



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	<p>Quarterly Updates Kathleen Leyden, Maine – State Chair</p> <p>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.</p> <p><u>Content:</u></p> <ul style="list-style-type: none"> ▪ 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	<p>NROC Committee Progress Committee Chairs and David Keeley, NROC Contractor</p> <p>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.</p> <p><u>Desired decision(s) or other outcome:</u></p> <ul style="list-style-type: none"> ▪ 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 ▪ Prioritize <p><u>Content:</u></p> <ul style="list-style-type: none"> ▪ 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 on Committee and with activities <p><u>Materials:</u> NROC Committee rosters [Page 14]</p>
10:45 am	<p>Decision-making Protocol Recommendation from the Executive Committee David Keeley, NROC Contractor</p> <p><u>Desired decision(s) or other outcome:</u></p> <ul style="list-style-type: none"> ▪ Councilors review and accept decision-making protocol <p><u>Content:</u></p> <ul style="list-style-type: none"> ▪ Review and discuss draft protocol for EC decision-making (20 minutes) <p><u>Materials:</u> Draft protocol [Page 16]</p>



<p>11:15 am</p>	<p>Appropriations Strategy Kathleen Leyden, Maine – State Chair</p> <p><u>Desired decision(s) or other outcome:</u></p> <ul style="list-style-type: none">▪ Councilors commit to support appropriations strategy <p><u>Content:</u></p> <ul style="list-style-type: none">▪ Review and discuss current appropriations strategy (20 minutes) <p><u>Materials:</u> NEGC congressional request: priority ocean issues [Page 18]</p>
<p>11:35 am</p>	<p>Marine Spatial Planning in New England Betsy Nicholson, NOAA and Deerin Babb-Brott, Mass</p> <p><u>Desired decision(s) or other outcome:</u></p> <ul style="list-style-type: none">▪ Councilors are aware of MSP activities in New England▪ Address potential follow-on actions to the TNC workshop <p><u>Content:</u></p> <ul style="list-style-type: none">▪ 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)
<p>12:00 pm</p>	<p>Lunch Please feel free to bring your own lunch or \$ for a lunch order.</p>
<p>12:45 pm</p>	<p>LiDAR Discussion Susan Russell-Robinson, USGS</p> <p><u>Desired decision(s) or other outcome:</u></p> <ul style="list-style-type: none">▪ 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 <p><u>Content:</u></p> <ul style="list-style-type: none">▪ 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) <p><u>Materials:</u> LiDAR workshop description [Page 22], LiDAR Proposal from UNH and Great Bay NERR [Page 23]</p>



<p>1:30 pm</p>	<p>Collaboration between NROC and NERACOOS Mel Coté, EPA and Malcolm Spaulding, President - NERACOOS</p> <p><u>Desired decision(s) or other outcome:</u></p> <ul style="list-style-type: none"> ▪ Councilors are aware of possible synergies between NROC and NERACOOS ▪ Provide advice on ways to sustain strong interaction between the two organizations <p><u>Content:</u></p> <ul style="list-style-type: none"> ▪ NERACOOS offers recommendations for ways to advance NROC work plan priorities
<p>2:15 pm</p>	<p>NROC Activities and Perspectives in Climate Change David Russ, USGS</p> <p><u>Desired decision(s) or other outcome:</u></p> <ul style="list-style-type: none"> ▪ 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 <p><u>Content:</u></p> <ul style="list-style-type: none"> ▪ 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 – NEIWPC, 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) <ul style="list-style-type: none"> ○ Statement on climate change ○ More formal inclusion in committee descriptions and work plans ○ Other <p><u>Materials:</u> Gulf of Maine Council Climate Network Update [Page 24], NEGC Resolution on CC [Page 25], Revised NROC statement on climate change [Page 27]</p>
<p>3:30 pm</p>	<p>Closing Business & Adjourn Mel Coté, EPA – Federal Chair and Kathleen Leyden, Maine – State Chair</p>



Northeast Regional Ocean Council – 2009 Contact List

Submitted by Adrienne 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 its 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 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 Adrienne 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
Ron Rozsa	Long Island Sound Program
Sally Yozell	The Nature Conservancy
Andrew Lipsky	USDA NRCS
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Coastal Hazards Resilience Committee	
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Susan Russell Robinson	US Geological Survey
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Adrienne Harrison	NOAA Coastal Services Center
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NROC: Making decisions in an interstate context

Submitted by David Keeley, NROC Contractor

Background: In 2005 the New England Governors' Conference brought together the six New England states to address ocean and 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 committee 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 – It develops and implements strategies to advance the request (e.g., what member of the Senate should do *&^, 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 past, present and future NROC chairs and vice-chairs. 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.
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 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 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.
4. 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.
5. Executive committee meeting notes should be posted in a folder on the NROC website for use by the full Council.



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. <u>Deliverables:</u> 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 <u>Amount Required:</u> \$200,000 <u>Service Provider:</u> 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? <u>Deliverable:</u> Gulf of Maine Habitat Monitoring Data System <u>Amount Required:</u> \$125,000	NOAA Coastal Services Center	Commerce, Justice, Science and Related Agencies

The Council is a regional ocean partnership among
Maine•New Hampshire•Massachusetts•Rhode Island•Connecticut•Vermont
Department of Interior•Environmental Protection Agency•National Oceanic and Atmospheric Administration
US Coast Guard•Department of Agriculture•Army Corps of Engineers



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. <u>Deliverable:</u> Peer-reviewed research that responds directly to priority coastal and ocean management issues in New England <u>Amount Required:</u> \$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. <u>Deliverables:</u> 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) <u>Amount Required:</u> \$1,200,000 <u>Service Provider:</u> 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. <u>Deliverables:</u> High resolution bathymetric, geological, and ecological seafloor maps <u>Amount Required:</u> \$1,500,000 <u>Service Provider:</u> 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. <u>Deliverables:</u> Effective state-federal partnerships and accomplishment of annual work plans <u>Amount Required:</u> \$300,000 <u>Recipient/Service Provider:</u> 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



<p><u>Deliverables:</u> 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.)</p> <p><u>Amount Required:</u> \$350,000</p> <p><u>Recipient/Service Provider:</u> US Gulf of Maine Association/Northeast Regional Ocean Council</p>	Center	and Related Agencies
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3. Improve decision-making about ecosystem health		
Activity	Federal Program	Committee
<p>Produce and disseminate New England specific communications and outreach materials that describe the conditions and trends of the coastal and marine environment.</p> <p><u>Deliverables:</u> Web and print materials (e.g., fact sheets, brochures, reports, etc.), meetings and work sessions</p> <p><u>Amount Required:</u> \$40,000</p> <p><u>Recipient/Service Provider:</u> US Gulf of Maine Association/Northeast Regional Ocean Council</p>	NOAA Coastal Services Center	Commerce, Justice, Science and Related Agencies
<p>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.</p> <p><u>Deliverables:</u> 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</p> <p><u>Amount Required:</u> \$300,000</p> <p><u>Recipient/Service Provider:</u> US Gulf of Maine Association/Gulf of Maine Council</p>	NOAA Coastal Services Center	Commerce, Justice, Science and Related Agencies
<p>Support implementation of the Gulf of Maine Environmental Monitoring Plan by conducting Gulfwatch -- a monitoring program (circa 1991) that measures chemical contaminants</p> <p><u>Deliverables:</u> Produce annual data report on chemical concentrations, Produce and disseminate outreach and communication materials for managers</p> <p><u>Amount Required:</u> \$125,000</p> <p><u>Recipient/Service Provider:</u> US Gulf of Maine Association/Gulf of Maine Council</p>	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,



<p>coastal hazards community in New England, and make measurable progress in addressing the adverse effects of rising sea levels. <u>Deliverables:</u> 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; <u>Amount Required:</u> \$300,000 & \$50,000 <u>Recipient/Service Provider:</u> US Gulf of Maine Association/Northeast Regional Ocean Council & Gulf of Maine Council</p>	<p>Coastal Services Center</p>	<p>Justice, Science and Related Agencies</p>
Sub-total		<p>\$350,000</p>

<p>5. Strengthening our response to renewable and traditional energy activities</p>		
<p>Activity</p>	<p>Federal Program</p>	<p>Committee</p>
<p>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. <u>Deliverables:</u> 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 <u>Amount Required:</u> \$100,000 <u>Recipient/Service Provider:</u> US Gulf of Maine Association/Northeast Regional Ocean Council</p>	<p>NOAA Coastal Services Center</p>	<p>Commerce, Justice, Science and Related Agencies</p>



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

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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



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 its 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 NEG/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