



NATIONAL OCEAN POLICY
IMPLEMENTATION PLAN
APPENDIX

National Ocean Council

APRIL 2013



Introduction

This appendix presents the actions that Federal agencies will take to achieve the outcomes described in the Implementation Plan. The actions contained here encompass and further the nine National Priority Objectives of the National Ocean Policy. They reflect and capture the actions previously identified under the National Priority Objectives as those that will yield the greatest benefit to the Nation. Many of these actions will produce benefits in the short-term that address immediate needs of communities, ecosystems, and the public. Others create building blocks to support key outcomes in the medium- to long-term. All are based on thoughtful assessment of public feedback, the most pressing challenges, and available resources. They are consistent with existing agency missions and activities. Moreover, they reflect a prudent investment that will ensure that our ocean, coasts, and Great Lakes remain healthy, productive, and resilient, and continue to benefit all Americans.

The actions in this appendix are organized by year of completion under the corresponding Implementation Plan section (e.g., The Ocean Economy) and subsection in which the relevant action is described. Agencies and/or the interagency working groups responsible for each action are indicated in brackets following each action and indexed in the list of acronyms at the end of the appendix. The actions are also cross-referenced to the nine National Priority Objectives as indicated in brackets following each action and indexed at the bottom of each page. Many of the actions are cross-cutting and support multiple national outcomes, reflecting the many ways that the National Ocean Policy provides products and services of value—better science and information, effective collaboration with industry and stakeholders, and more efficient and better-informed decision-making—across the spectrum of ocean uses. Such cross-cutting actions are not duplicated in this appendix.



I. The Ocean Economy

Supporting Economic Growth

Advance our mapping and charting capabilities and products to support a range of economic activities.

2013

- Integrate existing and emerging coastal and seafloor mapping guidelines, best practices, and standards to ensure interoperability of data. [IWG-OCM, NOAA] [OMI]

2014

- Improve and implement technology and techniques for acoustic characterization of seafloor properties to enable multiple uses of data for nautical charting and marine habitat mapping. [IWG-OCM, NOAA] [OMI]
- Obtain modern high-resolution seafloor mapping data in key coastal and shelf waters, including the National Shoreline, in accordance with the national priorities and standards. [IWG-OCM] [OMI]

2017

- Develop an annually updated National Ocean and Coastal Mapping Plan, using the Ocean and Coastal Mapping Inventory, that defines priority mapping needs and gaps, and implement the plan through interagency collaboration in planning, budgeting, and execution. [IWG-OCM] [OMI]
- Improve and implement airborne and other techniques for coastal elevation, bathymetric mapping, and nautical charting, including low-lying coastal areas with turbid waters. [USACE, DOI (USGS), NOAA, IWG-OCM] [OMI]
- Improve and implement coastal change analysis products and a sustained and seamless description of coastal and marine elevation extending from on-shore coastal areas (Coastal National Elevation Dataset) through the U.S. Exclusive Economic Zone (EEZ) and extended continental shelf, including elevation models and derived map products, for local, State, and Federal managers. [IWG-OCM, DOI (USGS), USACE, NOAA] [OMI]

Provide greater accessibility to data and information to support commercial markets and industries, such as commercial fishing, maritime transportation, aquaculture, and offshore energy.

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2013

- Develop, evaluate, and expand an integrated geospatial database of Federal and non-Federal, certified and non-certified ocean observation data to provide access to public information and provide extracts or contact information for privately held information. [IOOC Member Agencies] [OMI]

2015

- Provide quantitative data on coastal habitat carbon sequestration and facilitate the use of results from pilot projects to support private-sector development of greenhouse gas offset protocols for use in voluntary carbon markets. [DOI (USGS)] [REPR]
- Conduct a preliminary assessment of the economic costs and benefits of debris removal from coastal areas dependent on tourism. [NOAA, EPA] [Water]

2017

- Compile and make available relevant climate, water, wind, and weather data; environmental models of seasonal and extreme conditions; and other information to support development of the Nation’s coastal and offshore renewable energy, including wind, ocean thermal, and hydrokinetic (e.g., waves, tidal energy) resources. [DOE, NOAA, DOI, DOC, NSF] [IDIU]
- To the extent they may be discovered, develop new natural products and biotechnological processes from marine environments and evaluate their potential for commercial development. [NOAA, DOI, DOE, DOC, HHS (NIH), NSF] [IDIU]

Sustain and further develop ocean observing systems for the economic benefit of maritime commerce and marine industry.

2014

- Develop an inventory of both Federal and non-Federal IOOS® capabilities by comparing observing requirements with standardized requirement specifications. [NOAA] [OMI]

2015

- Update the National Operational Wave Observation Plan. [USACE, NOAA] [OMI]
- Complete a strategic plan for recommended future Physical Oceanographic Real-Time System (PORTS®) installations. [NOAA] [OMI]

Promoting Jobs

Increase efficiencies in decision-making by improving permitting processes and coordinating agency participation in planning and approval processes.

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2013

- Develop and implement permitting regulatory efficiencies for aquaculture. [NOAA, USDA, EPA, USACE, USCG, DOI (USFWS)] [CS]
- Establish an interagency aquaculture initiative that supports jobs and innovation through the National Science and Technology Council’s Interagency Working Group on Aquaculture and other partnerships. [DOC, NOAA, USDA (ARS, NIFA)] [IDIU]
- Through leveraging existing research priorities, provide scientific information on the environmental health effects of finfish aquaculture to streamline permitting and improve water quality monitoring. [Aquaculture Regulatory Task Force] [IDIU]
- Identify pilot projects, in collaboration with relevant stakeholders, to streamline permitting processes and reduce duplicative efforts, while ensuring appropriate environmental and other required safeguards. [NOC] [CS]

2015

- Identify and make available best management practices to inform and improve Federal permitting processes for aquaculture. [NOAA, USDA, EPA, USACE, USCG, DOI (USFWS)] [CS]

Provide jobs and economic value by protecting and restoring coastal wetlands, coral reefs, and other natural systems.

2013

- Through the National Shellfish Initiative develop pilot projects to identify ways to both maximize the environmental sustainability and ecosystem benefits (e.g., nutrient filtration, carbon sequestration, fish habitat) and the commercial value of shellfish aquaculture. This would help develop a comprehensive plan to sustainably increase shellfish production and restore populations in U.S. waters. [NOAA, USDA (ARS, NIFA)] [IDIU]

2014

- Identify ecologically at-risk species in eutrophic and upwelling driven hypoxic systems to obtain a vulnerability analysis based on available data. [NOAA] [Water]

2015

- Develop an analysis of the contribution and impacts (including job creation) of emerging uses—including renewable energy, aquaculture, and biotechnology—on the economies of the communities and regions dependent on marine and coastal resources. [NOAA, DOE, DOI, FERC, DOL, DOC] [IDIU]

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- Produce an interagency report on socioeconomic benefits to coastal communities of restoring hypoxic zones. [NOAA, EPA, DOC] [Water]

Prevent lost employment opportunities and economic losses associated with environmental degradation.

2013

- Integrate relevant socioeconomic monitoring information (e.g., U.S. Census and Bureau of Labor Statistics data) with ecosystem monitoring information to understand changes and impacts to communities and their environments in selected areas. [NOAA, DOC, DOL] [CC]
- Complete an initial analysis of ocean and coastal economic statistics and jobs that builds on existing programs and includes information on rural communities and the roles of transportation, shipping, and numerous other sectors in economic contribution and job creation across the United States. [DOC, DOI, DOL, DOT, USACE, DOE] [IDIU]

2015

- Identify actions Federal agencies can take, in coordination with State, tribal, regional, and local agencies, to improve the management of coastal wetlands and reduce losses nationwide. [EPA, NOAA, USACE, DOI (USFWS)] [REPR]
- Develop and deploy rapid, field-based detection systems for various harmful algal blooms (HAB)-causing species and their toxins. [NOAA, HHS (FDA), DOI (USGS)] [Water]
- Provide and integrate county-level coastal and ocean job trends data via NOAA’s Digital Coast to enable decision-makers and planners to better assess the economic impacts of climate change and ocean acidification. [NOAA, DOI, USACE] [CC]

Developing a Skilled Ocean Workforce

Develop human capacity and the skilled workforce necessary to conduct ocean research and manage ocean resources.

2013

- Provide content and professional development opportunities to support ocean content in the Next Generation Science Standards. [IWG-OE] [IDIU]

2014

- Develop programs that enhance undergraduate education on ocean research and management, using authentic research experiences. [NSF, HHS (FDA)] [IDIU]

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- Make available education and training tools that can be used to improve national and international educational opportunities on ocean issues. [EPA, NASA] [IDIU]

2016

- Complete studies of future ocean workforce requirements. [NOAA, DOT, DOC, DOL] [IDIU]
- Provide scholarship, fellowship, and internship opportunities in ocean, coastal, and Great Lakes programs to students, including underrepresented groups, working with professional societies, nonprofits, and minority-serving institutions. [NOAA, EPA, DOT, NSF] [IDIU]

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II. Safety and Security

Improving Maritime Domain Awareness

Enhance remote sensing systems for ocean observations to support maritime domain awareness.

2013

- Identify observation priorities for all National Ocean Policy objectives that can be accomplished with unmanned and/or satellite remote sensing systems. [IOOC, IWG-FI] [OMI]
- Complete an inventory of available Federal and non-Federal unmanned undersea vehicles (both tethered and autonomous) and satellite remote sensing systems. [IWG-FI] [OMI]

2014

- Complete an analysis and selection of performance measurements for unmanned and satellite remote sensing system utilization. [DOD, NASA, NOAA, NSF] [OMI]

2017

- Demonstrate capability for coordinated unmanned and satellite remote sensor sampling in a specific region of environmental interest as a step toward a fully operational capability. [DOD, NASA, NOAA, NSF] [OMI]

Engage internationally to exchange information, expertise, and knowledge about policy issues in the maritime domain.

2013

- Exchange information, expertise, and science on matters related to the National Ocean Policy with international organizations and bodies [e.g., International Maritime Organization (IMO), Intergovernmental Oceanographic Commission (IOC)] that address ocean and maritime issues contained in the Policy and with countries that may have an interest in such matters. [DOS, USCG, NOAA, EPA, NSF, NASA, DOI, USACE, DOT, DOJ, DOD] [CS]

Providing Maritime Safety and Security in a Changing Arctic

Enhance communication systems in the Arctic to improve our capability to prevent and respond to maritime incidents and environmental impacts.

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2013

- Establish baselines of:
 - The performance capabilities of mid-frequency (MF), high-frequency (HF), very high-frequency (VHF), and ultra high-frequency (UHF) communications systems to air and surface vessels in the Arctic. [DOD] [Arctic]
 - The performance of air-, surface-, and available shore-based sensors. [DOD] [Arctic]
- Complete inventory of existing DHS, DOD, and partner communication capabilities (e.g., satellites, land-based systems, and submarine cables) in the Arctic region. [DOD, USCG] [Arctic]
- Establish and strengthen partnerships with industry (e.g., oil companies, ship operators), other governments (e.g., Canada, Russia, Norway), and Alaska Native organizations to build on existing and new Arctic communications solutions and capabilities, such as the Canadian Space Agency Polar Communication and Weather Mission. [DOD, USCG, NOAA] [Arctic]

2014

- Identify, analyze, rank, and implement the most cost-effective options to reduce communication gaps and boost Federal capabilities in the Arctic Operational Region, commensurate with available resources and user needs. [DOD, USCG, NOAA, DOT] [Arctic]

Improve Arctic environmental incident prevention and response to ensure coordinated agency action, minimize the likelihood of disasters, and expedite response activities.

2013

- Improve oil spill prevention, containment, and response infrastructure, plans, and technology for use in ice-covered Arctic seas, using all available sources, such as Federal agencies, industry, academia, and international partners. [DOI (BSEE), USCG, DOT, NOAA] [Arctic]
- Initiate interagency research and integration of data to improve models for spill trajectory, oil fate, and weathering, and natural resource maps based on Arctic conditions in order to feed scenario development and risk assessment. [USCG, DOI (BSEE, BOEM), NOAA] [Arctic]
- Complete scientifically based field or test tank experiments and tests of response tools for U.S. Arctic marine waters. [USCG, DOI (BSEE), EPA] [Arctic]
- Compile integrated datasets needed to populate an Arctic oil spill planning, coordination, and response tool such as the Emergency Response Management Application (ERMA®) and complete and deploy a public and responder Arctic ERMA®. [NOAA] [Arctic]
- Identify options to minimize and/or mitigate the risk associated with vessel use and carriage of heavy-grade fuel oil in the Arctic. [NOAA, DOS, DOJ, USCG, DOT] [Arctic]

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- Participate in joint training and workshops with other Arctic nations on oil spill response activities in the Arctic, such as the use of mechanical recovery, dispersants, and in situ burning following major spill events. [USCG, NOAA, DOI (BSEE), DOT] [Arctic]
- In cooperation with other Arctic countries, develop international guidelines for both spill prevention and for spill response activities in the Arctic, such as the provision of improved sea ice forecasts for mariners and the use of mechanical recovery, dispersants, and in situ burning following major spill events. [USCG, NOAA, DOI, DOJ, DOS, DOD, DOT] [Arctic]

2014

- Identify Arctic resource and infrastructure shortfalls for high-risk scenarios and assess strategies to address those shortfalls. Complete a resource-neutral plan to address the significant logistical issues (e.g., housing and feeding personnel, staging and deploying equipment, and managing waste) that would be involved in a large-scale oil spill response in the Arctic during any season. [DOI (BSEE), NOAA, USCG, ARRT, DOT] [Arctic]

Improve Arctic sea ice forecasting to support safety at sea.

2013

- Deliver tactical-scale Arctic sea ice analysis and forecasts in Geographic Information System (GIS)-enabled broad-scale format to meet USCG requirements. [NOAA, DOD, USCG] [Arctic]
- Develop better maps of the ice edge, and make field data available early enough in the year to be useful for seasonal ice forecasts. [NASA] [Arctic]
- Expand Volunteer Observing Ship and coastal community participation in the Arctic sea ice observation program, and catalog user requirements for sea ice products, services, and delivery. [NOAA] [Arctic]

2014

- Deliver tactical-scale sea Arctic ice analysis and forecasts in formats that meet additional user requirements. [NOAA, DOD] [Arctic]
- Coordinate with international partners to improve Arctic sea ice forecasting through generalization of buoy/ mooring data from a single point to a broader area and satellite data calibration using this buoy/mooring data. [NOAA, DOD, NSF] [Arctic]
- Initiate a study of the marginal ice zone to better measure the rate of Arctic sea ice melt and regrowth. [NOAA, DOD] [Arctic]

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Improve Arctic mapping and charting for safe navigation and more accurate positioning.

2013

- Conduct airborne gravity data collection over the State of Alaska (including the Aleutians by 2019) to help correct meters-level errors in Arctic positioning. [NOAA] [Arctic]
- Conduct coordinated interagency Arctic ocean and coastal mapping operations and incorporate results into ocean.data.gov and Arctic-specific data portals. [IWG-OCM, NOAA] [Arctic]
- Complete electronic navigational chart coverage as agreed to by the Arctic Regional Hydrographic Commission. [NOAA] [Arctic]
- Refine, in collaboration with native communities and stakeholders, a priority list of Arctic maritime regions and shorelines for surveying. [NOAA, DOI (USGS)] [Arctic]
- Establish mapping guidelines, standards, vessel of opportunity protocols, and standard operating procedures to facilitate integrated ocean and coastal mapping and acquisition of Arctic hydrographic, shoreline, habitat mapping, and water column data in the Bering, Chukchi, and Beaufort Seas. [NOAA, IWG-OCM, DOD] [Arctic]

2014

- Update nautical charts, Environmental Sensitivity Index maps, and other Arctic feature maps with mapping data acquired during annual field seasons. [NOAA] [Arctic]

2015

- Prepare the material that could support a U.S. submission on the Extended Continental Shelf delimitation in Arctic waters. [NOAA, DOJ, DOS, DOI (USGS)] [Arctic]

Enhancing the Safety and Security of Ports and Waterways

Conduct Waterway Analysis and Management System assessments and Port Access Route Studies to support decisions on waterways management and other navigational priorities.

2014

- Conduct Waterway Analysis and Management System (WAMS) assessments and Port Access Route Studies (PARS), beginning with the ongoing Atlantic Coast PARS and Bering Strait PARS, and focusing on other areas indicated by risk/return analysis, to support decisions on waterways management and other navigational priorities. [USCG] [IDIU]

Assess the vulnerability of ports and waterways to sea-level rise and extreme weather events or other natural disasters and enable actions that more effectively reduce risks and impacts.

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2013

- Update USACE guidance on incorporating sea-level rise into project planning. [USACE, NOAA] [CC]

2014

- Develop best practices for climate change and ocean acidification vulnerability assessments for Federally-funded and/or Federally-managed coastal and ocean facilities and infrastructure in high-hazard areas. [NOAA, DOI, EPA, DOD, DOT] [CC]

Advance ocean observing systems to further enhance search and rescue operations and spill response in our ports and waterways.

2014

- Develop a national modeling strategy to determine how regional-scale models supported by IOOS® regions can be integrated into Federal efforts. [IOOC] [OMI]
- Update the National Surface Current Mapping Plan and prioritization of new radar sites. [NOAA] [OMI]

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III. Coastal and Ocean Resilience

Reducing Adverse Conditions

Reduce coastal wetland loss.

2013

- Document the status and trends of coastal wetlands using the most recent data from 2004 to 2009, including status and trends across the U.S. coastal regions. [NOAA, DOI (USFWS)] [REPR]

2014

- Protect, restore, or enhance 100,000 acres of wetlands, wetland-associated uplands, and high-priority coastal, upland, urban, and island habitat. [USDA, USACE, NOAA, DOI, EPA] [Water]

Protect, conserve, and restore coastal and ocean habitats.

2013

- Support State certainty programs for reducing nutrient and sediment loads that will accelerate the adoption of voluntary conservation efforts. [USDA, EPA] [Water]
- Establish a marine debris monitoring protocol—including consistent nomenclature, sampling methods, source attribution, and data reporting requirements—for use by Federal agencies and non-Federal entities, including non-governmental organizations and volunteer groups. [NOAA, EPA] [Water]
- Identify and promote non-regulatory measures to reduce marine debris, such as market-based incentives, use of litter receptacles along shorelines, and use of litter traps in rivers and estuaries. [EPA, NOAA] [Water]

2014

- Complete State/territory-specific coral bleaching response plans and/or resilience/adaptation strategies to better coordinate action to address the impacts of climate change and ocean acidification on coral reef ecosystems. [USCRTF] [REPR]
- Complete and disseminate a reference handbook to include a review of existing policies, agency and State/territory roles and responsibilities, a compendium of best practices, science-based methodologies for quantifying ecosystem services, and protocols for use when responding, assessing, mitigating, and restoring coral reef ecosystems. [USCRTF] [REPR]

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2015

- As part of the National Fish Habitat Assessment, complete a marine fish habitat assessment that includes an analysis of the links between estuarine and upland habitats to inform future habitat conservation work under the National Fish Habitat Partnership. [NFHP Federal Caucus] [REPR]

2017

- Initiate a showcase project linking healthy watershed protection to estuary or Great Lakes water body protection, and evaluate the success in protecting and conserving high-quality coastal waters. [EPA, USDA, NOAA, DOI] [Water]

2025

- Protect 2 million acres of lands identified as high conservation priorities, with at least 35 percent being forestlands of highest value for maintaining water quality. [USDA] [Water]

Locate, control, prevent, and eradicate invasive species populations.

2013

- Develop mechanisms to facilitate public–private partnerships to address invasive species, such as Memoranda of Understanding and related joint planning documents, and submit them for review and approval by participating entities. [NISC] [REPR]
- Identify potential Federal and non-Federal funding sources that can contribute to the funding of a pilot-scale request for proposals to address invasive species. [NISC] [REPR]
- Analyze potential models and identify strategic gaps and opportunities, with the Aquatic Nuisance Species Task Force (ANSTF), to improve our ability to conduct Early Detection Rapid Response operations. [NISC] [REPR]
- Develop the processes for requesting Early Detection Rapid Response proposals and evaluation criteria in concert with the Invasive Species Advisory Committee, Aquatic Nuisance Species regional panels, and Federal invasive species program experts. [NISC, ANSTF] [REPR]

2014

- Review the initial round of pilot-scale proposals to address invasive species, report on the pilot program’s effectiveness, and make recommendations for its continued improvement. [NISC, ANSTF] [REPR]

Improve and preserve our Nation’s coastal and estuarine water quality to provide clean water for healthier waterways, communities, and ecosystems.

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2013

- Develop a pilot assessment selection strategy and identify coastal watersheds for pilot assessments using updated wetland inventories and geospatial data. [EPA, NOAA, USACE, DOI (USFWS)] [REPR]
- Establish integrated interagency monitoring, modeling, and assessment partnerships in priority watersheds to better evaluate the effectiveness of land treatment practices (e.g., Mississippi River Basin Healthy Watersheds Initiative, Chesapeake Bay Initiative, and Great Lakes Restoration Initiative). [USDA, EPA, USACE, DOI, NOAA] [Water]
- Implement environmental market pilot projects (e.g., USDA Chesapeake Bay Watershed Initiative) between Federal and regional partners for nutrient and sediment reduction. [USDA, DOI, EPA] [Water]
- Develop quantitative performance measures to evaluate the effectiveness of restoration efforts, National Forest BMPs, and systems of conservation practices for mitigating hypoxia and other water quality impairments through watershed nutrient-loading reductions. [NOAA, USDA] [Water]
- Advance the development and application of scenario-based ecosystem models to quantitatively evaluate hypoxia causes and impacts, using an integrative modeling approach, and develop outreach tools to communicate advanced understanding to coastal managers and other stakeholders. [NOAA, DOI (USGS)] [Water]
- To minimize impacts of hypoxia, support state development of at least 12 state-wide nutrient reduction strategies through webinars, grant funding, and an online data tool. [EPA] [Water]
- Provide results of integrated modeling and resulting tool kits for communicating hypoxia-related information to coastal managers and other stakeholders. [NOAA, DOI (USGS), USDA] [Water]

2014

- For each coastal watershed selected for a pilot assessment, complete analyses of data and information from the 2011 Status and Trends of Wetlands in the Conterminous United States, NOAA’s Coastal Change Analysis Program, Clean Water Act Section 404 program, State regulatory programs, USACE Civil Works programs, and geospatial sources. [EPA, NOAA, USACE, DOI (USFWS)] [REPR]
- Implement coordinated projects in targeted locations to reduce land-based pollutants impacting coral reef ecosystems. Provide information and tools necessary for managers and decision-makers to identify and implement the most effective and efficient management practices in upstream environments. [USCRTF] [REPR]

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- Establish baseline levels of selected contaminants in bays, estuaries, and Great Lakes waters, sentinel species, and people living in coastal communities and, where sufficient data exist, describe temporal trends and an assessment of the effectiveness of Federal programs designed to abate degradation of water quality. [NOAA, EPA, DOI (USGS), USACE] [Water]
- Enhance contaminant monitoring and disease surveillance programs in a pilot region, ensuring broader agency participation by providing a continuum of observations from the watershed to the coastal ocean, and producing a government-wide monitoring portfolio that links across states, tribes, regions, academia, and other stakeholders and volunteer organizations. [NOAA, EPA, DOI (USGS)] [Water]

2015

- Improve management of water pollutants and other constituents in discharges (e.g., invasive species, pathogens, toxics, sediments) from vessels and ocean dumping using existing authorities. [EPA, USCG] [Water]
- Develop, coordinate, and integrate stakeholder/partner monitoring programs to encourage community involvement, education, and stewardship in the protection of healthy watersheds. [DOI, EPA, NOAA, USDA] [Water]
- Target State Clean Water Act Section 319 grant programs to priority areas identified by states as they develop comprehensive strategies to reduce nitrogen and phosphorus pollution and encourage the use of Clean Water State Revolving Fund funding to high-priority projects in each state, including those that address nutrient pollution. [EPA] [Water]
- Develop pilot projects to increase access to the Urban Waters Federal Partnership for nearby residents, implement environmental improvements in or near these areas, and increase economic activity in or near urban water bodies. [Urban Waters Federal Partnership] [Water]
- Promote green infrastructure and low-impact development approaches in urban and suburban areas to reduce impacts of discharges of toxics, pathogens, pesticides, nutrients, and sediments from newly developed and existing sites. [EPA] [Water]
- Develop a national hypoxia data portal to support State and regional efforts for seamless data sharing and information dissemination, building on the success of the EPA/USGS data portal, and link to ocean.data.gov. [NOAA, DOI (USGS), EPA] [Water]
- Inventory and evaluate best management practices to address storm water runoff from the Federal-aid highway system, the efficiency of measures implemented to reduce sediments and common pollutants found in highway storm water runoff, and the costs associated with construction, operation, and maintenance. Results of research completed by 2015 could be used in future establishment of performance measures used at a national level. [DOT] [Water]

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Preparing for Change

Strengthen and integrate observations into a coordinated network of sentinel sites to enhance the Nation’s ability to provide early warnings, risk assessments, and forecasts for impacts.

2013

- Develop a draft framework for indicators of community and ecosystem impacts (physical, biological, chemical, cultural, social, and economic) to track changes in vulnerability and resiliency through time as part of the sustained National Climate Assessment process. [USGCRP, NOAA] [CC]
- Implement the National Fish, Wildlife, and Plants Climate Adaptation Strategy to help guide development and application of vulnerability assessments for coastal and ocean living resources and environments. [DOI, NOAA, CEQ, USACE] [CC]

2014

- Produce an inventory and assessment of observations and monitoring capabilities in networks and systems of ocean, coastal, and Great Lakes protected areas, research sites, and observing systems. [NOAA, DOI, EPA, DOD] [CC]
- Build partnerships with both Federal and non-Federal entities (e.g., State agencies, tribal agencies, and academic institutions) to integrate existing observing activities into sentinel site networks. [NOAA, EPA] [CC]
- Integrate climate information, tools, and services on coasts and oceans into the online inter-agency global change information system. [USGCRP, NOAA, EPA, DOI] [CC]

2015

- Integrate and strengthen sentinel site networks to track the impacts of climate change and ocean acidification on living marine resources (e.g., fisheries and marine protected species), protected areas, and coastal and Great Lakes communities in selected areas. [NOAA, DOI, EPA] [CC]

Determine the impacts and interacting stressors on ecological systems, economies, and communities.

2013

- Assess the role of coastal habitat carbon storage and sequestration for incorporation into habitat protection, restoration, management, and adaptation efforts. [DOI, NOAA] [REPR]
- Develop methods and models to improve the assessment of carbon sequestration capacities for different coastal wetland types (e.g., mangroves and sea grasses). [DOI (USGS)] [REPR]

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- Identify coastal wetland demonstration sites appropriate for carbon sequestration and emission research, with emphasis on sites already identified for the purposes of long-term ecological research. [DOI (USGS), USDA, EPA, NSF, NOAA, USACE] [REPR]

2014

- Develop and disseminate a suite of regional climate projections for coastal and marine regions of the United States. [USGCRP, NOAA] [CC]
- Develop regional- and local-scale, decision-relevant models and projections for selected areas that assess changes in climate to changes in the physical, chemical, and biological conditions of coastal and marine ecosystems. [NOAA, DOI (USGS)] [CC]

2015

- Develop a protocol for carbon sequestration as an ecosystem service that can be incorporated into existing Federal policies. [DOI (USGS), NOAA, USDA] [REPR]
- Improve analytical and forecast models by incorporating more realistic hydrological characterization of the coastal watershed and of human-use activities. [NOAA, EPA] [Water]

Assess the vulnerability of coastal communities and ocean environments to climate change and ocean acidification and, in partnership with tribes, coastal communities, and states, design and implement adaptation strategies to reduce vulnerabilities.

2013

- Provide guidance on the effective use of regional climate and sea-level rise scenarios, including associated uncertainties. [USGCRP] [CC]
- Initiate a framework for identifying, documenting, and communicating coastal and ocean adaptation strategies and related activities. [USGCRP, NOAA] [CC]
- In support of the work of the Technical Mapping Advisory Council, develop recommendations to ensure that flood insurance rate maps incorporate the best available climate science and provide these to FEMA. [NOC] [CC]
- As part of the U.S. National Climate Assessment, develop national syntheses and assessments of coastal and ocean vulnerability to climate change, ocean acidification, and sea-level change, in cooperation with relevant stakeholders (communities, ecosystem managers, etc.) and tribes. [USGCRP, NOAA] [CC]
- Develop and disseminate methods, best practices, and standards for assessing the resiliency of natural resources, cultural resources, populations, and infrastructure in a changing climate. [DOI, NOAA, EPA, FEMA, DOT] [CC]

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- Foster and apply ecosystem-based approaches to adaptation, using the adaptive services of natural systems to help reduce vulnerabilities and risks to people and the built environment. [DOI, NOAA] [CC]

2014

- Conduct targeted research and disseminate findings to address valuable information needs related to the direct and indirect impacts of climate change, ocean acidification, and other stressors on:
 - Coastal communities, infrastructure, and economies. [NOAA, NSF, DOT] [CC]; and
 - Key species, habitats, and ecosystems. [NSF, NOAA, DOI, USACE] [CC]
- Develop best practices for climate change and ocean acidification vulnerability assessments for Federally-managed cultural and natural resources, tailored to different ecosystems and landscapes as needed. [NOAA, DOI, DOT, EPA] [CC]
- Integrate ocean, coastal, and Great Lakes climate change and ocean acidification risks, impacts, and vulnerabilities into national and international climate assessments. [USGCRP] [CC]

2015

- Provide guidance to waterfront property owners on environmentally responsible management options for shoreline erosion. [USACE, DOI, EPA, FEMA, NOAA] [CC]
- Develop tools (e.g., climate change models) and water quality protection measures (e.g., BMPs) aimed at assessing and mitigating the impact of future climate change and ocean acidification within existing ocean and coastal programs (e.g., National Wildlife Refuge System, National Park System, National Forests, National Estuarine Research Reserves, National Estuary Program, and State counterpart areas). [DOI, EPA, NOAA, USDA (USFS)] [Water]

2020

- Create and implement an interagency plan for coordinated monitoring of the impacts of climate change and ocean acidification through existing networks using standardized and/or interoperable techniques, databases, and indicators whenever and wherever possible, to maximize integration of information across networks and agencies, leveraging existing protocols where practicable and relevant. [IWG-OA, USGCRP, IOOC, EPA] [CC]

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Recovering and Sustaining Ocean Health

Establish a framework for collaboration and a shared set of goals to promote ecosystem-based management.

2013

- Develop ecosystem-based management (EBM) principles, goals, and performance measures; produce a policy statement; and coordinate adoption by NOC member agencies. [ORM-IPC, OST-IPC] [EBM]
- Complete formal interagency partnership agreements (e.g., Memoranda of Agreement) between NOC agencies regarding coordination and leveraging efforts to achieve EBM. [NOC] [EBM]
- Strengthen existing agency and interagency EBM efforts, focusing on increasing collaboration with experts, practitioners, and stakeholders, efficiency, consistency, and transparency of management efforts across agencies. [ORM-IPC] [EBM]
- Develop guidance for all Federal agencies about how to implement EBM under existing regulatory and legislative authorities, such as the National Environmental Policy Act (NEPA), into agency-specific programs and associated actions (e.g., risk analyses and permit reviews). [ORM-IPC, OST-IPC, NOC Legal Working Group] [EBM]

2016

- Incorporate EBM into Federal agency environmental planning and review processes using a phased approach. [NOC Agencies] [EBM]

Improve coastal and estuarine restoration efforts through better monitoring, coordination, and planning.

2014

- Review, revise, and approve minimum ecological monitoring data standards for coastal and estuarine habitat restoration projects. [NOAA, USACE, DOI, EPA, USDA] [REPR]
- Facilitate removal of trash and marine debris and hazards to navigation caused by marine debris through community-based grants, State coastal managers, and other means. [NOAA, USCG, EPA, DOI] [Water]

2016

- Develop and incorporate adaptation strategies for coastal and ocean species and habitats into future planning and management processes, such as fisheries, protected species, coral reefs, or shellfish aquaculture. [NOAA, DOI, EPA] [CC]

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- Improve analytical and forecast models by developing or enhancing models that simulate contaminant transport, fate, and effects; take a holistic “atmosphere-watershed-coastal ocean” approach and offer scenario-based outcomes of reducing contaminant loading. [NOAA, EPA, DOI (USGS)] [Water]
- Identify principal sources of debris and areas of accumulation in coastal waters, along shorelines, and in marine areas in each region. [NOAA, EPA] [Water]

Improve the Nation’s preparedness for and response to environmental hazards through better forecasts, increased and more integrated monitoring, and strengthened preparedness.

2013

- Develop an interagency coordinating framework to strengthen the institutions, mechanisms, and capacities for systematically enhancing resilience to hazards. [FEMA, USCG, DOT, working with National Science and Technology Council Subcommittee on Disaster Reduction] [CC]

2014

- Establish a Health Early Warning System (i.e., a disease/toxin/pathogen surveillance system) to provide effective procedures for information dissemination and to alert public health officials and managers to protect against emerging threats to human, wildlife, and ecosystem health posed by degraded water quality. [NOAA, EPA, HHS (CDC)] [Water]
- Develop and publish a suite of tools and best practices to assist states and localities in responding to marine debris resulting from natural hazards (e.g., tsunamis, hurricanes, floods). [IMDCC] [Water]
- Develop, working with the seafood industry, new, rapid assessment methods to detect HAB toxins, petrochemicals, industrial and residential chemical contaminants, microbial contamination and spoilage in seafood. [NOAA, HHS (FDA), EPA] [Water]
- Improve infrastructure, including availability of standards and probes, shared-use facilities, monitoring platforms, and training, to develop the expertise necessary for state-of-the-art national capabilities for HAB monitoring and detection and improving accuracy of HAB forecasting. [NOAA, HHS (FDA), DOC (NIST), DOI (USGS)] [Water]
- Provide more reliable models for HAB forecasts and coordinated training for State and local officials to improve regional capabilities for HAB monitoring, assessment, forecasting, and response. [NOAA, HHS (CDC)] [Water]

Protect significant natural and cultural marine and Great Lakes areas and sufficient habitat to ensure maintenance of ecosystem processes.

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2013

- Reactivate and repopulate the Site Evaluation List (SEL) with marine areas that have been identified as nationally significant due to their conservation, recreational, ecological, historical, scientific, cultural, archaeological, educational, or aesthetic qualities. [NOAA] [REPR]
- Identify priority species and their high-value habitats that would benefit most from habitat assessments and conservation actions. [NOAA] [REPR]

2014

- To support long-term sustainability of ocean resources, evaluate cultural resources for additional protection under the National Historic Preservation Act. [DOI, NOAA] [REPR]

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IV. Local Choices

Providing Tools for Regional Action

Identify and implement pilot projects that use an integrated ecosystem-based approach to partnering in the stewardship of ocean and coastal resources.

2013

- Develop criteria for identifying priority geographic areas for pilot implementation of ecosystem-based management, and use those criteria to identify three locations for pilot projects. [ORM-IPC] [EBM]

2016

- Determine what additional data and tools are needed for implementing EBM in the selected pilot project locations, and conduct EBM pilot projects in the identified areas, ensuring that EBM data and tools (e.g., integrated ecosystem assessments) are available for use, data/tool gaps are filled, and data are collected in accordance with ocean.data.gov requirements. [ORM-IPC] [EBM]
- Provide EBM training curricula to meet the needs of Federal, State, tribal, regional, and local ocean, coastal, and Great Lakes resource managers, policymakers, and stakeholders. [USDA, NOAA, USACE, DOI, DOT] [IDIU]

2017

- Provide results of pilot projects, and compile and disseminate initial EBM best practices and case studies to Federal agencies, non-Federal partners, and stakeholders, and refine best practices based on results of pilot projects. [ORM-IPC] [EBM]

Assess the vulnerability of communities and ocean environments to climate change and ocean acidification and support and implement adaptation strategies to promote informed decisions.

2013

- Provide guidance for performing comprehensive, risk-based vulnerability assessments of climate change impacts for voluntary adoption by coastal programs. [EPA, NOAA, DOI] [CC]
- Develop tools and conduct training courses for decision-makers and managers at all levels on how to design and implement vulnerability assessments for coastal and ocean infrastructure, communities, and natural and cultural resources. [NOAA, EPA, FEMA, USACE, DOT]] [CC]

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2014

- Provide accessible, standardized guidance and training for incorporating climate change and ocean acidification information into ecosystem management, restoration, and marine planning activities. [NOAA, DOI, EPA] [CC]
- Collaborate with State, tribal, local, and community efforts on developing climate change and ocean acidification vulnerability assessments. [NOAA, DOI (USGS), EPA] [CC]

2015

- Provide coastal inundation and sea-level change decision-support tools to local, State, tribal, and Federal managers. [NOAA, DOI, USACE] [CC]

Expand and improve discovery of and access to non-classified Federal data and decision-support tools, including ocean and coastal mapping products, to support local, tribal, State, and regional decision-making.

2013

- Continue to build out the national marine planning data portal (ocean.data.gov), and develop and implement a governance strategy for the national information management system that ensures high data quality and standards-based data management for maximum data utility and interoperability. [ocean.data.gov Portal Working Group] [CMSP]
- Develop and complete an assessment of existing and needed decision-support tools, and training to support ocean and coastal decision-makers. [OST-IPC, ORM-IPC] [IDIU]
- Continue to make non-classified agency data, decision-support tools, and visualization capabilities of relevance to marine planning publicly available in machine-readable formats through ocean.data.gov. [NOAA, USCG, DOD, DOI, EPA, DOE, USACE] [CMSP]

Strengthening Regional Partnerships

Support regional priorities and enhance regional partnerships' ability to address issues of regional importance.

2013

- Identify grant and non-monetary opportunities (including tools, resources, and in-kind services) to support the continued development and organization of regional alliances and existing Regional Ocean Partnerships (ROPs), including data collection and analysis needed to advance regional efforts. [NOAA, EPA, DOI, USACE] [CS]

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- In coordination with ROPs, compile best management practices (BMPs) that are broadly applicable for all ROPs (e.g., how to effectively engage stakeholders, develop partnerships, identify priorities, develop regional action plans, and measure success). [NOAA, EPA, DOI, USACE] [CS]
- Identify and prioritize specific opportunities to partner with non-Federal entities, stakeholders, and organizations, including inter-tribal organizations, on National Ocean Policy priorities. [ORM-IPC, OST-IPC] [CS]
- Develop adaptation strategies in consultation with tribes and with tribal and State Historic Preservation Offices that are consistent with State, tribal, and local land use laws and policies to address the impacts of climate change on coastal and ocean cultural resources. [DOI, NOAA, USDA] [CC]

Support engagement of interested tribal authorities and use of tribal information.

2013

- As an initial step, agencies will routinely share results of individual agency engagement with interested tribal authorities in support of tribal involvement in priority-setting and planning for each region. [ORM-IPC] [CMSP]

Supporting Regional Priorities

Support marine planning to advance regionally determined economic, social, environmental, and cultural interests.

2013

- Provide guidance and information to Federal, State, and tribal agency Regional Planning Body co-leads and regional planning body members; make available to stakeholders and the public. [NOC Office] [CMSP]
- Assist regional, State, and tribal partners who want to hold marine planning workshops. [RPB Federal co-leads, NOC Office] [CMSP]
- Federal agencies will participate on and work with Regional Planning Bodies, to determine initial steps needed to support regional planning to advance regional interests. [Federal RPB members] [CMSP]
- Federal agencies in regions that do not establish a Regional Planning Body will collaborate to identify and address priority science, information, and ocean management issues and coordinate with non-Federal partners and stakeholders as appropriate. [Regional Federal agency representatives] [CMSP]

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2016

- Develop and provide decision-support tools and information services to meet the needs of Federal, State, tribal, regional, and local ocean, coastal, and Great Lakes resource managers, policymakers, and stakeholders. [NOAA, DOI, EPA, DOE, DOD] [IDIU]

2017

- Regional Planning Bodies will develop marine plans. [Regional Planning Bodies] [CMSP]

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V. Science and Information

Enhancing Our Understanding of Ocean and Coastal Systems

Advance fundamental scientific knowledge through exploration and research.

2013

- Use *Science for an Ocean Nation: An Update of the Ocean Research Priorities Plan* to inform the prioritization of Federal research activities. [OST-IPC Member Agencies] [IDIU]
- Develop a 5-year strategy for ocean exploration under the Omnibus Public Land Management Act of 2009's ocean exploration provisions. [NOAA] [IDIU]

2014

- Conduct expeditions in poorly known or unknown regions of the ocean and Great Lakes. [NOAA, NASA, NSF] [IDIU]
- Identify and collaborate with an ongoing project to employ public input and use socioeconomic and natural sciences to identify, develop, and apply valuation frameworks for ecosystem services. [IWG-OSS] [IDIU]

Advance technologies to explore and better understand the complexities of land, ocean, atmosphere, ice, biological, and social interactions on a global scale.

2013

- Identify the limitations of existing methodologies for integrating observational data, including coastal and global ocean remote and in situ data, physical and biological data, and ocean observations and socioeconomic data. [NASA, NOAA, NSF, DOI (USGS), DOE] [OMI]

2016

- Identify the limitations of existing methodologies integrating short-term and sustained long-term ocean observational data, and develop initial activities to improve integration. [NASA, NOAA, NSF] [OMI]

2017

- Implement the design of the National Water Quality Monitoring Network for U.S. coastal waters and their tributaries through the National Water Quality Monitoring Council.[DOI, EPA, NOAA, USDA] [Water]

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- Implement data and modeling techniques to support a global mapping capability for temporal changes. [NASA, DOI (USGS)] [OMI]

Increase ocean and coastal literacy.

2013

- Incorporate, in collaboration with the Department of Education, ocean and coastal criteria into the Green Ribbon Schools initiative. [CEQ] [IDIU]
- Develop social media capabilities to promote ocean and coastal stewardship. [NOAA, DOI, EPA, CEQ] [IDIU]
- Develop and initiate an outreach and education program to inform stakeholders, Federal managers, scientists, and the public of the benefits, principles, best practices, and available decision-support tools of ecosystem-based management. [NOAA, DOI] [EBM]

2014

- Develop content to deliver the latest ocean science to the public, aquariums, museums, science centers, and National Parks, including working through coordinated exhibit networks such as the Coastal Ecosystem Learning Center network. [NOAA, NASA] [IDIU]

2017

- Enhance incorporation of native and traditional observations and knowledge, along with information on native peoples and their cultural traditions, into ocean education materials. [NSF, DOI] [IDIU]
- Engage students in ocean sciences by supporting the National Ocean Sciences Bowl and other competitions. [NOAA, NSF, NASA, DOI, SI, EPA, USACE, DOT; DOD] [IDIU]
- Execute infrastructure and demonstration projects that deliver ocean observing data for formal and informal education, including ocean technology programs for post-secondary education. [NOAA, NSF, NASA] [IDIU]

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Strengthening Our Ability to Acquire Marine Data and Provide Information

Assess the status of the Federal Oceanographic Fleet to inform future planning and to ensure a more efficient interagency approach to managing the Fleet.

2013

- Identify at-sea survey (oceanographic and living marine resource) and research mission requirements to support national science and data needs. [IWG-FI] [OMI]
- Update the Federal Oceanographic Fleet Status Report. [IWG-FI] [OMI]
- Complete analysis and selection of Fleet utilization performance measurements and an evaluation of a prototype Fleet schedule portal. [IWG-FI] [OMI]
- Assess the capabilities for oceanographic ships to support multi-mission agency activities in the Arctic. [IWG-FI] [OMI]

Advance and sustain ocean, coastal, and Great Lakes observing system infrastructure to support a variety of users.

2013

- Complete a detailed inventory of non-fleet operational ocean observation assets for the 11 Integrated Ocean Observing System (IOOS®) Regions and develop/release build-out plans within available resources. [NOAA] [OMI]
- Within existing statutory authorities, create a program for the notification, collection, and organization of Federal and non-Federal ocean observing systems that will reduce redundancies in collection, provide a central database for public information and connect to privately held information, and assist in prioritizing areas in need of additional collection. [IOOC Member Agencies] [OMI]

2014

- Develop a strategic plan for how IOOS® can best address the need for operational biological observations, in the context of what is currently being done or planned. [NOAA] [OMI]

2015

- Construct and deploy the Ocean Observatories Initiative as a long-term platform for testing and developing innovative ocean sensors and communication standards. [NSF] [OMI]

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- Develop a national sub-surface ocean observation and monitoring plan that will address use of new autonomous underwater vehicle technologies and sustained monitoring and operational observations in the water column to support decision-making. [IOOC] [OMI]

Develop an integrated ocean and coastal data and information management system to support real-time observations.

2013

- Identify the existing data services and systems, as well as the requirements to support integrated discovery and access through an information management system and integrative functions required for the management system. [IOOC Member Agencies] [OMI]
- Adopt recommended best practices and standards (such as the Coastal and Marine Ecological Classification Standard) to ensure consistent terminology for coastal and marine ecological features when describing and delivering ocean and coastal mapping data and derived products. [IWG-OCM] [OMI]

2016

- Implement a fully coordinated, nationally integrated system for ocean and coastal data that includes international partners under the Global Earth Observation System of Systems framework and supports the Global Climate Observing System Implementation Plan. [IOOC Member Agencies, USGCRP] [OMI]
- Begin implementing well-accepted international standards for data transmission formats, metadata, and version control via the Global Telecommunications System (GTS), as well as best practices for observing and data quality. [NOAA, USACE] [OMI]

2020

- Extend the current data standards within the biological domain to allow for increased interoperability between marine biological data and physical and social data within an ocean observation context. [NOAA, DOI, NSF, USDA, EPA, NASA, DOC] [OMI]

Implement a distributed biological observatory in the Arctic to monitor changes and improve our understanding of their socioeconomic and ecosystem impacts.

2014

- Conduct multi-year distributed biological observatory (DBO) research cruises with Federal, State, and international partners to document change in distribution, abundance, biomass, species composition, and rates of primary production at two of five stations along the DBO latitudinal gradient. [NOAA, NSF] [Arctic]

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2015

- Based on the pilot phase analysis, execute DBO plans and prepare annual assessments on physical and ecological state of Pacific Arctic marine environment. [NOAA, DOI (USFWS)] [Arctic]

Improving Science-based Products and Services for Informed Decision-Making

Improve the science framework to support decision-making.

2013

- Inventory programs and projects that use ecosystem-based management, analyze their successes and shortcomings, and identify and fully describe the key characteristics of effective EBM efforts. [ORM-IPC] [EBM]
- Using ocean.data.gov and other data sources, identify regional information gaps that impede science-based EBM, and develop a plan to fill them. In addition to necessary basic natural and socioeconomic data, this should focus on gaps in synergistic and cumulative ecosystem effects of various human and natural forces. [OST-IPC] [EBM]
- Develop national guidelines and best practices for EBM implementation in collaboration with non-Federal partners and stakeholders. [ORM-IPC, OST-IPC] [EBM]
- Engage partners and stakeholders and establish a process for EBM, including monitoring. [ORM-IPC, OST-IPC] [EBM]
- Phase EBM principles and goals into the Federal programs for the restoration of ocean, coastal, and Great Lakes ecosystems, to the extent practicable. [NOAA, DOI] [EBM]
- Coordinate a review of recent and ongoing social indicator efforts that characterize human interactions with the ocean, our coasts, and Great Lakes, with synthesis and recommendations for application to inform long-term trend analyses and integrated ecosystem assessments for coastal communities. [NOAA, IWG-OSS] [IDIU]

2014

- Coordinate a review of recent and ongoing efforts related to social science data collection and analysis methods and best practices, with synthesis and recommendations for application to inform ocean, coastal, and Great Lakes decision-making. [IWG-OSS] [IDIU]

Provide the high-quality data and tools necessary to support science-based decision-making and ecosystem-based management.

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2013

- Develop introductory and advanced training materials for Federal managers and scientists to obtain a common understanding of ecosystem-based management principles, best practices, and latest decision-support tools. [ORM-IPC; OST-IPC] [EBM]
- Provide formal training on EBM principles, best practices, and latest decision-support tools to Federal managers and scientists. [NOAA, EPA, DOI, USDA, DOT] [EBM]

2016

- To facilitate improved science-based decision-making and EBM, deliver an information portal for agencies and stakeholders to access decision-support tools and share the results of and lessons learned from EBM pilot projects. [DOI, NOAA] [IDIU]

Develop and share decision-support tools to identify coastal land protection and restoration priorities.

2013

- Develop an interagency plan for topographic [primarily Light Detection and Ranging (LiDAR) or equivalent accuracy] and shallow bathymetric mapping to ensure comprehensive and accurate elevation information for coastlines. [IWG-OCM, DOI (USGS), NOAA, USACE] [CC]
- Institute collaborative partnership(s) (e.g., State, tribal, local, private, academic) within the Chesapeake Bay to augment an initial system prototype that will provide watershed-wide decision-support tools to promote strategic coastal land conservation, restoration planning, and decision-making. [DOI (USGS, NPS)] [REPR]
- Complete the initial build-out of the Chesapeake System and initiate its use for collaborative conservation efforts, including development of data standards. [DOI (USGS, NPS)] [REPR]

2014

- Make the Chesapeake System infrastructure available for other regional initiatives. [DOI (USGS, NPS)] [REPR]

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List of Acronyms

ANSTF	Aquatic Nuisance Species Task Force
ARRT	Alaska Regional Response Team
ARS	Agricultural Research Service
BMP	Best Management Practice
BOEM	Bureau of Ocean Energy Management
BSEE	Bureau of Safety and Environmental Enforcement
CDC	Centers for Disease Control
CEQ	Council on Environmental Quality
DBO	Distributed Biological Observatory
DHS	Department of Homeland Security
DOC	Department of Commerce
DOD	Department of Defense
DOE	Department of Energy
DOI	Department of the Interior
DOJ	Department of Justice
DOL	Department of Labor
DOS	Department of State
DOT	Department of Transportation
EBM	Ecosystem Based Management
EEZ	Exclusive Economic Zone
EFH	Essential Fish Habitat
EPA	Environmental Protection Agency
ERMA	Emergency Response Management Application
ESI	Environmental Sensitivity Index
FDA	Food and Drug Administration
FERC	Federal Energy Regulatory Commission
GDP	Gross Domestic Product
GIS	Geographic Information Systems
GTS	Global Telecommunications System
HAB	Harmful Algal Bloom
HAPC	Habitat Areas of Particular Concern
HEW	Health Early Warning
HHS	Department of Health and Human Services

NATIONAL OCEAN POLICY IMPLEMENTATION PLAN APPENDIX

IMDCC	Interagency Marine Debris Coordinating Committee
IMO	International Maritime Organization
IOC	Intergovernmental Oceanographic Commission
IOOC	Interagency Ocean Observation Committee
IOOS	Integrated Ocean Observing System
IWG-FI	Interagency Working Group on Facilities and Infrastructure
IWG-OCM	Interagency Committee on Ocean and Coastal Mapping
IWG-OE	Interagency Working Group on Ocean Education
IWG-OSS	Interagency Working Group on Ocean Social Science
LiDAR	Light Detection and Ranging
NASA	National Aeronautics and Space Administration
NEPA	National Environmental Policy Act
NFHP	National Fish Habitat Partnership
NIFA	National Institute of Food and Agriculture
NIH	National Institutes of Health
NISC	National Invasive Species Council
NIST	National Institute of Standards and Technology
NOAA	National Oceanic and Atmospheric Administration
NOC	National Ocean Council
NPS	National Park Service
NSF	National Science Foundation
ORM-IPC	Ocean Resource Management Interagency Policy Committee
OST-IPC	Ocean Science and Technology Interagency Policy Committee
PARS	Port Access Route Study
PORTS	Physical Oceanographic Real-Time System
ROP	Regional Ocean Partnership
SEL	Site Evaluation List
USACE	U.S. Army Corps of Engineers
USCG	U.S. Coast Guard
USCRTF	U.S. Coral Reef Task Force
USDA	U.S. Department of Agriculture
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
USGCRP	U.S. Global Change Research Program
USGS	U.S. Geological Survey
WAMS	Waterway Analysis and Management System