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Before the
Senate Committee on Commerce, Science and Transportation
Subcommittee on Oceans, Atmosphere, Fisheries, and Coast Guard
June 9, 2009

Introduction

Good morning, Mr. Chairman and Members of the Committee. My name is Deerin Babb-Brott, and I am Assistant Secretary of Oceans and Coastal Zone Management of the Executive Office of Energy and Environmental Affairs for the Commonwealth of Massachusetts. I am pleased to be here today to share with you our first-hand experiences in the initial applications of marine spatial planning and ecosystem-based management through the development the Commonwealth's first comprehensive ocean management plan. In my testimony today, I will describe the concept of marine spatial planning and explain our current efforts in Massachusetts to use spatially-explicit information on ecosystem components and human uses, activities, and facilities to improve our stewardship and management of the ocean environment in and beyond Massachusetts marine waters.

The Context for Marine Spatial Planning

Our Nation's oceans provide the foundation for uses, goods, and services that collectively represent a significant component of the United States economy. The oceans support an impressive list of renewable and non-renewable goods and services including: commercial and recreational fishing; marine transportation and navigation; energy, communications, and waste/process-water infrastructure; sand and gravel extraction; recreational boating, diving, wildlife watching; science and education; and historical and cultural sites. "Ecosystem services" has emerged as a term capturing the array of uses, goods, and benefits that humans derive from natural systems. Estimates of the value of the services derived from marine ecosystems can be generated but they are generally very conservative as numerous services are very difficult to quantify.

Human society benefits greatly from the uses, goods, and services provided by estuarine and marine ecosystems, but our activities—both in the ocean, along its coasts, and on adjacent land and watersheds—are also having detrimental effects on these same systems, their components and processes. Rapid climate change, habitat loss and changes, pollution, and spread of invasive species are just some of the threats and stressors which are jeopardizing these ecosystems and the human services they provide.

At the same time, the marine waters are increasingly eyed for new uses and development, including traditional energy facilities such as liquefied natural gas terminals and associated

pipelines, offshore aquaculture, and the extraction of sand or gravel resources for beach and shoreline stabilization. Another significant use of the ocean going forward is the development of renewable energy facilities. While tide, current, and wave resources represent potential as renewable energy sources, wind energy in the Northeast is the resource with the greatest promise on the basis of currently available technology. Here, offshore wind is superior to remote onshore wind in terms of resource size, distribution, capacity factor, reliability, minimization of environmental impact, and proximity to population centers. It is a potentially inexhaustible resource that, in many cases, is available in close proximity to regions with the highest electricity demand, minimizing the need for costly new transmission lines.

Concurrent with these new demands comes an increasing awareness of the tremendous importance of maintaining a healthy and resilient marine ecosystem to both support the uses and services that society values and benefits from and also to support its resilience to the increasing threats of global climate change. Time is long overdue to be more active stewards of these public resources and to take a more pro-active stance in planning for marine ecosystem protection and the responsible and sustainable uses that stem from it.

Marine Spatial Planning and Ecosystem-based Management

Aspects of two formal methods for developing and organizing information and making management decisions about human uses in the marine environment are being used in the development of the Massachusetts Ocean Management Plan: marine spatial planning and ecosystem-based management. The United Nations Educational, Scientific, and Cultural Organization web page on marine spatial planning (http://www.unesco-ioc-marinesp.be/) explains that:

> Marine spatial planning is a **public process** of **analyzing and allocating the spatial and temporal distribution of human activities** in marine areas **to achieve ecological, economic, and social objectives that usually have been specified through a political process.** Characteristics of marine spatial planning include ecosystem-based, area-based, integrated, adaptive, strategic and participatory.
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> Marine spatial planning is not an end in itself, but a practical way to create and establish a more rational use of marine space and the interactions between its uses, to balance demands for development with the need to protect the environment, and to achieve social and economic objectives in an open and planned way.

More than 220 academic scientists and policy experts with relevant expertise signed the *Scientific Consensus Statement on Marine Ecosystem-Based Management*, which was published in 2005 by Communication Partnership for Science and the Sea and written by K.L. McLeod, J. Lubchenco, S.R. Palumbi, and A.A. Rosenberg. This statement defines ecosystem-based management as:

> . . . an integrated approach to management that considers the entire ecosystem, including humans. The goal of ecosystem-based management is to maintain an ecosystem in a healthy, productive and resilient condition so that it can provide the services humans want and need. Ecosystem-based management differs from current approaches that usually focus on a single species, sector, activity or concern; it considers the cumulative impacts of different sectors.
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> Specifically, ecosystem-based management:
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> - emphasizes the protection of ecosystem structure, functioning, and key processes;
> - is place-based in focusing on a specific ecosystem and the range of activities affecting it;
> - explicitly accounts for the interconnectedness within systems, recognizing the importance of interactions between many target species or key services and other non-target species;
> - acknowledges interconnectedness among systems, such as between air, land and sea; and
> - integrates ecological, social, economic, and institutional perspectives, recognizing their strong interdependences.

While these definitions exemplify the many interpretations of marine spatial planning, we have adopted one from the United Nations' Educational, Scientific, and Cultural Organization that has particular appeal for us by virtue of its intuitive simplicity.

> *Marine spatial planning is the adaptive process of collecting, analyzing and managing the spatial distribution marine resources and habitats and human activities to achieve the goals defined by society. Not unlike what we regularly do on land in terms of zoning and land-use planning to site development while protecting such features as open space, habitat, and drinking water supplies, marine spatial planning seeks to do the same in the ocean environment.*

The Massachusetts Oceans Act

In Massachusetts, rich ocean waters and a spectacular coastline have shaped our history, economy, and way of life. Today, these ecologically and economically vital public resources face unprecedented development pressure and represent potential solutions for new challenges, such as climate change. In addition to traditional ocean uses—recreation and tourism, fishing and shellfishing, and shipping and trade—new proposals for energy, aquaculture, off-shore sand mining, and other projects highlight the need for a comprehensive ocean management strategy.

In 2003, the Massachusetts Ocean Management Task Force was appointed to examine evolving ocean uses and develop a comprehensive approach to managing ocean resources. In March 2004, the Task Force released its final recommendations in the *Waves of Change* report. These recommendations focused on: strengthening state agencies to address environmental, planning, and public trust issues in both state and federal waters; establishing an ecosystem-based protocol to improve management of federal waters; and initiating ocean education and stewardship

initiatives. The Task Force's top recommendation was that legislation be enacted to require the development of comprehensive ocean resource management plans for Massachusetts ocean waters. This recommendation and the cooperative efforts that followed led to the passage of the Oceans Act of 2008.

The Oceans Act of 2008 requires the Secretary of the Executive Office of Energy and Environmental Affairs (EEA) to develop an integrated ocean management plan. Specifically, the Oceans Act requires that the plan shall:

1. Set forth the Commonwealth's goals, siting priorities, and standards for ensuring effective stewardship of its ocean waters held in trust for the benefit of the public.
2. Adhere to sound management practices, taking into account the existing natural, social, cultural, historic, and economic characteristics of the planning areas.
3. Preserve and protect the public trust.
4. Reflect the importance of the waters of the Commonwealth to its citizens who derive livelihoods and recreational benefits from fishing.
5. Value biodiversity and ecosystem health.
6. Identify and protect special, sensitive, or unique estuarine and marine life and habitats.
7. Address climate change and sea-level rise.
8. Respect the interdependence of ecosystems.
9. Coordinate uses that include international, federal, state, and local jurisdictions.
10. Foster sustainable uses that capitalize on economic opportunity without significant detriment to the ecology or natural beauty of the ocean.
11. Preserve and enhance public access.
12. Support the infrastructure necessary to sustain the economy and quality of life for the citizens of the Commonwealth.
13. Encourage public participation in decision-making.
14. Adapt to evolving knowledge and understanding of the ocean environment.
15. Identify appropriate locations and performance standards for activities, uses, and facilities allowed under the Oceans Sanctuaries Act.

The Oceans Act does not create a new layer of regulation, but rather provides that all state certificates, licenses, permits and approvals for any proposed structures, uses, or activities be consistent with the plan to the maximum extent practicable. Additionally, the ocean management plan must be incorporated into the Massachusetts Coastal Zone Management Plan. Therefore, in addressing the requirements of the Oceans Act, the ocean management plan must take an integrated approach across levels of government, both in its development as well as its implementation.

The Act stipulates that the Division of Marine Fisheries (DMF) shall have sole responsibility for developing and implementing any fisheries management plans or fisheries regulations, and, further, that commercial and recreational fishing shall be allowable uses subject to the exclusive jurisdiction of DMF. Additionally, DMF is directed to assess the potential economic impacts of planning decisions to commercial and recreational fishing and make recommendations to minimize those impacts. To ensure that the ocean management plan and fisheries management

are complementary, the Ocean Act requires that fisheries management shall be integrated, to the maximum extent practicable, with the plan.

In addition, the Oceans Act makes a new allowance for the development of "appropriate scale" renewable energy development, including wind, wave and tidal energy, in state waters; establishes an Ocean Resources and Waterways Trust Fund to restore or enhance marine habitat and resources or compensate for navigational impacts that is to be funded by mitigation fees assessed to ocean development; establishes an Ocean Advisory Commission and Ocean Science Advisory Committee to assist the Secretary in developing the ocean management plan; and requires that the ocean plan be revised and reviewed by the public and the legislature at least every five years.

Finally, the Oceans Act established an aggressive eighteen-month timeline for developing the ocean plan, challenging us to respond quickly. While the schedule is ambitious, we will meet it, with an ocean plan that both advances the marine spatial planning state of the art in Massachusetts and beyond, and sets out a framework for ongoing, adaptive planning and ocean management.

Marine Spatial Planning in Massachusetts

Principles and practices of marine spatial planning and ecosystem-based management, whether derived from academic expression, conceptual models, or specific application in other ocean management plans, provided one aspect of the basic foundation for the Massachusetts Ocean Management Plan. The plan considered marine spatial planning and ecosystem-based management principles through the prism of other elements of the planning context, including:

- The Oceans Act as a source for siting priorities and standards.
- Existing state law, particularly the Massachusetts Environmental Policy Act, for siting thresholds and standards.
- Performance standards in Massachusetts agencies' resource and regulatory programs.

Importantly, as planning and management disciplines, marine spatial planning and ecosystem-based management have been advanced in alternative configurations that share the common elements of a formalized and iterative process that applies specified deliberative methodologies and information requirements. The structure and content of the ocean plan will be consistent with, and has been framed carefully to allow for, ongoing incorporation of new knowledge and refined methods relevant to marine spatial planning and ecosystem-based management.

As the basis for developing the ocean plan, a planning team at the Executive Office of Energy and Environmental Affairs (EEA), supported by EEA's Office of Coastal Zone Management, conducted an ambitious public information and participation campaign that included the following:

- **Web Sites and Electronic Updates -** To provide the public with the necessary information to effectively participate in plan development, EEA launched the Massachusetts Ocean Plan web site. In addition, EEA developed the Public Input Portal

for Massachusetts Ocean Planning to provide direct access to video/transcripts of public meetings, an online commenting form, and a log of the public comments submitted. EEA also distributed periodic Ocean Planning Alert emails, available both electronically and in print.

- **Public Listening Sessions -** In September and October of 2008, EEA held 18 public Listening Sessions in Boston, Eastham, Fall River, Gloucester, Lowell, Nantucket, New Bedford, Norwell, Oak Bluffs, Pittsfield, Plymouth, Salem, Salisbury, Springfield, West Barnstable, Weymouth, Woods Hole, and Worcester. More than 300 people turned out to give their input on the goals for the ocean management plan. Videos and transcripts of these Listening Sessions were posted on the Public Input Portal to support further public participation, and summaries of the comments provided at the meetings were posted to the EEA Ocean Plan website.
- **Ocean Management Planning Principles Workshop -** In November 2008, the OAC and SAC held a joint workshop to discuss various aspects of the general practice of marine spatial planning. In addition to OAC and SAC members, 30 individuals participated.
- **Data Workshops -** In February 2009, twin workshops were held by EEA in Sandwich and Boston to for the public to review draft work group (see below for a description of the work groups) maps and products. More than 40 people participated in the Sandwich workshop and almost 60 participated in Boston.
- **Stakeholder Meetings -** During the development of the draft plan, EEA held more than 80 meetings with individual interest groups, advocates, industry representatives, and others to answer their questions and solicit their direct input. More than 110 people were interviewed through these meeting and summary reports of their comments were posted on the EEA Ocean Plan website.
- **OAC Workshop on Preliminary Plan Components -** In May 2009, the OAC held twin workshops in Woods Hole and Boston to discuss preliminary spatial analysis of existing ocean management data, compatibility and impact analysis of ocean uses, and conceptual management measures to be used in the Massachusetts Ocean Management Plan. More than 130 stakeholder representatives attended these workshops.

To collect and analyze information needed for plan development, EEA worked with state agency staff and the Massachusetts Ocean Partnership. Reports stemming from these efforts and detailing their results are available electronically at www.mass.gov/czm/oceanplan/index.htm.

- **Technical Work Group Reports -** Work groups made up of state agency staff and members from federal agencies, academia, the renewable energy industry, and non-governmental organizations were charged with assembling available natural resource and human use data to be used in plan development. These work groups were organized topically and covered: habitat; fisheries; transportation, navigation, and infrastructure; sediment; recreation and cultural services; and renewable energy. Much of the data used in the ocean management plan stemmed from these work group reports, and members of the habitat and fisheries work groups formed the core staff that worked on the Ecological Valuation Index (described more fully in Chapter 3.

- **Qualitative Commercial Fishing Information -** EEA staff met with commercial fishermen in meetings coastwide to discuss the development of the ocean management plan and concerns of fishermen. At several of these meetings, fishermen used maps and National Oceanic and Atmospheric Administration charts to provide information regarding the locations of particular fisheries in the planning area, type of gear used, and seasonal restrictions.
- **Qualitative Recreational Fishing Information -** The Division of Marine Fisheries performed a coast-wide survey of recreational fishing interests to identify areas of concentrated recreational fishing activity. While this survey was not designed to be statistically accurate, it provided useful information for planning purposes.
- **Qualitative Recreational Use Information -** The Massachusetts Marine Trades Association developed a series of maps indicating areas of concentrated recreational activity throughout the planning area.
- **Automated Information System (AIS) -** The Stellwagen Bank National Marine Sanctuary provided AIS information for the planning area and adjacent federal waters. This data captures the tracks of commercial vessels greater than 299 tons. This information was digitized with the assistance of the Massachusetts Ocean Partnership and used to identify areas of the planning area used by commercial vessel traffic.
- **Vessel Monitoring System (VMS) -** The Gloucester office of the National Marine Fisheries Service provided VMS information for the planning area and adjacent federal waters, which indicates the tracks of commercial fishing vessels that are fishing in federal waters. This information was digitized with the assistance of the Massachusetts Ocean Partnership and used to identify areas of the planning area traversed by commercial fishing vessels fishing in federal waters.
- **Assessment of Human Activities in the Planning Area -** Through funding provided by the Massachusetts Ocean Partnership, scientists from the National Center for Ecological Analysis and Synthesis at the University of California/Santa Barbara mapped the footprint and preliminarily assessed the impact of certain human activities in the planning area.
- **Science Tools to Implement Ecosystem-Based Management in Massachusetts -** Through funding provided by the Massachusetts Ocean Partnership, the consulting firm MRAG Americas, Inc. provided an overview and recommendations regarding the application of ecosystem-based management principles to the Massachusetts Ocean Management Plan. This report also provided an overview of decision support tools and ecosystem models.
- **Planning Framework Review -** The Massachusetts Ocean Partnership funded a team of consultants to review ocean management efforts outside of Massachusetts to identify applicable aspects for the approach to the ocean management plan. This team provided recommendations for the overall framework for the ocean management plan.
- **Development of Mitigation Framework Options -** Through funding provided by the Massachusetts Ocean Partnership, the firm IEc reviewed previous ocean development projects in Massachusetts and interviewed involved parties. The purpose of this study was to provide recommendations for developing a framework for how to develop an approach to mitigation for ocean development in the future.

The basic purpose of the ocean management plan is to translate the policy direction and specific requirements of the Oceans Act into a management plan through a logical, sequential process of developing decision-making guidance for use in analyzing existing data.

The plan was developed by a sequential process that entailed: 1) evaluating the Oceans Act and developing goals and strategies to identify key issues to be addressed based on values expressed therein; 2) assessing the compatibility and impacts of uses, activities, and facilities allowed under the Ocean Sanctuaries Act with marine resources and other uses; 3) applying the strategies as initial planning guidance to identify appropriate and inappropriate locations for specific uses, activities, and facilities; 4) correlating the planning guidance with spatial data and generating maps that illustrate impacts associated with uses marine resources; 5) evaluating options for managing uses; and 6) developing an ocean management plan that best accomplishes the management plan goals described above.

The overall approach to developing the ocean management plan was therefore framed by the 15 core requirements and other substantive and procedural elements of the Oceans Act, including the independent status of commercial and recreational fishing, the requirement that the plan be revised no less frequently than every five years, and the consultative roles of the Ocean Advisory Commission and Science Advisory Council. Important additional considerations included:

- Vested public interest in the development of the draft plan;
- The amount of data and information either immediately available or able to be acquired within the schedule for the draft plan;
- Principles and practices of marine spatial planning and ecosystem-based management;
- Existing law and policy; and
- The degree of change in current management practices necessary to address current challenges, justifiable by available information, and reasonable as a first response to the Ocean Act's comprehensive expression of the public trust doctrine.

To begin developing the ocean management plan and understanding the requirements of the Oceans Act, the 15 requirements of the Oceans Act were organized in generally common themes as illustrated below.

Governance and Management
Set forth the Commonwealth's goals, siting priorities and standards for ensuring effective stewardship of its ocean waters held in trust for the benefit of the public
Coordinate uses that include international, federal, state, and local jurisdictions
Adhere to sound management practices, taking into account the existing natural, social, cultural, historic, and economic characteristics of the planning areas
Adapt to evolving knowledge and understanding of the ocean environment
Facilitate public participation in decision-making

Preserve and protect the public trust
Natural Ecosystems
Value biodiversity and ecosystem health
Respect the interdependence of ecosystems
Address climate change and sea-level rise
Identify and protect special, sensitive, or unique estuarine and marine life and habitats
Human Uses
Identify appropriate locations and performance standards for activities, uses, and facilities allowed in Ocean Sanctuaries
Foster sustainable uses that capitalize on economic opportunity without significant detriment to the ecology or natural beauty of the ocean
Support the infrastructure necessary to sustain the economy and quality of life for the citizens of the Commonwealth
Reflect the importance of the waters of the Commonwealth to its citizens who derive livelihoods and recreational benefits from fishing
Preserve and enhance public access

This organization by general theme was further refined by addressing the questions: What central principles does the Oceans Act establish? What are the most specific, important things that the Act requires the plan to do? How can the plan best accomplish those things in the context of the other important considerations described above? To respond to these questions, the following subjects were reviewed: the Oceans Act requirements, the current state of knowledge of the marine environment and its uses, consideration of the preferred management approach (discussed above), and public and stakeholder comment including input from the Ocean Advisory Commission.

This review led to the development of the following framework for the ocean management plan: specific **goals** describe what the ocean plan should achieve); **findings** summarize conditions, issues, and desired future conditions associated with the goals; **strategies** describe the information and process needed to achieve the goals; and **outcomes** define the final product that achieves the goals.

The four goals established in the ocean management plan are: 1) integrated ocean management; 2) good stewardship - protection of the marine ecosystem; 3) good stewardship - human use of the marine ecosystem, and 4) an adaptive foundation for ocean management in the future. These goals reflect the highest priority, basic elements needed to be responsive to the Act and provide

the basis for ongoing work. For each of the goals, there is an accompanying outcome for the ocean management plan to achieve.

Findings provide summary characterizations of conditions, issues, and desired future conditions associated with each of the goals and also provide a general rationale for the selection of particular strategies. Findings are based on the understanding of the ocean ecosystem, human uses and natural resources in the marine environment, stakeholder comment, and the Ocean Act requirements and other existing laws, policies, and regulations regarding ocean resources and uses.

These goals and their associated strategies and findings provide the foundation for the Massachusetts Ocean Management Plan. The next step in developing the plan was to apply the decision-making guidance supplied by the goals and strategies. This step occurred through the development of compatibility assessment and application of this assessment using existing data, as discussed in the next section.

Uses, activities, and facilities allowed by the Ocean Sanctuaries Act, as described below, were analyzed to determine the degree to which they are incompatible with marine resources and other uses, activities, and facilities based on: 1) functional incompatibility (e.g., two uses that cannot physically occupy the same location); 2) the significance of potential impacts to natural resources that have special status under existing law and policy (e.g., a use that could have significant impacts to a Special Aquatic Site protected by the Clean Water Act); and 3) the significance of potential impact to values expressed in the Oceans Act (e.g., areas of high fishing effort and value).

Once these planning criteria were defined, they were then correlated with data layers to represent the location and extent of human uses and natural resources.

Uses and special status resources were then mapped by category of potential incompatibility or impact. These initial maps served two purposes: first, they provided the basis for screening and identification of areas suitable areas for large-scale wind energy development; and second, they provided the basis for considering management and regulatory options to be implemented by the ocean management plan.

The maps resulting from the compatibility assessment analyses conducted for each category of use, activity, and facility allowed under the Ocean Sanctuaries Act formed the basis for consideration of planning and management options that were reviewed and discussed with the Ocean Advisory Commission. Three general management options were considered:

1. Regulate as now, using ocean data for alternatives analysis and performance standards in permit conditions;
2. Designate specific areas for individual use based on data and compatibility assessment criteria; or
3. Apply a hybrid approach to: 1) designate areas for uses with potentially significant impacts for which EEA has good data; and 2) identify exclusionary areas, defined by resources and uses subject to likely or significant incompatibility or impact, applicable to spatially indeterminate uses or uses for which EEA has poorer data.

The management options were evaluated based on their ability to:

- Advance the interests of the Oceans Act;
- Protect the marine environment;
- Avoid and minimize conflict with existing water-dependent uses;
- Provide flexibility for new uses and future changes to management based on an increasing understanding of the marine environment, new technologies, and evolving social values;
- Apply management and regulatory limits that can be substantiated by current data;
- Use and streamline existing law and regulation to allow regulatory decisions appropriate to the scale of potential impact;
- Employ new data and information within an adaptive framework

As the management options for uses were being developed, in a parallel process, options for identifying and protecting special, sensitive, or unique marine and estuarine life and habitats was conducted (as required by the Oceans Act). Members of the Habitat and Fisheries Work Groups convened to develop an approach to address the requirements of the Oceans Act to identify and protect special, sensitive, or unique areas by developing the concept, methodology, and data for an ecological valuation index (EVI). The EVI is an attempt to systematically evaluate the ecology of Massachusetts waters using available data. The EVI was conceived and developed to be responsive to the directives of the Oceans Act, to incorporate existing ecological knowledge and data (qualitative and quantitative, as available and appropriate), and to be scientifically defensible and rigorous in approach. Not all data compiled by the Habitat and Fisheries Work Groups were used in the EVI development. Some data sets were spatially and/or temporarily incomplete and had limitations that precluded their use in this process.

As a brief overview, the EVI begins with a compilation and analysis of existing spatial data regarding species occurring in the ocean planning area. Data for four marine mammal species, five bird species, five crustacean species, eight mollusk species, and 22 fish species were incorporated into the EVI. Individual datasets were then rated according to a standard set of ecological criteria (major contribution to survival/health of population, spatial rarity, and global and regional importance). The planning area was gridded into 250-meter cells and the values for each cell calculated based on the sum of the rankings of the dataset present in each cell.

The intent of the EVI was to develop a scientifically defensible approach for differentiating areas in terms of their ecological value. Such a differentiation would support efforts to identify locations appropriate for particular uses and to designate “special, sensitive, or unique” areas of life and habitat, pursuant to the Oceans Act. Because it was a multi-species approach by design, it was also a step toward incorporating an ecosystem-based perspective into the ocean management plan.

Limitations of the EVI included data availability (data for certain species or guilds are not available) and the spatial resolution of certain data leading to limitations on the conclusions that could be drawn. Additionally, our understanding of ocean habitats and species habitat

requirements is continually evolving, as are the related data available to managers. The development of the EVI provided important information for use in ocean management plan specifically regarding how special, sensitive, or unique areas are identified and protected.

Current Status of Planning

A public review draft of the ocean plan is due on June 30, 2009. Following public hearings and legislative review, the ocean plan will be promulgated by December 31, 2009.

Lessons Learned to Date

- Marine spatial planning cannot occur in the absence of data to characterize the human and natural components of the marine ecosystem. Comprehensive data is not necessary, but a minimum requirement is sufficient data to accurately characterize baseline environmental and human use conditions. Baseline data can be derived from data of varying temporal and spatial scale and resolution.
- Marine spatial planning is extremely time and labor intensive and sufficient staff and agency resources are required to address data, public participation, and planning needs. The Massachusetts planning process was fortunate to be supported by the Massachusetts Ocean Partnership, with funding from the Gordon and Betty Moore Foundation. This support allowed us to benefit from applied planning research, develop significant new data, and greatly facilitated public and stakeholder participation.
- A related point is that for marine spatial planning, process is substance. Acquiring, analyzing, presenting, and, based on feedback, revising information in an iterative process with public, stakeholder and decision-making audiences has been a fundamental component of developing our ocean plan.
- The principles and practices of marine spatial planning must be interpreted within the specific political, legal, social, and environmental context in which it is applied.
- Marine spatial planning and, particularly, ecosystem-based management address complex systems about which much is poorly understood or unknown. We have not let absence of knowledge be an excuse to not take action. However, a key principle has been to continually review our planning material to ensure that management decisions can be substantiated by available information.
- Similarly, we have not let the perfect be the enemy of the good, and have embraced the ambitious schedule established by the Oceans Act as the basis for establishing an adaptive framework for future planning.
- Last, the need for the coordinated and supportive participation of the federal agencies cannot be overstated. To successfully support local and regional marine spatial planning initiatives, we strongly believe that the National Oceanic and Atmospheric Administration should have a centralized, coordinating federal role in working with states and regions to advance federal, regional and state marine spatial planning policy and implementation. NOAA is operationally and administratively well suited for this position by virtue of its expertise and role in providing data, technical services, research and coordination across federal agencies related to climate and weather, ocean and coastal services, charting and observation, fisheries and marine resources, and regional and state relationships.