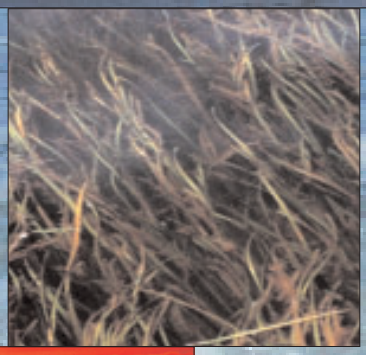
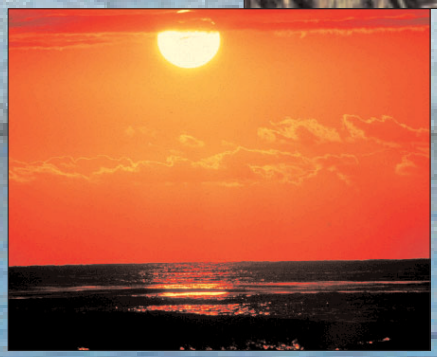
# WAVES OF CHANGE





## THE MASSACHUSETTS OCEAN MANAGEMENT TASK FORCE REPORT AND RECOMMENDATIONS

March, 2004

# MASSACHUSETTS OCEAN MANAGEMENT TASK FORCE - MEMBERS

### Chair

Susan Tierney, former EOEA Secretary; Managing Principal,
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### State Officials

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Jim Hunt, Director, MEPA
David O'Connor, Commissioner, Division of Energy Resources
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Mayor Fred Kalisz, City of New Bedford (Represented by
John Simpson, Executive Director of the New Bedford
Harbor Development Commission)
Mayor Thomas Menino, City of Boston (Represented by
Richard McGuinness, Boston Redevelopment Authority)
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Bill Adler, Executive Director, Mass. Lobstermen's Association;
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Priscilla Brooks, Conservation Law Foundation;
Gulf of Maine Council Member
Jack Clarke, Director of Advocacy, Massachusetts Audubon Society
Tom Cox, President, Mass Marine Trades Association;
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C. M. "Rip" Cunningham, Jr., Saltwater Sportsman Magazine;
Marine Fisheries Advisory Board
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Mike Leone, Port Director, Massachusetts Port Authority;
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Craig MacDonald, Superintendent, Stellwagen Bank NMS
Captain Brian Selarno, U.S. Coast Guard (Represented by
Lt. Gabrielle McGrath, Chief of the Planning Department,
U.S. Coast Guard Marine Safety Office in Boston)
Bob Varney, Regional Administrator, U.S. EPA
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Jeff Willis, Deputy Director, Coastal Resources
Management Council, Rhode Island

### State Elected *Ex Officio* Members

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Hon. Bruce E. Tarr, Massachusetts Senate, First Essex and Middlesex
Hon. Susan Williams Gifford, House of Representatives, Second Plymouth
Hon. Anthony J. Verga, House of Representatives, Fifth Essex

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Hon. Richard E. Neal, U.S. House of Representatives
Hon. John Olver, U.S. House of Representatives
Hon. John F. Tierney, U.S. House of Representatives

# MASSACHUSETTS OCEAN MANAGEMENT TASK FORCE
## REPORT AND RECOMMENDATIONS

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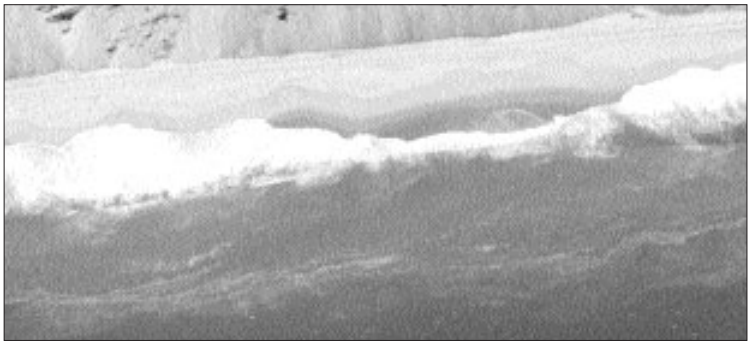
# ACKNOWLEDGEMENTS

The Task Force's report is the result of significant effort on the part of many people during a relatively short period of time, given the complexity and importance of the assignment. The Task Force has been able to accomplish its work under a challenging time frame due, in part, to the commitment and support of Task Force members, agency staff, and volunteers. Several Task Force members in particular, along with state agency staff and private sector consultants, provided significant assistance in researching and drafting sections of this report and its companion Technical Report. These individuals are: Bill Adler (Massachusetts Lobstermen's Association), Mike Armstrong (Massachusetts Division of Marine Fisheries (DMF)), Deerin Babb-Brott (Massachusetts Coastal Zone Management (CZM), Jay Baker (CZM), Priscilla Brooks (Conservation Law Foundation), Todd Callaghan (CZM), Dennis Ducsik (CZM), John Duff (U-Mass/Boston), Mike Egan (Carruth Capital), Bruce Estrella (DMF), Tom Hoopes (DMF), Jim Hunt (Massachusetts Environmental Policy Act (MEPA) office), Sarah Joor (CZM), Kate Killerlain (CZM), Judy McDowell (Woods Hole Oceanographic Institution), Vin Malkoski (DMF), Joe Pelczarski (CZM), Ann Pembroke (Normandeau Associates), Arthur Pugsley (MEPA), Tom Skinner (CZM), Susan Snow-Cotter (CZM), Megan Tyrrell (CZM), Sue Tierney (The Analysis Group, Inc.), Greg Watson (Massachusetts Technology Collaborative), Alex White (CZM), and Tony Wilbur (CZM).

The Task Force also appreciates the leadership and hard work provided by Task Force Working Group Chairs including: Sue Tierney (Frameworks Working Group), Jim Hunt (Policy Working Group), Tom Skinner (Use Characterization Working Group), Judy McDowell (Data Trends and Needs Working Group), David O'Connor (Principles Working Group) and Robbin Peach (Outreach Working Group).

Behind many task forces is a hard-working and dedicated staff. Ours was particularly well supported by Susan Snow-Cotter (CZM) and Sarah Joor (CZM), who provided lead policy and logistics assistance to the Task Force and its many working groups.



The Task Force would also like to acknowledge the generous financial assistance for the Ocean Management Initiative provided by the Massachusetts Environmental Trust and by the National Oceanic and Atmospheric Administration. Without this support, this work would not have been possible.

Photos
All photographs courtesy of NOAA photo library, CZM archives, or CZM staff unless otherwise noted.

Cover Photos
Background waves - Jennifer MacLean; all others NOAA

Design/Layout
Arden Miller, CZM

Map of Ocean Jurisdiction
Diane Carle, CZM

MARCH 2004

To: Ellen Roy Herzfelder, Secretary of Environmental Affairs

From: Susan Tierney, Chair, Massachusetts Ocean Management Task Force

Re: Task Force Final Report, Principles and Recommendations

On behalf of the Massachusetts Ocean Management Task Force, I am pleased to present our Final Report, Principles, and Recommendations for managing the Commonwealth's ocean resources.

Ever since you established the Task Force in June 2003, the public officials and private citizens who are Task Force members have taken seriously the charges that you assigned to us. This Final Report reflects our collective efforts to respond to your request that we:

- Define guiding principles for the use of state waters and ocean resources;
- Examine Massachusetts coastal policies and the adequacy of the legal framework;
- Determine data requirements for managing state waters; and
- Examine the organization of governance over state waters to ensure that statewide interests are met.

In addressing these issues, the Task Force members have endeavored to understand the rich and diverse features of the Commonwealth's ocean resources, the character of these "public trust" resources which are held and managed on behalf of Massachusetts citizens, the existing set of governmental statutes, regulations, and processes that affect the protection and use of these ocean resources, and possible ways to enhance the management and, in some cases, uses of these resources for the benefit of the citizens of the Commonwealth at present and for the future.

We have also been particularly mindful of current uses and natural resource qualities of the state's oceans, and of our state's rich cultural, social, and economic heritage that has been tied so closely to the ocean and our varied interactions to it. We took as our point of departure the current state of resources and uses, growing tensions between existing and proposed uses and resource needs, and the current set of laws and regulations affecting them, in order to consider what legal authorities and action might be needed to assure that the Bay State's public trust ocean resources are adequately protected while also fostering sustainable uses of them. We noted the tensions that are growing with respect to competing uses of the state's ocean resources and the relationship between oceans under state versus federal versus regional jurisdiction.

During the past months of education, research, analysis, public consultation, and discussion, the Task Force members have developed Principles and Recommendations for managing the Commonwealth's ocean resources. We have written this Report and its accompanying Technical Report to attempt to describe the conditions of our ocean resources and the state of knowledge and policy tools relating to our oceans. These elements have formed the basis for our policy recommendations to you.

Our Principles are a statement of the main beliefs and values that we think are appropriate to guide public policy decisions about the protection and use of the Commonwealth's ocean resources. Our Recommendations reflect our views about the legal, public policy, and information tools the Commonwealth needs to have and exercise to assure appropriate protections of these resources and to allow appropriate uses of them for various public and private purposes today and in the future. The Technical Report provides detailed background information on the state of our oceans, data relating to them, and the policy and management tools the state has to regulate and protect our ocean resources for the benefit of the public.

In preparing these principles, recommendations, and reports, we had lively debates and discussions. The Task Force members came with different points of view, and individual members might have written a different report if they had authored it alone. The Task Force members as a whole, however, have

attempted to provide you with a consensus document. Like any such consensus document among responsible citizens with different perspectives, our report reflects numerous compromises among strongly held positions.

We have attempted to gather public input during the course of our work and have benefited substantially from comments from members of the public, representatives of interested groups, and various experts from relevant fields. We understand that it will be important to continue to seek additional public comment, now that our report and recommendations to you have been finalized. Indeed, we understand that in some respects, the presentation of our findings and recommendations to you is only one step in a much longer process in which you, the Romney Administration, and members of the Massachusetts General Court will make decisions about what, if any, changes to make in the Commonwealth's statutes, regulations, and other governance processes in response to the Task Force's Recommendations. Public input will be a critical part of that larger process, and we welcome it - even when the opinions differ from our own.

We recognize that we offer these recommendations at a time of significant state budgetary constraints, including many years in which state agencies involved with matters relating to the state's oceans have been operated with reduced staffs and budgets. We also recognize that adoption and implementation of many of our recommendations will require additional public resources. We think that the health of our oceans is critical to the health of our state in the future, and we urge you and other state officials to make ocean management a priority in both substantive policy and resource allocation decisions.

Additionally, we know it is timely for the Commonwealth to proceed on these recommendations in light of recent undertakings by various organizations (including several major initiatives at the national level, including the Pew Oceans Commission and the U.S. Commission on Ocean Policy) to make recommendations for management of the federal oceans. Massachusetts is at the forefront of state ocean management and protection and we have an opportunity to work closely with these national efforts to manage our own state's ocean resources in a proactive manner that both protects the underlying marine ecosystem and serves public needs for food and energy production, shipping, recreation, waste disposal, telecommunication, etc.

We wish you success in continuing stewardship of the Massachusetts oceans, and we extend our appreciation of the priority that you have made of this resource that is so important to what has made Massachusetts such a special place to live - in the past and in the future.

# EXECUTIVE SUMMARY

### *Changing Ocean Uses*

Coastal and ocean waters have played a significant role in the history of Massachusetts, for fishing, shipbuilding, trade, recreation, and scientific research, among other things. These multiple uses of the ocean are well known and appreciated as part of the fabric of what makes our state so special historically. More recently, we have begun to use our ocean for such activities as aquaculture, laying of fiber optic cables, a gas pipeline, artificial reefs, high-speed ferries and more. Today, there is interest in diversifying our dependence on fossil fuels by producing energy from wind and wave energy off our coast. Other potential emerging uses of the ocean range from the designation of marine protected areas to ensure the conservation of marine ecosystems to the siting of offshore liquid natural gas facilities to the extraction of offshore sand for restoring our recreational beaches.

These evolving uses of the ocean represent both a considerable opportunity and challenge for the Commonwealth. To help feed our densely-packed population, we clearly need protein made available from the fishing and aquaculture industries. To fuel our cars, homes and businesses, we need diverse energy sources, some of which are located in the ocean or are transported through it. The threat of global climate change requires us to use more renewable resources for our electricity supply, and some of the most abundant such resources are located in the ocean. We value the recreation and beauty that the ocean provides. We have also learned the hard way (such as through the collapse of groundfish resources, the pollution of Boston Harbor, shellfish closures, and oil spills) that marine resources are not limitless, can take decades to restore, and require more vigilant protection in the future than in the past. It is clear that ocean space is limited.

Conflicts between different uses within our oceans have historically been few, but as more uses are permitted and proposed, greater conflict is inevitable. With the range of both traditional and emerging uses before us, many questions have been raised. Which uses should be allowed in which areas? Who should decide? How do we ensure that individual and collective uses do not harm the environment? Do we have the right information to make those decisions? Do public agencies that are authorized to make these decisions have the right tools? Given that the ocean is a public trust resource, how should the Commonwealth effectively manage the "assets of the trust" it owns on behalf of the public to best protect and use them for the benefit of citizens today and in the future?

### *Ocean Management Initiative and Task Force*

In recognition of the range of existing and proposed ocean uses in the Commonwealth and the many questions being raised on managing our ocean resources and the uses of them, Governor Mitt Romney and Secretary of Environmental Affairs Ellen Roy Herzfelder announced an Ocean Management Initiative in March of 2003. The first phase of this Initiative was the appointment of an Ocean Management Task Force in June of 2003. Secretary Herzfelder charged the group to examine the current trends and issues, identify data and information gaps, review existing ocean governance mechanisms, and draft recommendations for administrative, regulatory, and statutory changes, if deemed necessary. The Task Force was also asked to develop statewide ocean management principles to guide future ocean management in the Commonwealth.

The Task Force is comprised of 23 private and public sector individuals (listed on inside front cover). The Secretary also asked representatives from the relevant federal agencies, adjacent states, and members of the state and federal congressional delegation to participate as *ex-officio* members. The Task Force was chaired by Dr. Susan Tierney, a former Secretary of Environmental Affairs in Massachusetts, former Assistant Secretary for Policy in the U.S. Department of Energy, and currently a Managing Principal at Analysis Group Inc.

### *Task Force Process*

The Task Force and its Working Groups met over thirty times between June 2003 and March 2004. All meetings were open to the public and all written material was made available on the Task Force website (http://www.state.ma.us/czm/oceanmgtinitiative). To enable the Task Force to explore issues in greater depth, six Working Groups were established: Frameworks; Policy; Use Characterization; Outreach, Principles; and Data Trends and Needs (refer to Appendix for more on the Task Force's Working Groups). In addition to the Task Force and Working Group meetings, the Task Force held six public meetings, the largest in October at the New England Aquarium. Preliminary recommendations were released for public comment in early December. When the public comment period ended on February 13th, 2004, over three hundred comments had been submitted (and are available on the Task Force website).

### *Geographic Focus of Report*

The Ocean Management Task Force focused its work on ocean areas within the Commonwealth's jurisdiction. Generally, this area extends from the low water mark to the seaward boundary of the Commonwealth. Typically, the Commonwealth's marine boundary extends three nautical miles offshore with the exception of areas within Massachusetts Bay, Cape Cod Bay, and Nantucket Sound that extend further due to bay closure lines established by the U.S. Supreme Court.

### *Report Structure*

The Ocean Management Task Force Report is broken up into two volumes: this Task Force Report and Recommendations, and the companion Technical Report. The Task Force Report and Recommendations contains an introduction, descriptions of the theme areas (e.g., governance, management tools, scientific understanding, and public outreach) that the Task Force has addressed, six Principles for ocean management, fifteen Recommendations with justifications and implementation plans, and a conclusion. The Technical Report contains a wealth of information provided by Task Force members and staff to support the recommendations provided herein. The Technical Report includes chapters on the public trust doctrine in Massachusetts, a descriptive overview of traditional and emerging ocean uses, an overview of data trends and needs, a summary of state and federal regulatory authorities relating to ocean resources, and several appendices.

### *Conclusions and Recommendations*

After lengthy consideration of the issues relating to ocean use, protection, and management, the Task Force found that the Commonwealth agencies have done a commendable job managing the state's ocean resources. That being said, the times are changing and the tools that the agencies have to do their jobs are not keeping pace with the increasing complexity and challenges of the management issues before them.

The oceans and its resources are held in trust by the state for the benefit of the public. The Task Force believes that the oceans are too valuable a resource to continue to manage in an ad hoc and reactive manner. Below are six basic principles of ocean resource management, as well as fifteen recommendations aimed at improving the comprehensive management of ocean resources.

Underlying our principles of ocean resource management is our belief that our oceans embody extraordinarily dynamic and complex environments that are influenced by a combination of natural forces and human activities. Healthy ocean ecosystems are vital to human health and welfare. Human activities above, below and on the ocean surface, as well as on land, can and should be managed to allow both use and protection of ocean resources. Principles for managing those activities should embody an ethic of ocean stewardship that: (1) protects the public trust; (2) values biodiversity; (3) respects the interdependence of ecosystems; (4) fosters sustainable uses; (5) makes use of the best available information; and (6) encourages public participation in decision-making.

Our fifteen policy recommendations are grouped by the themes of governance, management tools, scientific understanding and outreach.

# LIST OF RECOMMENDATIONS

***Where do we go from here?***

The recommendations in this report are prospective in nature and will not impact projects or proposals already under regulatory review. We believe that sound public policy requires that any new laws, regulations, or policies adopted in line with our recommendations be applied prospectively with respect to projects filed after the adoption of these new policies. We neither recommend a moratorium on development and permitting activities, nor want our proposals and uncertainty about policy to have the effect of chilling development. While in this report we offer recommendations to change the existing permit process, no changes in process will occur by virtue of this report alone, since the Task Force alone has no legal authority. Our recommendations are offered to the Secretary of Environmental Affairs, who has stated that she will hold public hearings on the report prior to submitting her recommendations to the Governor. Any statutory or regulatory changes that the Secretary decides to advance based on this report will be subject to public notice requirements, and will undergo policy debate and discussion in the legislative, regulatory, and political forums that take up these matters for consideration and decision.

In the course of its deliberations, the Task Force became very much aware of the extraordinary extent to which state agencies are stretched in managing coastal resources: from the review of ocean-based projects to assessing fisheries stocks or habitat, from planning activities in ocean sanctuaries to seafloor mapping, and from permitting to enforcement of resource protection laws, many environmental agencies have lost significant staff in recent years. These staff reductions lessen the state's ability to adequately manage ocean resources at precisely the time when it is needed most. The Task Force recognizes the need to assess current staff levels and program needs and supports investments in personnel, research, and equipment for Massachusetts' coastal and ocean resource management and planning programs.

In reaching these recommendations, the Task Force has already benefited substantially from comments from members of the public, representatives of interested groups, and various experts from relevant fields. We understand that it will be important to continue to seek additional public comment, now that our report and recommendations have been finalized. Indeed, in some respects, the presentation of our findings and recommendations is only one step in a much longer process in which the Romney Administration and members of the Massachusetts General Court make decisions about what, if any, changes to make in the Commonwealth's statutes, regulations and other governance processes in response to the Task Force's recommendations.

In pursuing its work, the Task Force has in many ways been on the leading edge of state ocean management. Few areas of the world have experience in trying to plan ahead for how we want to use and protect our ocean resources. We encourage the Commonwealth to take these bold steps to help assure that our ocean resources, which have been so important to Massachusetts's rich history and which are held in trust for the benefit of the public, will continue to be part of our state's healthy, productive economy and environment in the future, as well.

# SUMMARY OF TASK FORCE RECOMMENDATIONS
## (THIS SUMMARY WAS EXCERPTED FROM THE REPORT)

### Governance Recommendation #1: Comprehensive Ocean Resources Management Act

#### Recommendation

The Ocean Management Task Force recommends that the Secretary of Environmental Affairs develop legislation for a new, comprehensive Ocean Resource Management Act, whose centerpiece would be the creation of new Ocean Resource Management Plans that set forth management objectives and strategies for various discrete ocean planning areas and activities within the state waters of the Commonwealth.

The Act that we envision would retain and strengthen existing environmental protections associated with the ocean as a public trust resource while streamlining the array of existing statutes governing the use and protection of the Commonwealth's oceans. State laws and regulations that would likely be affected under the Act to improve coordination and strengthen resource protection include the Chapter 91 program at the Department of Environmental Protection (DEP), the program to implement the Ocean Sanctuaries Act at the Department of Conservation and Recreation (DCR), and the state's Coastal Zone Management (CZM) program. In addition, under the new legislation that we are recommending, the Division of Marine Fisheries (DMF) would be involved (along with other agencies) in the development of comprehensive ocean management plans and would retain jurisdiction of day-to-day fisheries management activities.

If an Ocean Resource Management Act were adopted, it would supercede several of the policy-related recommendations that appear later in this report that are designed to improve the existing mechanisms for managing the state's ocean resources in the absence of a new law.

### Governance Recommendation #2: Ocean Management Coordination

#### Recommendation

Massachusetts should pursue ecosystem management of offshore waters through federal, regional, and state coordination and cooperation. The Task Force recommends that the Commonwealth:

1. develop cooperative ocean management plans with federal agencies for offshore waters, for example in portions of the Gulf of Maine or Nantucket Sound;

2. review and revise the state's enforceable coastal policies, based on the passage of the proposed Comprehensive Ocean Resources Management Act or other state legislation, existing statutes, and formal approval by the National Oceanic and Atmospheric Administration (NOAA);

3. continue to apply enforceable coastal policies through federal consistency to activities in state waters, coastal watersheds, and adjacent federal waters;

4. expand cooperative frameworks for project review, such as the U.S. Army Corps of Engineers' Joint Processing meetings;

5. support regional and international ocean management councils, such as the Gulf of Maine Council on the Marine Environment; and

6. develop and/or expand existing cooperative agreements with adjacent states.

## Governance Recommendation #3: Climate Change Plans

### Recommendation

Given the important interactions between global climate change and the conditions of our ocean resources, the Task Force recommends that the state include in its Climate Change Action Plan various elements relating to effects of climate change on our coasts and oceans, measures to mitigate effects on such things as coastal flooding and sea level rise, and policies to reduce greenhouse gas emissions. The Task Force supports the state's efforts in this regard and recommends the collection of information about trends relating to climate change impacts in Massachusetts (e.g., sea level rise, ocean and coastal storm frequency, ocean salinity, inventories of certain species within state waters, coastal flooding, and inventory and location of wind and tidal resources). Furthermore, any Ocean Resource Management Plans developed under new statutory authority (described in Governance Recommendation #1) should be developed in coordination with and in consideration of the state's Climate Change Action Plan. The Task Force further supports policies that decrease the Commonwealth's reliance on energy resources that emit greenhouse gasses.

## Governance Recommendation #4: Ocean Sanctuaries Act Revisions

### Recommendation

The regulations implementing the Ocean Sanctuaries Act (OSA) (302 CMR 5.00) should be updated unless or until a new Ocean Resource Management Act is enacted and implemented - at which time, the more comprehensive Ocean Resource Management Act could be written specifically to replace the OSA, since the purposes of a new Ocean Resources Management Act as we envision it would encompass those of the original OSA. The OSA regulations should be updated to clarify for the regulated community, the public, and the agencies the range of permitted and prohibited activities and the environmental performance standards that guide project review in Ocean Sanctuaries. We also recommend that the Massachusetts Board of Underwater Archaeological Resources (BUAR), DEP, DCR, DMF, Energy Facilities Siting Board (EFSB), and the Massachusetts Environmental Policy Act (MEPA) office develop a Memorandum of Understanding (MOU) governing protocols for interagency coordination on project reviews involving projects in Ocean Sanctuary areas.

## Management Tools Recommendation #1: Fee Structures

### Recommendation

Current Chapter 91 program fees—such as "tidewater displacement" and "tidelands occupation" fees—should be examined and adjusted as appropriate (i.e., increased or decreased). This recommendation applies only to such fees for proposed structures and non-fishing activities in state offshore waters, consistent with the Task Force scope of work based on its charge from the Secretary, under which we limited our consideration of issues to those relating to the ocean (as opposed to on-shore areas). In the event a separate fee structure is deemed appropriate for these offshore waters, the geographic area subject to any adjusted fees should be defined and mapped. This change should occur even if a new Ocean Resource Management Act is not enacted and implemented, and should be dovetailed with that Act's implementation if it is. Out of respect for the public trust nature of the state's ocean resources, we recommend that consideration be given to defining a rate schedule for occupation fees based on valuation concepts more typical of submerged lands leasing in other states,

as an alternative to the concept of simple "rental." At the same time, the revised fee structure and levels of fees should not serve to discourage preferred water-dependent uses and other activities that significantly advance the ocean management and other policy goals of the Commonwealth. We assume fees will be levied only on projects that otherwise comply with all applicable standards for approval.

We strongly recommend that, as part of this overall ocean resource management initiative, the Legislature establish a dedicated account where revenues generated from all Chapter 91 program fees can be retained to help defray Chapter 91 program administrative costs and to advance coastal and ocean management objectives, including but not limited to: increasing public access to the ocean; maintaining coastal open spaces and port infrastructure; conducting scientific research, monitoring, and data collection; enforcing compliance with ocean-related regulatory requirements; and other ocean-related policy and planning activities (such as developing, implementing and enforcing Ocean Resource Management plans, if the Ocean Resource Management Act is adopted along the lines proposed in Governance Recommendation #1).

## Management Tools Recommendation #2: Marine Protected Areas

### Recommendation

The Secretary of Environmental Affairs should convene a working group, with the express purpose of developing recommendations to the Secretary regarding a formal process, criteria and information standards for designating Marine Protected Areas (MPAs) in the state's ocean. For the purpose of this working group's assignment, MPAs could include areas for the protection of special, sensitive, and/or unique estuarine and marine habitat and/or life (such as marine mammals, birds, reptiles, soft corals, and other bottom dwelling plants and animals), physical or submerged cultural resources, the protection of important fisheries and fishing activities from other uses, and/or the protection and study of marine biodiversity and ecosystems. The working group should consider ways to ensure a clear and inclusive public process, with appropriate role(s) for key state agencies (e.g., DMF and CZM), in coordination with federal agencies and in consideration of other existing use restrictions. The working group should also address management planning, monitoring and research requirements, and enforcement measures to ensure that the objectives of their designation are being accomplished. The working group should also consider whether legislation is needed to accomplish the recommended process for designation of MPAs, particularly in conjunction with the enactment of a new comprehensive ocean resources management act. (The Ocean Management Task Force considered this MPA issue in some detail, but were unable to reach consensus on the matter within the time frame for presenting this entire package of recommendations to the Secretary.)

## Management Tools Recommendation #3: Coordination of Mitigation

### Recommendation

In their reviews of proposals to construct and/or carry out certain regulated activities within the state's ocean resources, the state permitting agencies should continue to prioritize avoidance and minimization of environmental impacts prior to development of mitigation for impacts. Nonetheless, in some situations, unavoidable impacts will occur as a result of proposed projects. With or without a new Ocean Resource Management Act, the Commonwealth should seek to enhance the role of the EOEA Secretary in development of environmental mitigation, and enhance the coordination among permitting and resource management agencies with respect to development of mitigation for unavoidable environmental impacts. The Commonwealth should use its existing authority under MEPA to strengthen coordination of the activities of state permitting and resource management agencies.

The Commonwealth should use MEPA (particularly the Section 61 process) to clarify distinctions between compensation to the Commonwealth (as trustee of the public trust) for occupation or use of public trust resources, and mitigation for environmental impacts associated with such use or occupation. The Commonwealth should ensure that the MEPA process is used to fully engage all permitting and resource management agencies on questions of mitigation from the earliest possible stages of the environmental review process, and that this enhanced coordination is reflected in any Proposed Section 61 Findings presented in Environmental Impact Reports (EIRs). This enhanced coordination is especially important for large infrastructure projects that involve multiple agencies and raise important policy issues regarding use of public trust resources. However, such enhanced coordination could benefit the permitting of smaller projects as well, even those that do not require EIRs under MEPA.

The Commonwealth should develop a priority list of marine restoration and remediation projects. The Commonwealth should consider implementation of projects on this list as potentially appropriate mitigation in situations where a project may have impacts that are difficult to otherwise mitigate, provided that the restoration project is reasonably related to the environmental impact in need of mitigation.

## Management Tools Recommendation #4: Enforcement

### Recommendation

Enforcement of Coastal laws and regulations should be a high priority of the Commonwealth. EOEA should ensure that sufficient enforcement personnel are provided to resource management and law enforcment agencies. Where appropriate, the Commonwealth should require implementation of supplemental environmental projects in lieu of monetary penalties assessed for environmental violations. EOEA and its agencies should create a priority list of marine restoration and remediation projects that could be implemented through compliance and enforcement violations.

## Management Tools Recommendation #5: Visual, Cultural, and Aesthetic Impacts

### Recommendation

Those Commonwealth agencies with potential jurisdiction over visual impacts of projects in state waters (specifically, the MEPA Office, DEP, the Energy Facilities Siting Board, and the Massachusetts Historical Commission) should develop and implement common methodologies and standards for the analysis of visual, cultural, and aesthetic impacts of proposed projects in state waters. Where possible, the agencies should develop common standards and criteria for mitigation of said impacts. The methodologies and standards should ensure that the visual, cultural, and aesthetic impacts of projects in state waters are fully understood and that a uniform set of methods and standards exists for presentation of data on visual, cultural, and aesthetic impacts. Such agency coordination should occur whether or not the proposed Comprehensive Ocean Resource Management Act (CORMA) is enacted and implemented. If this Act is adopted and implemented, the analysis of visual, cultural, and aesthetic impacts should be a consideration in development of Ocean Resource Management Plans.

## Management Tools Recommendation #6: Use Characterization

### Recommendation

To support fully informed and inclusive decision-making, ocean management planning should be supported by the development and maintenance of inventories of the uses and resources of the state's marine waters. Such inventories should be kept up-to-date to indicate not only existing uses of the state's oceans, but also emerging trends in new or changing types and patterns of use. This data should be GIS-based and organized on maps and databases to illustrate uses and resources on the seafloor, in the water column, and/or at the ocean surface, as well as uses in the airspace over these areas, and when activities (human and natural) occur in time. Additionally, to the extent feasible, they should include upstream and coastal areas that affect the ocean resources. Such inventories would be useful for ocean resource management, even in the absence of more comprehensive ocean resource planning authorized by a new state statute.

To support baseline use characterizations and resource management decisions that rely upon these use characterizations, baseline mapping for all state waters should be organized around themes useful for ocean resource management, with the possibility of reliance on the following main geographic and socio-economic themes:

- point locations of infrastructure located in ocean resources (physical structures or jurisdictional lines);
- patterns of industrial, commercial, and recreational transit over the surface;
- natural macro-features, including bathymetry, surficial geology, habitat, circulation, wind, and tidal currents;
- location and seasonal distribution of fisheries and fisheries resources, as well as other marine flora and fauna;
- location of other natural resources, such as wind or tidal areas, and areas of tidal upwelling;
- socio-economic trends, such as commercial, industrial, recreational, cultural, military, homeland security, and others; and
- utilization types and trends, such as extractive, transient, stationary, resource-dependent, and others.

Mapping should clearly represent the ubiquity of recreational and commercial boating, while identifying areas where these uses are geographically and/or seasonally concentrated. Mapping should also clearly represent the relationship between boating and transient fish resources. Decisions regarding use characterizations must be coordinated closely with decisions regarding data acquisition and management.

## Scientific Understanding Recommendation #1: Marine and Ocean Resource Trends Advisory Group

### Recommendation

An advisory group of state, federal, academic and other marine and fishery scientists and other experts should be appointed to evaluate and estimate baseline marine species population levels, habitat conditions, and contaminant levels to evaluate changes in ocean resources through time, identify emerging threats to ocean resources, and determine appropriate management goals. Conditions relating to the effects of global climate change, including sea-level rise and salinity of the ocean, could be included in these data collection efforts. The group should compile historic data and periodically study trends in these resources relative to the estimated historic conditions to assess improvements or degradation in the character of the resources.

The goal of this recommendation is not to set conservation or restoration goals to achieve minimally disturbed environmental conditions, but rather to fully leverage existing historic data to contribute to our understanding of estuarine and marine ecosystems, thereby leading to improved resource management. The estimation of minimally-disturbed population levels and habitat conditions can also assist in the assessment of cumulative impacts and contribute to the recommended comprehensive ocean resources monitoring and research plan. This advisory group should advise state officials responsible for stewardship and management of the state's ocean resources.

## Scientific Understanding Recommendation #2: Ocean Monitoring and Research

### Recommendation

As a basis for sound management of ocean resources - with or without new state authorities to develop comprehensive ocean resource management plans - a comprehensive ocean resources monitoring and research plan should be developed. This monitoring and research plan should encompass living and non-living estuarine and marine resources, as well as studies of the economic and other uses of these resources. The plan could serve as an important "roadmap" for work to be carried out by state resource agencies and others (e.g., academic institutions, permit applicants, public agencies), and should be periodically reviewed and adjusted to reflect improved understanding of resources and their patterns of use, integrate new management approaches and incorporate innovative survey techniques. The plan should provide guidelines on standardized protocols for conducting surveys to enhance data consistency.

The monitoring and research plan should be ecologically driven and cover both environmental features of the ocean (living marine resources, such as commercial, recreational and non-target species; benthic communities; invasive species; estuarine and marine habitat; water and sediment quality; and physical oceanographic, wind, and weather patterns), as well as social and economic uses and characteristics of these ocean resources (including uses of the water column, the lands under the water, and the water sheet). The plan should lay out a complete scope to evaluate cumulative impacts from activities such as coastal alteration projects, fisheries, and implications of resource management approaches (e.g., fishery and watershed planning), while distinguishing changes due to natural processes.

National and regional efforts to develop monitoring and research plans have recently garnered support, and Massachusetts is an active participant. One such effort is the Gulf of Maine Ocean Observing System (GoMOOS) with its array of oceanographic buoys collecting realtime data in the Gulf of Maine, including in Massachusetts Bay. These larger efforts should guide specific monitoring and research needed to improve the understanding and management of the Commonwealth's ocean resources. The comprehensive plan for Massachusetts should be developed by Massachusetts resource agencies, but rely on an integrated approach that includes municipalities, neighboring states, federal agencies, collaborative efforts between fishermen and government agencies, and provide flexibility for innovative approaches and the identification of research needs.

## Scientific Understanding Recommendation #3: Seafloor Mapping

### Recommendation

In support of comprehensive management and monitoring of ocean resources, the Commonwealth should acquire high-resolution seafloor habitat maps. Existing and emerging technology, such as aerial photography and multibeam sonar, collects spatially explicit information on vegetation characteristics, topography, and surficial geology of the seafloor and provides the foundation for seafloor habitat mapping. Habitat is a term that encompasses physical, chemical, and biological attributes, and the creation of seafloor habitat maps, showing the distribution and abundance of seafloor habitats, requires the collection and interpretation of a variety of environmental data to delineate and describe characteristics of the seafloor environment. Seafloor mapping should be done in coordination with the Natural Heritage Program's terrestrial Biomapping Project and the Gulf of Maine Data Partnership Program, which is facilitating data sharing among regional groups.

## Scientific Understanding Recommendation #4: Standardized Protocols for Data Collection

### Recommendation

As a corollary to our recommendations relating to Ocean Monitoring and Research and the Dissemination of Ocean Resource Data, we also recommend that when state permits require that environmental monitoring be carried out by the project applicant as part of publicly permitted activities, such monitoring should use more standardized protocols for data collection. The standardized monitoring protocols should be designed to aid managers in assessing environmental suitability and impacts of proposed and permitted activities and gain understanding of individual and cumulative impact of projects and uses. These standards should be flexible to allow project proponents achieve specific goals and evaluate effectiveness of new technologies designed to assess resources and, wherever possible, be consistent with federal data standards.

## Outreach Recommendation #1: Ocean Literacy and Stewardship

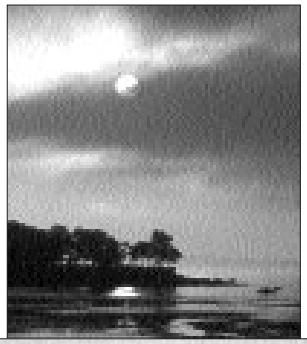
### Recommendation

The Task Force recommends that the Secretary make a formal commitment to developing a new ocean literacy and stewardship ethic among all citizens of Massachusetts. The initiative should target a multigenerational audience, and include the private and public sectors, academic institutions, politicians, advocates, the media, and the general public. It should include a K-12 Ocean Education project, as well as a broader public education strategy.

## Outreach Recommendation #2: Dissemination of Ocean Resource Data

### Recommendation

We recommend increased public dissemination of data collected on the Commonwealth's resources, whether part of today's existing permitting and resource management programs or as part of a new, more comprehensive ocean resource management framework, as we have proposed in Governance Recommendation #1. Such information might include: an index of all state-funded ocean resource and use data; data collected in support of permit applications or as part of permit requirements; and data collected with state-issued scientific permits. Such data should be made available to interested parties for a nominal fee, accompanied by documentation to set the context for their proper use. The index should include geographically referenced long-term and short-term data sets and project specific resource surveys, and have links to the actual data and reports. To the extent feasible, all data producers should be responsible for making their data available to the public according to protocols established by the state, and via web sites, web-mapping tools, or through existing publicly available databases (such as MassGIS). Data providers should be responsible for assuring that any data they provide is quality assured and represents sound science.



# INTRODUCTION

## Background

The ocean waters that surround the Commonwealth of Massachusetts support a large human population, a growing marine economy, and a diverse marine resource base. Given the geography of our state, 1500 miles of shoreline, the dense population, and past and present marine industries, it is not surprising that the management of our ocean waters is a priority.

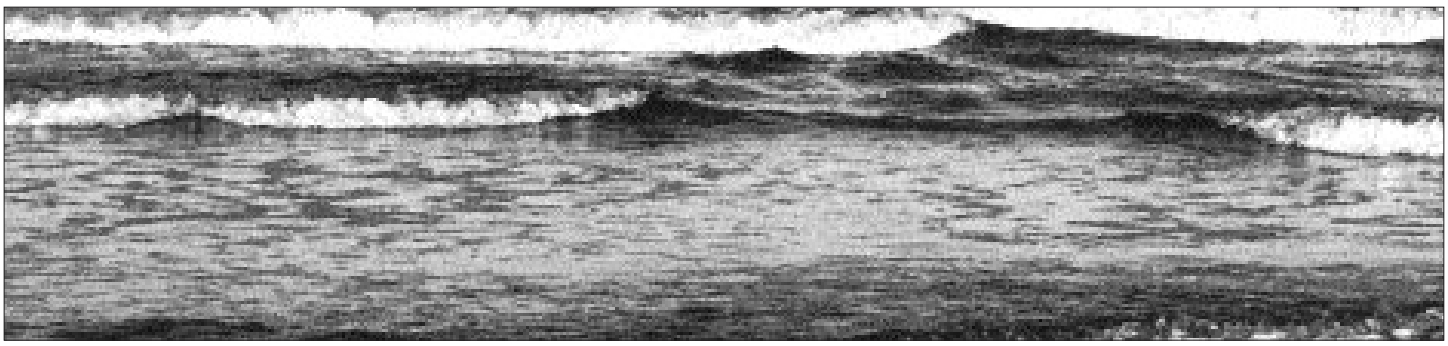
Coastal and ocean waters have played a significant role in the history of Massachusetts, for fishing, shipbuilding, trade, recreation, and scientific research, among other things. These multiple uses of the ocean are well known and appreciated as part of the fabric of what makes our state so special. Appropriately, the state's ocean is subject to a high degree of legal protection under what is known as the Public Trust Doctrine. As discussed more fully in the Technical Report accompanying this Task Force Report, this doctrine provides that all Massachusetts' tidewaters, the submerged lands beneath them (i.e., seaward of the low tide line), and the living resources inhabiting such waters and lands (e.g., fish, other marine animals, aquatic plants) are held by the state in trust for the benefit of all the people. As a general rule, the public has broad rights under the trust to use and enjoy these ocean resources for any lawful purpose, including but not limited to fishing, navigation, and recreation, subject to certain limitations established in statutory and case law. The Commonwealth has the responsibility to effectively manage all trust resources it owns on behalf of the public, a process that requires a careful balancing of conservation and beneficial use, within parameters set by the legislature and the courts.

Efforts to protect and manage our ocean resources are not new and began with the need to regulate fishing activities and designate shipping lanes. In the twentieth century, mooring fields, special use areas, pollution reduction and ocean clean-up activities, and other types of ocean management approaches became more common, as local, state, and federal government agencies sought to manage ever-increasing fishing, development, environmental and navigational demands on the oceans of the Commonwealth. Until recently, relatively informal approaches to managing the state's ocean resources have been the norm, in response to changing needs. Advances in science and technology, increased dependence on fossil fuels, and limited undeveloped land have brought a host of changes to Massachusetts waters in recent years. The following chart provides some further information on a subset of ocean projects that have been proposed over the past few years that indicates the changing nature of the projects.

## Table 1

### Proposed Infrastructure and Other Projects in or near Massachusetts' Oceans

| Project (Proponent) | Location | Primary Project Purpose | Status |
|---|---|---|---|
| **Hubline Gas Pipeline** (Maritimes and Northeast) | Traversing Massachusetts Bay (from Beverly to Weymouth) | Expansion of the natural gas delivery system within Eastern Massachusetts, to help transport natural gas from sources in Eastern Canada to consumers in New England. | Approved and constructed; in operation. |
| **Fiber Optic Cables** (various project owners for different projects) | Multiple corridors and routes in Boston Harbor and Massachusetts Bay | Telecommunications infrastructure for Eastern Massachusetts. | Permitted and constructed; in operation. |
| **Offshore Sand Mining** | 9 miles offshore (within bay closure line) from Hull | Extraction of sand from ocean floor for beach nourishment. | Department of Conservation and Recreation is preparing a Draft EIR |
| **Nantucket Sound Wind Farm** (Cape Wind) | Horseshoe Shoals, Nantucket Sound (located in federal waters, except for the power cable to interconnect the wind farm to the on-shore electric grid) | Construction and operation of wind generation facilities in off-shore waters with plentiful wind resources. | U.S. Army Corps of Engineers and the Massachusetts Environmental Policy Act Office are preparing a Draft Environmental Impact Statement/Report to be released in the summer of 2004. CZM will review project for consistency with state coastal policies |
| **Off-shore Wind Farms** (Winergy Wind Farms) | Nantucket Shoals and Davis Bank (located in federal waters); Falmouth, Truro and Gloucester in state waters | Construction and operation of wind generation facilities in off-shore waters with plentiful wind resources. | Proposals have been withdrawn. |
| **Hull Light Wind Turbine** | Hardings Ledge, Hull | Construction and operation of wind generation facilities in off-shore waters with plentiful wind resources. | Preapplication Phase |



Many of these projects are important to Massachusetts, for one reason or another, and many have received approvals from state and local agencies. They reflect important, changing features of our complex economy, and represent the kinds of infrastructure proposals that we expect to see in the future, as well.

With the recent growth in these types of offshore development, together with a variety of other ocean-use technologies known to be on the drawing boards, the "first come, first serve" approach that characterized ocean use in the twentieth century has increased tensions and in some cases created conflicts among these activities and other, more traditional types of ocean uses and resource protection goals. For example, the Hubline project listed above gave rise to violations to "time-of-year" fishery restrictions, and the Hull Wind Turbine may pose conflicts with the lobster industry. Further, the proposed sand and gravel mining project has raised questions about habitat and other ecosystem impacts that cannot be answered satisfactorily due to the absence of sufficient baseline data. These threats of environmental damage are particularly worrisome because Massachusetts has already experienced widespread impact to marine ecosystems and their dependent species from human uses including coastal wetland loss, eelgrass loss, invasive species proliferation, fish abundance declines, water quality degradation from point and non-point pollution sources, periodic oil spills, etc.

The changing nature and increase in uses of ocean areas have raised numerous legal, technical, policy, and governance issues among local, state, and federal agencies, as well as with the general public. Although state ocean waters, generally extending to three miles offshore, are owned by the state, managed in part by municipalities, and held in trust for the public, historically little state or local planning has taken place, so that the public regulatory processes for reviewing proposals has tended to default to a reactive process. Public decisions about whether to allow certain development activities often occur on a piecemeal basis, typically based on incomplete information and done in reaction to private project proposals as opposed to through a process that considers in advance the trade-offs among potential uses and the various public goals for ocean resource management. Traditional ocean users often feel threatened by potential new uses of this common area, and potential new users sometimes feel frustrated because they feel just as strongly about their rights to use the resource, especially in the absence of any advance notice that such developments are prohibited.

Moreover, regulatory agencies often must operate within outdated or vague policy frameworks in which to determine what uses are appropriate in specific locations. For example, state regulations generally exclude non-water-dependent development from open waters, but water-dependent projects are eligible for approval without further differentiation on the basis of type, size, location, environmental impacts, or other relevant parameters; and even prohibited non-water-dependent projects can seek a variance if necessary to accommodate an "overriding municipal, regional, state, or federal interest." In certain areas designated as Ocean Sanctuaries, the bar for allowable uses is set a bit higher, in that a (very) short list of activities is categorically prohibited by the Ocean Sanctuaries Act. Beyond this, however, virtually everything is allowable subject to a demonstration of "public convenience and necessity" - a test that has yet to be defined with respect to projects proposed for the oceans in anything other than vague and tautological terms and, as a consequence, has seldom operated as an effective use-screening device.

We believe that Massachusetts' ocean resources are too valuable and important for their fate to be left to such a reactive and fragmented policy approach. Massachusetts should reexamine its public trust responsibilities for the ocean. The assets of any trust - whether a land trust, or natural resource trust, or financial trust, or a public ocean trust as is here the case - must be managed for the benefit of its beneficiaries, and sound management requires a thoughtful and strategic plan to guide the allocation and preservation of its capital. This concept is particularly true for the Commonwealth's oceans, whose resources are so important to our common heritage, livelihood, enjoyment and long-term sustainable prosperity. We believe that the health

and welfare of our state is tied to the status of our oceans, and we think that more careful planning for the use and protection of our ocean resources is critical to our long-term interests. Healthy oceans are critically important to our well-being in Massachusetts. Our oceans embody extraordinarily dynamic and complex environments that are influenced by a combination of natural forces and human activities. Human activities above, below, and on the ocean surface, as well as on land, can and should be managed to allow both use and protection of ocean resources. Principles for managing those activities should embody an ethic of ocean stewardship that protects the public trust, values biodiversity, respects the interdependence of ecosystems, fosters sustainable uses, makes use of the best available information, and encourages public participation in decision-making.

### Subject Matter and Geographic Focus of Report

The Ocean Management Task Force focused its work on ocean areas within the Commonwealth's jurisdiction. Generally this area extends from the low water mark to the seaward marine boundary of the Commonwealth. Typically, the Commonwealth's marine boundary extends three nautical miles offshore, with the exception of areas within Massachusetts Bay, Cape Cod Bay, and Nantucket Sound that extend further due to bay closure lines established by the U.S. Supreme Court (Figure 1 on Page 22).

While our focus was on the Commonwealth's ocean areas, the Task Force was mindful of the significant consequences that land-based activities have on our oceans. Water quality issues are a high priority for both Massachusetts and federally-based management programs. From the point of view of the scope of our report, however, we opted not to directly address water quality issues since most pollution occurs on land or water bodies upstream of the oceans, and because there is an existing body of federal, state, and local water quality authorities addressing these issues. Similarly, the Task Force was cognizant of the potential impacts from activities occurring in federal waters, but recognizes the long-standing body of law and policy that generally prohibits state action over matters under federal jurisdiction. We have therefore limited our focus to policies that affect the state's oceans, as well as state actions to coordinate and otherwise interact with other jurisdictions. Additionally, the Task Force is aware that climatic changes resulting from human activities on the land affect the oceans in numerous ways, and we have addressed these issues from that perspective.

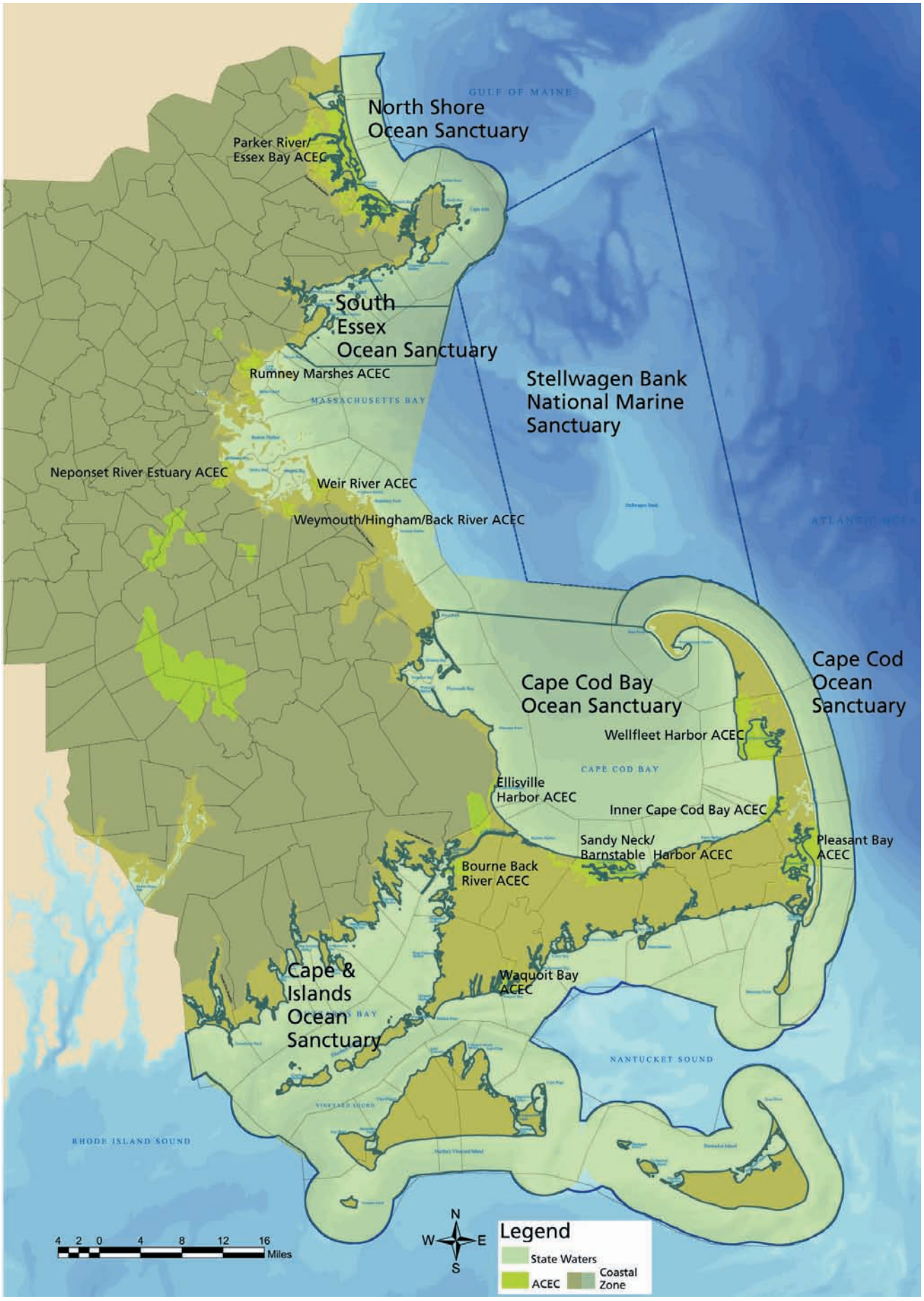
The Commonwealth shares much of its regulatory authority with the 78 cities and towns that border our 1500-mile coastline. The Massachusetts legislature enacted a law that extends the municipal boundaries of coastal communities three miles out to sea (19 Mass. General Laws Ch. 42 Section 1 (1998). Municipal authority does not, however, extend into areas where bay closure lines have extended the state boundary beyond three mile. Additionally, the Task Force recognizes the importance of cooperative planning and management of ocean areas with those federal agencies that are responsible for uses and resources in adjacent federal waters, as well as with our neighboring states of New Hampshire and Rhode Island.


Recognizing the multiple interactions between the state's ocean resources and the impacts of activities occurring on land, in the atmosphere, and in areas of federal jurisdiction, we agreed that our focus was ocean waters - an area where no previous broadly-based resource management or protection efforts have been undertaken on a statewide scale. This area became the centerpiece of our attention. But even so, we recognize that management of ocean resources should be done in concert with other relevant management entities and arenas to ensure that an appropriate ecosystem approach is pursued.

## The Task Force's Recommendations in Context

The Task Force acknowledges the serious commitment and technical expertise of the environmental agencies charged with managing our public resources. Nothing in this report should give the impression that we believe that the staff of existing agencies is falling short in its responsibilities in any way. In fact, in our view, due to budget cuts and changing priorities, the agencies have been forced to take on increasing responsibilities and work loads with significantly reduced resources. The recommendations herein are made with the clear understanding that additional resources are required to fulfill the Commonwealth's public trust responsibilities in ways that assure the vitality of these assets for citizens today and in the future.

This report is therefore about planning for our oceans' future. It is not about stopping development or fishing. But it is about charting a course for protection and use of our oceans, rather than simply reacting to trends and developments. While our suggestion for enhanced planning is new, we recognize that Massachusetts has a long history of asserting its position about how offshore resources should be used - whether it be questioning and ultimately halting Georges Bank oil drilling in the 1980s, successfully gaining fishery management jurisdiction for Nantucket Sound, or championing the designation of the Stellwagen Bank National Marine Sanctuary adjacent to state waters in the early 1990s. We have gone to extraordinary lengths in recent years, for example, to reduce and mitigate the impacts on our oceans of our activities on land; the massive, multi-year effort to clean up Boston Harbor is perhaps the best example of this investment in the health of our ocean. Massachusetts has long been culturally, ecologically, and economically invested in the ocean, and our recommendations reflect and honor that tradition.


GULF OF MAINE
North Shore
Ocean Sanctuary
Parker River/
Essex Bay ACEC
South
Essex
Ocean Sanctuary
Rumney Marshes ACEC
MASSACHUSETTS BAY
Stellwagen Bank
National Marine
Sanctuary
Neponset River Estuary ACEC
Weir River ACEC
Weymouth/Hingham/Back River ACEC
ATLANTIC OCEAN
Cape Cod
Ocean
Sanctuary
Cape Cod Bay
Ocean Sanctuary
Wellfleet Harbor ACEC
CAPE COD BAY
Ellisville
Harbor ACEC
Inner Cape Cod Bay ACEC
Sandy Neck/
Barnstable Harbor ACEC
Pleasant Bay
ACEC
Bourne Back
River ACEC
Cape &
Islands
Ocean
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Waquoit Bay
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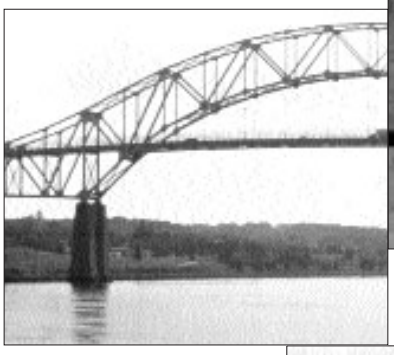
# PRINCIPLES OF OCEAN RESOURCE MANAGEMENT



# PREAMBLE

*Our oceans embody extraordinarily dynamic and complex environments that are influenced by a combination of natural forces and human activities. Healthy ocean ecosystems are vital to human health and welfare. Human activities above, below, and on the ocean surface, as well as on land, can and should be managed to allow both use and protection of ocean resources. Principles for managing those activities should embody an ethic of ocean stewardship that protects the public trust, values biodiversity, respects the interdependence of ecosystems, fosters sustainable uses, makes use of the best available information, and encourages public participation in decision-making.*

## 1. Protect the Public Trust

State ocean resources belong to the people of Massachusetts and are held in trust by the state for the benefit of current and future generations. Stewardship of ocean resources should promote beneficial uses balanced with conservation. Management policies should foster enhanced access to the ocean by the public.

## 2. Value Biodiversity

The diversity of ocean life is important for maintaining healthy and balanced marine and terrestrial ecosystems. A diversity of marine species also provides important societal benefits, some yet to be discovered. Oceans should be managed to protect and enhance the abundance and diversity of native species.

## 3. Respect the Interdependence of Ecosystems

The health of an ocean ecosystem depends on management policies that respect the interdependence of air, land, and water resources and the interconnection of all species to each other and their habitat. In addition, ecosystems often cross international, federal, state, and local boundaries. Therefore, state ocean management policies should reflect this interdependence and should be coordinated with other jurisdictions.

## 4. Foster Sustainable Uses

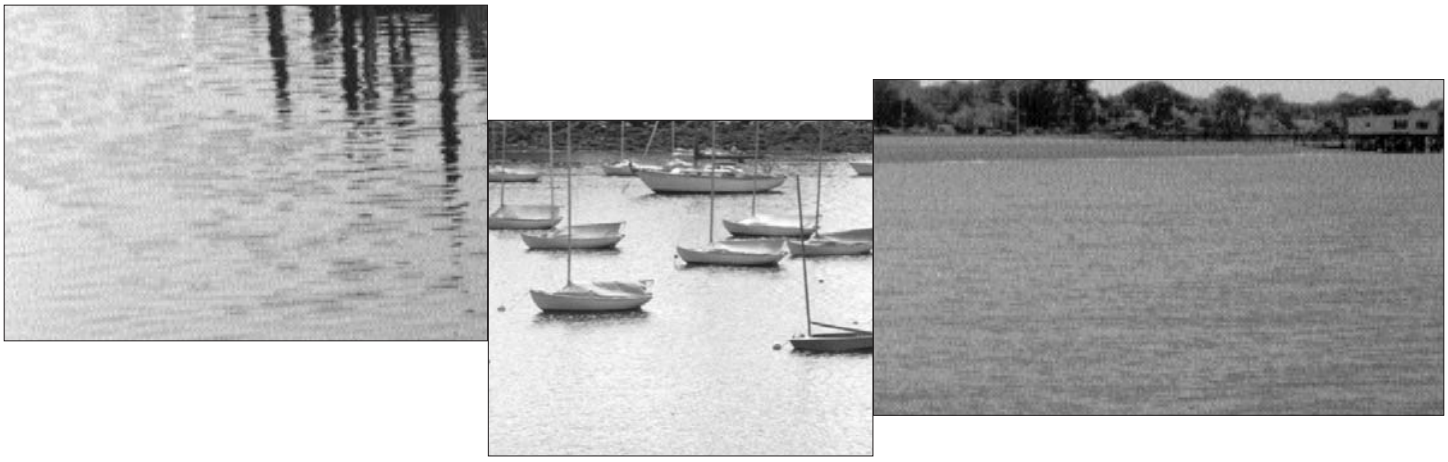
Human needs, such as for food, energy, recreation, and commerce, require ocean management policies that balance competing interests. For the benefit of present and future generations, human uses of the marine and coastal environments should be ecologically sustainable. Ocean management policies should be flexible enough to allow adjustment for evolving human needs and values, emerging technologies, and changing environmental conditions.

## 5. Use Best Available Information

Effective ocean management should adapt to our evolving knowledge and understanding of the ocean environment. Management decisions should be based on the best available information and expertise, and should consider the accumulating impact of human activity on the environment. Public officials should maintain and enhance the collection of biological, chemical, physical, social, and economic information and communicate this information to the general public.

## 6. Encourage Public Participation in Decision-Making

Effective ocean management requires the education, support and involvement of citizens, stakeholders and public officials. Education and outreach should encourage an ethic of ocean stewardship. The public should have the opportunity to be engaged in the process that creates ocean management policy. Management policies should ensure that citizens and stakeholders have access to clear, objective, and relevant information on which to base their judgments and positions.



NOTES

# GOVERNANCE OF OCEAN RESOURCE MANAGEMENT

# GOVERNANCE

For centuries, Massachusetts' men and women have turned to the sea for their livelihoods as fishermen, sailors, traders, and ship builders. These activities continue, but now a growing number of people use our offshore waters for boating, swimming, whale-watching, and other recreational activities. Commercially, the ocean floor is increasingly being used for such things as aquaculture, electric power cables, fiber optic cables, and gas lines. Recent proposals include offshore energy generation facilities, as well. Use of the state's public ocean resources - and everything below the low tide mark is considered within the public domain - have historically been determined on a "first come, first served" basis, but that dictum no longer satisfies multiple competing uses and access to the ocean resources of the Massachusetts coast.

With each new use, a public area of the ocean that had once been thought of as limitless is gradually experiencing the pressure of development, competing uses, and in some cases, over-use. Currently, we lack the formal governance processes to determine how best to tackle this problem. Should we be setting aside parts of the ocean for specific types of activities or projects? Is first-come, first-serve the right way to manage a public trust resource? How should we balance the clean energy value of ocean-based wind farms against the aesthetic effects on the nearby coastline? How should we balance the tensions between laying pipelines and transmission cables and fishing interests? How should we balance the various values associated with fishing and the need for sustainable populations of multiple fish species?

Governance structures for ocean resources, particularly those that cross jurisdictional boundaries, have historically been focused on single resources or activities, such as navigation, whales, commercial fishing, and ocean disposal. Comprehensive approaches to ocean management are difficult to develop, based on the large number of resources involved, their often migratory and multi-dimensional characteristics, and the tensions created by the vast economic potential of these resources. But given the realities of a limited resource base in the face of demands for competing uses and resource protection needs, we believe it is imperative that we develop new ocean governance structures to implement fair and sustainable ocean management approaches.

The Technical Report reviews key statutes most likely to apply to large coastal projects and other uses of the oceans, and further addresses the increasing number of development proposals for a variety of uses of our ocean resources. In this section, we summarize our recommendations for **governance** of our state's ocean resources, as a framework for developing and administering various management tools (described in the following section).

We recommend:

1. the passage of a Comprehensive Ocean Resources Management Act;
2. ocean management coordination among federal, state, and regional agencies;
3. adoption and implementation of a climate change action plan; and
4. revisions to the Ocean Sanctuaries Act.

# GOVERNANCE RECOMMENDATIONS

## Governance Recommendation #1: Comprehensive Ocean Resources Management Act

### Recommendation

The Ocean Management Task Force recommends that the Secretary of Environmental Affairs introduce legislation for a new, comprehensive Ocean Resource Management Act. The centerpiece of this act would be the creation of new Ocean Resource Management Plans that set forth management objectives and strategies for various discrete ocean planning areas and activities within the state waters of the Commonwealth.

The Act that we envision would retain and strengthen existing environmental protections associated with the ocean as a public trust resource while streamlining the array of existing statutes governing the use and protection of the Commonwealth's oceans. State laws and regulations that would likely be affected under the Act to improve coordination and strengthen resource protection include the Chapter 91 program at the Department of Environmental Protection (DEP), the program to implement the Ocean Sanctuaries Act at the Department of Conservation and Recreation (DCR), and the state's Coastal Zone Management (CZM) program. In addition, under the new legislation that we are recommending, the Division of Marine Fisheries (DMF) would be involved (along with other agencies) in the development of comprehensive ocean management plans and would retain jurisdiction of day-to-day fisheries management activities.

If an Ocean Resource Management Act were adopted, it would supercede several of the policy-related recommendations that appear later in this report that are designed to improve the existing mechanisms for managing the state's ocean resources in the absence of a new law.

The Ocean Resource Management Act would have the following key components:

- Preamble - articulating the compelling need for comprehensive ocean resource management;
- Ocean Resource Management Principles - presenting the principles to guide subsequent regulations and ocean resource management plans;
- An explanation of the state-wide interests that should be addressed in Ocean Resource Management Plans including, but not limited to, protecting fisheries; preserving public access; enhancing biodiversity and ecosystem health; addressing climate change and sea-level rise; fostering the growth of marine industries, trade and economic opportunity; and supporting needed infrastructure for the Commonwealth's economy;
- A statement of legal authority (which would likely modify the Ocean Sanctuaries Act and perhaps other authorities as needed to reduce inter-statutory conflicts, redundancies and overlap, while also preserving necessary protections that reside in those existing statutes), in order to:
    - Develop Ocean Resource Management Plan(s), with primary responsibility at the state level assisted by strong municipal and citizen participation;
    - Streamline governance of the public trust ocean resources by providing compulsory guidance and coordination to relevant state agency actions upon approval of an Ocean Resource Management Plan for a certain area;
    - Establish basic standards for allowable uses, impact control, and resource protection - including which different uses and impacts allowed and/or controlled in particular areas of the state's oceans that are governed by an Ocean Resource Management Plan;
    - Establish authority and in some cases requirements for data collection and dissemination;

- Establish authority for the collection of fees tied to permission to use the state's ocean resources for infrastructure and other development projects that are subject to licensing by the state;
- Establish a dedicated fund for Ocean Resource Management in which certain fees (Chapter 91 program), fines, settlements, and private revenues could be deposited to carry out the regulatory responsibilities and research activities authorized under the Act;
- Assign the authority to develop, adopt, and enforce Ocean Resource Management Plans to some entity within state government (see below); and
- Develop an appeal mechanism, including the use of citizen suits, to ensure accountability under the Act.

The Task Force recommends developing an internal organizational/decision-making structure within the Executive Office of Environmental Affairs (EOEA) to be responsible for implementing the Ocean Resource Management Act and for developing Ocean Resource Management Plans. Under the new Act that we envision, the Secretary of Environmental Affairs would be charged with the ultimate authority for approving Ocean Resource Management Plans with an inter-secretariat concurrence mechanism. The Secretary would be assisted by an advisory committee to help advise on the development and implementation of Ocean Resource Management Plans. Licensing decisions by state permitting and resource-management agencies would need to be consistent with approved plans.

The Ocean Resource Management Plans authorized by the new Act would be developed through a public stakeholder process and adopted by the state, with common elements that will be articulated through agency guidelines. These common elements might include efforts to:

- Define a planning area (e.g., the geographic scope of a particular ocean resource management plan, and the activities or systems covered by the plan);
- Define the ocean resource management vision, goals and objectives;
- Characterize the current resources and uses of the planning area: an inventory and analysis of resources and uses (historic, existing, potential, future); an inventory of the tools available for public management of these resources and uses;
- Identify natural, social, cultural, and economic opportunities / constraints, with conflict areas, with particular consideration for environmental justice, smart conservation, cumulative impacts, sustainability, and adverse economic impacts;
- Identify any areas of the state's oceans in a particular planning area that have resources of significant statewide interest (such as special fisheries habitat protection, sensitive or unique flora and fauna and habitats, venues for public access, viewsheds with high historical or cultural significance, certain unique and valuable physical resources, such as prime wind resources, designated port areas, important shipping channels), and provide for means to protect those resources or the particular uses of them;
- Develop alternative management scenarios based on Ocean Resource Management Principles, vision, state and regional goals and objectives, and analysis of features, from which a final management strategy would be chosen;
- Adopt the preferred ocean resource management approach for a particular planning area;
- Articulate the mechanisms through which the plan will be implemented (e.g., connections to subsequent regulatory or other agency action(s) that must be consistent with the plan, appeals of agency actions, state budgetary process and elements, coordination with various federal actions, etc.);
- Develop management guidance for applicable regulations;
- Establish a process and schedule for the subsequent updating of the plan(s); and
- Clarify authority for permitting, licensing, and construction of development projects.

The ocean management planning process will be staffed by appropriate EOEA and agency personnel. Ocean Resource Management Plans adopted under the Act should be periodically reviewed and renewed (such as on a five-year cycle), with public input, and with requirements that certain agency regulatory and budgetary actions be consistent with the ocean resource management plans. In developing the Act, the Secretary and the legislature should also further examine opportunities to consolidate or strengthen the administration of certain regulatory programs to improve coordination and transparency; these programs include Waterways (MGL Ch. 91), the Ocean Sanctuaries Act (MGL Ch. 132A, sec. 12A), and the Coastal Zone Management Act (MGL Ch. 21A).

## Justification

The Task Force believes that due to the high value and unique nature of ocean resources and uses, as well as the public trust character of these resources, the Commonwealth needs a comprehensive Ocean Resource Management Act to plan and regulate our ocean resources. The ocean waters, water-sheet, and lands under the waters of the Commonwealth are currently managed through an ad hoc collection of single-sector oriented laws, regulations and policies. Recent proposals to construct energy and telecommunications infrastructure and other projects in our ocean waters have revealed gaps, overlaps, and inconsistencies in authority, as well as gaps in the ability of the state to plan for - rather than simply react to - certain types of developments in the state's oceans.

Comprehensive legislation will give state agencies clear direction and stronger authority to establish a solid foundation for the protection and management of ocean resources. By requiring the development of Ocean Resource Management Plans, the Act contemplates a proactive approach to managing ocean resources, as opposed to the current approach of reacting to proposed projects on a "first-come, first-served" basis. And rather than having adverse public reaction and user conflicts over proposed projects, ocean planning can provide guidance to users well in advance by defining areas for fisheries use and protection, renewable energy development where prime wind and wave resources may exist, important shipping channels, or special viewsheds of documented scenic and cultural significance. Planning will also give clear direction to permitting agencies to streamline proposed uses that are consistent with approved Ocean Resource Management Plans. Through a proactive planning process, the Commonwealth can engage the public, municipal officials, industry representatives, and other stakeholders in articulating a shared vision for the appropriate use and protection of our ocean resources.

## Implementation Plan

We recommend that the Secretary convene an interagency working group to draft legislative language for a new Ocean Resource Management Act, and to begin to work with interested groups and the legislature to shape a legislative package for the Act. Because we do not mean for this process to chill appropriate development in the state or stall the timing, adoption, and implementation of a new Act, we do not recommend that any moratoriums be imposed during the pendancy of this process. We do, however, recommend that the state move expeditiously to draft, enact, and implement a new Act and prepare the subsequent plans so that they can play the important roles in the future that we envision for the protection and appropriate use of the state's ocean resources.

***Legislation Required:*** A Comprehensive Ocean Resources Management Act (CORMA) should be developed by the Secretary and submitted to the Legislature for consideration.

***Next Step:*** The Secretary should convene a working group to develop legislative, administrative, and regulatory changes needed to implement this recommendation.

***Timing:*** A CORMA bill should be drafted immediately.

***Funding Required:*** To implement the provisions of this Act, we recognize that public resources will be required and should be allocated to this purpose.

***Potential Sources of Funding:*** The Task Force recommends the creation of a dedicated account for certain fees (Chapter 91 program), fines, settlements, and private revenues, which would be used to fund this recommendation, supplemented as needed by state operating funds.

## Governance Recommendation #2: Ocean Management Coordination

### Recommendation

Massachusetts should pursue ecosystem management of offshore waters through federal, regional, and state coordination and cooperation. The Task Force recommends that the Commonwealth:

1. develop cooperative ocean management plans with federal agencies for offshore waters, for example in portions of the Gulf of Maine or Nantucket Sound.

2. review and revise the state's enforceable coastal policies, based on the passage of the proposed Comprehensive Ocean Resources Management Act or other state legislation, existing statutes, and formal approval by the National Oceanic and Atmospheric Administration (NOAA);

3. continue to apply enforceable coastal policies through federal consistency to activities in state waters, coastal watersheds, and adjacent federal waters;

4. expand cooperative frameworks for project review, such as the U.S. Army Corps of Engineers' Joint Processing meetings;

5. support regional and international ocean management councils, such as the Gulf of Maine Council on the Marine Environment; and

6. develop and/or expand existing cooperative agreements with adjacent states.

### Justification

Massachusetts has a long history of asserting its position about how offshore resources should be used - whether it be questioning and ultimately halting Georges Bank oil drilling, successfully gaining fishery management jurisdiction for Nantucket Sound, championing the designation of the Stellwagen Bank National Marine Sanctuary adjacent to state waters in the early 1990s, or today applying federal consistency review over a proposed offshore wind farm in nearby federal waters. Massachusetts is economically, ecologically, and culturally invested in the ocean and, while we recognize the limits to state jurisdiction in the legal sense, we have always considered the continental shelf to be intrinsically linked to our state and our interests in terms of its integrated geological formations and ecosystems, the wealth of life it supports, and the foundation it provides to many of our industries.

The federal/state boundary dividing the ocean is derived from law, not by virtue of oceanographic or other natural systems or processes. New ocean management structures are needed to promote consistent, coordinated ocean management policies and to ensure that the geographic divisions among federal and state management authorities support rather than prevent sound ecosystem management across a variety of jurisdictions.


Implementation Plan

Massachusetts is fortunate that regional and federal/state frameworks to assist in ocean management activities already exist, but their scope is generally limited to single-issue-specific purposes. EOEA should proactively continue to expand these frameworks and review and amend its enforceable coastal policies with assistance and approval of federal partners.

***Legislation required:*** This recommendation does not require any additional legislation, although the development of certain enforceable coastal policies relating to the state's oceans will depend in part on passage of a CORMA bill or other legislation. In addition, legislation may, in the future, strengthen and codify Massachusetts' participation in region ocean management councils.

***Next Steps:*** CZM, in conjunction with an ocean management advisory panel and working with other state agencies, should review existing state laws to develop potential new enforceable coastal policies; future laws should similarly be reviewed. EOEA should pursue mechanisms to develop cooperative management agreements with federal and neighboring state agencies for adjacent waters, continue and strengthen joint review frameworks with federal agencies, and promote the use of regional organizations for ocean management.

***Timing:*** CZM should conduct a review of existing state laws and propose new potential enforceable coastal policies by July 2004. Subsequent reviews should be on-going. Discussions with federal officials on joint management agreements have already begun.

***Funding Required:*** Funding would be required to initiate federal/state cooperative management planning.

***Potential Sources of Funding:*** State operating account, NOAA CZM grant.

## Governance Recommendation #3: Climate Change Plans

Recommendation

Given the important interactions between global climate change and the conditions of our ocean resources, the Task Force recommends that the state include in its Climate Change Action Plan various elements relating to effects of climate change on our coasts and oceans, measures to mitigate effects on such things as coastal flooding and sea level rise, and policies to reduce greenhouse gas emissions. The Task Force supports the state's efforts in this regard and recommends the collection of information about trends relating to climate change impacts in Massachusetts (e.g., sea level rise, ocean and coastal storm frequency, ocean salinity, inventories of certain species within state waters, coastal flooding, inventory and location of wind and tidal resources). Furthermore, any Ocean

Resource Management Plans developed under new statutory authority (described in Governance Recommendation #1) should be developed in coordination with and in consideration of the state's Climate Change Action Plan. The Task Force further supports policies that decrease the Commonwealth's reliance on energy resources that emit greenhouse gasses.

### Justification

Over the next century, climate change is projected to profoundly impact coastal and marine ecosystems, both in Massachusetts and around the globe. Such trends as sea-level rise, increased coastal flooding, inundation of wetlands, and changes in ocean and atmospheric circulation are predicted to occur.

These effects have been observed in many recent reports, including those recently issued by the Conference of New England Governors - Eastern Canadian Premiers in their Climate Change Action Plan (August 2001):

> The Intergovernmental Panel for Climate Change (IPCC), an international body of atmospheric scientists, in its *Third Assessment Report*, states that "There is new and stronger evidence that most of the warming observed over the last 50 years is attributable to human activities".... and that if no action is taken, average rates of warming by 2100 will "be greater than any seen in the last 10,000 years." Such instability will increase the incidence and severity of extreme weather events such as storms, droughts, floods, and heat waves; cause sea levels to rise; shift and/or expand certain disease and pest vectors; and further stress already vulnerable species and ecosystems.
>
> In the *Canada Country Study, Atlantic Region Report*, for example, scientists predicted that sea level rise is the impact with the highest degree of certainty associated with it and will lead to predictable and dramatic impacts. Many of these impacts would be common to the Eastern Canadian provinces and to New England states. The warming would stress our common natural resources-especially in the areas of agriculture, fisheries and forestry. Another recent analysis of regional impacts of future climate change in the United States, concluded that key issues for New England ...were likely to include an increase in weather extremes; stresses on estuaries, bays, and wetlands; changes in precipitation rates impacting water supply and food production; multiple stresses on urban areas; and recreation shifts.... Rising sea level and elevated storm surge levels-with associated problems of coastal erosion and saltwater inundation-would likely have severe impacts on our harbors, islands, and for the many communities located near the region's shoreline.

Clearly, as a state with significant ocean and coastal resources, Massachusetts will need to adapt to effects such as these. But more immediately and in addition, Massachusetts is taking a leadership role along with other states in the Northeast and with the Eastern Provinces of Canada to reduce the region's emissions of greenhouse gases that contribute to climate change. Over the past two years, as part of regional commitments of the New England Governors Conference/Eastern Canadian Premiers, Massachusetts has committed to take steps to reduce its greenhouse gases to 1990 levels by 2010, to reduce them 10 percent further by 2020, and to reduce greenhouse gas emissions sufficient to eliminate any dangerous threat to the climate. Pursuant to these commitments, Massachusetts is developing a state-wide Climate Change Action Plan that, among other things, calls for the development of renewable resources as one way to reduce the greenhouse gas emissions associated with fossil energy use. These commitments provide an important backdrop for the need for the Commonwealth to include clean, non-fossil fuel energy resources such as wind and tidal resources at appropriate sites, as well as plan for the adaptation of the state's (and region's) economic resource base and physical infrastructure to address the consequences of climate change.

Implementation Plan

The Secretary should ensure that ocean issues are well represented in the state's climate change action planning efforts and should task CZM with participating in Plan development and implementation as it affects coastal and ocean issues as well as coordination with similar federal initiatives.

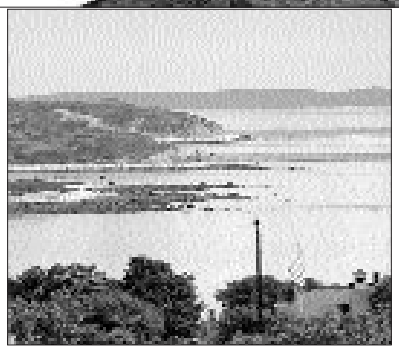
***Legislation required:*** No legislation is required.

***Next Step:*** CZM should comment on draft Climate Change Action Plan to ensure strong focus on ocean issues.

***Timing:*** Immediately

***Funding Required:*** No cost for initial steps. Implementation of Climate Change Action Plan as it relates to ocean issues will require funding.

***Potential Sources of Funding:*** NOAA grant funds.



## Governance Recommendation #4: Ocean Sanctuaries Act Revisions

Recommendation

The regulations implementing the Ocean Sanctuaries Act (OSA) (302 CMR 5.00) should be updated unless or until a new Ocean Resource Management Act is enacted and implemented - at which time, the more comprehensive Ocean Resource Management Act could be written specifically to replace the OSA, since the purposes of a new Ocean Resources Management Act as we envision it would encompass those of the original OSA. The OSA regulations should be updated to clarify for the regulated community, the public, and the agencies, the range of permitted and prohibited activities and the environmental performance standards that guide project review in Ocean Sanctuaries. We also recommend that the Massachusetts Board of Underwater Archeological Resources (BUAR), DEP, DCR, DMF, Energy Facilities Siting Board, and the Massachusetts Environmental Policy Act (MEPA) office develop a Memorandum of Understanding (MOU) governing protocols for interagency coordination on project reviews involving projects in Ocean Sanctuary areas.

Justification

The OSA and its implementing regulations were drafted to prohibit certain activities (i.e., offshore oil and gas leases). However, the protective principles of the OSA are expressed in sometimes-oblique terms without a strong tradition or precedent for interpreting what these terms mean in practice. For example, among the factors to be considered in determining public necessity are "whether the proposed facility will serve the public interest" and "whether...the public demonstrates a need for

the facility." And, contrary to the general perception, the OSA does not prohibit most offshore development (except in the waters off the Outer Cape). Rather, most offshore development - including industrial facilities, but excluding oil and gas development - may be permittable under the OSA, subject to the application of review standards that do not always provide clear guidance. The OSA and its regulations have generated questions from the regulated community and other permitting agencies with regard to issues of compliance with the OSA. Updating the OSA as part of a wider ocean resource management effort should be a top priority. Even in the absence of new statutory changes, there is a need for updating the regulations implementing the OSA, as well as the need for better coordination among agencies with responsibilities for reviewing projects in existing ocean sanctuaries. That said, our preference would be to focus parallel efforts on adoption of a comprehensive Ocean Resources Management Act, which would be written in a way to supercede the need for the new OSA regulations once it were adopted and implemented.

Implementation Plan

We recommend that the Secretary convene a workgroup to develop recommended revisions to existing OSA regulations. Specific issues to address include, but are not limited to, clarification of the Public Necessity and Convenience Test for the purposes of considering whether to allow certain development projects within the ocean sanctuaries, the definition of and standards relating to "significant alteration," and the development of guidance or standards relating to aesthetic impacts. As a subset of the workgroup process, an interagency workgroup should be convened to draft a Memorandum of Understanding that specifies and formalizes the roles and responsibilities of agencies that participate in OSA implementation. This workgroup process should keep up-to-date on the status of enactment of a new Ocean Resources Management Act, in order to assure that the drafting of such legislation incorporates and addresses the types of protections set forth in the OSA, and then also provides for the elimination of the OSA upon enactment of such an Ocean Resources Management Act with such provisions.

***Legislation required:*** The proposed CORMA would require legislation, which we recommend be drafted in a way to incorporate our recommended changes to the Ocean Sanctuaries Act. Updating the Ocean Sanctuaries Act regulations themselves would not require new legislation.

***Next Step:*** The Secretary should convene an interagency working group, co-chaired by DCR and CZM, to develop proposed regulatory changes and to develop an interagency MOU on coordination of project review in Ocean Sanctuaries.

***Timing:*** The Secretary should convene the working group as soon as possible, concurrent with the implementation of the recommendations for the Comprehensive Ocean Resources Management Act.

***Funding Required:*** Implementation of the regulatory changes and MOU may require additional resources.

***Potential Sources of Funding:*** State capital funds.

# MANAGEMENT

## TOOLS

# MANAGEMENT TOOLS

Potential and real conflicts over the uses and means to protect our coastal and ocean resources seem like a nearly inevitable result of the changes we've seen occurring across the Massachusetts landscape in recent decades. Because of increasing population, over three-quarters of the approximately 6 million residents of Massachusetts live within a one-hour drive of the Massachusetts coast. That coastal population increased 5.89% between 1990 and 2000. The Massachusetts economy is strongly tied to the state's position next to the ocean. More people and more prosperity will simply intensify the conflicts at and near to the shore.

Massachusetts coastal waters accommodate a wide variety of uses that are often separated by time, seasonality, or location (sea floor bottom, water column, water surface, air), or through existing specific use areas (e.g., shipping lanes). Most of these uses derive from activities that are designed to benefit different groups of citizens, if not the economy as a whole, and contribute to our state's overall development. Increases in overall uses, the development of new types of coastal and ocean activities, and a loss of productive marine and estuarine habitat, however, will likely lead to a significant increase in user conflicts. Historical and up-to-date inventories of the uses and resources of the state's marine waters are needed to support ocean management planning.

With so many new uses and so many unknowns, our vision of the future of the ocean that surrounds our shores is itself developing. But based on our experience on land, we know the nature of the problem, since the factors involved are the same. We need to make sure that the biodiversity of the world, or at least of our small part of it, is protected. We need to balance the recreational and commercial uses and the environmental resources of an ocean that may not be big enough to accommodate everyone, at least not near the coast. We need to learn how to manage this resource, and to understand that it is not unlimited.

The Technical Report that accompanies this Task Force Report describes the range of existing regulatory programs with authority over ocean resource uses as well as the wealth of ocean resource data. Several of these programs are in need of updating and fine-tuning to better respond to project proposals in an efficient and equitable manner. This section proposes six recommendations to strengthen the tools that agencies have to make management decisions regarding ocean resources.

We recommend that the Commonwealth:

1. examine current Chapter 91 license fees and adjust them where appropriate;
2. appoint a working group to develop recommendations on a formal process, criteria, and information standards for designating Marine Protected Areas;
3. continue the improvement of interagency coordination of project mitigation;
4. enforce existing environmental laws as a high priority;
5. develop methodologies and standards for the analysis of visual, cultural, and aesthetic impacts; and,
6. develop and maintain inventories of the uses and resources of the state's marine waters.

# MANAGEMENT TOOLS RECOMMENDATIONS

## Management Tools Recommendation #1: Fee Structures and Levels

### Recommendation

Current Chapter 91 program fees–such as "tidewater displacement" and "tidelands occupation" fees–should be examined and adjusted as appropriate (i.e., increased or decreased). This recommendation applies only to such fees for proposed structures and non-fishing activities in state offshore waters, consistent with the Task Force scope of work under its charge from the Secretary under which we limited our consideration of issues to those relating to the ocean (as opposed to on-shore areas). In the event a separate fee structure is deemed appropriate for these offshore waters, the geographic area subject to any adjusted fees should be defined and mapped. This change should occur even if a new Ocean Resource Management Act is not enacted and implemented, and should be dovetailed with that Act's implementation if it is. Out of respect for the public trust nature of the state's ocean resources, we recommend that consideration be given to defining a rate schedule for occupation fees based on valuation concepts more typical of s ubmerged lands leasing in other states, as an alternative to the concept of simple "rental." At the same time, the revised fee structure and levels of fees should not serve to discourage preferred water-dependent uses and other activities that significantly advance the ocean management and other policy goals of the Commonwealth. We assume fees will be levied only on projects that otherwise comply with all applicable standards for approval.

We strongly recommend that, as part of this overall ocean resource management initiative, the Legislature establish a dedicated account where revenues generated from all Chapter 91 program fees can be retained to help defray Chapter 91 program administrative costs and to advance coastal and ocean management objectives, including but not limited to: increasing public access to the ocean; maintaining coastal open spaces and port infrastructure; conducting scientific research, monitoring, and data collection; enforcing compliance with ocean-related regulatory requirements; and other ocean-related policy and planning activities (such as developing, implementing and enforcing Ocean Resource Management plans, if the Ocean Resource Management Act is adopted along the lines proposed in Governance Recommendation #1).

### Justification

Since we are recommending that certain uses of ocean resources continue to be allowed while also taking steps to plan for proper management of these resources and uses, we believe that it is appropriate that there be a source of financial resources to perform the studies, evaluations, assessments and plans that are part of this process. Without these financial resources, it will be impossible to achieve timely and effective management. It is not the intent of the Task Force to call for an examination of fees for fishing activities already subject to state management. Rather, the recommendation is limited to c. 91 fees associated with the authorization of structures or activities located in offshore waters, the geographic extent of which is left for subsequent determination in conjunction with the review of existing fee schedules.

### Existing State Authority to Assess Fees

Chapter 91 - Fees are assessed by the DEP for development activities in tidelands, generally in small amounts relative to the value of proposed development. Fees are collected to compensate for the

impacts of tidewater displacement and to ensure some "rent" is paid for the occupation of Commonwealth tidelands. Other fees are levied in connection with the filing of c.91 applications and the conduct of compliance inspections.

Chapter 91 Limitations - Occupation fees in particular are artificially low and difficult to justify as such in the case of certain high-value or high-impact development of free-standing offshore structures. The revised fee structure should reflect the extent (if any) to which proposed structures or activities provide on-site or off-site public benefits in addition to the payment of occupation fees. Furthermore, the fees do not distinguish between uses except on a broad categorical basis, and revenues generated from these fees are simply deposited into the general fund. We recommend that the occupation fees should be revised to better reflect the economic value of these public trust lands and the impacts on the regulated activities on the public's ocean resources, with the revenues from these fees dedicated for ocean-related purposes and allocated as appropriate to relevant agencies.

### Implementation Plan

We recommend that: (a) the Commonwealth undertake a study to research "best practices" in Massachusetts and other jurisdictions relating to the setting of fees in other policy areas (not necessarily having to do with the oceans, but in areas where a fee is designed to reflect "non-market" values associated with permitted or licensed development activities on a public resources (e.g. the radio spectrum, grazing fees, offshore oil royalties)); (b) the Commonwealth convene a working group to advise DEP on options for setting Chapter 91 fees, including through obtaining public comment on a specific set of proposed fees; and (c) the working group define and map the proposed area to be subject to a revised Chapter 91 fee structure.

***Legislation Required:*** Legislation is unnecessary to change current c. 91 fees, although the current Waterways regulations would need revision in accordance with public rulemaking procedures. However, new legislation (including amendment of c. 91) would be required for retention of fees in a dedicated account. Such new legislation could be modeled on Chapter 131, section 2A which in 2003 established a dedicated wildland acquisition account to retain monies collected from the sale of conservation stamps and various licenses for fishing, hunting, etc.

***Next Step:*** The Secretary should appoint the Commissioner of DEP and the Director of CZM as co-chairs of a Working Group to study best practices and draft a recommended approach.

***Timing:*** The Working Group should be appointed and meet by September 2004.

***Funding Required:*** We expect that staff resources would be required during the period of review of the fees.

***Potential Sources of Funding:*** State operating funds.

## Management Tools Recommendation #2: Marine Protected Areas

### Recommendation

The Secretary of Environmental Affairs should convene a working group, with the express purpose of developing recommendations to the Secretary with respect to a formal process, criteria and information standards for designating Marine Protected Areas (MPAs) in the state's ocean. For the purpose of this working group's assignment, MPAs could include areas for the protection of special, sensitive and/or unique estuarine and marine habitat and/or life (such as marine mammals, birds, reptiles, soft corals, and other bottom dwelling plants and animals), physical or submerged cultural

resources, the protection of important fisheries and fishing activities from other uses, and/or the protection and study of marine biodiversity and ecosystems. The working group should consider ways to ensure a clear and inclusive public process, with appropriate role(s) for key state agencies (e.g., DMF and CZM), in coordination with federal agencies and in consideration of other existing use restrictions. The working group should also address management planning, monitoring, and research requirements, and enforcement measures to ensure that the objectives of their designation are being accomplished. The working group should consider whether legislation is needed to accomplish the recommended process for designation of MPAs, particularly in conjunction with the enactment of a new comprehensive ocean resources management act. (The Ocean Management Task Force considered this MPA issue in some detail, but were unable to reach consensus on the matter within the time frame for presenting this entire package of recommendations to the Secretary.)

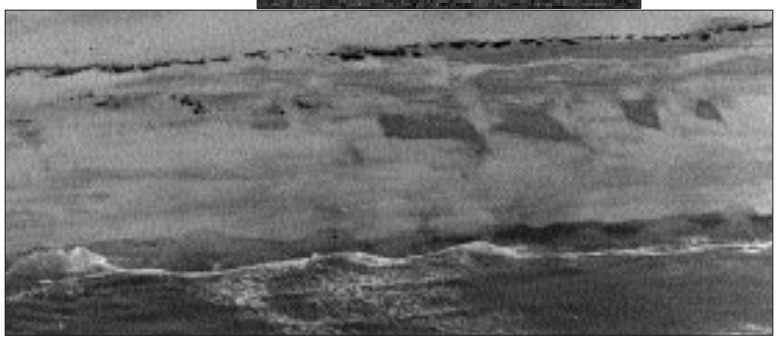
### Justification

Statewide planning of ocean resources may identify a need to restrict certain activities in discrete areas of the ocean for the protection of particular species, the protection of important fisheries, sensitive and/or unique habitats and species, and/or the protection and study of marine biodiversity and ecosystems. In addition, the location of submerged cultural resources, such as a shipwreck, may warrant special protections. Natural resources such as marine mammals, soft corals, eelgrass meadows, kelp beds, cobble reefs, and others are important to the overall ecosystem structure and function and warrant management measures that are largely beyond the scope of existing state authority.

The current state regulatory framework does not clearly grant any agency the explicit authority to restrict human uses for the protection of certain marine resources. Most authority resides within existing environmental management statutes that are not focused on the conservation of marine biodiversity, but on more specific objectives. Below is a listing of the existing authorities that provide limited authority to protect marine areas for different purposes. In consideration of the limited authority that these authorities provide, the Task Force has concluded that new, more comprehensive authority to designate MPAs may be required.

### EXISTING STATE AUTHORITY TO PROTECT MARINE AREAS

**Areas of Critical Environmental Concern (ACEC):**
The Secretary of EOEA and EOEA agencies are charged with developing "policies regarding the acquisition, protection, and use of" ACECs, including their designation (MGL ch21 A, section 2 (7)). Citizens and communities usually nominate "areas within the Commonwealth where unique clusters of natural and human resource values exist and which are worthy of a high level of concern and protection...[and are] of regional, state, or national importance or [contain] significant ecological systems with critical interrelationships" (310 CMR 12.03) Out of 28 ACECs located in different parts of Massachusetts, 14 are coastal, of which 13 are estuarine, including some inter-tidal and submerged lands. Once designated, higher levels of environmental review are applied to them in the existing state regulatory framework in order to conserve and protect their ecological and social value. All EOEA agencies are directed to take actions to preserve or restore ACECs. Municipalities may develop ACEC Resource Management Plans, but to date only two coastal areas have done so. **Limitations in the use of ACECs for ocean management:** The citizen nomination process limits the process considerably and would be difficult to coordinate with ocean management planning. ACECs have no requirement for (or resources to support) management planning, monitoring, research or enforcement, all of which would be necessary components of a successful SMMA. The ACEC program has no authority to restrict any activity.



Division of Marine Fisheries (DMF):
DMF has the authority to regulate "the opening and closing of areas within coastal waters to the taking of any and all types of fish" (MGL chapter 130, section 17A). This statute requires that any closures obtain the approval of the state's Marine Fisheries Advisory Commission following a public hearing. The Commission is then required to obtain the consent of the selectmen of any town or the mayor and city council of any city affected by such a closure. (MGL chapter 130, section 17A). Under authority of Massachusetts General Laws Chapter 130, Section 17(10), the director may adopt rules and regulations necessary for the maintenance, preservation and protection of all marine fisheries resources. Using this authority and that provided in MGL Chapter 130, section 17A, the director may adopt rules and regulations including restrictions on the manner of taking these resources, size limits, seasons and hours and opening and closing of areas to the taking of any and all types of these resources. Limitations in the use of DMF authority for ocean management: DMF's authority to close areas to fishing is restricted to fisheries-related purposes and may not be able to be utilized to close an area for general research, habitat protection, submerged cultural resource protection or to protect the full diversity of marine organisms. DMF also has no ability to prohibit the construction of permanent structures that would restrict access to fishing activity. The authority provided under MGL Chapter 130, 17A has been used on a regular basis, but DMF has never exercised its 17(10) authority.

The Ocean Sanctuaries Act (OSA):
The Ocean Sanctuaries Act (MGL Chapter 132A, Sections 13-16 and 18) designates five ocean sanctuaries to "be protected from any exploitation, development, or activity that would significantly alter or otherwise endanger the ecology or appearance of the ocean, seabed or subsoil." All areas of Massachusetts' coastal waters with the exception of the ocean area between Lynn and Marshfield, are designated as Ocean Sanctuaries. The Act is unique in its charge to protect the "ecology" and "appearance" interests as well as water quality. Limitations in the use of the OSA for ocean management: Relatively few activities (specifically, structures on the seafloor, extraction of sand, mineral, gas or oil, dumping of wastes, waste incineration, offshore electric generating stations, commercial advertising) are prohibited by this Act and there are exceptions to many prohibitions. Sanctuaries do not receive any special management oversight, nor is any research, monitoring or enforcement of the resources undertaken. Fishing is expressly permitted in Ocean Sanctuaries. The OSA implements much of its authority through comments on Chapter 91 licenses within Ocean Sanctuaries as the legislation explicitly made this non-permitting program.

Implementation Plan

We recommend that the Secretary establish an interagency working group, composed of the relevant state and federal agencies, co-chaired by DMF and CZM, and with input from a stakeholder advisory group.

***Legislation Required:*** The Working Group should develop recommendations about whether new draft legislation should be written and should include a recommended designation process, management planning and enforcement mechanisms.

***Next Step:*** The Secretary should appoint two co-chairs to develop a work plan for the Working Group. A stakeholder Advisory Committee should be appointed at the same time.

***Timing:*** The Working Group should be appointed immediately with a target date of September 2004 for making recommendations to the Secretary.

***Funding Required:*** Staffing would be required for the Working Group process as well as implementation.

***Potential Sources of Funding:*** No funding needed at this time.

## Management Tools Recommendation #3: Coordination of Mitigation

### Recommendation

In their reviews of proposals to construct and/or carry out certain regulated activities within the state's ocean resources, the state permitting agencies should continue to prioritize avoidance and minimization of environmental impacts prior to development of mitigation for impacts. Nonetheless, in some situations, unavoidable impacts will occur as a result of proposed projects. With or without a new Ocean Resource Management Act, the Commonwealth should seek to enhance the role of the EOEA Secretary in development of environmental mitigation, and enhance the coordination among permitting and resource management agencies with respect to development of mitigation for unavoidable environmental impacts. The Commonwealth should use its existing authority under MEPA to strengthen coordination of the activities of state permitting and resource management agencies.

The Commonwealth should use MEPA (particularly the Section 61 process) to clarify distinctions between compensation to the Commonwealth (as trustee of the public trust) for occupation or use of public trust resources, and mitigation for environmental impacts associated with such use or occupation. The Commonwealth should ensure that the MEPA process is used to fully engage all permitting and resource management agencies on questions of mitigation from the earliest possible stages of the environmental review process, and that this enhanced coordination is reflected in any Proposed Section 61 Findings presented in Environmental Impact Reports (EIRs). This enhanced coordination is especially important for large infrastructure projects that involve multiple agencies and raise important policy issues regarding use of public trust resources. However, such enhanced coordination could benefit the permitting of smaller projects as well, even those that do not require EIRs under MEPA.

The Commonwealth should develop a priority list of marine restoration and remediation projects. The Commonwealth should consider implementation of projects on this list as potentially appropriate mitigation in situations where a project may have impacts that are difficult to otherwise mitigate, provided that the restoration project is reasonably related to the environmental impact in need of mitigation.

### Justification

Administration of the state's public trust responsibilities for planning and policy making affecting use and protection of ocean resources is currently divided among several state agencies with overlapping responsibilities. The current system, through its division of oversight, is less transparent, less predictable, and more duplicative than it needs to be, and it can lead to delays and financial and regulatory burdens (to the state, to the applicant, or to the public) associated with the permitting of projects. A process with more clearly defined distinctions between compensation and mitigation, and more coordination among state permitting and resource management agencies, would enhance the predictability, accountability, and efficiency of the permitting process. As the Commonwealth's chief environmentalist, the EOEA Secretary is the most appropriate entity to assume coordinating functions. In addition, the MEPA process already gives the EOEA Secretary a potentially powerful tool to ensure coordination, and the issue preclusion provisions of the MEPA regulations effectively requires participation of relevant agencies in the MEPA process.

### Implementation Plan

The Secretary, through the MEPA Director, should designate a lead agency staff person whose responsibility would be to ensure that permitting and resource management agencies coordinate their actions and requirements, and that the MEPA process reflects the concerns of the permitting

and reviewing agencies. Implementing this recommendation would add additional emphasis on the coordinating role of MEPA, and would require the MEPA Office to more actively manage the coordination of agency activities (in other words, the MEPA analyst and/or Director would take on more of the responsibilities of a project manager, at least with respect to development of mitigation). EOEA should ensure that the MEPA Office has sufficient personnel and resources to accommodate any increased demands on existing staff. Development of a restoration priority list should be undertaken by EOEA in consultation with appropriate permitting and reviewing agencies.

***Legislation Required:*** It is possible to implement this recommendation without statutory or regulatory changes and with minimal changes to current agency practices. In practice, many of these functions are already performed by the MEPA Director and MEPA project analysts.

***Next Step:*** The Secretary should appoint an interagency working group, chaired by the MEPA director, to develop an implementation plan.

***Timing:*** The Secretary should appoint the working group as soon as possible.

***Funding:*** The working group process and ongoing implementation may require additional resources.

***Potential Sources of Funding:*** State capital funds.

## Management Tools Recommendation #4: Enforcement

### Recommendation

Enforcement of Coastal laws and regulations should be a high priority of the Commonwealth. EOEA should ensure that sufficient enforcement personnel are provided to agencies and through the Massachusetts Environmental Police. Where appropriate, the Commonwealth should require implementation of supplemental environmental projects in lieu of monetary penalties assessed for environmental violations. EOEA and its agencies should create a priority list of marine restoration and remediation projects that could be implemented through compliance and enforcement violations.

### Justification

Violations of coastal and ocean laws and regulations can lead to significant environmental impacts. State agencies must have the resources to enforce coastal laws and regulations. Using the principle of "the polluter pays," implementation of restoration projects can compensate for damage done by violators.

### Implementation Plan

Once the list of priority projects is developed, the state agencies with enforcement authority should seek to tie implementation of projects on the list to their enforcement actions. For example, implementation could be mandated through the process of developing Consent Orders.

***Legislation Required:*** The implementation of this recommendation will not require legislation.

***Next Step:*** The Secretary should appoint an interagency working group to develop a list of qualifying projects and an implementation plan. The working group should include representatives from state permitting agencies and the Office of the Attorney General.

***Timing:*** The Secretary should appoint the working group as soon as possible.

***Funding required:*** The working group process and implementation may require additional resources.

***Potential sources of funding:*** state operating funds, potentially state capital funds and private sector funds for supplemental environmental impacts. The Commonwealth should also examine the possibility and availability of federal grants.

## Management Tools Recommendation #5: Visual, Cultural, and Aesthetic Impacts

### Recommendation

Those Commonwealth agencies with potential jurisdiction over visual impacts of projects in state waters (specifically, the MEPA Office, DEP, the Energy Facilities Siting Board, and the Massachusetts Historical Commission) should develop and implement common methodologies and standards for the analysis of visual, cultural, and aesthetic impacts of proposed projects in state waters. Where possible, the agencies should develop common standards and criteria for mitigation of said impacts. The methodologies and standards should ensure that the visual, cultural, and aesthetic impacts of projects in state waters are fully understood and that a uniform set of methods and standards exists for presentation of data on visual, cultural, and aesthetic impacts. Such agency coordination should occur whether or not the proposed Comprehensive Ocean Resource Management Act (CORMA) is enacted and implemented. If this Act is adopted and implemented, the analysis of visual, cultural, and aesthetic impacts should be a consideration in development of Ocean Resource Management Plans.

### Justification

Visual, cultural, and aesthetic impacts are factors under several of the Commonwealth's existing environmental review processes and are often a major factor in determining public reaction to and attitudes about proposed projects. While perceptions of visual, cultural, and aesthetic impacts are inherently subjective, an objective system for presentation of data would help to inform the environmental review process. A uniform system for data presentation would enhance the predictability of the environmental review process and provide for a common starting point for public debate.

### Implementation Plan

We recommend that the Secretary appoint an interagency work group to develop standards for visual, cultural, and aesthetic impacts for adoption by the relevant agencies. To initiate this project, EOEA should task an intern with undertaking a literature search on this topic to reveal what approaches are being used in different areas.

***Legislation Required:*** To the extent that this recommendation is implemented as part of CORMA, it will require legislation. However, this recommendation may also be implemented independently of CORMA, through formation of an interagency working group chaired by EOEA.

***Next Step:*** see next step for CORMA. Otherwise, the Secretary should convene a working group as soon as possible.

***Timing:*** see CORMA

***Funding Required:*** see CORMA

***Potential Sources of Funding:*** see CORMA

## Management Tools Recommendation #6: Use Characterization

### Recommendation

To support fully informed and inclusive decision-making, ocean management planning should be supported by the development and maintenance of inventories of the uses and resources of the state's marine waters. Such inventories should be kept up-to-date to indicate not only existing uses of the state's oceans, but also emerging trends in new or changing types and patterns of use. This data should be GIS-based and organized on maps and databases to illustrate uses and resources on the seafloor, in the water column, and/or at the ocean surface, as well as uses in the airspace over these areas, and when activities (human and natural) occur in time. Additionally, to the extent feasible, they should include upstream and coastal areas that affect the ocean resources. Such inventories would be useful for ocean resource management, even in the absence of more comprehensive ocean resource planning authorized by a new state statute.

To support baseline use characterizations and resource management decisions that rely upon these use characterizations, baseline mapping for all state waters should be organized around themes useful for ocean resource management, with the possibility of reliance on the following main geographic and socio-economic themes:

- point locations of infrastructure located in ocean resources (physical structures or jurisdictional lines);
- patterns of industrial, commercial and recreational transit over the surface;
- natural macro-features, including bathymetry/surficial geology/habitat/circulation/ wind and tidal currents;
- location and seasonal distribution of fisheries and fisheries resources as well as other marine flora and fauna;
- location of other natural resources, such as wind or tidal areas, and areas of tidal upwelling;
- socio-economic trends, such as commercial, industrial, recreational, cultural, military, homeland security, and others; and
- utilization types and trends, such as extractive, transient, stationary, resource-dependent, and others.

Mapping should clearly represent the ubiquity of recreational and commercial boating, while identifying areas where these uses are geographically and/or seasonally concentrated. Mapping should also clearly represent the relationship between boating and transient fish resources. Decisions regarding use characterizations must be coordinated closely with decisions regarding data acquisition and management.

## Justification

Current permitting and management decisions are made largely on ad hoc evaluations of impacts to existing uses and resources. Ocean management planning requires, by definition, a comprehensive understanding of the location, nature, and interrelationship of uses and resources. GIS is a powerful information technology that has the ability to make data accessible and useful to the public, planners, and regulators as they think critically about how the ocean should be managed. GIS-based mapping of the state's ocean resources should be tiered, evolving, and scaleable. Data is the basis of maps; maps are the basis of use characterizations. To facilitate the development of effective ocean resource management plans, efforts to map and characterize coastal and marine uses must be supported by accurate, representative data that is maintained and presented in an organized, accessible manner.

Use characterizations should be an evolving product. There should be a baseline use characterization for all state waters developed from a synthesis of existing data. Comprehensive use characterizations should be developed even in advance of the development of ocean resource management plans - but at a minimum, are a necessary first element (inventory and analysis) for the development of such regional plans. The level of information required should be a function of the breadth of the proposed goals and management actions of such plans.

## Implementation

Due to the complex nature of use characterizations, a working group representing state and federal agencies, non-governmental organizations, commercial and recreational fisheries, maritime industries, energy, recreational boating, homeland security, defense agencies, and GIS systems and products should be created. This working group should establish standards for use characterization, obtain relevant use information, determine how best to represent and display the information, and ensure its dissemination among the public. This work group should work closely with area resource data specialists.

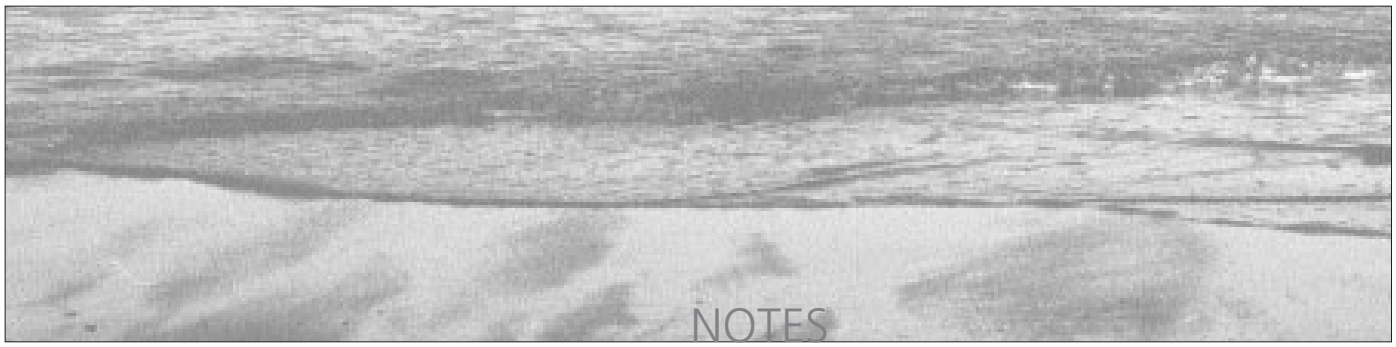
***Legislation required:*** No specific legislation is required unless specific authorization for use characterizations is desired.

***Next Step:*** We recommend that absent specific authorizing legislation, EOEA should convene an internal working group with representation from DMF, CZM, MassGIS, DEP, DCR, DAR, Massport, EFSB, and Department of Telecommunications and Energy (DTE). The working group should refine and expand existing use characterization information by working closely with user groups. Use characterizations should be compatible with existing programs at CZM (e.g., Massachusetts Ocean Resources Information System (MORIS)) and MassGIS.

***Timing:*** The internal working group should convene by June 2004.

***Funding Required:*** Additional resources may be needed to manage and update the use characterization project as well as funding in data management and map creation.

***Potential Sources of Funding:*** Capital funds, state GIS operating funds, NOAA CZM grant, NOAA Coastal Services Center grant.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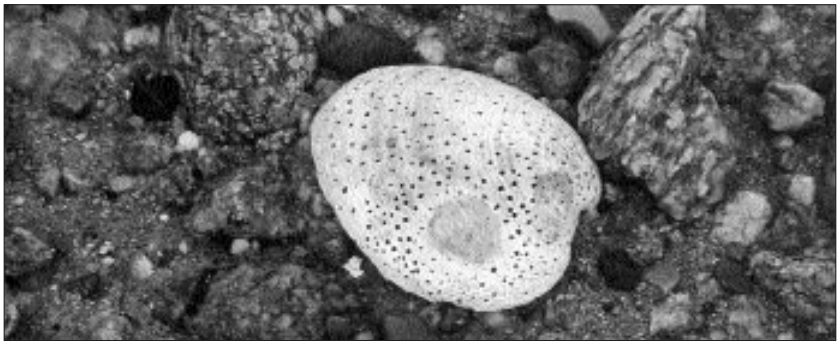
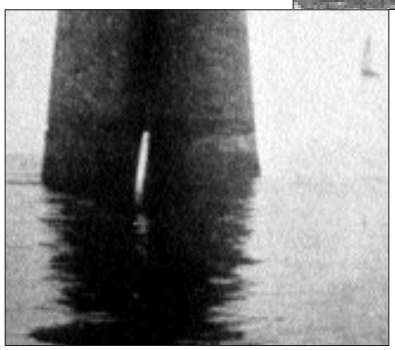
# SCIENTIFIC
# UNDERSTANDING



# SCIENTIFIC UNDERSTANDING

Massachusetts is fortunate to have a wide variety of ocean resources, which is largely due to its position at the intersection of two major biogeographic ocean regions, the Virginian and Acadian provinces. Biogeographic regions are identified by distinct differences in biological communities, physical characteristics and weather patterns. Cape Cod forms the boundary between the two provinces with the Acadian province north of Cape Cod and the Virginian province to the south. Although differences exist between the Acadian province (which encompasses the Gulf of Maine ecosystem) and Virginian province (represented by the waters of Massachusetts in the northern Middle Atlantic Bight), there are overlapping characteristics. For example, species and habitats often have broad geographic ranges, inhabiting several biogeographic zones.



Species populations and habitat conditions demonstrate substantial variability in abundance and quality. Natural variability mediates species population status and habitat conditions, but human activities have considerably altered estuarine and marine ecosystems throughout the world. Massachusetts is no exception - habitat loss and degradation, overfishing, and pollution have major impacts to the environment that affect the status of ocean resources in Massachusetts.

As part of the Task Force's efforts to understand these natural and physical phenomena relating to our ocean resources, the Task Force's Data Trends and Needs Work Group, composed of academic and government scientists, resource managers, and advocacy groups, undertook the large and important tasks of describing the diversity of ocean resources in Massachusetts and identifying influences of anthropogenic activities on the abundance and quality of certain resources. The Data Trends and Needs Working Group (1) summarized ocean resources data, key trends, and gaps in data; (2) summarized ecologically and economically important trends; (3) determined whether relevant data were readily available for planning purposes; (4) determined what data are needed to support ocean resource management purposes; and (5) provided recommendations to the Task Force to improve data collection, management, analyses, and interpretation to facilitate ocean resources management.

The following chapters are found in the Technical Report and present a range of resource information and identify limitations to the current knowledge of ocean resources. The data presented are, however, by no means a comprehensive assessment of all ocean resources or a thorough assessment of existing data. These chapters support the Scientific Understanding Recommendations:

Oceanography, Weather Patterns and Climate Change - Major oceanographic features and weather patterns are discussed, and the status and consequences of climate change are described.

Living Marine Resources - The summary includes a description of the monitoring of fishery resources, commercial and recreational fish and shellfish landings, abundance of selected species, and invasive species.

**Estuarine and Marine Habitat** - Habitats are categorized as wetlands, seagrass, and seafloor habitats, and major datasets are summarized to provide an overview of the status of these resources.

**Water and Sediment Quality** - Monitoring programs, major discharges, and the general requirements for monitoring activities are identified to provide an overview of the current state of water and sediment quality monitoring programs.

In addition to providing data and information on natural resources, the Technical Reports also describe trends in human population, maritime economics, and alteration of marine habitat and life:

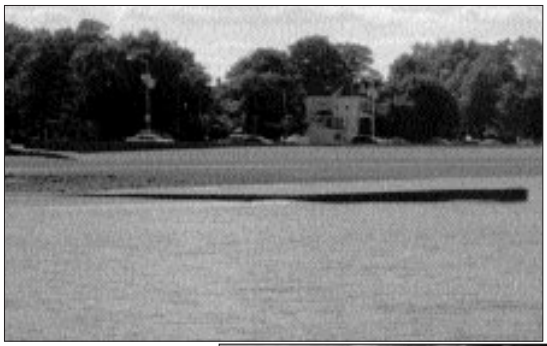
**Demographics of Human Population** - Thirty (+) years of human population data are summarized for coastal municipalities.

**Massachusetts Marine Economy** - An overview of maritime industries is presented to demonstrate the status and recent changes in ocean-based economic conditions.

**Alteration by Human Activity: Cumulative Impacts** - General human-induced and natural impacts to habitat are identified and described for Massachusetts.

Although ocean resources in Massachusetts are diverse and issues related to the understanding and management of these resources are complex, a common theme is apparent: the lack of data limits our collective understanding of trends in ocean resource abundance and quality and anthropogenic impacts to ocean resources. This lack of data is not just one that has affected the Task Force's work, but is a condition in the current environment in which public decisions are made about the use and protection of our ocean resources creating a hindrance to the long-term management of ocean resources. This lack of understanding does not imply that resource agencies in Massachusetts are uninformed, but many resources, ecological functions, and environmental impacts caused by humans remain to be discovered and explained in the ocean environment.

Ocean resources are not fully understood, and monitoring supplemented with targeted research is warranted to improve the management of the ocean environment. Seafloor habitat is a particular resource that affects many aspects of the environment. The types, quality, and extent of seafloor habitats are largely undocumented in Massachusetts. Fundamental to a comprehensive monitoring and research plan is the identification of seafloor habitats. Seafloor habitat is among a long list of resources that require further examination, and a coordinated, comprehensive ocean resource monitoring and research plan is needed to elucidate the ecology of the ocean and advance the management of ocean resources.



Government agencies, academic institutions, environmental consultants, and non-profit organizations study and monitor a variety of ocean resources in Massachusetts. Monitoring techniques are at times as varied as the resources monitored, limiting the comparability of distinct data sets on similar resources. Studying the ocean environment requires flexibility; however, guidance on standard data collection protocols assists the development of monitoring plans, especially monitoring for permit requirements. Current and future monitoring and research generates substantial volumes of data, and access to and dissemination of certain data, collected by monitoring programs, research, or part of permitting requirements, is imperative to applying data to resource management and planning.

Related to existing and future monitoring and research, an estimation of baseline species population levels, habitat conditions, and contaminant levels provides the foundation for a long-term perspective of environmental change. Many aspects of the ocean environment are well-described, but these accounts are often from recent decades. Ocean resources have been exploited throughout human history and continue to be affected by human activities. Current population levels and habitat conditions are a result of centuries of human exploitation and degradation interacting with natural variability, and our understanding of changes in population and habitat status is incomplete. Contemporary monitoring does not truly assess baseline conditions, potentially misinforming interpretations of the current character of the environment.

We believe that effective management and stewardship of the ocean environment requires a scientific understanding of ocean resources. The public agencies responsible for managing ocean resources, however, often lack the resources to collect fundamental data to support management decisions. The Technical Report takes a closer look at our data needs and gives a basis for our scientific understanding recommendations.

The Task Force makes the following recommendations to improve the scientific understanding of the Massachusetts ocean environment:

1. establish an advisory group of marine and fishery scientists to advise the Commonwealth;

2. develop a comprehensive ocean resources monitoring plan;

3. acquire and/or develop seafloor maps; and,

4. develop standards for monitoring data submitted by project proponents.

# SCIENTIFIC UNDERSTANDING RECOMMENDATIONS

## Scientific Understanding Recommendation #1: Marine and Ocean Resource Trends Advisory Group

### Recommendation

An advisory group of state, federal, academic and other marine and fishery scientists and other experts should be appointed to evaluate and estimate baseline marine species population levels, habitat conditions, and contaminant levels to evaluate changes in ocean resources through time, identify emerging threats to ocean resources, and determine appropriate management goals. Conditions relating to the effects of global climate change, including sea-level rise and salinity of the ocean, could be included in these data collection efforts. The group should compile historic data and periodically study trends in these resources relative to the estimated historic conditions to assess improvements or degradation in the character of the resources.

The goal of this recommendation is not to set conservation or restoration goals to achieve minimally disturbed environmental conditions, but rather to fully leverage existing historic data to contribute to our understanding of estuarine and marine ecosystems, thereby leading to improved resource management. The estimation of minimally-disturbed population levels and habitat conditions can also assist in the assessment of cumulative impacts and contribute to the recommended comprehensive ocean resources monitoring and research plan. This advisory group should advise state official(s) responsible for stewardship and management of the state's ocean resources.

## Justification

Current population levels and habitat conditions are a result of centuries of human exploitation and degradation interacting with natural variability. Baseline population levels and habitat conditions, spatial and temporal trends in resource character, and changes in natural processes and anthropogenic effects through time (cumulative impacts) are largely undocumented. The estimation of appropriate baselines, such as the period and status of a resource at an undisturbed state (or a status deemed appropriate by the advisory group) is needed for management and stewardship of ocean resources. The analysis of historic population levels will inform managers of potential population levels that can be sustained by marine ecosystems, which will help them determine appropriate management goals. Historic data on population levels is available for commercially valuable species but is difficult to incorporate because of the format of historic resource publications, which are not in electronic form. A thorough review of historic data will enable resource managers to determine baseline environmental conditions. These historic population levels and habitat conditions, supplemented with contemporary data collection, will inform the development of sustainable management goals, restoration plans, and assessment of changes in ocean resources through time.

## Implementation Plan

An advisory group should be appointed to outline the scope of this recommendation, including identifying priority species and habitats and appropriate temporal baseline levels. The advisory group can define baseline, evaluate the feasibility of estimating baseline populations and conditions for select species and/or habitats, and recommend a strategy to assess population levels and habitat conditions for resources with scant data. Existing frameworks for analyzing and describing populations and habitats, such as stock assessment approaches for commercially exploited species, should be evaluated and incorporated into this process. At the completion of each historical trends analysis, the advisory group should prepare a report that explains the trends analysis process and provides guidance for how marine resource managers should use the information.

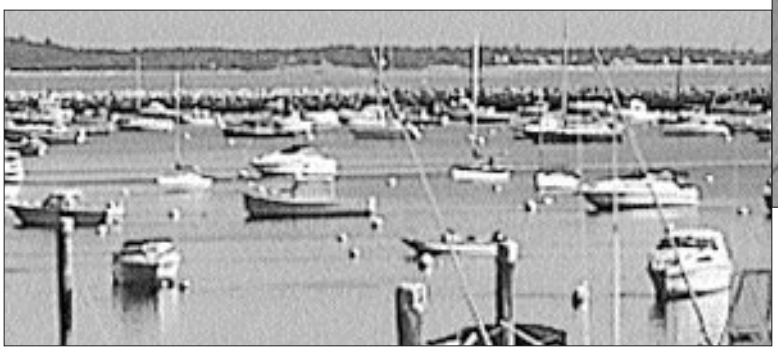
***Legislation Required:*** Not applicable.

***Next Step:*** We recommend that the Secretary appoint the chair and members of an advisory group to initiate the estimation of baseline populations and habitat conditions. The advisory group should directly or indirectly make use of the expertise, skills, and resources at the Massachusetts Marine Fisheries Institute.

***Timing:*** The chair and advisory group should be appointed by September 2004.

***Funding Required:*** Additional resources may be required to manage the Working Group process.

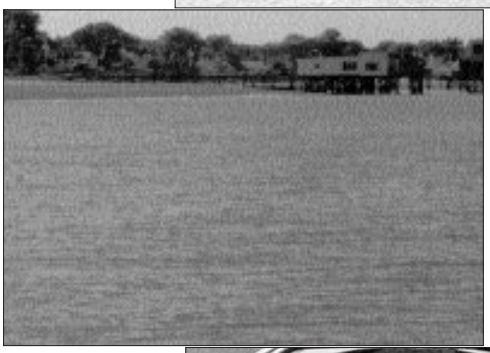
***Potential Sources of Funding:*** State capital funds, NOAA (through CZM grant), DMF, and/or EPA. Collaboration with federal and state agencies, academic institutions, fishery groups, municipalities, local environmental stewards, and NEFMC should also be sought.



## Scientific Understanding Recommendation #2: Ocean Monitoring and Research

### Recommendation

As a basis for sound management of ocean resources - with or without new state authorities to develop comprehensive ocean resource management plans - a comprehensive ocean resources monitoring and research plan should be developed. This monitoring and research plan should encompass living and non-living estuarine and marine resources, as well as studies of the economic and other uses of these resources. The plan could serve as an important "roadmap" for work to be carried out by state resource agencies and others (e.g., academic institutions, permit applicants, public agencies), and should be periodically reviewed and adjusted to reflect improved understanding of resources and their patterns of use, integrate new management approaches, and incorporate innovative survey techniques. The plan should provide guidelines on standardized protocols for conducting surveys to enhance data consistency.



The monitoring and research plan should be ecologically driven and cover both environmental features of the ocean (living marine resources, such as commercial, recreational and non-target species; benthic communities; invasive species; estuarine and marine habitat; water and sediment quality; and physical oceanographic, wind, and weather patterns), as well as social and economic uses and characteristics of these ocean resources (including uses of the water column, the lands under the water, and the water sheet) and submerged cultural resources. The plan should lay out a complete scope to evaluate cumulative impacts from activities, such as coastal alteration projects, fisheries, and implications of resource management approaches (e.g., fishery and watershed planning), while distinguishing changes due to natural processes.

National and regional efforts to develop monitoring and research plans recently garnered support, and Massachusetts is an active participant. One such effort is the Gulf of Maine Ocean Observing System (GoMOOS) with its array of oceanographic buoys collecting realtime data in the Gulf of Maine, including in Massachusetts Bay. These larger efforts should guide specific monitoring and research needed to improve the understanding and management of the Commonwealth's ocean resources. The comprehensive plan for Massachusetts should be developed by Massachusetts resource agencies, but rely on an integrated approach that includes municipalities, neighboring states, federal agencies, collaborative efforts between fishermen and government agencies, and provide flexibility for innovative approaches and the identification of research needs.

### Justification

Appropriate and effective management of ocean resources, including marine habitat and life and human uses of the ocean, requires sufficient understanding of the resources achieved through a comprehensive monitoring and research plan. Ocean resources are influenced by global phenomena (e.g., global warming and sea level rise), regional exploitation, and local perturbation, and, without long-term, systematic monitoring it is difficult to detect and understand the cause of spatial and temporal changes in the resources. The monitoring and research plan will guide the development of new information needed to explain trends in resources, thus informing resource managers. Many state and federal monitoring and research programs, non-government organizations, and private researchers

effectively monitor and study particular resources, such as exploited species or geographically restricted areas (e.g., harbors). These monitoring efforts achieve program goals and are a good foundation for a comprehensive monitoring and research plan. At the same time, however, there are a variety of ocean resources that are not monitored or are inadequately monitored, leading to a limited understanding (including type, distribution and abundance) of these resources. Indeed, in the recent past, certain monitoring programs carried out historically by state and other public agencies have had to terminate or severely limit their data collection and monitoring activities, in part because of budgetary imperatives.

In particular, cumulative impacts are difficult to investigate and describe because of inadequate data, patchy data collection and incomplete understanding of natural variation and human-induced effects on marine habitat and life. Ecosystem effects include, but are not limited to, changes in the type and quality of estuarine and marine habitats and species assemblages, and are also difficult to describe because of inadequate data. Without guidance on approaches to evaluate cumulative impacts, targeted studies to investigate human-induced perturbations and coordinated, long-term monitoring of a wide range of resources, an analysis of cumulative impacts will be unattainable, and cumulative impacts will remain unknown in Massachusetts.

National and regional programs, such as the EPA's National Coastal Assessment and Gulf of Maine Council on the Marine Environment, are currently outlining a coordinated monitoring network that includes northeastern United States and southeastern Canada. These efforts, in addition to other regional and state programs (e.g., monitoring done by the Massachusetts Water Resource Authority, (MWRA)), can facilitate the development of Massachusetts' plan and provide a means to integrate Massachusetts into regional projects.

The Task Force believes that such a "monitoring and research roadmap" - along with the actual resources to carry out critical monitoring activities - is essential to form a basis for sound management and use of the Commonwealth's ocean resources.

### Implementation Plan

We recommend that a working group, comprised of state and federal agencies, non-governmental organizations, fishery representatives, and public interest groups, be established and tasked with outlining the components of a comprehensive monitoring and research plan for the Commonwealth of Massachusetts. The work group should summarize existing monitoring programs, evaluate effectiveness of current monitoring, and recommend improvements to statewide monitoring.

***Legislation Required:*** The Working Group should investigate the need for new legislation or changes to existing legislation to fund the development and implementation of the monitoring and research plan.

***Next Step:*** The Secretary should appoint a chair to outline a work plan for the Working Group. An Advisory Committee should be appointed at the same time.

***Timing:*** The Chair and Working Group should be appointed and meet by October 2004.

***Funding Required:*** Additional resources may be required to manage the Working Group process. Long-term, dedicated funding will be required to prepare the monitoring and research plan. This effort will be a multi-million dollar investment.

***Potential Sources of Funding:*** State capital funds. NOAA (through CZM grant), and/or EPA. Collaboration with academic institutions, fishery groups, municipalities, local environmental stewards and NEFMC should also be sought.

## Scientific Understanding Recommendation #3: Seafloor Mapping

### Recommendation

In support of comprehensive management and monitoring of ocean resources, the Commonwealth should acquire high-resolution seafloor habitat maps. Existing and emerging technology, such as aerial photography and multibeam sonar, collects spatially explicit information on vegetation characteristics, topography and surficial geology of the seafloor and provides the foundation for seafloor habitat mapping. Habitat is a term that encompasses physical, chemical and biological attributes, and the creation of seafloor habitat maps, showing the distribution and abundance of seafloor habitats, requires the collection and interpretation of a variety of environmental data to delineate and describe characteristics of the seafloor environment. Seafloor mapping should be done in coordination with the Natural Heritage Program's terrestrial Biomapping Project and the Gulf of Maine Data Partnership Program, which is facilitating data sharing among regional groups.

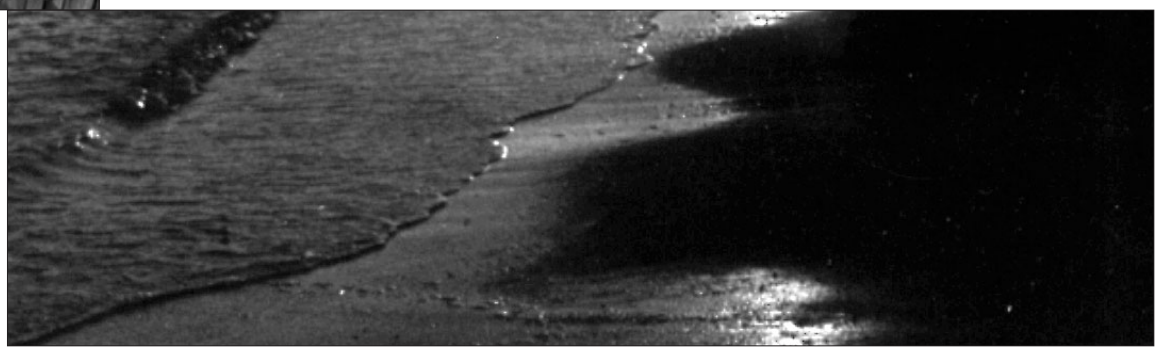
### Justification

The distribution, types, and quality of seafloor habitats are largely undocumented in Massachusetts' marine environment. Terrestrial resource managers have highly detailed maps that show surficial geology, topography, infrastructure, and vegetation communities for the entire Commonwealth. Marine resource managers generally lack this type of information, unless the site has been scrutinized for a previously proposed project. For example, the Massachusetts DEP mapped the distribution of seagrass throughout state waters, and this data is invaluable to environmental impact assessments and monitoring programs. There are few data that identify the distribution of any other seafloor habitats. In the absence of spatially explicit information, marine resource managers must rely on site-specific resource characterizations provided by project proponents to make management decisions. The lack of thorough information regarding the distribution and extent of seafloor habitats hinders long-term ocean resource planning.

Comprehensive seafloor habitat mapping will facilitate the detection of unique or sensitive habitat types and the design and implementation of habitat and indicator species monitoring programs. Additionally, seafloor habitat maps will provide a spatial reference for assessing changes in the distribution and abundance of biological communities (e.g., commercially exploited or protected species), evaluating the potential impacts of human seafloor alterations, locating important cultural resources (e.g., shipwrecks) and proactively identifying ocean resource management approaches.

### Implementation Plan

Development of a strategic plan to obtain seafloor habitat maps should be led by the existing (informal) Interagency Marine Habitat Working Group organized by CZM, with involvement from federal and state agencies, non-governmental organizations, researchers, and fishermen. The Working Group will coordinate with existing work groups and programs, such as the Gulf of Maine Mapping Initiative (GOMMI) and the University of



New Hampshire - NOAA Center for Coastal and Ocean Mapping, to guide the development of the strategic plan. The Working Group should consider utilizing DMF's recently acquired multibeam mapping equipment to advance this recommendation. Because creation of seafloor habitat maps is an evolving science, the strategic plan should be implemented in stages, with input from map users helping to guide the data collection and interpretation process.

***Legislation Required:*** Not applicable

***Next Step:*** The Marine Habitat Working Group should coordinate with the monitoring and research plan Working Group to develop a strategic plan for obtaining seafloor habitat maps.

***Timing:*** The Working Group should draft a strategic plan by October 2004.

***Funding Required***: Additional resources may be needed to manage the Working Group process. This effort requires a multi-million dollar investment over several years. Biological, chemical and physical data are needed to identify habitats, and the collection of these data will require a systematic methodology to create seafloor habitat maps for the entire state.

***Potential Sources of Funding:*** State capital funds. USGS, NOAA, and/or EPA. Collaboration with academic institutions, fishery groups, municipalities, local environmental stewards and NEFMC should also be sought.

## Scientific Understanding Recommendation #4: Standardized Protocols for Data Collection

### Recommendation

As a corollary to our recommendations relating to Ocean Monitoring and Research and the Dissemination of Ocean Resource Data, we also recommend that when state permits require that environmental monitoring be carried out by the project applicant as part of publicly permitted activities, such monitoring should use more standardized protocols for data collection. The standardized monitoring protocols should be designed to aid managers in assessing environmental suitability and impacts of proposed and permitted activities and gain understanding of individual and cumulative impact of projects and uses. These standards should be flexible to allow project proponents achieve specific goals and evaluate effectiveness of new technologies designed to assess resources and, wherever possible, be consistent with federal data standards.

### Justification

Many permitted activities require that the developer carry out studies on an on-going basis to monitor the impacts of their activities on resources in the area. In recognition of the extent of existing permitted activities and the increasing number of large coastal alteration projects in Massachusetts (and projects located in the Commonwealth's ocean), monitoring requirements,

including pre- and post-construction monitoring, should be standardized. This approach could mean additional monitoring requirements for existing and future permitted activities. The extent of data collected for permitted activities can provide substantial insight into quality and function of ocean resources, the duration of environmental impacts and ultimate success of environmental recovery, within and adjacent to the footprint of a particular project. The monitoring data should be provided to state agencies and indexed to allow efficient access to monitoring results, as referenced in the Dissemination of Ocean Resource Data Recommendation. Standardized monitoring protocols and improved access to permit-related data can assist in the assessment of potential impacts of future projects, enhance the ability of state environmental agencies to evaluate future proposals and develop monitoring programs, and set the foundation for evaluating cumulative impacts.

### Implementation Plan

An interagency group composed of environmental agencies should be tasked with determining the process of adding permit requirements to implement standardized data collection protocols, to the maximum extent possible. Additionally, an interagency work group should evaluate on-going monitoring programs and periodically make needed changes to these programs. The MWRA, for example, reviews its monitoring program and can guide the evaluation of permitted activities throughout Massachusetts that are required to conduct monitoring. Implementation of this recommendation should not impede ongoing monitoring efforts, but should supplement existing monitoring efforts.

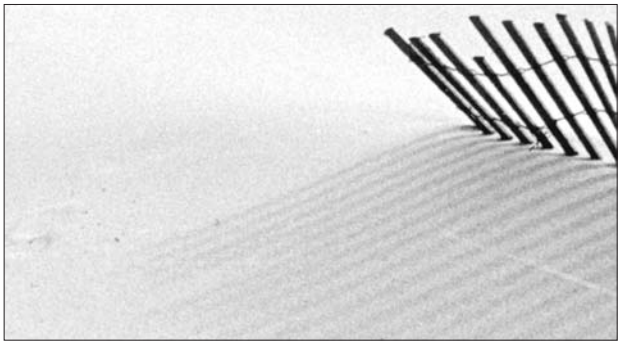
***Legislation Required:*** The interagency Working Group should investigate regulatory requirements for monitoring, including standardized protocols and data management, and identify changes needed to improve monitoring programs.

***Next Step:*** An interagency work group should be appointed to guide the process of investigating permit requirements and changing requirements to standardize methodology.

***Timing:*** The work group should be appointed by September 2004.

***Funding Required:*** Additional resources may be required to guide the Working Group process.

***Potential Sources of Funding:*** State capital funds. NOAA and/or EPA. Collaboration between state and federal agencies, municipalities and environmental stewards should also be sought.



# OUTREACH

# OUTREACH

Key to the ultimately successful implementation of this report's recommendations and further ocean management initiatives is the support and understanding of ocean issues by the citizens of our Commonwealth. While many of us appreciate the ocean when we are enjoying it on a beautiful summer day or watching a storm, it is the rare individual who spends time serving on his or her town conservation commission, or participating in a beach clean-up, or teaching his or her children about the marine resources right here in our backyard, or even becoming aware of the full range of ways in which the state's oceans enhance the quality of our lives in Massachusetts. It is important for the Commonwealth to build an informed constituency for this public resource.

When citizens are motivated to participate in ocean management at any level, it is essential that they have access to data and information on ocean resources. The Technical Reports accompanying the Task Force's Report provide an overview of the wealth of data and information collected by state and federal agencies on our ocean resources. This information is a public resource that should be easily accessible to a broad range of users. Armed with adequate information, citizens can be effective participants in ocean management decision-making at the local, state, and even the federal and international levels.

We recommend that the state:

1. develop through a variety of means a new ocean literacy and stewardship ethic among all citizens of Massachusetts; and,

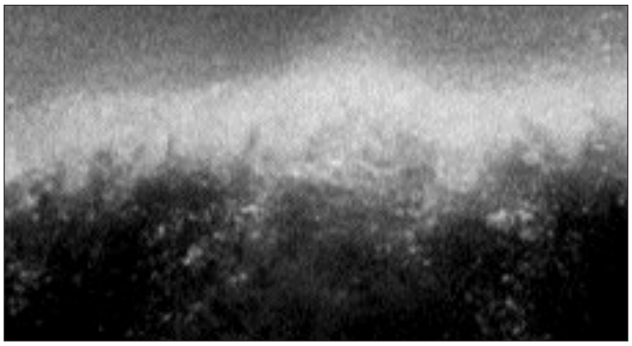
2. increase public dissemination of data collected on the Commonwealth's resources.

# OUTREACH RECOMMENDATIONS

## Outreach Recommendation #1: Ocean Literacy and Stewardship

### Recommendation

The Task Force recommends that the Secretary make a formal commitment to developing a new ocean literacy and stewardship ethic amongst all citizens of Massachusetts. The initiative should target a multigenerational audience, and include the private and public sectors, academic institutions, politicians, advocates, the media, and the general public. It should include a K-12 Ocean Education project, as well as a broader public education strategy.



### Justification

The Task Force recognizes that public understanding and support is integral to the long-term success of ocean management efforts. Consistent with our governing principles to encourage public participation in decision-making and promote respect for sustainable uses and protection of our interdependent ecosystems, appropriate and effective management of our oceans will ultimately rely on informed and educated decision-makers and resource users.

Incorporating more meaningful information about our ocean resources as part of a K-12 public education should be given a high priority, as it is an investment in the future that makes eminent

sense. The ocean environment faces many immediate challenges and threats, however. The Task Force recommendations and their ultimate effectiveness will depend on expanded public education and outreach to the adult population.

Massachusetts is fortunate to have an entrepreneurial business community, cutting-edge technology community, passionate environmentalists, and some of the world's leading research and educational institutions - Harvard, Woods Hole Oceanographic Institution, M.I.T., and public institutions through the University of Massachusetts to name a few. An opportunity exists to tap into this wealth of expertise.

We are also extremely well positioned to capitalize on the high caliber ocean education work already underway in the Commonwealth by groups such as COSEE (The New England Center for Ocean Sciences Education Excellence) based at the New England Aquarium, University of Massachusetts, and Woods Hole Oceanographic Institution, the Massachusetts Marine Educators, and the many excellent private and public ocean education programs throughout the state. While we have a growing body of ocean curricula, programs, and marine educators, what is lacking is effective coordination, strategic focus for these efforts, and, most importantly, resources to sustain these efforts.

## Implementation Plan

The Task Force recommends that the Secretary of Environmental Affairs immediately launch a school-based Ocean Education project as a part of the Ocean Management Initiative. The goal of the project is to promote a Massachusetts-focused ocean education program that leads to greater understanding and stewardship of the Commonwealths' ocean wealth. The audience will include private and public schools, higher education, and post-graduate programs, but will focus on K-12 public school children throughout the Commonwealth.

The Secretary should expand her existing Ocean Education Working Group to include key ocean education programs and participants, such as the Department of Education. Once dedicated staff is hired to coordinate this effort, the group should develop a strategic plan to coordinate the existing programs, expand programs to underserved communities, establish linkages between science and education programs, ensure that targeted outreach is undertaken, and identify resources necessary to implement the plan.

In addition, an advisory group should be assembled to fully explore options and guide the creation of a sustainable broader outreach plan. The outreach plan should draw upon, and complement, local, regional, national efforts to improve ocean literacy. The advisory group should represent broad interests, cutting across traditional sectors. Examples of representation might include SAGEE (Secretaries Advisory Group for Environmental Education), University of Massachusetts/higher education, marketing/public relations/communications firm, Department of Tourism, the media, non-profit ocean advocates, faith-based

organizations, resource users, scientists, federal, state and local coastline officials, private ocean engineering and consulting firms, etc. The plan should reflect efforts to align new ocean outreach with the Massachusetts Curriculum Frameworks development by the Department of Education, including with respect to the instructional constraints related to MCAS. Strategic planning, communication, and marketing consultants should be hired, when appropriate, to support the plan's creation and implementation. A designated office within EOEA should be staffed to coordinate committees and consultants and to implement various aspects of an outreach plan.

***Legislation required:*** No legislation is required.

***Next Step:*** The Secretary should staff the existing informal Ocean Education Working Group. A three-year strategic plan should be developed.

***Timing:*** This recommendation can be initiated immediately.

***Funding Required:*** Additional resources may be needed to coordinate this effort and initial funds are needed to support immediate projects (printing of existing outreach tools, Secretary's Ocean Excellence awards, workshops).

***Potential Sources of Funding:*** EOEA capital funds, Environmental Trust, Gulf of Maine Council Implementation Grants, other state/federal educational and competitive grant funds.

## Outreach Recommendation #2: Dissemination of Ocean Resource Data

### Recommendation

We recommend increased public dissemination of data collected on the Commonwealth's resources, whether part of today's existing permitting and resource management programs or as part of a new, more comprehensive ocean resource management framework as we have proposed in Governance Recommendation #1. Such information might include: an index of all state-funded ocean resource and use data; data collected in support of permit applications or as part of permit requirements; and data collected with state-issued scientific permits. Such data should be made available to interested parties for a nominal fee, accompanied by documentation to set the context for their proper use. The index should include geographically referenced long-term and short-term data sets, project specific resource surveys, and have links to the actual data and reports. To the extent feasible, all data producers should be responsible for making their data available to the public according to protocols established by the state, and via web sites, web-mapping tools, or through existing publicly available databases (such as MassGIS). Data providers should be responsible for assuring that any data they provide is quality assured and represents sound science.

### Justification

Data on ocean resources and uses in Commonwealth waters are largely difficult for potential users to locate. To the extent that public funds support the collection and/or interpretation of this data or support public permitting of private activities (e.g., Chapter 91 permits, MEPA reviews, approvals to site facilities in Ocean Sanctuaries), it is incumbent on the state agencies to make data available to the public, consultants, students, researchers, and other users. Substantial amounts of data are collected in support of permit requests and scientific research, primarily by environmental consulting companies and academic scientists. Even when private entities (such as developers of energy or telecommunication facilities and commercial fishermen) are required to supply data to state agencies, such data are generally not accessible by the public, may use

multiple and varied data protocols, and are generally difficult for parties to access and combine with other information. MassGIS, the Massachusetts Ocean Resources Information System (MORIS), and the Atlantic Coastal Cooperative Statistics Program (ACCSP) are examples of data management systems that index and provide access to many existing datasets; however, many datasets remain unavailable and the lack of a central listing of all data sets remains an impediment to full public access. Access to data, including data from state funded programs, permit requirements and research, is imperative for a thorough understanding of estuarine and marine habitat and life, evaluation of proposed projects, and improved ocean resource management. This initiative requires a modest investment in funding.

### Implementation Plan

To fully realize the value of ocean resources data collected in Massachusetts and to ensure appropriate application of these data to ocean resources management, a thorough list of data sets needs to be compiled and organized. Agencies that collect substantial volumes of data, manage projects that generate data, review permit-related data, and provide state-issued scientific permits used to generate data should be responsible for supplying such data to a state-wide index. The data should be supplied in an appropriate format with complete descriptions of data collection methods and guidance as to the appropriate use of data (metadata). A government program, such as MassGIS, should be identified to manage the list and dissemination of data.

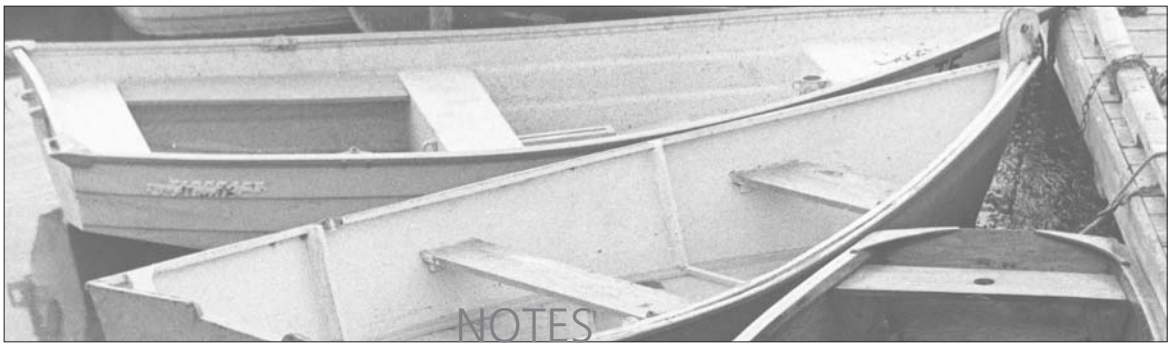
***Legislation Required:*** Not applicable.

***Next Step:*** The Secretary should appoint an agency to coordinate and disseminate the data index. State-funded programs and research that collect data should be initially indexed, and followed by an index of permit-related data.

***Timing:*** Data management is an ongoing effort that includes government and non-government organizations. The appointed agency to manage this effort should identify a working group to guide this process by September 2004.

***Funding Required:*** This effort may require additional resources to initiate and maintain the data index.

***Potential Sources of Funding:*** State capital funds. NOAA (through CZM grant), and/or EPA.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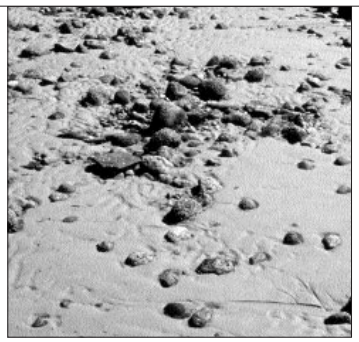
# CONCLUSION & APPENDIX



# CONCLUSION

This final Task Force Report, with its statement of Principles, the Recommendations, and accompanying Technical Reports, concludes the first phase of Massachusetts Ocean Management Initiative. The Task Force's recommendations are ambitious, consensus-based, and tempered with pragmatism.

We believe it is timely for the Commonwealth to advance these recommendations in light of recent undertakings by various organizations (including several major initiatives at the national level, such as the Pew Oceans Commission and the U.S. Commission on Ocean Policy) to make recommendations for management of the federal oceans. Massachusetts is at the forefront of state ocean management and protection and will work closely with these national efforts. The Commonwealth has an opportunity to move forward in managing our own state's ocean resources in a proactive manner that both protects the underlying marine ecosystem and serves public needs for food and energy production, shipping, recreation, waste disposal, telecommunication, etc.

We expect that following on our delivery of this Report to the Secretary of Environmental Affairs, she will request additional public comment on our Principles and Recommendations. These additional public comments will aid her in developing a plan to move forward in response to our Recommendations. We expect that the Secretary will work with her Commissioners, as well as with external partners in the public and private sectors, to develop an implementation plan for those recommendations she believes merit further pursuit. We stand ready to support her in these efforts.

Successful implementation of these Recommendations cannot be accomplished by state government alone. Partnerships with the private sector, advocacy groups, academia, local government, and federal agencies will be sought to move forward on this ambitious agenda, to ensure that the policies adopted and implemented in Massachusetts in the future receive the benefit of broad-based support.

# APPENDIX

## Ocean Management Task Force
## Task Force Report, Volume II: Technical Report
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# WORKING GROUPS OF THE OCEAN MANAGEMENT TASK FORCE

**Principles Working Group** (Chaired by David O'Connor), tasked with developing a group of Ocean Management Principles to guide the work of the Task Force and subsequent work of the Ocean Management Initiative.

**Outreach Working Group** (Chaired by Robbin Peach, staffed by Sarah Joor), tasked with identifying opportunities to raise public awareness and involvement in the Task Forces' work.

**Frameworks Working Group** (Chaired by Dr. Sue Tierney, staffed by Susan Snow-Cotter), responsible for identifying and evaluating overall policy approaches for managing the Commonwealth's ocean resources

**Policy Working Group** (Chaired by Jim Hunt, staffed by Arthur Pugsley), charged with determining the shortcomings and strengths of our legal/regulatory/policy tools; identifying gaps; examining best practices; crafting appropriate policy, regulatory, and statutory recommendations; and developing recommendations to improve federal/state/local, interagency, and cross-jurisdictional coordination.

**Use Characterization Working Group** (Chaired by Tom Skinner, staffed by Deerin Babb-Brott), tasked with characterizing the uses/activities (e.g., industrial, commercial, recreational, military, preservation) occurring in different geographic regions of the Commonwealth; assessing the areas of highest conflict, as well as areas that accommodate multiple uses; and forecasting changing uses.

**Data Trends and Needs Working Group** (Chaired by Dr. Judy McDowell, staffed by Tony Wilbur), charged with summarizing the key state ocean resource data presently collected, including ecological and economic trends; identifying gaps in knowledge, and the availability of existing data; and identifying information that is essential to support ocean management decisions.

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