

Integrating Ocean Science and Resource Management: Interagency Report

**Prepared by the Joint Subcommittee on Ocean Science and Technology and the
Subcommittee on Integrated Management of Ocean Resources**

November 15, 2008

The coasts, ocean and Great Lakes^{*} are a vast resource for the United States and are at the center of over a trillion dollars worth of goods and services contributing to the nation's economy each year. Growing industries such as sustainable offshore energy production and drugs from the sea promise to increase their importance to society even more. Beyond economics, the ocean comprises 70 percent of the Earth's surface giving it the lead role in influencing how our planet functions. It produces one half of the oxygen we breathe and absorbs much of the carbon we produce. It is both the beginning and the end of the Earth's water cycle. Its ability to store and transport heat maintains the Earth's climate within a livable range and drives both global climate and local weather patterns. However, we do not fully understand its role in global change. Coastal and marine waters provide some of the most biologically productive and economically valuable habitats on the planet. However, the global ocean is degraded by human activity. Ocean legislation at both state and federal levels recognizes that this is a time of promise and peril for the ocean. Expanding regional governance initiatives also demonstrates awareness of the need for and value of improved approaches that overcome traditional geopolitical boundaries.

The combination of Congressional and Executive actions over the last five years has resulted in robust mechanisms for coordination and cooperation among the Federal agencies that have responsibilities in the ocean, ranging from Cabinet-level to the working level, and including external advisory committees. At the working level, the Joint Subcommittee on Ocean Science and Technology (JSOST) and the Subcommittee on Integrated Management of Ocean Resources (SIMOR) provide coordinated approaches to issues such as: ensuring basic research needed to support policy decisions and ocean management; planning ocean technology and infrastructure needed for resource management and research; setting broad priorities for collaborative resource management efforts; developing the ocean workforce; integrating federal actions with regional and local authorities; promoting the translation of research to applications; strengthening government-industry cooperation; and increasing ocean literacy across the country.

The following is a joint overview statement from the JSOST and SIMOR. It highlights the purposes served by the collective federal ocean governance structure and the organizational and operational principles that should be retained and embodied in a coordinated approach to federal ocean activities. It also presents a high-level list of priorities shared among the ocean agencies, regardless of their specific mission or focus. The Appendices document the work accomplished through interagency ocean governance efforts over the last five years.

^{*} Throughout this document, "ocean" is used to refer to the ocean, coastal waters, and the Great Lakes.

Purpose

The interagency ocean governance structure and the activities it supports serve multiple purposes in the national interest.

Enhancing economic competitiveness, environmental stewardship, technical leadership, and quality of life and livelihood for our Nation's populace. Interagency efforts underpin and connect the wide range of activities involved in better understanding the marine environment. This understanding, founded on science, forms the basis for action to ensure that our ocean and coasts will be responsibly used and enjoyed now and into the future.

Providing a framework of national leadership – with regional and local partnerships – to meet the Nation's security, environmental, energy, and economic needs while continuing our legacy of ocean stewardship. Addressing national challenges while serving as responsible environmental stewards requires engagement of all federal ocean agencies at all levels of responsibility. Interagency communication and cooperation form the keystone for pooling and tapping the resources of knowledge and expertise housed within the individual ocean agencies.

Optimizing taxpayer investments in ocean activities, including the development of an appropriate ocean infrastructure (e.g., ocean observing systems) and a capable ocean work force. A permanent presence in the ocean through ocean observing technology provides insight needed to address the varied pressing issues facing the ocean and its resources. Such sophisticated new technology, in turn, requires a specialized workforce. Interagency activities foster a spirit of collaboration, enabling resources to be leveraged toward efforts that may not have otherwise been realized.

Providing leadership within the global ocean community and optimizing impact of U.S. diplomacy, including U.S. accession to the Law of the Sea Convention. Addressing global issues requires a global approach, based on international cooperation toward sound science, proven management techniques and the transfer of ideas and technologies. A clear national perspective and consensus, derived from interagency forums, provide expert input to U.S. maritime diplomacy and the exercise of rights and obligations under international law.

Continuing to draw on the work of the United States Commission on Ocean Policy and community efforts such as the Pew Oceans Commission. The benefit and value added of interagency efforts – and the continual goal – are to bring the collective knowledge and resources of individual ocean agencies to bear on the critical issues independently raised by these two Commissions.

Sustaining communication and input on legislative activity on ocean issues. Addressing the full range of interconnected ocean challenges requires the regular exchange of information between Executive and Legislative entities. Communication through interagency forums provides insights to solving challenges and better enables agencies to work together toward efforts mandated by legislation.

Principles

The following principles of interagency collaboration are highlighted as the basis for success and should be embodied in any ocean governance structure and its activities.

Coordinating at the Cabinet-level and the working-level. Effective ocean leadership requires sustained attention at the cabinet and deputy-secretary levels, with well-informed decision makers at all levels. This necessitates both reporting mechanisms that channel information to the highest levels and staff members who regularly engage in interagency interactions.

Connecting ocean science with ocean management and policy decisions through existing and new efforts. Active and sustained interagency forums identify critical areas where basic and applied research and technology are needed to inform decision-making and management practices. Linking research and resource management requires approaches that are parallel, connected and integrated.

Sustaining partnerships as an essential element of ocean and coastal activities. Collaboration at the federal level has as a critical element support and use of partnerships with a wide range of actors in meeting the opportunities and challenges that federal agencies are addressing in improving oceans and coasts. At the regional level in particular, local, state, tribal and federal government agencies and the private (profit and non-profit) sector, have been successful in maximizing efforts to work on common matters of concern and interest. This is beginning to show significant results “on the ground.”

Codifying formal non-governmental advisory mechanisms. Input from the external ocean community is vital in developing, organizing and guiding federal ocean activities and ensuring linkage with industry and NGOs. Entities currently in place to advise federal agencies on ocean science, technology and management efforts should be reaffirmed and utilized to their fullest.

Coordinating legislatively-mandated programs in a centralized manner. Legislation has resulted in a number of programs that are conducted via interagency cooperation. Continued interagency support and oversight of these activities ensure timeliness and high standards.

Framing ocean related activities in the context of, and in connection with, the Earth system as a whole. The influence of the ocean on the Earth and the seamless link between air, land and sea must be considered and incorporated in the form and function of ocean research and management efforts.

Recognizing the linkage between upstream and downstream. Opportunities to enhance to ocean and coastal ecosystem health exist, both through activities taking place within these ecosystems, but also through actions hundreds of miles away in inland watersheds. A watershed approach that reflects the linkage between upstream and downstream is needed to effectively take advantage of these opportunities.

Engendering a sense of responsibility for ocean stewardship. The challenges facing the ocean today are varied, as are the opportunities for improvement. It will take the continued work and

commitment of both individuals and organizations to ensure the health and functionality our nation's ocean and coasts.

Priorities

The following opportunities for advancement are highlighted as the priority areas in which ocean science and technology and resource management efforts should be focused.

Sustaining our national ocean policy and strengthening direction on ocean governance. A national ocean policy must be comprehensive in its treatment of ocean issues and should reflect the recommendations of the U.S. Commission on Ocean Policy, including U. S. accession to the Law of the Sea Convention, and draw on the work of community efforts such as the Pew Oceans Commission. It must also provide a framework for federal agencies to work collaboratively with regional and state ocean governance efforts toward a common vision for the future.

Forecasting and monitoring critical ocean processes and phenomena, including those linked to global climate change and variability, ocean acidification, storm formation, fish stocks and human health hazards. Increased capability to forecast key processes will expand not only the economic benefits of ocean forecasts, but their societal benefits as well. Only with such critical information will the nation be prepared for decisions associated with such emerging issues as climate adaptation and ocean energy development.

Providing and implementing scientific support for ecosystem-based management. Ecosystem-based management is regarded as one of the most effective ways to identify and account for complex interactions between marine resources and other components of the marine environment – including humans. It also provides a mechanism for coping with natural- and human-induced pressures on coastal and ocean ecosystems. Such approaches require a multi-dimensional and multidisciplinary effort to enhance understanding of ecosystem processes, including how those factors will change as climate changes.

Decreasing coastal and ocean pollution and ensuring clean and healthy coasts and beaches. Human impact in the form of pollution from the air, sea and, most critically, land impairs ecosystem functions and substantially contributes to their decline. Improving the condition of our nation's coasts and beaches – and the condition of the ocean overall – requires addressing sources of pollution at the watershed and airshed levels.

Deploying a robust ocean observing system to address climate, ecosystem health, economic, and security issues. Our ability to forecast ocean processes and understand ocean phenomena depends on our ability to observe the ocean. Observations are needed to provide insight on the ocean's role in climate, inform ecosystem based management, support economic operations, and improve maritime security. Deploying priority elements of an observing system will increase society's access to and responsible use of the ocean and realize the promise of ocean forecasting.

Establishing an ocean-literate nation. Responsible stewardship of ocean resources is based on availability of knowledge to make informed decisions. Ocean research provides the information needed to develop education, communication and management materials that are based on sound

science. Efforts to enhance ocean literacy support and, in turn, are supported by efforts to promote fundamental Science, Technology, Engineering and Mathematics skills.

Appendices

I. Ocean Economic Statistics

Information on the economic value and impact of the ocean and its resources is available at <http://noep.mbari.org/> and <http://www.economics.noaa.gov/>.

II. Interagency Committee on Ocean Science and Resource Management Integration

U.S. Extended Continental Shelf Task Force – Under the ICOSRMI, the U.S. Extended Continental Shelf Task Force, an interagency body headed by the U.S. Department of State, coordinates work to define the limits of the U.S. continental shelf. Information on this effort can be found at <http://www.state.gov/g/oes/continentalsshelf/>.

III. Joint Subcommittee on Ocean Science and Technology

A. National Ocean Research Priorities Plan and Implementation Strategy – The National Ocean Research Priorities Plan and Implementation Strategy, developed with extensive community input, is designed to establish and realize priorities for ocean science and technology for the next decade. It is available at <http://ocean.ceq.gov/about/docs/orppfinal.pdf>

B. FY 2010 Interagency Ocean Science and Technology Priorities Memorandum – This memorandum describes the FY 2010 interagency ocean science and technology priorities as called for in the Ocean Research Priorities Plan and Implementation Strategy. The full text is at <http://ocean.ceq.gov/about/docs/jsostfy10ipm.pdf>.

C. 2006-2007 Federal Ocean and Coastal Activities Report to the U.S. Congress - This report provides an overview of the activities and accomplishments of the federal agencies implementing the U.S. Ocean Action Plan for calendar years 2006 and 2007. It is located at http://ocean.ceq.gov/2007_Oceans_Report_final.pdf.

D. JSOST Interagency Working Groups and Other Subgroups – The JSOST has established both formal Interagency Working Groups and other ad hoc entities to provide expert attention on specific ocean issues of import as needed. Information on these groups and representative samples of work products can be found as indicated below.

1. Interagency Working Group on Harmful Algal Blooms, Hypoxia and Human Health.

a. Charter (available at http://ocean.ceq.gov/about/sup_jsost_iwgs.html)

b. Harmful Algal Bloom Management and Response: Assessment and Plan (available at http://ocean.ceq.gov/about/docs/jsost_hab0908.pdf)

c. Interagency Oceans and Human Health Annual Report, 2004-2006 (available at http://ocean.ceq.gov/about/docs/jsost_iohh0908.pdf)

d. Interagency Oceans and Human Health Research Implementation Plan: A Prescription for the Future (available at <http://ocean.ceq.gov/about/docs/ohhfinal.pdf>)

- e. Scientific Assessment of Freshwater Harmful Algal Blooms (available at <http://ocean.ceq.gov/about/docs/frshh2o0708.pdf>)
- 2. Interagency Working Group on Ocean Partnerships
 - a. Charter (available at http://ocean.ceq.gov/about/sup_jsost_iwgs.html)
 - b. Strategic Plan (available at http://ocean.ceq.gov/about/docs/jsost_iwgop_sp1008.pdf)
- 3. Interagency Working Group on Ocean Observations
 - a. Charter (available at http://ocean.ceq.gov/about/sup_jsost_iwgs.html)
 - b. The Relationship between the Integrated Ocean Observing System and the Ocean Observatories Initiative (available at http://ocean.ceq.gov/about/docs/IOOS_OOI071808.pdf)
- 4. Interagency Working Group on Facilities
 - Charter (available at http://ocean.ceq.gov/about/sup_jsost_iwgs.html)
- 5. Interagency Working Group on Ocean and Coastal Mapping
 - Charter (will be available at http://ocean.ceq.gov/about/sup_jsost_iwgs.html)
- 6. Interagency Board on Deep Sea Corals and Vulnerable Marine Environments (ad hoc)
 - Terms of Reference (available at http://ocean.ceq.gov/about/sup_jsost_iwgs.html)
- 7. Interagency Task Force on Anthropogenic Sound in the Marine Environment (ad hoc)
 - Terms of Reference (available at http://ocean.ceq.gov/about/sup_jsost_iwgs.html)

IV. Subcommittee on Integrated Management of Ocean Resources

A. 2008 SIMOR Report on Progress – This document highlights progress made on and recommendations for improving resource management coordination, and notes future resource management priorities. A link to this document is available at: <http://ocean.ceq.gov/about/simor.html>

B. Statement of Purpose – This document serves as the guiding framework under which SIMOR conducts business. It can be found at http://ocean.ceq.gov/about/docs/SIMOR_Purpose.pdf.

C. Statement of Priorities – The Statement of Priorities outlines the four SIMOR priority areas and highlights initial focus areas for these priorities. It is available at http://ocean.ceq.gov/about/docs/SIMOR_Priorities_050505.pdf.

D. 2006 SIMOR Work Plan – The SIMOR Work Plan presents the four priority areas with specific actions to be accomplished with currently available resources. Further information and full text are at http://ocean.ceq.gov/about/sup_simor_workplan.html.

E. Interagency Marine Debris Coordinating Committee – Falling under SIMOR purview, the Interagency Marine Debris Coordinating Committee is responsible for developing and recommending comprehensive and multi-disciplinary approaches to reduce the sources and impacts of marine debris.

1. A description of this group’s work is available from:
http://ocean.ceq.gov/about/docs/SIMOR_IMDCC.pdf .

2. The recent Interagency Report on Marine Debris Sources, Impacts, Strategies & Recommendations is available from:
http://ocean.ceq.gov/about/docs/SIMOR_IMDCC_Report.pdf .

F. Coastal America – Coastal America is a partnership among federal, state and local governments and private alliances to collaboratively address coastal environmental issues in an action-oriented, results-driven process. Now under SIMOR leadership, information on this effort is at <http://www.coastalamerica.gov/>.

G. Top 10 Marine and Coastal Cooperative Conservation Lessons Learned: A Report for the Subcommittee on Integrated Management of Ocean Resources – Tying into the SIMOR priority focus area on regional and local collaboration, this report identifies lessons that states and regions could apply to their individual regional contexts. Full text is at
http://cooperativeconservation.gov/library/SIMORCoopConsLessons_031907.pdf.

V. Joint Efforts

Interagency Working Group on Ocean Education – The focus of this joint working group overseen by the JSOST and SIMOR is improving ocean literacy in the U.S.

- a. Charter (available at http://ocean.ceq.gov/about/sup_jsost_iwgs.html)
- b. Ocean Education Action Plan (available at http://ocean.ceq.gov/about/docs/SIMOR_IWGOE_Implement.pdf)

VI. Related Efforts

Committee on the Marine Transportation System – Aligned with the ocean governance structure noted in this document, the Committee on the Marine Transportation System is a Federal inter-departmental committee directed to ensure the development and implementation of national Marine Transportation System policies. Additional information can be found at <http://www.cmts.gov/index.htm> , and the recent Committee report entitled, “National Strategy for the Marine Transportation System: A Framework for Action,” is available from:
<http://www.cmts.gov/nationalstrategy.pdf> .