for adaptive management; and

BE IT FURTHER RESOLVED THAT the NEG/ECP directs its Climate Change Steering Committee to continue to work with organizations such as ICLEI (Local Governments for Sustainability) to provide communities with the tools to easily incorporate climate change adaptation in municipal planning and decision making.

BE IT FURTHER RESOLVED THAT Governors and Premiers reaffirm their commitment, as a region, to reduce greenhouse gas emissions 10% below 1990 levels by 2020, and to levels sufficient to eliminate any dangerous threat to the climate by 2050.

Adopted at the 32nd Annual Conference of the New England Governors and Eastern Canadian Premiers in Bar Harbor, Maine, on September 16, 2008

John E. Baldacci
Governor of Maine
Co-chair

Shawn Graham
Premier of New Brunswick
Co-chair

The Conference of the New England Governors and the Eastern Canadian Premiers / Conférence des Gouverneurs de la Nouvelle Angleterre et des Premiers ministres de l'Est du Canada

NROC Climate Statement

Submitted by Dave Russ, USGS

The Northeast Regional Ocean Council (NROC), the U.S. arm of the New England Governors' and Eastern Canadian Premiers' (NEG/ECP)Ocean Working Committee, recognizes that the impacts of climate change, as portrayed in the 2007 International Panel on Climate Change Fourth Assessment Report, have and will have profound effects on New England's ocean and coastal resources. NROC is concerned with how rise in sea-level, change in frequency and intensity of coastal storms, change in coastal processes, and increase in ocean temperature will affect its three areas of focus, namely 1) ocean and coastal hazard response and resiliency, 2) ocean and coastal ecosystem health, and 3) ocean energy resource planning and management.

Adaptation to anticipated climate impacts requires a coordinated response from state, federal, and NGO entities to quickly incorporate strategies into future planning and decision-making processes. The NROC is well positioned to facilitate integration of state and federal climate change action plans to reduce redundancy and better leverage national and regional resources. NROC will foster collaboration and communication amongst it members and with regional entities such as the NEG/ECP Committee on Environment and Climate Change Steering Committee, the Northeast States for Coordinated Air Use Management (NESCAUM), the New England Interstate Water Pollution Control Commission's (NEIWPCC) Climate Change Initiative, and the Northeast Region of the International Council for Local Environmental Initiatives (ICLEI) Local Governments for Sustainability. Interaction among these organizations will be to:

- Foster a collaborative approach in responding to the actions contained in Resolution 32-5, "Resolution Concerning Climate Change Adaptation," that was adopted by the CEG/ECP during their annual meeting on September 16, 2008, and
- Identify, strengthen, prioritize, and align the coastal and ocean components of regional climate adaptation strategies to incorporate them, where appropriate, into the 3 NROC focus areas.

NROC commits to capitalizing on its state-federal interagency partnerships to facilitate the sharing of knowledge across the region. For example, NROC is championing the development of an inventory of climate initiatives and activities that will form the backbone to building a regional strategy. Additionally, the NROC is convening regional workshops, using webinars and other electronic communication media to cost-effectively engage a diverse group of participants, and providing representatives to regional boards such as the Gulf of Maine Ocean Observing System (GoMOOS) and the Northeastern Regional Association of Coastal Ocean Observing Systems (NERACOOS).

January, 2009