

FEDERAL OCEAN AND COASTAL ACTIVITIES REPORT TO THE U.S. CONGRESS

For Calendar Years 2008 and 2009

Report Prepared by
The White House Council on Environmental Quality
and
The White House Office of Science
And Technology Policy



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INTRODUCTION

The Oceans Act of 2000 requires that a report of Federal ocean and coastal activities be submitted to Congress every two years. This report provides an overview of Federal programs related to ocean, coastal, and Great Lakes activities for Calendar Years 2008 and 2009. The report also highlights the President's FY 2011 Budget Request for approximately \$12.2 billion in Federal funding for ocean, coastal, and Great Lakes programs.

The ocean, our coasts, and the Great Lakes deeply impact the lives of all Americans, whether we live and work in the country's heartland or along its shores. America's rich and productive coastal regions and waters support tens of millions of jobs and contribute trillions of dollars to the national economy each year. They also host a growing number of important activities, including recreation, science, commerce, transportation, energy development, and national security and they provide a wealth of natural resources and ecological benefits. Despite the critical importance of these areas to our health and well-being, the ocean, coasts and Great Lakes face a wide range of threats from human activities.

In June 2009, President Obama created the Interagency Ocean Policy Task Force (Task Force), led by the Chair of the Council on Environmental Quality (CEQ) and comprising 25 senior-level policy officials from across the Federal government. The Task Force was charged with developing recommendations to enhance our ability to maintain healthy, resilient, and sustainable ocean, coasts, and Great Lakes resources for the benefit of present and future generations. The Final Recommendations provide for an implementation strategy which recommends a clear set of priority objectives that

our Nation should pursue to further a comprehensive and integrated National Ocean Policy. On July 19, 2010, the President issued Executive Order (E.O.) 13547, *Stewardship of the Ocean, Our Coasts, and the Great Lakes*, which adopted those Final Recommendations and directed Federal agencies to implement them under the guidance of a new National Ocean Council. This report for Calendar Years 2008 and 2009 organizes information to highlight examples of department and agency activities that align with these national priority objectives. The appendix details budgetary information through the President's FY 2011 Request reflecting Federal investment in ocean, coastal, and Great Lakes efforts.

Highlighting Efforts in Support of the National Policy

The nine national priority objectives of the Final Recommendations comprise the focus of the implementation strategy for the National Policy. CEQ, Office of Science and Technology Policy (OSTP), and the Office of Management and Budget (OMB) worked with departments and agencies to identify and provide information on recent activities, highlighting efforts that contribute toward these objectives.

Acknowledging that many of these agency efforts predate E.O. 13547, these highlights are presented as examples to demonstrate alignment with the new National Ocean Policy and the nine priority objectives. The next section outlines and defines the scope of the nine national priority objectives.

National Priority Objectives of the New National Ocean Policy

The implementation strategy of the National Ocean Policy recommends nine priority objectives. The first four, which together frame *How We Do Business*, represent overarching ways in which the Federal Government must operate differently or better to improve stewardship of the ocean, our coasts, and the Great Lakes. The implementation strategy also identifies five *Areas of Special Emphasis*, each of which seek to address some of the most pressing challenges facing the ocean, our coasts, and the Great Lakes.

How we do Business

These objectives represent overarching ways in which the Federal government must operate differently to improve stewardship of the ocean, coasts, and the Great Lakes.

1. **Ecosystem-Based Management:** Adopt ecosystem-based management as a foundational principle for the comprehensive management of the ocean, our coasts, and the Great Lakes.
2. **Coastal and Marine Spatial Planning:** Implement comprehensive, integrated, ecosystem-based coastal and marine spatial planning (CMSP) and management in the United States.
3. **Inform Decisions and Improve Understanding:** Increase knowledge to continually inform and improve management and policy decisions and the capacity to respond to change and challenges. Better educate the public through formal and informal programs about the ocean, our coasts, and the Great Lakes.
4. **Coordinate and Support:** Better coordinate and support Federal, State, tribal, local, and

regional management of the ocean, our coasts, and the Great Lakes. Improve coordination and integration across the Federal Government, and as appropriate, engage with the international community.

Areas of Special Emphasis

These objectives identify priority issue areas to address the most pressing challenges facing the oceans, coasts and Great Lakes.

1. **Resiliency and Adaptation to Climate Change and Ocean Acidification:** Strengthen resiliency of coastal communities and marine and Great Lakes environments and their abilities to adapt to climate change impacts and ocean acidification.
2. **Regional Ecosystem Protection and Restoration:** Establish and implement an integrated ecosystem protection and restoration strategy that is science-based and aligns conservation and restoration goals at the Federal, State, tribal, local, and regional levels.
3. **Water Quality and Sustainable Practices on Land:** Enhance water quality in the ocean, along our coasts, and in the Great Lakes by promoting and implementing sustainable practices on land.
4. **Changing Conditions in the Arctic:** Address environmental stewardship needs in the Arctic Ocean and adjacent coastal areas in the face of climate-induced and other environmental changes.
5. **Ocean, Coastal, and Great Lakes Observations, Mapping, and Infrastructure:** Strengthen and integrate Federal and non-Federal ocean observing systems, mapping, sensors, and data collection platforms into a national system and integrate that system into international observation efforts.

Agency Budget Information

Budgetary data from all agencies involved in ocean and coastal activities are collected in the Appendix, with information provided for the Fiscal Year (FY) 2008 and FY 2009 actual obligations (including the American Reinvestment and Recovery Act), FY 2010 enacted level, and the President's FY 2011 Budget Request. For consistency, the agency budget information as presented in the Appendix is divided into the same four themes as previous reports. These thematic areas are:¹

- Enhancing the Use, Conservation and Management of Ocean, Coastal, and Great Lakes Resources,
- Advancing Our Understanding of Oceans, Coasts, and Great Lakes,
- Supporting Maritime Transportation, and
- Advancing International Ocean Science and Policy.

Looking Ahead

As implementation begins on the new National Policy, departments and agencies have begun to align existing activities with the national priority objectives, outlined in the Final Recommendations. This report will help inform the work of the National Ocean Council as it moves forward with the development of strategic action plans for these objectives.

¹ *Detailed explanations of these thematic areas can be found in the 2007 FOCAR.*

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FEDERAL FUNDING SUMMARY

The President's FY 2011 Request outlines approximately \$12.2 billion in funding for Federal ocean, coastal, and Great Lakes programs (see Tables 1 and 2). Funding for oceans activities is based on subjective determinations regarding the amount of funding in various programs that are dedicated to each of the thematic areas of (1) Enhancing the use, conservation and management of ocean, coastal, and Great Lakes resources, (2) Supporting

maritime transportation, (3) Advancing our understanding of oceans, coasts, and Great Lakes, and (4) Advancing international ocean science policy. These data are intended to provide a general understanding of the investments the Federal government is making in related activities. Funding for future fiscal years will be determined through the Administration's annual budget process.

Table 1: Summary of Funding by Agency
(Dollars in Millions)

Agency	FY 2008 Actual Obligations	FY 2009 Regular Appropriations Actual Obligations	FY 2009 Recovery Act Actual Obligations	FY 2010 Enacted	FY 2011 Budget
Department of Agriculture	368	419	0	484	489
Department of Commerce	2,255	2,346	449	2,485	2,519
Department of Defense	389	438	0	515	617
Army Corps of Engineers	1,193	1,168	890	1,142	1,079
Department of Energy	56	81	7	81	86
Environmental Protection Agency	871	779	2,240	2,064	1,829
Department of Health and Human Services	12	11	0	17	14
Department of Homeland Security	4,388	3,567	0	3,373	3,323
Department of the Interior	709	796	33	1,051	909
Marine Mammal Commission	3	3	0	3	3
National Aeronautics and Space Administration	105	83	9	76	72
National Science Foundation	417	439	407	433	587
Smithsonian Institution	1	1	0	1	1
Department of State and USAID	95	83	0	118	79
Department of Transportation	533	526	100	555	545
Department of Treasury	10	10	0	10	17
Total	11,402	10,750	4,134	12,408	12,168

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Table 2: Summary of Funding in the President's FY 2011 Request by Theme

(Dollars in Millions)

Agency	Enhance the use, conservation, and management of ocean coastal and Great Lakes resources	Supporting maritime transportation	Advancing our understanding of oceans, coasts, and Great Lakes	Advancing International Ocean Science and Policy	Other, not elsewhere classified	Total
Department of Agriculture	477	0	8	0	4	489
Department of Commerce	1,357	279	660	89	134	2,519
Department of Defense	21	0	2	0	594	617
Army Corps of Engineers	901	133	46	0	0	1,079
Department of Energy	69	0	17	0	0	86
Environmental Protection Agency	1,754	15	50	10	0	1,829
Department of Health and Human Services	1	0	10	4	0	14
Department of Homeland Security	1963	1348	11	2	0	3,323
Department of the Interior	763	1	133	8	3	909
Marine Mammal Commission	2	0	1	0	0	3
National Aeronautics and Space Administration	0	0	72	0	0	72
National Science Foundation	2	0	556	30	0	587
Smithsonian Institution	0	0	1	0	0	1
Department of State and USAID	44	0	10	25	0	79
Department of Transportation	14	530	0	0	0	545
Department of Treasury	0	0	0	0	17	17
Total	7,279	2,306	1,577	167	753	12,168

FEDERAL AGENCY HIGHLIGHTS

Listed below are examples of Federal agency activities that correspond to the new National Ocean Policy's nine priority objectives. It is important to note that this list is not exhaustive in that it only represents a portion of those activities that most closely align with each national objective, and reflect activities that predate E.O. 13547.

HOW WE DO BUSINESS

Ecosystem-Based Management (EBM)

National Oceanic and Atmospheric Administration (NOAA): NOAA is advancing ecosystem-based management by expediting the creation of Integrated Ecosystem Assessments (IEA) for large marine ecosystems. IEAs bring scientific and technological rigor to resource management decisions by incorporating diverse sources of data, including socio-economic data, into ecosystem models that evaluate trade-offs between ecosystem and societal goals. The multi-line office initiative leverages existing data and expertise to provide a more comprehensive science-based decision-making framework for NOAA's management of coastal and marine ecosystem resources, with the potential to inform Coastal and Marine Spatial Planning (CMSP).

U.S. Agency for International Development (USAID): USAID programs demonstrate that ecosystem-based approaches, improved governance, and participatory management can improve fisheries productivity, promote ocean stewardship, and increase food security. One example is the *Fisheries Improved for Sustainable Harvest (FISH)* program in the Philippines. The target of the program was to increase fish populations in four large sub-regions by ten percent over five-years. In

Danahon Bank, FISH has demonstrated that well-managed fisheries can increase productivity three-fold, and that fish catch decline can be arrested and reversed over a period of time if destructive and illegal fishing is reduced, fishing capacity is managed and local fisheries governance is strengthened. Management initiatives included gear restrictions; species specific management; establishment of marine protected areas (MPAs) and MPA networks; coordinated and consistent law enforcement; stakeholder education and engagement; registration, licensing, and zoning of fishing; and water use activities. From 2004 to 2008, there was a 76% increase of the total harvest with a corresponding 73% increase in the value of fish. Likewise, catch per fisher showed an increase from 2.6 kg per fisher per day in 2004, to 6.06 kg per fisher in 2008.

Army Corps of Engineers (Corps): As part of its Regional Sediment Management (RSM) activities, the Corps has launched and supported a number of initiatives to advance regional sediment management approaches through partnerships with other Federal agencies, State, and local governments. One such initiative includes the New York-New Jersey Harbor Estuary Program RSM Plan. Working with the Harbor Estuary Program, the Corps is participating with the Environmental Protection Agency, ports, and other partners in developing a proactive, long-term, regional management perspective that spans state lines. The goal is to integrate stakeholder involvement in sediment management in the upper watershed to improve the management of sediments and contaminants, and reduce dredging needs and impacts. The RSM plan acknowledges sediment management in the Harbor Estuary as a regional issue that can only be successfully implemented as a joint effort

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between Federal, State, and local entities and the public. The Estuary Program has helped improve public understanding of the interconnection of the streams in the upper parts of the watershed to effective management of sediment in the estuary.

Coastal and Marine Spatial Planning

U.S. Geological Survey (USGS) and Bureau of Ocean Energy Management, Regulation, and Enforcement (BOEMRE): In order to promote discussion of CMSP within the Department of the Interior (DOI) as a preparatory step toward subsequent national and regional engagement, USGS and BOEMRE are convening a CMSP workshop to share these ideas and promote collective understanding of science needs. The two-day workshop, to be held December 1-2, 2010 in the San Francisco Bay Area, will convene representatives from DOI offices and other groups actively engaged in CMSP.

National Oceanic and Atmospheric Administration (NOAA): NOAA has initiated several key efforts in support of CMSP focused on three primary areas:

- Strengthening CMSP science, data integration, and technology capacity;
- Establishing an integrated NOAA-wide program focused on ecosystem-based coastal and marine spatial planning; and
- Providing leadership and support for regional CMS planning and implementation.

Building upon NOAA's broad science and technical expertise and ocean management authorities, NOAA has begun to strengthen internal capacity and engage external partners to use existing data and fill key gaps in developing CMS plans. Efforts also focus on using existing visualization and decision-support tools that provide information key to decision-making such as Digital Coast and the Multipurpose Marine Cadastre (a joint program with BOEMRE).

Through establishing a NOAA-wide CMSP program, the Agency has taken a proactive and cohesive approach to planning and executing the diverse actions in the National CMSP Framework. In addition, NOAA has begun to leverage its partnerships and resources toward enhancing regional planning and implementation efforts through active engagement with coastal states and regional ocean partnerships.

Inform Decisions and Improve Understanding

Office of Insular Affairs (OIA): OIA partnered with the Joint Institute for Caribbean Marine Sciences (a consortium of four universities), the National Park Service, and the Government of the Virgin Islands to build a world-class marine research and education center (MREC) on St. Croix. The MREC will be built to Platinum LEED standards and draw students and researchers from around the world to study coral reef and coastal ecosystems in a sustainable environment. In addition to K-12, undergraduate and graduate courses, the MREC will provide NPS Caribbean park units with invaluable support for research and monitoring critical of coastal and ocean resources within and surrounding the parks. The International Institute for Sustainable Laboratories has chosen the MREC for its 2010-2011 International Sustainable Laboratory Student Design Competition.

NOAA: NOAA's National Marine Fisheries Service (NMFS) implemented new measures in FY 2009 to protect highly endangered North Atlantic right whales. Due to the North Atlantic Right Whales' slow-moving nature and migration patterns through East coast shipping lanes, ship strikes have become their primary threat. NMFS implemented a requirement for large ships to reduce speeds in areas where the whales feed and reproduce. In addition, using an innovative approach to integrate biological data and ship

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traffic patterns around the Stellwagen Bank National Marine Sanctuary, NOAA, and the U.S. Coast Guard gained approval from the United Nations' International Maritime Organization to shift a major shipping lane into Boston to avoid the highest density of whales in the area. These measures are estimated to reduce the risk of right whale ship strikes by 74% during April to July. The ship strike reduction measures, combined with existing protective actions, including surveying whale migration routes by aircraft and providing advisories and information on right whale locations to mariners, form a comprehensive approach to help right whales recover.

Coordinate and Support

Department of Transportation (DOT): DOT, through its operating administrations the Saint Lawrence Seaway Development Corporation (SLSDC), and the Maritime Administration (MARAD) plays an important role in bringing the maritime transportation industry and Federal and State agencies together in an effort to harmonize oceans and transportation policies.

SLSDC, a wholly owned government corporation within the DOT, is responsible for the operations and maintenance of the U.S. portion of the St. Lawrence Seaway. SLSDC initiated the Great Lakes Ballast Water Collaborative (the Collaborative), in conjunction with the International Joint Commission, in the fall of 2009 to bring together industry, State and Federal regulators on the issue of ballast water and invasive species. One of the primary goals of the Collaborative is to share relevant, useful, and accurate information and foster better communication and collaboration among the key stakeholders engaged in the effort to reduce the risk of introduction and spread of aquatic nuisance species. A particular emphasis of the Collaborative has been to bring State

representatives together with marine industry representatives and respected scientists to find workable and effective solutions to the aquatic invasive species challenge as they relate to the Great Lakes St. Lawrence Seaway System. A February 2010 report prepared by the Great Lakes Seaway Ballast Water Working Group found that during the 2009 navigation season, 100 percent of vessels bound for the Great Lakes Seaway received a ballast tank exam. The Working Group is comprised of representatives of the SLSDC, the Canadian Saint Lawrence Seaway Management Corporation, the USCG, and Transport Canada.

MARAD, whose mission includes support for the U.S. maritime industry has, for example, provided significant Federal funds and expertise to several independent facilities to evaluate various promising ballast water treatment technologies. These independent facilities include: the Maritime Environmental Resource Center in Baltimore (associated with the University of Maryland); the Great Ships Initiative Facility in Superior, Wisconsin; and the California Maritime Academy in Vallejo, California. MARAD coordinates its efforts with its Federal partners including NOAA, USCG, and EPA, state agencies, such as the Port of Baltimore and several Great Lakes ports, and the Great Lakes Maritime Research Institute. MARAD is engaged in similar efforts with regard to other port and vessel discharges including air emissions.

National Institutes of Health (NIH): The NIH includes 27 separate health institutes and centers, one of which is the National Institute of Environmental Health Sciences (NIEHS). The National Science Foundation (NSF) and NIEHS collaboratively launched and currently support the Centers for Oceans and Human Health (OHH). These Centers have established a new paradigm for linking the health and rich resources

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of the Earth's oceans with the health outcomes of the Earth's population. By harnessing the various talents, disciplines, and expertise of scientists supported by the collaborating agencies; combining the tools of genomics, proteomics, and metabolomics with chemical oceanography; and stimulating inter-center cooperation and coordination, this program offers tremendous promise for developing more comprehensive linkages between oceans and human health. Supported by the chemical and biological science resources of NIEHS and NSF, the Centers also demonstrate the capacity of Federal research agencies to collaborate and leverage resources to foster high-quality interdisciplinary research. The following three research areas are considered high priority for this program: combating the spread of harmful algal blooms, studying marine organisms for sources of new drugs, and reducing morbidity due to water and vector-borne disease.

USAID: USAID is a major supporter of the new *Coral Triangle Initiative*, a multi-national initiative to safeguard the region's natural assets. The Coral Triangle is a geographic area encompassing almost 6 million square kilometers of ocean and coastal waters in Southeast Asia and the Western Pacific. The Coral Triangle is within the territories of Indonesia, Malaysia, Papua New Guinea, the Philippines, Timor Leste, and the Solomon Islands. Recognized as the global center of marine biological diversity, the region is home to some 363 million people, one-third of whom are directly dependent on coastal and marine resources for their livelihoods. The marine and coastal natural resources of the Coral Triangle – and the many goods and services they provide – are at immediate risk from a range of factors, including: over-fishing, unsustainable fishing, land-based sources of pollution and climate change. These factors adversely impact food security, employment opportunities, and standards of living for people dependent on fish and other marine resources for their livelihoods.

In August 2007, President Yudhoyono of Indonesia proposed the creation of the Coral Triangle Initiative to safeguard the region's extraordinary marine and coastal biological resources. The six heads of State signed a joint Plan of Action at the CTI Leaders' Summit during the World Oceans Conference in Manado, Indonesia in May 2009. Recognizing the potential of the CTI to be a truly transformative regional initiative with far-reaching environmental and economic benefits, the United States has offered considerable financial, political, and technical support through both bilateral and multilateral channels. A U.S. coordinated response involves USAID, DOS, DOJ, and NOAA, along with non-governmental groups and U.S. universities.

AREAS OF SPECIAL EMPHASIS

Resiliency and Adaptation to Climate Change and Ocean Acidification

USAID: To ensure effective donor assistance to less developed countries in the face of climate change, in 2009 USAID developed a programming guide called *Adapting to Coastal Climate Change – A Guidebook for Development Planners* for staff and partners on mainstreaming climate change adaptation into development assistance activities. The objective of the guide, and complementary training for staff and partners, is to assist developing countries with adaptation to climate change and safeguard U.S. investments. USAID has also partnered with NOAA and other organizations to deliver five workshops on coastal climate change adaptation, with more investment in this work planned for the coming several years.

Federal Emergency Management Agency (FEMA): In FY 2010, FEMA will use \$51.0 million to initiate updated coastal flood hazard studies in those areas determined to be in most

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need. This investment will fund hazard data updates for 15% of the Nation's populated coastline, representing approximately 3,000 miles of open coast. Future coastal hazard analyses and mapping needs will be selected based on risk, community and State cost share, and cost efficiencies using a consistent hazard study approach.

National Park Service (NPS): In 74 parks spanning 25 coastal states and U.S. territories, the NPS manages over 6,000 miles of beaches, coral reefs, kelp forests, seagrass beds, wetlands, historic shipwrecks and forts, and a diverse array of marine aquatic wildlife and fisheries. Coastal hazards are likely to increase due to higher sea temperatures which fuel storms of increasing intensity, coupled with projected sea-level rise. The NPS, U.S. Geological Survey, and universities are collaborating to provide Storm Vulnerability Assessments to inform long-term resource management plans, park facilities planning such as relocating buildings or roads; and assessing long-term threats to resources. These assessments include geologic maps for estimating storm surge and inundation impacts from storms of varying intensity, and estimates of shoreline change and potential vulnerability to sea-level rise or lake-level change. In 2009, an assessment report for George Washington Birthplace National Monument was published, and in 2010 reports for Pu'ukohola Heiau National Historic Site and Kaloko-Honokohau National Historic Park will be published. NPS has also developed a pilot Storm Recovery Plan for Cape Lookout National Seashore to guide post-storm response in coastal parks.

NOAA: The Federal Ocean Acidification Research and Monitoring (FOARAM) Act of 2009 mandates that NOAA have an active monitoring and research program to determine potential impacts of decreased ocean pH and carbonate saturation states, which are the direct

result of rising atmospheric CO₂ concentrations. In response to this mandate, NOAA is in the process of creating an Ocean Acidification Program office, and in July 2010, released the NOAA Ocean and Great Lakes Acidification Research Plan, which presents a research strategy for NOAA to advance the understanding of the impacts of ocean acidification and to address related challenges to local and national ecosystems and communities. Additionally, scientists at the OAR's Pacific Marine Environmental Laboratory (PMEL) are leaders in working to understand the impacts of ocean acidification. In a 2008 field study along the west coast of North America between Canada and Mexico, the PMEL team along with a large number of international collaborators found, for the first time, corrosive water caused by the ocean's absorption of carbon dioxide (CO₂) on the continental shelf of western North America.

Regional Ecosystem Protection and Restoration

Environmental Protection Agency (EPA) Office of Water: To accelerate restoration of the Great Lakes, EPA's FY 2010 appropriation included a new \$475 million inter-agency initiative to address issues that affect the Great Lakes, such as invasive species, non-point source pollution, toxics, and contaminated sediment. The FY 2011 President's budget for the Great Lakes Restoration Initiative (GLRI) is \$300 million to carry on this work as described in the Great Lakes Restoration Initiative Action Plan. The GLRI uses outcome-oriented performance goals and measures to target the most significant problems and track progress in addressing them. Under the Initiative, EPA's Great Lakes National Program Office will continue cooperation with Federal, State, tribal, and international agencies to carry out the responsibilities of the United States under the U.S./Canadian Great Lakes Water Quality Agreement to protect, maintain, and restore the chemical, biological, and physical

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integrity of the Great Lakes. Funds will be used to strategically implement both Federal projects and prioritize competitive grants for areas other than water infrastructure programs that are addressed under base programs. Funding will be increased for grants to States, tribes, local governments and others to implement Lakewide Management Plans and Remedial Action Plans. Competitive grants issued through Federal programs will restore watershed habitats; remove fish passage barriers, stabilize stream banks, protect and restore aquatic habitats, and restore threatened, endangered, and rare species. To prevent and control invasive species, EPA and its partners will develop better ballast water treatment and establish new grant and implementation programs.

Bureau of Ocean Energy Management, Regulation and Enforcement (BOEMRE): Under the Coastal Impact Assistance Program (CIAP), BOEMRE is authorized to distribute funds to States and coastal political subdivisions (CPSs) for projects and activities for the conservation, protection, or restoration of coastal areas. One recent project approved under the CIAP is the Mandeville Aquatic Ecosystem Restoration project, which is located in Mandeville, Louisiana. The project was awarded \$3.7 million in the spring of 2009 to update their unique biological wastewater treatment system, resulting in an increased growth of vegetation. This increased vegetation growth has provided refuge to waterfowl and other animals, impeded saltwater intrusion, and further reduced coastal erosion. The process of wetland assimilation involves discharging nitrogen enriched treated sewer effluent into marshland.

Water Quality and Sustainable Practices on Land

USDA Natural Resources Conservation Service (NRCS): To improve the health of the Mississippi River Basin, including water quality and wildlife habitat, the USDA Natural Resources Conservation Service is developing the Mississippi River Basin Healthy Watersheds Initiative (MRBI). Through this new Initiative, NRCS and its partners will help producers in selected watersheds in the Mississippi River Basin voluntarily implement conservation practices that avoid, control, and trap nutrient runoff; improve wildlife habitat; and maintain agricultural productivity. These improvements will be accomplished through a conservation systems approach to manage and optimize nitrogen and phosphorous within fields to minimize runoff and reduce downstream nutrient loading. NRCS will provide producers assistance with a system of practices that will control soil erosion, improve soil quality, and provide wildlife habitat while managing runoff and drainage water for improved water quality. The Initiative will build on the past efforts of producers, NRCS, partners, and other State and Federal agencies in the 12-State Initiative area to address nutrient loading in the Mississippi River Basin. Nutrient loading contributes to both local water quality problems and the hypoxic zone in the Gulf of Mexico. The 12 participating States are Arkansas, Kentucky, Illinois, Indiana, Iowa, Louisiana, Minnesota, Mississippi, Missouri, Ohio, Tennessee, and Wisconsin. NRCS will offer this Initiative in FY 2010 through 2013, dedicating at least \$80 million in each fiscal year. This is in addition to funding by other Federal agencies, States, and partners and the contributions of producers. The \$80 million will be in addition to regular NRCS program funding in the 12 Initiative States.

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U.S. Geological Survey (USGS): Through its hydrologic monitoring, assessments, and research programs, USGS monitors approximately 600 streamgages located within the U.S. tidal zone. These streamgages provide basic water quality data needed to characterize water conditions and constituent loads into coastal waters. USGS conducts interpretive studies linking land use and use of pharmaceuticals, pesticides, fertilizers, and industrial byproducts and municipal wastes to the resulting quality of water entering receiving streams and coastal waters. Under its Cooperative Water Program, USGS partners with non-Federal agencies in the operation of an additional 7,500 USGS streamgages around the nation that report the flow of water into the nation's rivers, and ultimately, coastal waters. Data collected by the Cooperative Water Program are incorporated into the National Water Information System that represents data from 21,000 sites, water levels from over one million wells, and chemical data from rivers, streams, lakes, springs, and ground water at 338,000 sites.

Changing Conditions in the Arctic

National Science Foundation (NSF): NSF is supporting construction of the Research Vessel (R/V) Sikuliaq formerly the Alaska Region Research Vessel. The R/V Sikuliaq is a 242-foot research ship specifically designed to operate in seasonal Arctic sea ice and open waters surrounding Alaska. The vessel will support research expeditions to explore timely issues such as sea ice recession, changing ocean currents, Arctic habitats, and ocean acidification.

National Oceanic and Atmospheric Administration (NOAA): In 2009, the National Weather Service (NWS) Alaska Region established a new experimental offshore marine weather service zone that extends out to 200 nautical miles from Alaska's north shore to cover the entire U.S. Exclusive Economic Zone in the

Arctic Ocean. The NWS currently provides operational marine weather and sea ice forecast services for the new offshore marine zone to ensure weather and sea ice safety for the expected increase in maritime commercial and recreational activities in the Arctic.

Department of State (DOS): The DOS takes a lead role in promoting international actions to reduce the impact of short-lived climate forcers (SLCFs include black carbon, methane, tropospheric ozone) on the Arctic. SLCFs exert a powerful warming effect on the Arctic, and accelerate the melting of Arctic sea ice. The U.S. is co-chairing with Norway the Arctic Council's SLCF task force, which is developing recommendations for mitigation policies that the eight Arctic States could take to reduce the warming impact of SLCFs. In addition, the Department of State announced the creation of a \$5 million fund to finance projects with international partners to demonstrate the feasibility of early action to reduce SLCF impacts.

Ocean, Coastal, and Great Lakes Observations, Mapping, and Infrastructure

National Oceanic and Atmospheric Administration (NOAA): NOAA's research ship *Okeanos Explorer* has mapped 2,400 square miles of the Indonesian seafloor as part of a joint Indonesia-U.S. exploration of the deep ocean north of Sulawesi, Indonesia. The *Okeanos Explorer's* built-in multibeam sonar mapped a massive undersea volcano while cameras on the ship's remotely operated vehicle took high-definition images of the feature. Utilizing this new model of exploring the ocean through telepresence, scientists working out of Exploration Command Centers are connected to the *Okeanos Explorer* live via satellite and high-speed internet pathways, and can interact with shipboard personnel to guide the expedition. During the

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Okeanos Explorer sea trials, scientists developed collaborative opportunities to work around the Pacific—gathering bathymetry and habitat data off the coast of California helping to inform sanctuary boundary expansions, collecting hydrographic data leading to updated nautical charts, and exploring the United States Extended Continental Shelf through a partnership with the U.S. State Department.

Bureau of Ocean Energy Management,

Regulation and Enforcement (BOEMRE): As per the Energy Policy Act of 2005 (P.L. 109-58), the BOEMRE and its Federal and non-Federal partners have been pursuing an outer continental shelf (OCS) mapping initiative allowing more direct access to the information and resources necessary to promote and conduct good ocean governance. The rapidly evolving system, the Multipurpose Marine Cadastre (MMC), contains information regarding the location of OCS Federally-permitted activities, obstructions to navigation, submerged cultural resources, undersea cables, offshore aquaculture projects, and any area designated for the purpose of safety, national security, environmental protection, or conservation and management of living marine resources. In 2010, the MMC team has focused on strengthening the biodiversity and human use data, as well as building decision support tools to support coastal and marine spatial planning. This multiyear endeavor continues to require joint planning, interaction, and commitment by Federal, State, local, territorial, and tribal entities working through public and private partnerships.

Department of State (DOS): The Extended Continental Shelf (ECS) Task Force, led by the DOS, with co-vice chairs from the Department of the Interior (DOI) and the National Oceanic and Atmospheric Administration (NOAA), coordinates the collection and analysis of data among a dozen Federal agencies in an effort to establish the outer limit of the U.S. ECS. This

effort will delineate an enormous area where the United States can exercise sovereign rights over the resources on and below the seabed. Data analysis and collection will be completed for 15 areas off the U.S. coast where there may be extended shelf. These efforts require significant interagency coordination on science, cruise planning, logistics, and operations. In June 2010, the ECS Project completed a month-long bathymetric cruise off the coast of Kingman Reef and Palmyra, two more cruises are planned off the Northern Mariana Islands, as well as the third United States-Canada joint expedition to the Arctic Ocean, will take place in August and September.

APPENDIX: AGENCY BUDGET TABLES AND NARRATIVES

DEPARTMENT OF AGRICULTURE

Natural Resources Conservation Service (NRCS)

Conservation Technical Assistance (CTA)

NRCS, working in partnership with local conservation districts and others, are major providers of technical assistance. Assistance is provided to land users voluntarily applying conservation and to those who must comply with local or State laws and regulations. CTA helps landowners and land users make informed decisions about how to improve soil and water quality, improve and conserve wetlands, enhance fish and wildlife habitat, and reduce flooding. Land-based conservation practices applied through the CTA program provide benefits to near-shore ocean habitats, including coral reef ecosystems, by reducing sediment and nutrient loading into receiving water bodies.

Coastal and ocean ecosystems can be impacted by runoff from agricultural operations. A significant portion of CTA funds are used to assist farmers in the development of comprehensive nutrient management plans. These reduce animal waste runoff to water bodies through the development and implementation of practices related to the handling and storing of animal manure and the application of the manure on land. The process for developing such management plans also encourages landowners to assess and address the condition of all natural resources on their property.

Environmental Quality Incentives Program (EQIP)

The Environmental Quality Incentives Program (EQIP) is a voluntary conservation program that promotes agricultural production, forest management and environmental quality as compatible goals. EQIP is not an “oceans” program but does provide major benefits to improving water resources including ocean and

near-shore coastal ecosystems. Through EQIP, producers may receive financial and technical assistance to install or implement conservation practices to address soil, water, and air quality, wildlife habitat, surface and groundwater conservation, energy conservation, and related natural resource concerns on eligible land. Eligible land includes cropland, grassland, rangeland, pasture, non-industrial private forest land; and other agricultural lands, as determined by the Secretary.

EQIP activities are carried out according to an EQIP plan of operations developed in conjunction with the producer. EQIP may pay up to 75 percent of the costs incurred to install or implement conservation practices important to improving and maintaining the health of natural resources in the area. Payments may be made to encourage a producer to adopt conservation practices that improve water quality, such as nutrient management, manure management, integrated pest management, irrigation water management, and wildlife habitat management, or to develop a Comprehensive Nutrient Management Plan (CNMP) and components of a CNMP.

As erosion and runoff from agricultural operations may impact ocean and coastal ecosystem health, EQIP is an integral tool for improving these ecosystems. Producers within ocean and coastal watersheds are eligible for EQIP financial and technical assistance to address water quality resource concerns. Through the implementation of various conservation practices, NRCS helps producers to control soil erosion and manage nutrient runoff and drainage water for improved water quality.

Wetland Reserve Program (WRP)

The Wetlands Reserve Program is a voluntary program that provides technical and financial assistance to eligible landowners to restore, enhance, and protect wetlands. Although this program is not an “oceans” program, restoring

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wetlands and associated upland buffer areas on the Nation's landscape benefits the ocean waters. Once restored, wetlands filter nutrients and sediment from surface runoff that flows into ocean receiving waters. There are over 2 million acres enrolled in the program. The number of projects offered from landowners always exceeds the program's acreage enrollment authority. Therefore, NRCS State Conservationists determine project selection priority within broad national guidelines.

National Institute of Food and Agriculture (NIFA)

Research and Education

Research and Education programs administered by NIFA are the USDA's principal entrée to the university system of the U.S. for the purpose of conducting agricultural research and education programs as authorized by multiple pieces of legislation.

Integrated Activities

Within NIFA, integrated is defined as bringing the three components of the agricultural knowledge system (research, education, and extension) together around a problem area or activity. Integration may be done at the project level or more generally at the program level mixing research, education, and extension project work. A project or program is optimally integrated if the components complement one another and are truly necessary for the ultimate success of the project or program.

Agricultural Research Service

The Agricultural Research Service (ARS) provides research and technical information to develop sustainable aquaculture programs that will provide opportunities for fish farmers and healthy, high quality seafood for consumers. ARS also conducts a significant amount of research on developing 'Best Management Practices' to minimize the delivery of agriculturally derived pollutants to aquatic

ecosystems. In several regions of the U.S. (e.g. the Mississippi River Basin and the Chesapeake Bay), this research has an impact on the health of coastal ecosystems.

Managing Coasts and Their Watersheds Account

This program conducts fundamental and applied research on the processes that control the quality of waters exported from agricultural lands, and develops new and improved technologies for managing the Nation's agricultural water resources in watersheds draining into priority marine, estuarine, and coastal ecosystems (e.g., Chesapeake Bay, Mississippi River Basin/Gulf of Mexico, and the Great Lakes), to maintain the health and economic growth of the American people.

The Marine Aquaculture Account

This account supports mapping shellfish aquaculture operations, eelgrass beds, and burrowing shrimp populations at an estuarine landscape scale. The account supports spatial analyses in order to quantify the interaction between oyster aquaculture practices, fish utilization of these estuarine habitats as predators and parasite hosts, and burrowing shrimp recruitment and movement.

National Forest Service

The Forest Service provides research and technology tools to understand basic ecosystem processes in nearly all forest and rangeland ecosystems. Emerging research includes the human dimensions in exploring the urban ecosystem. The Forest Service uses this research to develop sustainable ecosystem-based management plans and decision tools. These tools are integrated into training and educational program to transfer scientific knowledge to the public, State and private organization, and other federal agencies. Examples of regional efforts contributing to ocean, coastal and Great Lakes issues are noted below.

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Gulf of Mexico Research and Development

Forest Service scientists have developed a conceptual approach that builds the likelihood of hurricane damage into forest management. This has resulted in an adaptive strategy that owners and managers can use in the short term to respond to hurricane damage, and in the long term to manage recovery efforts. Studies are also designing agroforestry and riparian forest buffer systems for use within agricultural systems to reduce non-point source pollution, stabilize stream banks, and restore other ecological functions, which will reduce nitrogen fertilizer runoff causing widespread hypoxia in the Gulf of Mexico.

Great Lakes State & Private Forestry Unit-Great Lakes Restoration Initiative

The Forest Service is working toward restoring Brownfields and reducing toxic substances by planting trees and vegetation to take up or trap contaminants and reduce stormwater runoff. Another effort involves using management plans and tree assessment tools to plant trees in urban areas and assesses and protects ecosystem and stream health. The Forest Service is also establishing and enhancing weed management areas to help plan and carry out programs for the reduction of invasive plants within in the Great Lakes basin.

Pacific Ocean Research and Development

Land and Watershed Management Program investigations are looking at the cumulative effects of land management on watersheds, riparian zones, and fish habitat for Pacific Salmon, and conservation and restoration of these

habitats. Wetlands research at the Institute of Pacific Islands Forestry is providing Pacific Islanders with the understanding needed to conserve forested wetlands and determine the best management practices that contribute to sustainable patterns of use. Other efforts are examining the cumulative effects of forest management on hillslope processes, fishery resources and downstream environments to gain a better understanding of the physical and biological processes that integrate terrestrial, riparian, and aquatic ecosystems at the watershed scale.

Chesapeake Research and Development

The Baltimore Ecosystem Study has shown the strong interactions among social, ecological, and hydrological systems in urban and surrounding areas, including the relationship of water quality to urban land uses. This knowledge has helped increase water quality through urban planning, ecological restoration, and the development of best management practices.

Atlantic Ocean Research and Development

In the Atlantic region, cooperative studies are looking at acid deposition, mercury concentrations and aluminum toxicity on Atlantic salmon and the effect of migratory fish on upstream ecosystem processes. In the Caribbean, wildlife multifaceted research is studying neotropical migratory species, common year round resident birds, invasive wildlife species, and endangered species under current trends of drier summer conditions.

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DEPARTMENT OF AGRICULTURE

	Percentage of Funds Dedicated to Each Ocean-Related Program Function					Dollars in millions				
	Enhance the use, conservation, and management of ocean coastal and Great Lakes resources	Supporting maritime transportation	Advancing our understanding of oceans, coasts, and Great Lakes	Advancing International Ocean Science and Policy	Other, not elsewhere classified	FY 2008 Actual Obligations	FY 2009 Regular Appropriations Actual Obligations	FY 2009 Recovery Act Actual Obligations	FY 2010 Enacted	FY 2011 Budget
Natural Resources Conservation Service										
Conservation Tech Asst	100%					65.2	64.0	0.0	68.4	71.5
Wetlands Reserve Program	100%					66.1	136.0	0.0	197.0	161.3
Env. Qual. Incentives Program	100%					204.0	185.3	0.0	182.1	225.2
National Institute of Food and Agriculture										
Freshwater			100%			7.6	7.8	0.0	4.5	4.4
Estuarine			100%			1.8	1.9	0.0	1.4	1.2
Marine			100%			0.6	0.6	0.0	0.4	0.4
Point Pollution			100%			0.1	0.1	0.0	0.1	0.1
Agricultural Research Service										
Managing Coasts and Their Watersheds				100%		3.8	3.8	0.0	4.0	3.9
Marine Aquaculture	100%					7.7	8.6	0.0	8.7	5.7
Forest Service										
Gulf Of Mexico/R&D	100%					8.0	7.9	0.0	8.1	8.1
Gulf/S&PF			100%			0.5	0.5	0.0	0.5	0.5
Great Lakes/R&D	100%					0.1	0.1	0.0	0.1	0.1
Great Lakes/S&PF Restoration Initiative	100%					0.0	0.0	0.0	6.9	3.3
Pacific Ocean/R&D	26%		74%							
Chesapeake Bay/R&D	50%		50%			1.0	1.0	0.0	1.0	1.0
Chesapeake/S&PF	100%					0.9	1.0	0.0	1.0	1.0
Atlantic Ocean/R&D			100%			0.1	0.1	0.0	0.1	0.1
Caribbean			100%			0.1	0.1	0.0	0.2	1.1
TOTAL						367.6	418.8	0.0	484.4	488.8

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration (NOAA)

National Ocean Service (NOS)

NOS primarily focuses on observing, measuring, assessing, and managing the Nation's coasts, oceans, and Great Lakes, as well as conducting response and restoration activities to protect vital coastal and ocean resources. NOS also works with coastal communities to enhance their resilience to disasters and the impacts of a changing climate.

As a national leader for ocean and coastal stewardship, NOS promotes a wide range of research and operational activities aimed at better understanding ocean, coastal, and Great Lakes ecosystems. NOS provides improvements in the quality, quantity, geographic distribution, and timeliness of ocean and coastal observations – one of the nine priority objectives in the National Ocean Policy. Observations by NOS assets and partners are critical components of the Nation's Integrated Ocean Observing System (IOOS), as well as fundamental contributors to the Global Earth Observation System of Systems (GEOSS) and Global Sea Level Observing System (GLOSS). NOS mapping, charting, geodetic, and oceanographic activities build on marine and coastal observations collected to increase the efficiency and safety of maritime commerce, support ocean and coastal resource management, and address coastal flooding, sea level rise, and water quality concerns.

NOS also protects and manages the special marine areas of the Nation's marine sanctuaries, and the Papahānaumokuākea and Rose Atoll Marine National Monuments, and through partnerships with coastal states, manages and protects the Nation's valuable coastal zones and nationally significant estuarine reserves. NOS helps Federal, State, local, and international managers build the suite of skills and capacity

needed to protect, restore, and use coastal ecosystems by providing financial and technical assistance and other applied research and capacity-building resources.

Mapping and Charting: The Office of Coast Survey is an integral part of NOAA's overall mission to support the nation's commerce with information for safe, efficient, and environmentally sound transportation. The Office of Coast Survey works closely with NOAA's Office of Marine and Aviation Operations to chart the 3.4 million square nautical miles in the U.S. Exclusive Economic Zone.

Ocean Assessment Program: Within this program, NOAA supports a number of offices that provide the data and tools that the nation needs to manage its ocean and coastal resources and implement the National Ocean Policy. For example, the NOAA Coastal Services Center works with other federal agencies and local and state governments to bring information, services, and technology to the nation's coastal resource managers. The Center is a partner in over 100 ongoing projects geared to site specific coastal issues. Additionally, NOAA is building the capacity within this program to provide the information, mapping, and tools needed to implement the National Coastal and Marine Spatial Planning Framework.

Coastal management: The Office of Ocean and Coastal Resource Management (OCRM) provides national leadership, strategic direction, and guidance to state and territory coastal programs and estuarine research reserves. OCRM works with state and territory coastal resource managers to implement the Coastal Zone Management Act, with a range of partners to develop a scientifically-based national system of marine protected areas and estuarine reserves, and with numerous stakeholders to protect, sustain, and restore coral reef ecosystems. These efforts comprise a portion of NOAA's contribution to the Ecosystem and Restoration objective of the National Ocean Policy.

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Office of Response and Restoration (OR&R):

NOAA's OR&R protects coastal and marine resources, mitigates threats, reduces harm, and restores ecological function. The OR&R provides comprehensive solutions to environmental hazards caused by oil, chemicals, and marine debris and served as NOAA's front line during the Deepwater Horizon BP oil spill response. OR&R also conducts oil spill and other hazard research to improve our ability to respond to events in the future.

National Marine Fisheries Service (NMFS)

NOAA's National Marine Fisheries Service (NMFS) has stewardship responsibility for the largest Exclusive Economic Zone in the world. The Magnuson-Stevens Fishery Conservation and Management Act (MSA) is the primary law governing marine fisheries management in U.S. Federal waters. NMFS is continuing to implement the 2007 amendments to the MSA. The MSA, the Marine Mammal Protection Act, and the Endangered Species Act are the primary management tools NMFS uses to meet its immediate and long-term goals, including advancing ecosystem approaches to managing living marine resources. NMFS objectives include: (1) ending overfishing by 2011 and reducing bycatch; (2) ensuring safe and sustainable aquaculture practices; (3) improving the management of international living marine resources; (4) restoring and protecting essential fish habitats; and (5) increasing the quality and accuracy of recreational fishing information.

Fisheries Research and Management:

The Office of Sustainable Fisheries, the NOAA regional offices, and the Regional Fishery Management Councils all work cooperatively to manage fish stocks important to commercial, recreational, and subsistence fisheries. NOAA's Office of Science and Technology provides the research and technology development activities (including biology, ecology, economic and social sciences, oceanography, engineering, and other disciplines) used to inform the conservation and management of living marine resources.

Protected Species Research and Management:

NOAA's Office of Protected Resources works to conserve, protect, and recover species under the Endangered Species Act (ESA) and the Marine Mammal Protection Act (MMPA). Different divisions of the program focus on developing policies and regulations to implement the provisions of the ESA or MMPA to protect and recover endangered and threatened marine and anadromous species, marine mammals, and sea turtles, and the habitat required by each of these animals.

Oceanic and Atmospheric Research (OAR or NOAA Research)

The Office of Oceanic and Atmospheric Research (OAR) leads NOAA's research enterprise, the driving force behind NOAA environmental products and services that protect life and property and promote sustainable economic growth. It consists of Federal laboratories, Cooperative Institutes, the National Sea Grant College Program, the NOAA Climate Program Office, the Office of Weather and Air Quality, and the Office of Ocean Exploration and Research. These programs are enhanced by formal and informal partnerships with academia, industry, and governmental agencies. OAR plays a key role in NOAA's ability to advance the National Ocean Policy objective of Inform Decisions and Improve Understanding.

OAR has world-class observational, modeling, and technology-development capabilities used to understand ocean-atmosphere systems. These capabilities better characterize the role of the oceans in weather and climate, and support modeling efforts to predict major coastal storms and hurricanes. Developing and enhancing sophisticated climate models further advances NOAA's ability to provide climate services. OAR also provides sustained *in situ* observations for understanding the role of the oceans in climate variability and potential change. OAR is a world leader in monitoring and understanding the influence of natural and anthropogenic atmospheric constituents, including greenhouse

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gases and aerosols, that may affect climate or influence air quality.

OAR, in partnership with academic and Federal scientists, provides research-based information and predictive capabilities to assist management of U.S. territorial waters. OAR information supports decisions regarding fisheries, coral reefs, and water resource management; the biotechnological and geological potential of hydrothermal vent systems; depleted populations of exploited or protected species; and development and understanding of the physical, chemical, and biological aspects of the oceans and Great Lakes.

The National Sea Grant College Program: Sea Grant fosters scientific and economic advances in sustainable marine aquaculture, marine biotechnology, commercial and recreational fishing, aquatic nuisance species research and outreach, marine education, seafood technology, and harmful algal blooms.

National Weather Service (NWS)

The mission of the National Weather Service is to provide weather, hydrologic, and climate forecasts and warnings for the United States, its territories, adjacent waters, and ocean areas for the protection of life and property and the enhancement of the national economy. NWS supports the infrastructure of critical ocean observations; telecommunication and data management functions; and the provision of a number of advisory, warning, and forecast services. Most NWS ocean program activities support the national observation infrastructure and related advisories, warnings, and forecasts needed for the safety of life and the overall quality of the earth's environment. Important ocean-related activities supported within the NWS are:

Marine Observations: Continuous, real-time monitoring of ocean and atmospheric elements supports weather, water, and seasonal climate prediction. The NWS operates the National Data Buoy Center, which designs, develops, operates, and maintains a marine observational network of

over 150 data collection buoys and 55 coastal stations.

Marine Weather Services: The NWS issues marine forecasts and warnings for the U.S. coastal, Great Lakes, and offshore, as well as for high seas areas of international waters that are the responsibility of the United States.

Tropical Cyclone Support: The NWS issues forecasts, watches, and warnings for tropical cyclones for the United States and its territories. It operates the National Hurricane Center in Miami, Florida and the Central Pacific Hurricane Center in Honolulu, Hawaii.

Tsunami Program: The NWS operates the West Coast/Alaska Tsunami Warning Center in Palmer, Alaska and the Pacific Tsunami Warning Center in Ewa Beach, Hawaii; hosts the International Tsunami Information Center; maintains the Deep-ocean Assessment and Reporting of Tsunamis buoy station network; operates a local network of seismic stations; and contributes to the national water level network.

Arctic Ocean Marine Weather Service: With the permanent Arctic sea ice cover diminishing, the Arctic Ocean is anticipated to become seasonally navigable. In 2009, the National Weather Service (NWS) Alaska Region established a new experimental offshore marine weather service zone in the Arctic Ocean north of Alaska that extends out to 200 nautical miles from Alaska's north shore to cover the entire U.S. exclusive economic zone (EEZ) in the Arctic Ocean. The NWS currently provides operational marine weather and sea ice forecast services for the new offshore marine zone to ensure weather and sea ice safety for the expected increase in maritime commercial and recreational activities in the Arctic.

National Environmental Satellite, Data, and Information Service (NESDIS)

The National Environmental Satellite, Data, and Information Service ensures continuous operational availability and access to

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environmental satellite data and information from both NOAA and non-NOAA satellites.

Environmental Satellite Observing Systems:

NESDIS's remote sensing activities address an expanded suite of ocean, coastal, and terrestrial sensing needs. NESDIS also supports research partnerships to enable the transition of remote sensing products into operational availability. These products and services range from worldwide operational sea ice analyses and forecasts; search and rescue of aviators, mariners, and land-based users in distress; and the detection and prediction of coral reef bleaching and harmful algal blooms.

Ocean Remote Sensing: The Ocean Remote Sensing program directly addresses NOAA's mission to describe and predict changes in the Earth's environment by supporting integrated, quality, end-to-end ocean remote sensing systems and providing the operational community with a suite of space-based products and services for the coastal and global oceans. These data and services serve as the satellite component to NOAA's contribution to the U.S. Integrated Ocean Observing System (IOOS).

National Ice Center: NESDIS is the home of the National Ice Center, a multi-agency operational center whose mission is to provide the highest quality strategic and tactical ice services tailored to meet the operational requirements of U.S. interests and to provide specialized meteorological and oceanographic services to U.S. government agencies. Comprehensive ice forecasts will be essential to advancing U.S. interests in the Arctic and for supporting the Arctic objective of the National Ocean Policy.

NOAA Data Centers and Information

Services: NOAA's National Data Centers manage the world's largest collection of publicly available climatic, oceanographic, and geophysical data and information. They house and operate several World Data Centers for Oceanography, Marine Geology, and Geophysics, as well as the NOAA Library. These World Data Centers are components of a global network of

discipline centers that facilitate the international exchange of data.

Office of Marine and Aviation Operations

The mission of NOAA's Office of Marine and Aviation Operations is to provide high-quality ship and aircraft operations and scientific support to NOAA. It operates and maintains 12 aircraft and the NOAA fleet of 18 commissioned research and survey vessels, provides guidance and assistance for outsourced ship and aircraft support, conducts the NOAA Diving Program, and administers the NOAA Commissioned Corps. The NOAA Commissioned Corps – the smallest of the Nation's seven uniformed services – operates ships and aircraft, leads mobile field parties, manages research projects, conducts diving operations, and serves in program positions throughout NOAA.

The NOAA fleet provides platforms for the collection of oceanographic and atmospheric data required to meet NOAA's environmental and scientific missions. The fleet conducts complex hydrographic surveys to support nautical charting; oceanographic and atmospheric research to study global climate change; fisheries-stock and marine-mammal assessments; and monitoring of coastal habitats and pollution trends. NOAA's aircraft collect environmental and geographic data for NOAA hurricane and other severe-weather and atmospheric research; provide aerial support for coastal and aeronautical-charting and remote-sensing projects; conduct aerial surveys to help predict flooding potential from snow melt; and provide support to NOAA's fishery- research and marine-mammal assessment programs.

National Institute of Standards and Technology

The National Institute of Standards and Technology (NIST) is a non-regulatory Federal agency within the U.S. Department of Commerce. NIST promotes U.S. innovation and industrial competitiveness by advancing measure-

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ment science, standards, and technology in ways that enhance economic security and improve quality of life. NIST laboratories conduct research that advances the nation's technology infrastructure and is needed by U.S. industry to continually improve products and services. NIST scientific and technical research and services are provided specifically to the ocean community through the National Marine Analytical Quality Assurance Program (NMAQAP) and through its work in marine health biosciences. As a major part of these strategic collaborations, NIST is a partner in NOAA's Hollings Marine Laboratory (HML) and maintains laboratories and a staff of scientists at this coastal research facility who collaborate with the other HML partners and other national and international ocean science professionals to provide the science necessary for understanding linkages between environmental condition and the health of marine organisms and humans.

Through NMAQAP, NIST conducts a cryogenic banking program of marine environmental specimens for the assessment of long-term trends in environmental quality. NIST also develops and administers chemical measurement quality assurance exercises among various chemical laboratories (foreign and domestic) that analyze marine environmental samples (particularly for contaminants) and develops analytical reference and control materials to insure that coastal management decisions affecting changes in legislation, health, trade, and economics are based on valid chemical measurements. Also under this program, NIST builds strategic collaborations within the ocean science community to advance measurement technology for the solution of ocean issues.

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	Percentage of Funds Dedicated to Each Ocean-Related Program Function					Dollars in millions				
	Enhance the use, conservation, and management of ocean coastal and Great Lakes resources	Supporting maritime transportation	Advancing our understanding of oceans, coasts, and Great Lakes	Advancing International Ocean Science and Policy	Other, not elsewhere classified	FY 2008 Actual Obligations	FY 2009 Regular Appropriations Actual Obligations	FY 2009 Recovery Act Actual Obligations	FY 2010 Enacted	FY 2011 Budget
National Oceanic and Atmospheric Administration										
National Ocean Service (NOS)										
<i>Operations, Research and Facilities</i>										
Mapping and Charting		100%				109.4	95.6	40.0	97.2	97.0
Geodesy		100%				28.4	38.5	0.0	37.3	29.4
Tide and Current Data		100%				28.0	31.3	0.0	33.7	29.7
Ocean Assessment Program	100%					105.7	94.5	0.0	113.0	88.7
Response and Restoration	100%					25.7	27.7	0.0	28.1	24.7
National Centers for Coastal Ocean Science			100%			51.5	53.3	0.0	54.8	65.3
Coastal Management	100%					94.2	102.3	0.0	105.0	120.1
Marine Sanctuary Program	100%					50.4	52.8	0.0	53.1	45.7
<i>Procurement, Acquisition and Construction</i>										
Coastal and Estuarine Land Conservation Program	100%					14.0	15.0	0.0	20.0	25.0
NERRS Construction & Acquisition	100%					12.1	10.0	0.0	6.9	3.9
Marine Sanctuaries Facilities	100%					14.3	13.5	0.0	14.0	5.5
Other NOS Construction/Acquisition	100%					14.1	7.7	0.0	3.9	0.0
National Marine Fisheries Service (NMFS)										
<i>Operations, Research and Facilities</i>										
Protected Species Research and Management	51%		48%	1%		167.7	173.1	1.2	204.0	210.3
Fisheries Research and Management	45%		55%			328.2	435.0	0.6	433.0	463.6
Enforcement and Observers/Training	96%			4%		84.9	90.3	0.0	106.7	105.3
Habitat Conservation and Restoration	45%	10%	45%			50.4	53.4	153.8	58.2	54.9
Other Activities Supporting Fisheries	33%		67%			184.5	146.9	0.0	102.7	73.7
Other Accounts	36%		64%			136.7	44.8	0.0	23.6	19.6
Pacific Coastal Salmon Recovery Fund	88%		12%			66.9	80.0	0.0	80.0	65.0
<i>Procurement, Acquisition, & Construction</i>										
NMFS Construction			100%			5.2	6.9	0.0	0.0	0.0
Oceanic and Atmospheric Research										
Great Lakes Research Laboratories & Joint Institutes										
National Sea Grant College Program	49%	1%	17%	100%	33%	57.0	55.0	0.0	63.0	62.5
National Undersea Research Program				100%		10.0	8.9	0.0	8.9	9.2
Ocean Exploration				100%		19.5	18.6	0.0	21.8	18.6
Other Ecosystem Programs				100%		9.5	2.6	0.0	0.0	11.6
Other Ocean, Coastal and Great Lakes Partnership Programs				100%		11.3	13.5	0.0	15.0	0.0
Climate Research Labs & Joint Institutes				100%		14.5	14.8	0.0	15.1	15.5
National Weather Service										
<i>Operations, Research & Facilities</i>										
U.S. Marine Observations	10%		10%		80%	24.2	28.9	0.0	31.2	31.2
U.S. Marine Weather Program		30%			70%	18.2	18.8	0.0	18.8	18.8
U.S. Tropical Cyclone Program					100%	17.5	20.6	0.0	20.6	20.7
U.S. Tsunami Warning Program					100%	23.2	23.2	0.0	23.3	23.3
Storm Surge Program					100%	0.2	0.2	0.0	0.2	0.2
Marine Modeling		30%			70%	3.3	3.4	0.0	3.4	3.5

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	Enhance the use, conservation, and management of ocean coastal and Great Lakes resources	Supporting maritime transportation	Advancing our understanding of oceans, coasts, and Great Lakes	Advancing International Ocean Science and Policy	Other, not elsewhere classified	FY 2008 Actual Obligations	FY 2009 Regular Appropriations Actual Obligations	FY 2009 Recovery Act Actual Obligations	FY 2010 Enacted	FY 2011 Budget
National Environmental Satellite, Data, and Information Operations, Research & Facilities										
Ocean Remote Sensing	51%	11%	27%		11%	3.8	3.8	0.0	3.8	3.8
Other Environmental Observing Services	65%		35%			10.9	10.9	0.0	10.9	10.9
Ice Services		100%				0.8	1.3	0.0	2.2	2.2
Archive, Access and Assessment (National Ocean Data Center)	59%		6%		35%	13.5	14.2	0.0	16.2	16.2
Climate Database Modernization Program	10%	20%	30%	40%		1.0	1.1	0.0	1.2	1.2
International Pacific Research Center	10%	20%	20%	50%		0.4	0.4	0.0	0.4	0.4
Integrated Data & Envir. App. (IDEA) Center	10%	20%	20%	50%		0.6	0.6	0.0	0.6	0.6
Procurement, Acquisition & Construction										
Geostationary Operational Environmental Satellites	100%					44.3	66.2	0.0	89.2	96.9
Polar-orbiting Operational Environmental Satellites	33%	7%	60%			6.9	3.9	0.0	2.6	2.5
National Polar-orbiting Operational Satellite JASON-3	60%	20%	20%			82.7	72.0	6.5	95.6	265.2
	100%					0.0	0.0	0.0	20.0	50.0
Program Support										
Corporate Services	40%	20%	25%	5%	10%	78.3	75.6	0.0	75.6	75.6
NOAA Education Program	50%		50%			38.8	49.7	0.0	49.7	53.8
Facilities	40%	20%	25%	5%	10%	7.6	12.3	0.0	12.3	12.3
Procurement, Acquisition & Construction										
Construction					100%	23.3	61.6	148.4	21.0	14.0
NOAA Marine and Aviation Operations										
Operations, Research, & Facilities										
Marine Services	60%	25%	15%			109.9	118.5	0.0	118.5	117.6
Fleet Planning & Maintenance	60%	25%	15%			16.8	28.0	20.0	48.0	17.0
Aircraft Services	25%	60%	15%			2.1	4.5	0.0	4.5	3.5
Procurement, Acquisition, & Construction										
Fleet Replacement	90%	5%	5%			5.3	11.5	78.0	89.5	5.0
National Institute of Standards and Technology										
Scientific Technical Research and Services	100%					4.4	4.4	0.0	5.2	5.2
Marine Analytical Quality Assurance and	100%					2.7	2.7	0.0	2.7	2.7
Marine Biosciences	100%					1.0	1.0	0.0	1.0	1.0
Biosciences NMR	100%					0.7	0.7	0.0	0.7	0.7
Pacific Specimen Banking Program	100%					0.0	0.0	0.0	0.8	0.8
Total						2255.2	2345.8	448.5	2485.3	2518.7

DEPARTMENT OF DEFENSE

Defense Advanced Research Agency (DARPA)

The Center of Excellence for Research in Ocean Sciences (CEROS) encourages research and development in ocean sciences, by involving specialized small businesses with expertise in ocean related research. Major research areas of interest have included shallow water surveillance technologies, ocean environmental preservation, new ocean platform and ship concepts, ocean measurement instrumentation, and unique properties of the deep ocean environment.

Office of the Secretary of Defense Sciences

Strategic Environmental Research & Development Program (SERDP)

SERDP was established by the Defense Authorization Act of 1991 as a partnership among the Department of Defense (DOD), the Department of Energy (DOE), and the Environmental Protection Agency (EPA). The Program was created with a vision of bringing the capabilities and assets of the Federal laboratories to bear on the environmental challenges faced by the Department of Defense. As such, SERDP is DOD's environmental research and development program. To address the highest priority issues confronting the Army, Navy, and Air Force, SERDP focuses on cross-service requirements and pursues high-risk/high-payoff solutions to the Department's most intractable problems. SERDP invests in science and technology that improves our understanding of marine mammals, their populations, locations and behavior. In addition, SERDP invests in technologies to detect and remediate unexploded ordnance in marine and estuarine settings. The fate, transport and effects of energetic materials and other contaminants in the marine environment are areas of ongoing research.

Finally, SERDP is operating the Defense Coastal/Estuarine Research Project at Marine Corps Base Camp Lejeune.

Environmental Security Technology Certification Program (ESTCP)

The ESTCP's goal is to demonstrate and validate promising, innovative technologies that target the Department of Defense's most urgent environmental needs. These technologies provide a return on investment through cost savings and improved efficiency. The current cost of environmental remediation and regulatory compliance in the Department is significant. Innovative technology offers the opportunity to reduce costs and environmental risks. For example, the Department of Defense is responsible for a large number of contaminated sites and ranges with unexploded ordnance in coastal and estuarine environments. Advanced technologies will improve our ability to assess, monitor, and remediate contaminated sediments and unexploded ordnance at these sites.

Department of the Navy

The U.S. Navy's ocean and coastal activities are performed by the Office of Naval Research and the Oceanographer of the Navy. Through their research and coordination with other agencies, universities and research organizations, they develop and maintain expertise in wide ranging areas of ocean science to ensure that the Navy meets its mission of maintaining, training and equipping combat-ready forces capable of winning wars, deterring aggression and maintaining freedom of the seas.

Office of Naval Research (ONR)

The Office of Naval Research coordinates, executes, and promotes the science and technology programs of the United States Navy and Marine Corps through universities,

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government laboratories, and nonprofit and for-profit organizations. It provides technical advice to the Chief of Naval Operations and the Secretary of the Navy, works with industry to improve technology manufacturing processes while reducing fleet costs or extending fleet capabilities, and fosters continuing academic interest in naval relevant science from the high school through post-doctoral levels. It has programs in a number of ocean related activities.

Naval Ocean Sciences

Basic research areas included in this program are: coastal geosciences, environmental optics, physical oceanography, ocean engineering and marine systems, undersea signal processing, and ocean acoustics. The basic research conducted in these areas is competitively selected to have a potential for major impact on future naval operations and warfare. Focus is upon observing, modeling, and predicting mostly small scale processes in the air/ocean/shore environments as they might affect naval operations as well as sensor and system performance in the world's oceans, primarily littoral regions around the globe. Principal investigators are primarily in the academic community but extensive ties exist with navy labs, university/navy labs, other government labs and private industry. Much of the knowledge gained in this research is useful to other agency programs, plus State and local entities, both public and private.

Applied Ocean Research

Applied oceanographic research is conducted in an integrated approach with the basic research program to allow new knowledge obtained in various oceanographic disciplines to be synthesized and exploited toward specific naval applications, such as snowcasts and forecasts of ocean variability or environmental effects on sensors, platforms, structures, and operations. Often the result is an environmental model, algorithm or technique to be tested for operational use. The products are designed to increase the naval operator's knowledge of the battlespace environment with the goal to

unclutter the tactical picture, provide tools for tactical decisions, and provide a tactical advantage through exploitation of environmental variability. In addition, significant investments are made in observational methods such as drifters, floats, and autonomous underwater vehicles for adaptive sampling and data assimilation. Principal investigators are in the academic community, navy and other government labs, and private industry. A significant portion of these developments, especially the observational capabilities, have often proved very useful to agency programs, plus State and local entities, both public and private.

National Oceanographic Partnership Program

This program is a collaboration of Federal agencies that support ocean research partnerships. This program was established in Fiscal Year 1997 through Public Law 104-201 with the aims: (1) to promote the national goals of assuring national security, advancing economic development, protecting quality of life, and strengthening science education and communication through improved knowledge of the ocean; (2) to coordinate and strengthen oceanographic efforts in support of those goals by identifying and carrying out partnerships among Federal agencies, academia, and industry in the areas of data, resources, education, and communication. Strong linkage exists with fourteen Federal agencies. Efforts funded under this program involve partnerships between various components of the national oceanographic community focusing most recently on a U.S. ocean observing system.

Marine Mammals

This program provides both basic and applied research in response to the need to conduct naval activities in ways that identify disruption to marine mammals and other protected marine life. Program areas include investigations of environmental consequences of underwater sound, predictive modeling and quantitative analysis of naval sonar systems and testing and

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training involving detonations of explosives in the marine environment as well as the development of resources to monitor and mitigate potentially adverse interactions between naval activities and the marine environment. Principal investigators include members of the academic community, government labs, and private industry.

Oceanographer of the Navy

The Chief of Naval Operations, through the Oceanographer of the Navy and the Director, Fleet Readiness Division (CNO-N43), sponsors operational Navy Meteorology and Oceanography (METOC) services and related research and development. The Navy provides meteorological services for Navy and joint forces, meteorological products to the Marine Corps, and oceanographic support to all elements of the Department of Defense. The Navy sponsors programs in four closely related disciplines to provide worldwide, comprehensive, integrated weather and ocean support – meteorology, oceanography, geospatial information services, and precise time and astrometry. All are used to protect ships, aircraft, fighting forces, and shore establishments from adverse ocean and weather conditions, and to provide a decisive tactical, operational, and strategic edge by exploiting the physical environment.

Oceanography Program

This program provides a wide array of essential tactical, operational, strategic, METOC products and services to operating forces afloat and ashore. These services include collecting and processing environmental data using resources such as oceanographic ships, aircraft, satellites, and computing systems. These products and services enhance the performance of active and passive sensor and weapon systems; optimize the effectiveness of the sea control mission for mine counter-measures; and identify the environmental effects that influence the performance of fixed and mobile warfare systems and tactics. General and tailored oceanographic, acoustic, and meteorological

forecasts are provided daily to fleet commanders and individual operating units from the Meteorology and Oceanography Command's numerical modeling and forecasting centers and from forecasting support activities located worldwide. Funding primarily supports national security interests and also benefits maritime commerce. The increase in budget seen in FY11 is due to procurement of an oceanographic research vessel.

Oceanography – Research and Development to Support Operations

This program enables the warfighter of the future to effectively carry out their mission, by transitioning to operational use research performed by the Office of Naval Research. The Space and Naval Warfare Systems Command is the primary office responsible for transitioning Naval research to operational use. All research and development funded by the Oceanographer of the Navy is in direct support of the Naval mission. This program includes the Oceanographer's Space METOC line.

Geospatial Information and Services

This program provides hydrographic data from nearshore areas to support the production of coastal, combat, approach, harbor, and special purpose nautical charts used to address littoral warfare requirements. Funding primarily supports national security interests and also benefits identification of natural hazards, cooperative efforts with other nations, maritime commerce, marine science, technology and education.

U.S. Army Corps of Engineers

The Army Corps of Engineers (Corps) carries out regulatory, coastal storm damage reduction, navigation, environmental restoration, and research and development missions that are significant components of Federal coastal and ocean activities, and include the planning, design, engineering, and operation of the

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relevant infrastructure. The Corps supports a coastal wave data collection program, conducts coastal and inland mapping and surveying, provides hindcast data bases of waves and water levels, provides analytical tools for evaluating the water and sediment elements of several coastal-ocean linked watersheds, tracks several indicator (target) species, monitors habitats, and develops engineering guidance documents that are used widely in both the public and private sectors. The Corps' Coastal and Hydraulics Laboratory is renowned for the contributions to ocean and coastal science.

Funding for the Corp's ocean and coastal activities is provided through the following programs:

Construction

The Corps builds navigation projects, which generally consist of dredging entrance and exit channels and harbors to a greater depth and width to allow larger vessels to safely navigate in and out of the harbors and ports. These projects may also include structures such as breakwaters and jetties that are integral to their functioning. The Navigation program mission is to provide safe, reliable, efficient, effective and environmentally sustainable waterborne transportation systems for movement of commerce, national security needs, and recreation. The Corps also constructs coastal storm damage reduction projects, which generally consist of "soft" engineering structures like beach nourishment which involves dredging sand from the ocean inlets and placing it on the shore. The Storm Damage Reduction (SDR) program contributes to the national effort to reduce flood risk by protecting lives, homes, business, agricultural areas, public infrastructure, and critical environmental areas. Further, the Corps protects and restores the environment through the restoration of aquatic ecosystems working with partners and stakeholders to restore degraded ecosystem structure, function, and processes to more natural conditions.

Operation and Maintenance

The objective of the Corps is to ensure reliable mission achievement in order to return value back to the national investment. These projects were built to meet national needs through prioritized investments of Federal funds, and to recognize this, the Corps ensures that reliable performance and maximum sustainable operating life is achieved through its Operation and Maintenance programs.

This general area provides funding for the operation, maintenance, and care of existing harbors and related works, including maintenance of harbor channels provided by a State, municipality or other public agency, that serve navigation needs of general commerce where authorized by law; clearing and straightening channels; and removal of obstructions to navigation. This work consists of dredging, repair, and operation of structures and other facilities. Related activities include aquatic plant control, monitoring of completed coastal projects, removal of sunken vessels, and the collection of domestic waterborne commerce statistics.

Mississippi River Tributaries

Under this program, Congress has authorized two structures, with levees and channels, to divert freshwater from the Mississippi River into coastal bays and marshes for fish and wildlife restoration.

Regional Sediment Management

The Corps continues to explore ways of managing sediment on a systems basis, and to identify and eliminate institutional barriers to implementing a systems approach to sediment management. This approach to managing sediment resources contributes to facilitating more effective management and conservation of our ocean and coastal resources through innovative science, management, and policy initiatives. It has initiated and supported a number of initiatives to advance regional sediment management approaches through a range of partnerships with other Federal

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agencies, State and local governments, the private sector, and other stakeholders. The Corps will continue to apply this approach in 2010-2011.

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DEPARTMENT OF DEFENSE

Percentage of Funds Dedicated to Each Ocean-Related Program Function

Dollars in millions

	Enhance the use, conservation, and management of ocean coastal and Great Lakes resources	Supporting maritime transportation	Advancing our understanding of oceans, coasts, and Great Lakes	Advancing International Ocean Science and Policy	Other, not elsewhere classified	FY 2008 Actual Obligations	FY 2009 Regular Appropriations Actual Obligations	FY 2009 Recovery Act Actual Obligations	FY 2010 Enacted	FY 2011 Budget
Defense Advanced Research Projects Agency										
The Center of Excellence for Research in Ocean Sciences (CEROS)	10%	20%	20%	0%	50%	10.0	10.0	0.0	8.0	0.0
Office of the Secretary of Defense Sciences (CEROS)										
Strategic Environmental Research & Development Program (SERDP)	80%		20%			6.4	9.3	0.0	8.3	10.5
Environmental Security Technology Certification Program (ESTCP)	100%					9.6	2.3	0.0	3.7	3.9
Department of Navy										
<i>Office of Naval Research</i>										
Naval Ocean Sciences					100%	82.3	81.7	0.0	91.2	90.6
Applied Ocean Research					100%	13.2	16.3	0.0	16.2	18.1
National Oceanographic Partnership Program					100%	9.7	8.2	0.0	9.1	9.1
Marine Mammals					100%	14.3	12.8	0.0	10.1	10.2
<i>Environmental Compliance</i>										
Marine Mammals	100%					4.3	5.2	0.0	8.8	8.3
<i>Oceanographer of the Navy</i>										
Oceanography Program					100%	102.9	136.9	0.0	199.5	277.7
Oceanography-R&D					100%	48.6	59.7	0.0	94.6	116.1
Geospatial Information and Services					100%	87.4	95.7	0.0	65.7	72.3
Total						388.7	438.1	0.0	515.3	616.6

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DEPARTMENT OF THE ARMY

		Percentage of Funds Dedicated to Each Ocean-Related Program Function					Dollars in millions				
		Enhance the use, conservation, and management of ocean coastal and Great Lakes resources	Supporting maritime transportation	Advancing our understanding of oceans, coasts, and Great Lakes	Advancing International Ocean Science and Policy	Other, not elsewhere classified	FY 2008 Actual Obligations	FY 2009 Regular Appropriations Actual Obligations	FY 2009 Recovery Act Actual Obligations	FY 2010 Enacted	FY 2011 Budget
Army Corps of Engineers											
Construction											
Environmental	100%					17.5	5.0	0.0	17.0	18.0	
Shore Protection			100%			65.0	58.0	0.0	59.0	37.0	
Navigation		100%				257.0	236.0	302.0	148.0	115.0	
Investigations											
Shore Protection	100%					3.0	0.0	1.0	2.0	15.0	
Costal Field Data			100%			4.0	4.0	1.0	5.0	9.0	
Research and Development	50%	50%				5.0	4.0	0.0	3.0	35.0	
Operation and Maintenance											
Channels and Harbors	100%					736.0	758.0	580.0	805.0	747.0	
Protection of Navigation	100%					17.0	10.0	6.0	16.0	20.0	
Coastal Wetlands Restoration											
Trust Fund	100%					88.0	90.0	89.9*	84.6	83.0	
FC, Miss. River & Tribs.	100%					0.0	3.0	0.0	2.0	0.0	
Total						1192.5	1168.0	890.0	1141.6	1079.0	

DEPARTMENT OF ENERGY

Office of Science

Biological and Environmental Research

The Science account supports research programs in condensed matter and materials physics, chemistry, biology, climate and environmental sciences, applied mathematics, computational science, high energy physics, nuclear physics, plasma physics and fusion energy sciences. The account also provides the Nation's researchers with state-of-the-art user facilities offering capabilities that are unmatched anywhere in the world and enable U.S. researchers and industries to remain at the forefront of science, technology, and innovation.

Office of Fossil Energy R&D

The Office of Fossil Energy conducts R&D on technologies to improve the environmentally sound exploration and production of hydrocarbon resources in the ocean environment. Specifically, the program is focused on electrical component design, reservoir modeling, and drilling technologies for use in high temperature and high pressure environments. In addition, the program conducts R&D to improve our understanding of hydrate formations, their role in the global carbon cycle, and their potential as an energy resource.

Methane Hydrates Research

Occurrence and behavior of hydrate natural systems; the geological controls on hydrate formation and destabilization; the relation of hydrates to various natural geohazards; hydrate potential role within long-term carbon cycling; possible near-term hydrate feedbacks to ongoing climate change; and the potential of hydrates to serve as an energy resource.

Historically, this research activity has been conducted by the Office of Fossil Energy. In Fiscal Year 2011, it is proposed that the program be moved to the Office of Science.

Natural Gas Technology

The NETL's Ultra-Deepwater Complementary Program projects are focused on HT electrical components; new HPHT correlations for reservoir modeling; and, the world's first HPHT Drilling Test Facility for developing understanding of drilling mechanics up to 30,000 PSI and 250 degrees C.

Ultra-Deepwater and Unconventional Natural Gas

Extending basic scientific understanding of the various processes and phenomena that directly impact the design and reliable operation of an ultra-deepwater production system; developing "enabling" technologies that facilitate the development of additional technical advances; enhancing existing technologies to help lower overall cost and risks; pursuing "Grand Challenges" (long-term, high-risk research, on applied science, and on key leveraging and transformational technologies capable of "leapfrogging" over conventional pathways); and accomplishing ultra-deepwater resource development in a safe and environmentally responsible manner.

Office of Energy Efficiency & Renewable Energy

Water Power Program

The EERE Water Power Program researches, tests, and develops innovative technologies capable of generating renewable, environmentally responsible, and cost-effective electricity from water. Technologies include marine and hydrokinetic (MHK) technologies, renewable technologies that harness the energy

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from wave, tidal, current, and ocean thermal resources, as well as those that improve the efficiency, flexibility, and environmental performance of conventional hydropower generation.

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DEPARTMENT OF ENERGY

	Percentage of Funds Dedicated to Each Ocean-Related Program Function					Dollars in millions				
	Enhance the use, conservation, and management of ocean coastal and Great Lakes resources	Supporting maritime transportation	Advancing our understanding of oceans, coasts, and Great Lakes	Advancing International Ocean Science and Policy	Other, not elsewhere classified	FY 2008 Actual Obligations	FY 2009 Regular Appropriations Actual Obligations	FY 2009 Recovery Act Actual Obligations	FY 2010 Enacted	FY 2011 Budget
Office of Science										
<i>Biological and Environmental Research</i>										
Climate Change Research			100%			6.0	8.0	0.0	13.0	13.0
Genomics			100%			6.0	7.0	0.0	7.0	4.0
Office of Fossil Energy R&D										
<i>Oil and Natural Gas Technology</i>										
Natural Gas Technology	100%					8.0	8.0	0.0	0.0	0.0
Ultra-deepwater and Unconventional	100%					15.0	15.0	0.0	15.0	0.0
Methane Hydrates	60%		35%	5.00%		13.0	13.0	0.0	13.0	0.0
Office of Energy Efficiency & Renewable Energy										
Ocean-related Water Power Program	100%					8.0	28.0	0.0	30.0	19.0
<i>Wind Power Program</i>										
Research & Testing (Offshore Wind R&D)	100%					0.0	2.0	7.0	3.0	50.0
Total						56.0	81.0	7.0	81.0	86.0

ENVIRONMENTAL PROTECTION AGENCY

The U.S. Environmental Protection Agency (EPA) protects human health and safeguards the natural environment upon which all life depends. EPA contributes to the protection of our Nation's ocean and coastal resources by striving to ensure that our waters are successfully managed, protected, and restored to sustain healthy biological communities and to protect human health. EPA's ocean and coastal protection activities emphasize habitat protection, partnerships, programs addressing ocean-based and land-based sources of coastal and ocean pollution, and water quality monitoring and assessment. Whenever possible, these activities are implemented on an integrated watershed basis, addressing air, land, and ecosystem relationships.

Office of Water

Place-based Programs

Gulf of Mexico Program

EPA's efforts in the Gulf of Mexico directly support a collaborative, multi-organizational Gulf States-led partnership comprised of regional, business and industry, agriculture, State and local government, citizens, environmental and fishery interests, and numerous Federal departments and agencies. The Gulf of Mexico Program is designed to assist the Gulf States and stakeholders in developing a regional, ecosystem-based framework for restoring and protecting the Gulf of Mexico.

Great Lakes Restoration Initiative

To accelerate the restoration of the Great Lakes, EPA's FY 2010 appropriation included a new \$475 million inter-agency initiative to address issues that affect the Great Lakes, such as invasive species, non-point source pollution, and toxics and contaminated sediment. The GLRI uses outcome-oriented performance goals and

measures to target the most significant problems and track progress in addressing them. Under the Initiative, U.S. EPA's Great Lakes National Program Office will continue cooperation with Federal, State, tribal, and international agencies to carry out the responsibilities of the United States under the U.S./Canadian Great Lakes Water Quality Agreement to protect, maintain, and restore the chemical, biological, and physical integrity of the Great Lakes.

Chesapeake Bay Program

The Chesapeake Bay Program is a unique regional partnership that has led and directed the restoration of the Chesapeake Bay since 1983. Each Bay Program partner agrees to use its own resources to implement projects and activities that advance Bay restoration. The partnership defines its collective actions through formal, voluntary agreements and provides general policy direction through consensus documents, typically called directives.

In response to President Obama's Executive Order on Chesapeake Bay Protection and Restoration (E.O. 13508), signed on May 12, 2009, EPA and the other agencies identified in the E.O. released on May 12, 2010 a strategy to coordinate, expand, and bring greater accountability to efforts to help speed the Bay's recovery. The strategy is managed by a high-level Federal Leadership Committee for the Chesapeake Bay, chaired by EPA and including senior representatives of the departments of Agriculture, Commerce, Defense, Homeland Security, the Interior, Transportation and other agencies.

Mississippi River/Gulf of Mexico Watershed Nutrient Task Force

EPA serves as the chair of the Mississippi River/Gulf of Mexico Watershed Nutrient Task Force, which is composed of senior

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representatives from Federal, State, and tribal agencies and organizations. *The Gulf Hypoxia Action Plan 2008 for Reducing, Mitigating, and Controlling Hypoxia in the Northern Gulf of Mexico and Improving Water Quality in the Mississippi River Basin*, signed in June 2008, presents a Framework for Action in addressing hypoxia in the northern Gulf of Mexico and actions to accelerate the reduction of nitrogen and phosphorus as well as to advance the science, track progress, and raise awareness. This work is part of EPA's Coastal Ecosystems activities.

National Estuary Program/Coastal Ecosystems

The National Estuary Program (NEP), established in 1987 by amendments to the Clean Water Act, currently includes place-based partnership programs in 28 "estuaries of national significance." Each program uses a local, collaborative, stakeholder-driven process to develop and implement its comprehensive, long-term management plan for estuary protection and restoration. The plan's development and implementation rests on partnerships with Federal, tribal, State, local, and community entities. Aside from base NEP grants, the Agency also provides additional support for several "Large Aquatic Ecosystems", including Long Island Sound, Puget Sound, San Francisco Bay, and South Florida. The NEP includes support for working with coastal managers to assess climate change vulnerabilities, and develop and implement adaptation plans.

Coastal and Marine Pollution Control Programs

Regulation of Material for Dumping into the Ocean

Under the Marine Protection, Research, and Sanctuaries Act (MPRSA or Ocean Dumping Act), EPA develops regulations and standards for ocean dumping, designates and manages sites for ocean dumping, issues permits for such dumping (except for dredged material permits, on which EPA must concur with the Army Corps of Engineers), and develops national regulatory guidance. This Act serves to implement U.S. treaty obligations under the London Convention.

EPA carries out this work through its Marine Ecosystems activities.

Vessel Pollution

Under Section 312 of the Clean Water Act, EPA sets performance standards for marine sanitation devices, and designates no-discharge zones for vessel sewage. Also under Clean Water Act Section 312, EPA is developing discharge standards for all discharges from recreational vessels, and works with the Department of Defense to develop Uniform National Discharge Standards to regulate discharges incidental to the normal operation of vessels of the Armed Forces. EPA has also developed and is implementing a general permit for discharges from large non-recreational vessels under CWA Section 402. In addition, as set out in the Certain Alaska Cruise Ship Operations Act, EPA, working closely with the State of Alaska and the U.S. Coast Guard, is assessing the need for changes to gray and black water standards for cruise ships operating in Alaska. EPA carries out this work through its Marine Ecosystems activities.

BEACH Program Grants

EPA administers the Beaches Environmental Assessment and Coastal Health Act (BEACH Act), signed into law on October 10, 2000. In 2010, EPA expects to award an additional \$9,900,000 in grants to eligible States. These funds support microbiological testing and monitoring of coastal recreation waters, including the Great Lakes waters, and support notifying the public of possible exposure to disease-causing microorganisms in coastal recreation waters.

Recreational Water Criteria

EPA is required to conduct research and develop recreational waters criteria in a consent decree and settlement agreement. EPA Office of Water will use the results of these studies in the development of Recreational Waters Criteria to protect human health. EPA is conducting research to: (1) assess human health risks in recreational waters; (2) develop indicators methods and evaluate how well they singly or in combination correlate with swimming related illnesses; and (3) evaluate the suitability of indicators, methods and models for use in different types of waters and for different Clean Water Act programs.

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National Marine Debris Program

EPA's regulatory and voluntary programs work to mitigate marine debris. These programs focus on managing solid waste properly, managing solid waste through the storm water program, and educating people about the impacts of marine debris and what they can do to keep their trash out of our waterways. EPA supports the International Coastal Cleanup Campaign with grant funding and has also supported the National Marine Debris Monitoring Program, which is a statistically based national monitoring program to assess trends and sources of marine debris. EPA is using these results to focus on regulatory and voluntary efforts to reduce marine debris, particularly the debris originating on land.

Other Clean Water Act Programs

In addition to the Clean Water Act programs discussed above, there are numerous other programs established under the Clean Water Act to control pollution in all surface waters within the Act's jurisdiction. By controlling pollution before it reaches coastal and ocean waters, these programs also contribute to EPA's overall ocean and coastal protection activities. They include: water quality standards and criteria; point source discharge permit program; technical assistance/grant program to address nonpoint source pollution; total maximum daily load program; and water quality monitoring and reporting.

Aquatic Invasive Species Program

Aquatic invasive species are one of the greatest threats to U.S. waters and ecosystems. EPA has funded pilot prevention, control, management, research, and education projects, and provides input to national and international efforts to address this issue by serving on the National Invasive Species Council, the Aquatic Nuisance Species Task Force, and by participating in international efforts to develop a treaty and implementing guidance to address introductions through ballast water. EPA carries out this work through its Marine Ecosystems activities.

Assessing Coastal Conditions

Ocean and Coastal Field Assessments

EPA's ocean survey vessel (OSV) Bold acts as a platform from which EPA scientists gather data critical to guiding the Agency's regulatory coastal and ocean protection programs. The research vessel (RV) Lake Guardian is EPA's monitoring and research vessel on the Great Lakes, and is used with other Federal and State agencies and universities to monitor the health of the Great Lakes ecosystem and study biological and chemical problems in them.

Monitoring and Assessment at the Regional and National Scale

Through the coastal ecosystems program, the National Coastal Condition Report (NCCR) describes the ecological health of U.S. coastal waters and the Great Lakes at a regional and national scale. First issued in 2002 and most recently updated in 2008, the NCCR is a collaborative effort among EPA and other Federal agencies, as well as State, regional, and local organizations. It is the only statistically-significant measure of U.S. water quality on a nationwide scale which clearly communicates water quality to the public, and provides managers with the information they need to target water quality actions wisely, and to effectively manage those actions to maximize benefits. EPA, NOAA, USGS, and the U.S. Fish and Wildlife Service are jointly responsible for the National Coastal Condition Report III (NCCR III). The third NCCR assesses the condition of the nation's estuaries and coastal embayments, including the coastal waters of Hawaii and South-central Alaska, based largely on EPA's National Coastal Assessment data collected primarily in 2001 and 2002.

Office of International and Tribal Affairs

EPA helps shape the U.S. Government's positions on marine pollution issues. EPA also participates in treaty negotiations and advises technical programs that protect both

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environmental and economic interests throughout the world's oceans.

Office of Air and Radiation

Great Waters Program

Under the Great Waters program, in partnership with the Department of Commerce's National Oceanic and Atmospheric Administration, EPA addresses the impacts of air deposition to coastal waters. EPA regulates air emissions from area, stationary, and mobile sources and establishes National Ambient Air Quality Standards to protect public health and the environment.

Office of Enforcement and Compliance Assistance (OECA)

Vessel General Permit (VGP) Implementation / OECA and the Regions

In FY 2010, EPA is developing with the U.S. Coast Guard (USCG) and Office of Water, an MOU, sub-agreements and protocols to enhance the USCG's completion of the VGP screening checklists when inspecting vessels. EPA will be reviewing VGP compliance problems identified by the USCG and taking appropriate action to resolve/correct potential violations.

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ENVIRONMENTAL PROTECTION AGENCY

		Percentage of Funds Dedicated to Each Ocean-Related Program Function					Dollars in millions				
		Enhance the use, conservation, and management of ocean coastal and Great Lakes resources	Supporting maritime transportation	Advancing our understanding of oceans, coasts, and Great Lakes	Advancing International Ocean Science and Policy	Other, not elsewhere classified	FY 2008 Actual Obligations	FY 2009 Regular Appropriations Actual Obligations	FY 2009 Recovery Act Actual Obligations	FY 2010 Enacted	FY 2011 Budget
Office of Water											
	Gulf of Mexico	60%		30%	10%		5.7	4.6	0.0	6.0	5.0
	Great Lakes	84%	5%	8%	3%		43.0	57.0	0.0	475.0	300.0
	Chesapeake Bay	70%		30%			30.6	31.1	0.0	50.0	63.0
	Water Quality standards	100%					13.5	13.5	0.0	14.0	17.0
	Marine ecosystems	97%			3%		12.9	13.0	0.0	13.0	14.0
	Coastal ecosystems	100%					58.9	49.0	0.0	99.0	57.0
	BEACH program	100%					1.8	1.8	0.0	2.0	1.8
	BEACH program grants	100%					9.7	9.9	0.0	10.0	9.9
	Clean Water SRF	100%					468.7	385.9	2240.0	1176.0	1120.0
	Section 106 grants	100%					114.6	102.7	0.0	108.0	129.0
	Nonpoint source management	100%					100.4	100.4	0.0	100.0	100.4
Office of International and Tribal Affairs											
	Program Activities		50%		50%		0.8	0.3	0.0	0.1	0.4
Office of Air and Radiation											
	Section 105 Clean Air Grants	100%					1.0	1.0	0.0	1.0	1.0
<i>Environmental Program Management</i>											
	Great Waters Program	100%					1.0	1.0	0.0	1.0	1.0
Office of Research and Development											
	Water Quality Research: BEACHES	75%		25%			3.4	2.7	0.0	3.0	2.7
	Ecosystem Services Research: Services	10%		90%			4.9	5.4	0.0	6.0	5.0
Office of Enforcement and Compliance Assistance											
	Vessel General Permit Implementation	100%					0.0	0.0	0.0	0.0	1.0
Total							870.9	779.3	2,240.0	2,064.1	1,829.0

DEPARTMENT OF HEALTH AND HUMAN SERVICES

National Institutes of Health

National Institute of Environmental Health Sciences

The Department of Health And Human Services (DHHS) is the U. S. government's principal agency for protecting the health of all Americans and providing essential human services, especially for those who are least able to help themselves. Within DHHS is the National Institutes of Health (NIH), the world's premier medical research organization, whose mission is to uncover new knowledge that will lead to better health for everyone. NIH includes 27 separate health institutes and centers, one of which is the National Institute of Environmental Health Sciences (NIEHS). The NIEHS mission is to use environmental sciences to understand human disease and improve human health. In furtherance of its mission, NIEHS supports research on a number of ocean-related issues, including harmful algal blooms and the effects of environmental chemicals on marine life.

Fogarty International Center (FIC)

International Cooperative Biodiversity Groups (ICBG) Program

The ICBG is a unique effort that addresses the interdependent issues of biodiscovery, biodiversity conservation, and sustainable economic growth. Funding for this program is currently provided by the National Institutes of Health (NIH), the Biological Sciences and Geosciences Directorates of the National Science Foundation, the National Institute of Food and Agriculture of the Department of Agriculture, the Office of Biological and Environmental Research of the Department of Energy, and the Oceans and Human Health Initiative of the National Oceanographic and Atmospheric Administration. Efforts to examine the potential of the earth's plants, animals and microorganisms for new

drugs, agrochemicals and bioenergy agents are urgently needed, since enduring habitat destruction and the resulting diminishment of biodiversity will make it increasingly difficult to do so in the future. The Fogarty International Center/NIH-managed ICBG Program is designed to guide natural products drug discovery in such a way that local communities and other source country organizations can derive direct benefits from their own diverse biological resources. Benefit-sharing may provide clear incentives for preservation and sustainable use of that biodiversity.

FIC, being the international arm of NIH, has programs that span the globe. The ICBGs are currently working in nine countries in Latin America, Africa, Southeast and Central Asia, and the Pacific Islands, building research capacity in more than 20 different institutions and training hundreds of individuals. To date, more than 5,000 species of plants, animals, and fungi have been collected to examine biological activity in 19 different therapeutic areas. Numerous publications in chemistry, biodiversity policy, conservation and ethnobiology have emerged from the funded investigators. Broad public attention to the program and its timing relative to international developments associated with the U.N. Convention on Biological Diversity have allowed the ICBG program to offer useful working models for national and international policy discussions related to biodiversity conservation incentive measures, technology transfer, intellectual property and benefit-sharing.

Agency for Toxic Substances and Disease Registry

Division of Health Studies

The Great Lakes Human Health Effects Research Program (GLHHERP) is a congressionally-mandated, public health research program

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designed to determine, reduce, and prevent adverse health effects from exposure to toxic chemicals via fish consumption in the Great Lakes.

The goal of the GLHHERP is to assess the relationship between exposures to hazardous substances in the Great Lakes basin via fish consumption and to determine the potential for adverse health effects in vulnerable populations through research studies conducted by Great Lakes State health departments, academic institutions, and Federally recognized tribal governments. In FY 2008, this was a Division of Toxicology and Environmental Medicine program, funded in the amount of \$800,000, and distributed among four grantees: the University of Illinois-Champaign, Michigan State University, the State University of New York at Buffalo, and the State University of New York--College of Oswego. It is now a Division of Health Studies program.

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DEPARTMENT OF HEALTH AND HUMAN SERVICES

	Percentage of Funds Dedicated to Each Ocean-Related Program Function					Dollars in millions				
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National Institutes of Health										
National Institute of Environmental Health										
Ocean-related Extramural Research and Training			100%			9.1	8.8	0	9.1	9.4
Fogarty International Center										
<i>Division of International Training & Research</i>										
International Cooperative Biodiversity Group	40%		40%	20%		1.2	1.5	0	1.5	1.5
Agency for Toxic Substances and Disease Registry										
<i>Division of Health Studies</i>										
Great Lakes Human Health Effects Research Program				100%		0.8	0.8	0	5.6	3.2
Great Lakes Restoration- Brownfield	100%					0.5	0.3	0	0.5	0.3
Total						11.6	11.4	0	16.7	14.4

DEPARTMENT OF HOMELAND SECURITY

Federal Emergency Management Agency

Flood Map Modernization Fund

The Flood Map Modernization Program provides a technology based, cost-effective process for updating, maintaining, storing, and distributing the flood hazard and risk information portrayed on flood maps.

Disaster Relief Fund

The Hazard Mitigation Grant Program (HMGP) is authorized by Section 404 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, as amended (the Stafford Act), Title 42, United States Code (U.S.C.) 1570c. The key purpose of HMGP is to ensure that the opportunity to take critical mitigation measures to reduce the risk of loss of life and property from future disasters is not lost during the reconstruction process following a major disaster. HMGP is available, when authorized under the Presidential major disaster declaration, in the areas of the State requested by the Governor. The amount of HMGP funding available to the Applicant is based upon the total Federal assistance to be provided by FEMA for disaster recovery under the major disaster declaration.

Pre-Disaster Mitigation Fund

The Pre-Disaster Mitigation (PDM) program is authorized by Section 203 of the Stafford Act, 42 U.S.C. 5133. The PDM program is designed to assist States, Territories, Indian tribal governments, and local communities to implement a sustained pre-disaster natural hazard mitigation program to reduce overall risk to the population and structures from future hazard events, while also reducing reliance on Federal funding from future major disaster declarations.

National Flood Insurance Fund (NFIF)

Flood Mitigation Assistance Program

The Flood Mitigation Assistance (FMA) program is authorized by Section 1366 of the National Flood Insurance Act of 1968, as amended by the National Flood Insurance Act of 1968, as amended (NFIA), 42 U.S.C. 4104c, with the goal of reducing or eliminating claims under the National Flood Insurance Program (NFIP). Emergency Management Agency, Federal Insurance and Mitigation Administration administers the Unified Hazard Mitigation Assistance (HMA) Programs that present a critical opportunity to reduce risk to individuals and property from natural hazards while simultaneously reducing reliance on Federal disaster funds. The HMA programs are administered with States, Territories, and Indian Tribal governments who in turn work with their local governments and in some cases private non-profit organizations.

Repetitive Flood Claims Program

The Repetitive Flood Claims (RFC) program's goal is to reduce flood damages to individual properties for which one or more claim payments for losses have been made under flood insurance coverage. The RFC program seeks to achieve the greatest savings to the National Flood Insurance Fund in the shortest period of time.

Severe Repetitive Loss Program

The Severe Repetitive Loss (SRL) program's goal is to reduce flood damages to residential properties that have experienced severe repetitive losses under flood insurance coverage and that will result in the greatest amount of savings to the NFIF in the shortest period of time.

U.S. Coast Guard

Maritime Safety

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As the lead agency for maritime search and rescue in U.S. waters, the U.S. Coast Guard (CG) coordinates its afloat and airborne units, as well as those of Federal, State, tribal, and local responders. The CG helps leverage the world's merchant fleet to rescue mariners and vessels in distress around the globe through the Automated Mutual-assistance Vessel Rescue (Amvers) system. When natural or manmade disasters threaten the Nation, the CG works closely with State and local first responders to apply its maritime rescue and other operational capabilities in protecting life, property, and the environment.

The CG has lead responsibility for preserving the lives and safety of Americans and vessels and other property at risk in the maritime domain. In partnership with other Federal agencies, and other stakeholders, the CG preserves safety at sea through a focused program of prevention, response, and investigation. Prevention activities include developing and enforcing commercial and recreational vessel standards, licensing commercial mariners, installing and maintaining electronic and fixed aids to navigation, operating the International Ice Patrol to inform and protect ships transiting the North Atlantic shipping lanes, and educating the public. The CG develops operating and construction criteria for many types of vessels, from commercial ships to recreational boats, and serves as America's voice in the International Maritime Organization (IMO). As the National Recreational Boating Safety Coordinator, the CG works to minimize loss of life, personnel injury, property damage, and environmental harm associated with recreational boating. The CG's boating safety program involves public education programs, regulation of boating design and construction, approval of boating safety equipment, and vessel safety checks of recreational boats for compliance with Federal and State safety requirements. The all-volunteer Coast Guard Auxiliary plays a central role in executing many aspects of this program.

Maritime Mobility

The CG carries out numerous port safety and security and waterways management tasks. It provides a safe and efficient navigable waterway

system to support domestic commerce, international trade, and the military sealift requirements critical to our national defense posture. CG services include long- and short-range aids to navigation, access to a range of navigational information through Notices to Mariners, vessel traffic services, domestic and international icebreaking and patrol services, technical assistance and advice, vessel safety standards and inspection, and bridge administration standards and inspection. CG teams train the maritime forces of other nations throughout the world.

Protection of Natural Resources

The CG is the primary agency for at-sea enforcement of laws and regulations for the management and conservation of living marine resources and their environment, protecting these resources from preventable adverse impacts. The CG actively protects sensitive marine habitats and sanctuaries, marine mammals, and endangered marine species, and enforces laws that protect U.S. waters from the discharge of oil and other hazardous substances.

The CG has implemented a wide range of prevention programs, accompanied by enforcement, education, contingency planning, and emergency response activities in support of its many stewardship and environmental protection services. The CG enforces international environmental and safety laws and treaties set forth by the IMO through its Port State Control Vessel Inspection Program. The CG requires the owners and operators of vessels and facilities that carry or handle oil and designated hazardous substances to submit Response Plans in accordance with the Oil Pollution Act of 1990 and the IMO's highly successful international convention, MARPOL 73/78. These vessel and facility plans address spill response and mitigation procedures, required pollution prevention and cleanup equipment, and crew training requirements.

The CG works side by side with EPA, NOAA, and 13 other Federal departments and agencies as part of the National Response Team (NRT) and

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13 Regional Response Teams. The NRT provides Federal resources, technical assistance, and policy guidance for pollution incidents in support of the Federal On-Scene Coordinators. The recent Deepwater Horizon incident in the Gulf of Mexico was a notable example of this interagency coordination, with retired CG Commandant Thad Allen serving as the President's key representative to oversee the response.

The CG also provides mission-critical command and control support, and is typically the first responding agency to all marine environmental disasters, providing pollution control services, search and rescue capability, and humanitarian aid in times of natural or man-made disaster. Under the National Oil and Hazardous Substances Pollution Contingency Plan, senior CG officers are designated as Captains of the Port (COTPs). COTPs serve as the pre-designated FOSCs for oil and hazardous substance incidents in all coastal and some inland waterways. In addition, as response operations experts, the National Strike Force and Strike Teams are available to advise foreign governments for maritime pollution incidents worldwide.

To ensure all coastal areas are prepared to respond to oil spills, the CG works closely with Area Committee's to draft Area Contingency Plans. Area Contingency Plans lay out a framework for how agencies within the Area will work together during a response, and highlight environmentally sensitive areas and provide specific ways to protect them from harm. The CG participates in regular oil spill exercises to ensure that the plans are adequate and realistic. Every three years, the CG plans for and participates in a Spill of National Significance exercise.

The CG has a robust research and development program that pursues new technologies for marine environmental response and prevention. The CG serves as the Chair for the Interagency Coordinating Committee on Oil Pollution Research. In this role, the CG works with 13 other Federal partners to ensure that oil pollution Research and Development projects are

coordinated across Federal and academic entities, and takes into account the knowledge base and best practices of other stakeholders.

Another CG priority in living marine resources law enforcement is to protect the U.S. EEZ from incursions by foreign fishing vessels, thus protecting our valuable stocks of domestic living marine resources from foreign poaching. This mission is aligned with the CG's Maritime Security Role, ensuring U.S. maritime sovereignty and providing effective enforcement of U.S. law, international conventions, and treaties.

The two other principal priorities for living marine resources fall under the CG's Maritime Stewardship Role. CG maritime surveillance and law enforcement patrols help ensure compliance with domestic laws and regulations for living marine resources within the U.S. EEZ. Each year, the CG inspects over 6,000 U.S.-flagged vessels at sea to ensure compliance with Federal fishery, marine sanctuary, and protected species management and recovery plans. The CG's Living Marine Resources program includes the development of management measures that support environmental protection and ocean stewardship. CG personnel work with other agencies during the development of these management plans and regulations, providing expert advice and support regarding the enforcement of such management measures.

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DEPARTMENT OF HOMELAND SECURITY

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Federal Emergency Management Agency										
<i>Flood Map Modernization Fund</i>										
Coastal Flood Insurance Studies	100%					7.5	45.0	0.0	45.0	51.0
Impact of Climate Change on the NFIP	100%					0.5	0.0	0.0	0.0	0.0
<i>Management & Administration</i>										
HAZUS	100%					1.5	1.0	0.0	1.0	1.0
<i>Disaster Relief Fund</i>										
Hazard Mitigation Grant Program	100%					1246.0	359.0	0.0	23.0	0.0
<i>Pre-Disaster Mitigation Fund</i>										
Pre-Disaster Mitigation Program	100%					114.0	90.0	0.0	100.0	100.0
<i>National Flood Insurance Fund</i>										
Flood Mitigation Assistance Program	100%					34.0	35.7	0.0	40.0	40.0
Repetitive Flood Claims Program	100%					10.0	10.0	0.0	10.0	10.0
Severe Repetitive Loss Program	100%					80.0	80.0	0.0	70.0	0.0
FEMA Total						1493.5	620.7	0.0	289.0	202.0
U.S. Coast Guard										
<i>Maritime Safety</i>										
Search and Rescue	100%					733.9	746.7	0.0	761.2	772.1
Recreational Boat Safety	100%					220.4	264.4	0.0	247.1	251.1
Commercial Vessel Safety	50%	49%		1%		142.1	146.6	0.0	152.1	156.9
Waterways Management	50%	49%	1%			74.7	75.7	0.0	79.3	80.7
<i>Maritime Mobility</i>										
Bridge Administration		100%				10.6	10.6	0.0	11.6	11.8
Radio Navigation Aids		100%				109.8	111.0	0.0	113.0	115.3
Short Range Aids to Navigation		99%	1%			839.1	856.1	0.0	899.4	901.2
Ice Breaking - Domestic		100%				47.3	47.3	0.0	51.3	52.0
<i>Protection of Natural Resources</i>										
Marine Environmental Protection		99.5%	0.5%			134.6	124.9	0.0	158.8	161.0
Enf. Of Laws/Treaties-Fish Domestic	100%					549.5	533.9	0.0	576.3	586.0
Enf. Of Laws/Treaties-Protection of LMR	100%					32.6	29.0	0.0	33.6	33.1
USCG Total						2894.5	2946.0	0.0	3083.6	3121.1
Total						4388.0	3566.7	0.0	3372.6	3323.1

DEPARTMENT OF THE INTERIOR

U.S. Geological Survey

Geographic Research, Investigations and Remote Sensing

Geography programs are engaged in activities which support the National Ocean Policy and provide information needed for Coastal and Marine Spatial Planning. Research is being conducted to assess the causes and consequences of land change to water quality and wildlife habitat; develop web-based tools for resource management; and transfer these tools nationwide. Partnerships with other Federal, State, and local government agencies are in place to collect detailed elevation data from LiDAR along the coasts and in other areas.

Geologic Hazard Assessments

USGS geologic hazard monitoring and assessment activities support mitigation, preparedness and response to tsunami-generating earthquakes and landslides. The USGS National Earthquake Information Center reports on earthquakes around the world and works closely to coordinate USGS statutory responsibilities for earthquake reporting with NOAA responsibilities for tsunami detection and warning. USGS supports both internal and external research focused on earthquake hazards that threaten coastal areas.

Geologic Landscape and Coastal Assessments

USGS geologic landscape and coastal assessments investigations provide the understanding of geology and geologic processes required to address issues such as coastal erosion, storm, tsunami, earthquake, landslide and sea-level rise hazards; impacts of coastal contaminants; and decline of wetland, coral and offshore marine habitats and occurrence of low oxygen (hypoxia) zones and harmful algal blooms. The USGS will, in response to the

National Ocean Policy, engage with other Federal agencies in the development of an information management system to support implementation of Coastal and Marine Spatial Planning. The USGS has vast information resources, including data, assessments, interpretive products, and models; relevant to and required for effective implementation of CMSP.

Geologic Resource Assessments

The USGS Energy Resources Program (ERP) provides information from impartial, scientifically robust studies to advance the understanding of energy resources, contribute to plans for a sustainable and secure energy future, and facilitate responsible use of resources. The results from ERP energy resource assessments support the U.S. Department of the Interior's (DOI's) mission of protecting and responsibly managing the Nation's natural resources, and address key National Ocean Policy priority objectives such as inform decisions and improve understanding.

Hydrologic Monitoring, Assessments, and Research

The USGS provides the base streamflow and water-quality data for characterization of riverine inputs into coastal ocean waters. The USGS also funds studies of estuaries throughout the Nation including San Francisco Bay, Puget Sound, Chesapeake Bay, and the Everglades. The scope of the studies includes hydrodynamic modeling and water quality and habitat characterization of these waters. The information available supports the priorities of the National Ocean Policy.

Cooperative Water Program

The USGS hydrology efforts are enhanced through the Cooperative Water Program's partnership with more than 850 other Federal, State, and local partner agencies. These partnerships provide resources for the operation of 7,500 USGS streamgages around the Nation

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that report the flow of water into the Nation's rivers, and ultimately, coastal waters and provides basic water quality data needed to characterize water conditions and constituent loads into coastal waters.

Water Resources Research Act

The Water Resources Research Institutes plan, facilitate, and conduct research to aid in the resolution of State and regional water issues by promoting technology transfer and disseminating and applying research results. Research at many of the institutes addresses science priorities of the National Ocean Policy. There are currently 54 Institutes: one in each State, the District of Columbia, Puerto Rico, the U.S. Virgin Islands, and Guam. The Guam institute also serves the Federated States of Micronesia and the Commonwealth of the Northern Mariana Islands.

Biological Research & Monitoring

Priorities of the National Ocean Policy are addressed through biological investigations which quantify status and trends of critical biological resources in marine, coastal and Great Lakes environments, such as species at risk, shorebirds and water birds, sea ducks, pelagic seabirds, marine mammals, sea turtles and fish stocks.

Global Climate Change

USGS is developing assessment and forecast modeling tools and decision-support tools for changing coastal conditions and vulnerability under conditions of climate change. Additional work focuses on improving understanding of past Earth climates to inform modeling and forecasting of current and future climates in the Arctic, Pacific Coast, Gulf Coast and Atlantic Coastal Margin, including studies of sea-ice history and Earth's history of abrupt climate change. This program supports forecasting tools to assist coastal managers in anticipating and responding to coastal change due to storms, erosion, groundwater changes, and sea level rise.

Bureau of Land Management

The BLM manages coastal land and facilities in Oregon, Washington, and California, and watersheds that flow to the Pacific Ocean. A focal point of BLM land management is the protection and restoration of water quality and fish habitat. Anadromous fish such as Pacific salmon utilize habitat on BLM lands as far inland as tributaries to the Columbia River in Idaho for spawning and rearing. The protection, restoration and monitoring of water quality and fish habitat is outlined in BLM resource management plans. The BLM also funds a variety of research projects to further our understanding of effects of land management activities on riparian conditions, water quality, and fish habitat.

Bureau of Ocean Energy Management, Regulation, and Enforcement

The Bureau of Ocean Energy Management, Regulation, and Enforcement (BOEMRE), formerly known as the Minerals Management Service, is responsible for environmentally safe and sound offshore energy and minerals resource management on more than 1.7 billion acres of the Outer Continental Shelf (OCS).

The BOEMRE oversees its ocean activities along four primary program areas: offshore oil and gas, renewable energy, marine minerals, and the Coastal Impact Assistance Program. Currently, about 43 million acres are leased to private industry for oil and gas development. Production from these leases account for almost 29 percent of the Nation's domestic production of crude oil and nine percent of its natural gas. The BOEMRE's oversight and regulatory framework is intended to ensure production and drilling is done in a safe and environmentally responsible manner.

BOEMRE is committed to conducting its stewardship responsibilities with a consideration towards marine spatial planning and employing an adaptive and ecosystem-based approach to

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management. To accomplish this, BOEMRE decision-making is based on the best available scientific and geospatial information. This is accomplished through the integration of its environmental research and spatial information systems across its three resources management program areas: offshore oil and gas, renewable energy, and marine minerals.

OEMM - Offshore Energy and Minerals Management - Outer Continental Shelf Lands

With the passage of the Energy Policy Act of 2005 (EPAct), BOEMRE has led the effort to facilitate increased renewable energy production on the OCS. As with the OCS oil and gas program, the Renewable Energy Program covers activities throughout a project's life from leasing to final decommissioning, thus ensuring that all activities it oversees on the OCS are conducted in a safe and environmentally sound manner. BOEMRE has many efforts that support the development of wind resources on the Atlantic Outer Continental Shelf. In early 2010, the Secretary convened a meeting of Atlantic coastal State governors, which culminated in eleven Atlantic State governors signing a memorandum of understanding establishing the Atlantic Offshore Wind Energy Consortium. BOEMRE will open a new Atlantic Regional Office dedicated entirely to offshore renewable energy development offshore states from Maine to Florida. Furthermore BOEMRE has established task forces with States to facilitate offshore renewable energy coordination and consultation. The bureau has issued five offshore renewable energy leases—four to companies seeking to build data collection facilities on the OCS offshore of New Jersey and Delaware, and one to Cape Wind Associates LLC, for the commercial development of 468 MW of wind generation in Nantucket Sound.

Environmental Studies Program

The BOEMRE Environmental Studies Program carries out mission-oriented research that nurtures scientific discovery in the marine environment and social sciences while focusing on activities that address national goals related to

environmental quality, economic prosperity, and sustainable development. The program conducts large scale oceanographic circulation and modeling and laboratory studies to improve understanding of the fate, transport, and effects of oil when spilled in the environment and other potential impact producing agents, including permitted discharges which may affect air and water quality, and sound. The program also conducts cutting edge large-scale ecosystem-based studies in areas such as the Arctic and deepwater Gulf of Mexico leading to both discoveries of new habitats and new animal species. The primary focus of these studies, however, is to provide information to support management decisions necessary for environmental protection. In addition, the program carries out long-term research monitoring to gather time series information to describe changes in select marine ecosystem components in areas that have OCS development activities, including renewable energy production. Long-term data sets have been produced in the Arctic, Pacific and Gulf of Mexico and initial efforts are beginning in the Atlantic Region. Social and economic research is supported to develop an understanding of how OCS activities affect community composition and infrastructure, employment, and culture. Research partnerships with stakeholders, academia, other Federal agencies and international researchers and independent peer review are keystones for the program.

Technology Assessment and Research (TA&R) Program

The BOEMRE TA&R Program supports research associated with offshore operational safety and engineering issues, as well as oil spill response capabilities. Operational safety and engineering issues include the complete spectrum of oil and gas operations and renewable energy activities. The TA&R Program operates through contracts with universities, private firms, and government laboratories to assess safety-related technologies and to perform necessary applied research. Many projects are jointly funded with industry, other Government organizations, and international regulatory organizations as a means to minimize overlap and leverage funds.

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Marine Spatial Planning

As per the Energy Policy Act of 2005 (P.L. 109-58) the BOEMRE and its many Federal and non-Federal partners have been pursuing an OCS Mapping Initiative allowing more direct access to the information and resources necessary to promote and conduct good ocean governance. Marine Spatial Planning has been implicitly used in the development of the Five-Year Leasing Program and Sales Process as multiple and competing uses of the ocean are considered and balanced in leasing decisions.

ROMM - General Administration

The General Administration function provides the administrative, management and policy support, and services that the entire organization needs to carry out its primary mission of oceans resource management. The overhead support costs associated with oceans and coastal activities are estimated to be 50 percent of the total general administration program. Support includes procurement and managing contracts for environmental studies and other large projects, IT support, and the administrative staff who support the technical staff.

Oil Spill Research

The Oil Spill Research (OSR) appropriation funds oil spill response research, Ohmsett (the National Oil Spill Response and Renewable Energy Test Facility), oil spill prevention and response planning, and regulation of oil spill financial responsibility. The program supports research to improve the capabilities for detecting and responding to oil spills in the marine environment.

Coastal Impact Assistance Program

The Coastal Impact Assistance Program (CIAP) authorizes funds to be distributed to Outer Continental Shelf (OCS) oil and gas producing States for the conservation, protection and preservation of coastal areas, including wetlands.

Under the CIAP, the Secretary of the Interior is authorized to distribute to producing States and

coastal political subdivisions (CPSs) \$250 million for each of the fiscal years 2007 through 2010. Authorized uses of CIAP funds include projects and activities for the conservation, protection, or restoration of coastal areas and for the mitigation of damage to fish, wildlife, or natural resources.

National Park Service

Operation of the National Park System

In 74 parks spanning 25 coastal states and U.S. territories, the NPS manages over 6,000 miles of beaches, coral reefs, kelp forests, seagrass beds, wetlands, historic shipwrecks and forts, and a diverse array of marine aquatic wildlife and fisheries. The NPS developed an Ocean Park Stewardship Action Plan which seeks to establish a seamless network of ocean National Parks, National Wildlife Refuges, National Marine Sanctuaries, and National Estuarine Research Reserves; discover, map, and protect ocean parks; engage visitors in ocean park stewardship; increase NPS technical capacity for ocean exploration and stewardship. These parks play a critical role in conserving our nation's ocean and Great Lakes natural and cultural heritage.

Everglades Restoration and Research

The restoration, preservation, and protection of Federal interest lands in South Florida is critical to the health of the ecological systems supported by the Everglades' "river of grass" and directly affects the distribution and abundance of native vegetation and wildlife in Everglades National Park and Big Cypress National Preserve. The Comprehensive Everglades Restoration Plan (CERP) represents a partnership of federal, state and tribal agencies and implements projects that are essential to the restoration, protection and preservation of the natural ecological systems in central and south Florida. It includes feasibility studies, pilot projects for seepage management and in-ground reservoirs, and restoration projects

Fish and Wildlife Service

Resource Management

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Through its Resource Management appropriations, the U.S. Fish and Wildlife Service is engaged with the Department in implementing the National Ocean Policy. The Service is providing staff and resources to support the planning efforts called for in the Final Recommendations, including CMSP.

Under numerous laws and authorities, the Service has responsibility to protect and recover endangered species, conserve and manage certain marine mammals, conserve migratory birds and anadromous fish, restore coastal habitats, and manage the National Wildlife Refuge System, which includes portions of four marine national monuments in the Pacific Ocean. At least 14 separate Service programs conduct conservation activities or support restoration projects in coastal areas and almost 10 percent of the Service's annual budget supports marine and coastal activities. These programs manage wildlife refuges, conserve, restore and recover fish and wildlife, work with partners to protect and restore important coastal and marine habitat, protect ecosystem health, and respond to threats from climate change.

Coastal and Ocean activities supported by the Resource Management appropriations include: (1) Endangered Species Program to reverse the decline of listed species and expedite species recovery; (2) Conservation Planning Assistance Program that works in concert with Federal, State, and tribal governments to conserve wetlands and estuarine and marine habitat, and mitigate the detrimental impacts of conventional and renewable energy projects, navigation, and dredging proposals; (3) National Wetlands Inventory Program to develop data that is used in sea level rise model simulations and by managers and decision-makers for coastal resource and project assessments, wildlife and avian habitat management, oil-spill remediation, and wetland protection and conservation; (4) FWS Coastal Program which is a voluntary cooperative assistance program that provides technical and financial assistance to partners to support protection, restoration, and enhancement of coastal habitat. The Coastal Program is implemented through a network of habitat

restoration experts in 22 coastal areas around the nation, including the Great Lakes; (5) National Wildlife Refuge System, which includes 180 marine programs and coastal refuges, including expansive estuarine systems in the Arctic, remote coral reef atolls, and enormous Marine National Monuments in the Pacific. Conservation initiatives support fishery, wildlife, and listed species. Refuge marine programs ensure the maintenance of biological integrity and environmental health of refuge lands and waters; and (6) Fisheries Program consisting of 150 fisheries field stations that works closely with state and Tribal partners to protect and restore native fish populations, protects and restores aquatic habitats, and monitors and controls invasive species.

Construction

The construction program supports ocean and coastal resources via line-item construction projects that improve/protect coastal water and land resources.

Sport Fish

Coastal Wetland Conservation Grants

Coastal Wetland Conservation Grants awarded annually by the FWS are authorized by the Coastal, Wetlands Planning, Protection, and Restoration Act of 1990. The program is funded through excise taxes on fishing equipment, and motorboat and small engine fuel. Eligible recipients are coastal states, territories, and commonwealths. The grants are used to acquire, restore, and enhance coastal wetlands and adjacent habitat for long-term benefits to fish and wildlife.

The Clean Vessel Act Program

The Clean Vessel Act of 1992 authorizes a FWS competitive grants program to States to survey for the number and location of operational pump-out stations and dump stations in coastal states for certain types of recreational vessels; plan for construction of stations and facilities (coastal states only); construct, renovate, operate, and maintain pump out and dump stations; and conduct programs to educate recreational boaters about the problem of waste discharge from

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vessels and the location of pump out and dump stations. States are reimbursed up to 75 percent of project costs.

North American Wetlands Conservation Fund Grant Program

The North American Wetlands Conservation Act (NAWCA) grant program is an internationally recognized conservation program that provides grants throughout North America for the conservation of waterfowl and other wetland-associated migratory birds. For over 20 years, grants made available through NAWCA have helped a multitude of partnerships protect and improve the health and integrity of the landscapes on which our fish and wildlife resources depend.

Natural Resource Damage Assessment and Restoration

The restoration program's mission is to restore natural resources injured as the result of oil spills or hazardous substances releases. It assesses the injuries to natural resources for which the Department is designated a trustee on behalf of the public. The DOI negotiates legal settlements or takes legal actions against responsible parties to use recovered funds to restore injured resources. Using funds received in settlement, trustees plan and implement ecological restoration of injured natural resources caused by oil spills or the release of hazardous substances into oceans, coastal, and Great Lakes environments. All such restoration actions are implemented in concert with other affected Federal, State, and tribal co-trustees, as well as local and regional-level non-governmental organizations.

Office of Insular Affairs

Assistance to Territories: Coral Reef Initiative

The goal of the Coral Reef Initiative program is to improve the health of coral reefs in the U.S. insular areas for their long-term economic and social benefit through enhanced local management and protection. OIA's primary role is to assist the insular areas in identifying causes

for coral reef decline, assessing needs for improving local management and protection, and as available, providing technical and financial assistance to meet priority needs.

Office of the Secretary

ONRR – The Office of Natural Resources Revenue

The Secretary formally established ONRR from what was the Minerals Revenue Management program. ONRR reports to the Secretary through the Assistant Secretary for Policy, Management, and Budget. Funding attributable to ONRR continues to appear within the BOEMRE budget structure. Future reports will display ONRR funding independent from BOEMRE as the Department integrates ONRR into its operations. Through ONRR, the Department utilizes its financial systems and human resources to collect, account for, substantiate, and disburse revenues associated with mineral and offshore renewable energy production from leased federal and Indian lands. In addition, ONRR serves as a trustee of the royalty asset from Indian trust properties and as an advocate for the interests of Indian mineral owners, ensuring fulfillment of our Indian trust responsibility.

Annually, nearly \$900 million in outer continental shelf (OCS) receipts are transferred to the Land and Water Conservation Fund (LWCF) and \$150 million to the Historic Preservation Fund (HPF). In recent years, the OCS revenues have accounted for almost 100% of the deposits to the LWCF, and the entire amount to the HPF. However, actual appropriations from these accounts are significantly lower than the available receipts.

The LWCF has been the principal source of monies for Federal land acquisition at the Department of the Interior and the Forest Service. In addition, it provides for a matching grant program to assist States in recreation planning, acquiring recreational lands and waters, and developing outdoor recreational facilities. The HPF provides grants for important historic preservation activities.

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DEPARTMENT OF INTERIOR

Percentage of Funds Dedicated to Each Ocean-Related Program Function

Dollars in millions

	Enhance the use, conservation, and management of ocean coastal and Great Lakes resources	Supporting maritime transportation	Advancing our understanding of oceans, coasts, and Great Lakes	Advancing International Ocean Science and Policy	Other, not elsewhere classified	FY 2008 Actual Obligations	FY 2009 Regular Appropriations Actual Obligations	FY 2009 Recovery Act Actual Obligations	FY 2010 Enacted	FY 2011 Budget
U.S. Geological Survey										
Geographic Research, Investigations and Remote Sensing*			100%			3.2	3.2	0.0	3.2	3.2
Geologic Hazard Assessments	100%					9.5	9.5	0.0	9.5	9.5
Global Seismographic Network				100%		4.0	5.4	0.0	5.8	5.4
<i>Geologic Landscape and Coastal Assessments</i>										
National Cooperative Geologic Mapping			100%			1.6	1.6	0.0	1.6	1.6
Coastal and Marine Geology	55%	0%	44%	1%		40.6	44.7	0.0	46.2	49.3
<i>Geologic Resource Assessments</i>										
Energy Resources	25%		65%	10%		1.0	1.0	0.0	1.0	1.0
Hydrologic Monitoring, Assessments, and Research										
Ground-Water Resources	50%		50%			0.8	0.9	0.0	0.9	0.9
National Water Quality Assessment	40%		60%			6.4	6.9	0.0	6.9	6.9
National Stream Quality Accounting	25%		75%			0.4	0.0	0.0	0.0	0.0
Toxic Substances Hydrology	25%		75%			2.0	1.6	0.0	1.7	1.6
National Streamflow Information Program	60%	5%	35%			1.0	1.1	0.0	1.4	1.4
Hydrologic Networks and Accounting	20%		80%			3.0	3.0	0.0	3.1	3.5
National Water Quality Monitoring Network	60%	5%	35%			3.1	3.2	0.0	3.3	3.2
Cooperative Water Program										
Cooperative Water Program	60%	5%	35%			3.1	3.2	0.0	3.3	3.2
Water Resources Research Act										
Water Resources Research Act	10%		90%			2.5	2.6	0.0	2.6	2.6
Biological Research & Monitoring										
Contaminants			100%			0.2	0.2	0.0	0.2	0.2
Fisheries & Aquatic			100%			8.4	8.4	0.0	9.0	9.0
Invasive Species			100%			1.0	1.0	0.0	1.0	1.0
Status & Trends			100%			3.2	3.2	0.0	3.0	2.5
Terres., Freshwater, and Marine Ecosystems			100%			16.5	16.5	0.0	17.0	17.0
Wildlife & Terres.			100%			1.3	1.3	0.0	4.3	4.4
Global Change										
Global Change			100%			0.0	1.6	0.0	1.9	1.6
Climate Effects Network	50%		50%			0.0	0.0	0.0	0.2	0.1
Biological Carbon Sequestration			100%			0.0	0.0	0.0	0.0	0.4
Decision Support Analysis			100%			0.0	0.0	0.0	0.1	0.1
Research and Development			100%			0.6	4.4	0.0	4.8	6.4
USGS Total						113.4	124.5	0.0	131.8	136.0
Bureau of Land Management										
<i>Management of Lands and Resources</i>										
Manage & Monitor Salmon Habitat	100%					7.8	7.8	0.0	7.8	7.8
Other Activities**	100%					0.3	0.5	0.3	0.3	0.3
Subtotal						8.1	8.3	0.3	8.1	8.1
<i>Oregon & California Grant Lands</i>										
Manage & Monitor Salmon Habitat*	100%					19.9	20.4	0.0	21.3	19.9
Other Activities**	100%					1.5	1.5	0.0	1.5	1.5
Subtotal						21.4	21.9	0.0	22.9	21.4
BLM Total						29.5	30.2	0.3	31.0	29.5

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Percentage of Funds Dedicated to Each Ocean-Related Program Function

Dollars in millions

	Enhance the use, conservation, and management of ocean coastal and Great Lakes resources	Supporting maritime transportation	Advancing our understanding of oceans, coasts, and Great Lakes	Advancing International Ocean Science and Policy	Other, not elsewhere classified	FY 2008 Actual Obligations	FY 2009 Regular Appropriations Actual Obligations	FY 2009 Recovery Act Actual Obligations	FY 2010 Enacted	FY 2011 Budget
Bureau of Ocean Energy Management, Regulation, and Enforcement										
ROMM - Royalties and Offshore Minerals Management - Outer Continental Shelf Lands	100%					161.3	166.2	0.0	196.9	266.9
ROMM - Minerals Revenue Management	100%					40.8	43.3	0.0	44.7	59.2
ROMM - General Administration	100%					23.7	25.6	0.0	27.9	32.2
ROMM Subtotal						225.9	235.1	0.0	269.4	358.3
<i>Oil Spill Research</i>										
Oil Spill Research	100%					6.3	6.3	0.0	6.3	14.9
Coastal Impact Assistance Program***	100%					1.0	46.5	0.0	250.0	0.0
BOEMRE Total						233.2	287.9	0.0	525.7	373.2
National Park Service										
Natural Resource Stewardship	71%	1%	24%		4%	71.9	83.7	14.5	79.7	83.3
Everglades Restoration and Research	47%		53%			4.6	4.6	0.0	4.6	4.6
NPS Total						76.6	88.4	14.5	84.3	87.9
Fish and Wildlife Service										
<i>Resource Management</i>										
Consultation	100%					2.5	2.5	0.0	2.5	4.5
Recovery	100%					4.6	4.6	0.0	3.1	3.8
Coastal Program	100%					14.1	14.7	4.5	15.9	15.7
Partners for Fish and Wildlife	100%					12.5	12.2	0.6	13.3	13.7
National Wetlands Inventory	100%					2.0	1.3	0.0	1.2	1.2
Refuge Operations & Maintenance	78%		21%	1%		104.3	111.2	8.0	120.8	120.0
Marine Mammals Program	60%		35%	5%		3.0	3.4	0.0	5.6	5.9
Maintenance and Equipment	100%					5.7	5.8	4.4	5.8	5.8
Aquatic Habitat and Species Conservation	100%					11.0	11.2	1.0	11.2	13.2
ANS Control Invasive Alien Species	85%		15%			0.3	0.3	0.0	0.3	0.3
National Fish Hatchery Operations	100%					14.5	14.9	0.0	14.9	15.7
Division of International Conservation	95%			5%		0.3	0.3	0.0	0.3	0.3
Division of Management Authority	100%					0.1	0.1	0.0	0.1	0.1
Office of Law Enforcement	100%					1.0	1.0	0.0	1.0	1.1
Conservation Planning Assistance	100%					0.0	0.0	0.0	0.0	2.1
Environmental Contaminants	100%					0.0	0.0	0.0	0.0	0.4
RM Subtotal						175.8	183.5	18.4	196.0	203.9
Construction	100%					7.9	6.0	0.0	5.0	1.3
<i>Sport Fish</i>										
Coastal Wetlands Grants	100%					18.9	19.0	0.0	19.2	17.9
Clean Vessel Act Program	100%					14.0	13.6	0.0	12.8	12.8
SF Subtotal						32.9	32.6	0.0	32.0	30.7
<i>North American Wetlands Conserv. Fund</i>										
Coastal and Great Lakes Grants	100%					18.9	19.0	0.0	19.2	17.9
FWS Total						236.1	241.7	18.4	252.8	254.4
Natural Resource Damage Assessment and Restoration										
Damage Assessments	100%					3.1	2.1	0.0	2.1	2.1
Restoration Implementation	100%					16.5	20.4	0.0	22.0	25.0
NRDAR Total						19.6	22.4	0.0	24.0	27.1
Office of Insular Affairs										
Assistance to Territories										
Coral Reef Initiative	65%		20%	15%		1.0	1.0	0.0	1.0	1.0
OIA Total						1.0	1.0	0.0	1.0	1.0
DOI Total						709.4	796.1	33.2	1050.6	909.0

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* Includes Land Remote Sensing, Geographic Analysis and Monitoring, and National Geospatial Program

** Includes Science/R&D/Technology, Education, Law Enforcement, Coastal Facilities Deferred Maintenance

***Coastal Impact Assistance Program is a grant program which was authorized by the Energy Policy Act of 2005 to disburse \$250 million from OCS Oil and gas revenues each fiscal year 2007-2010 to producing states and coastal political subdivisions.

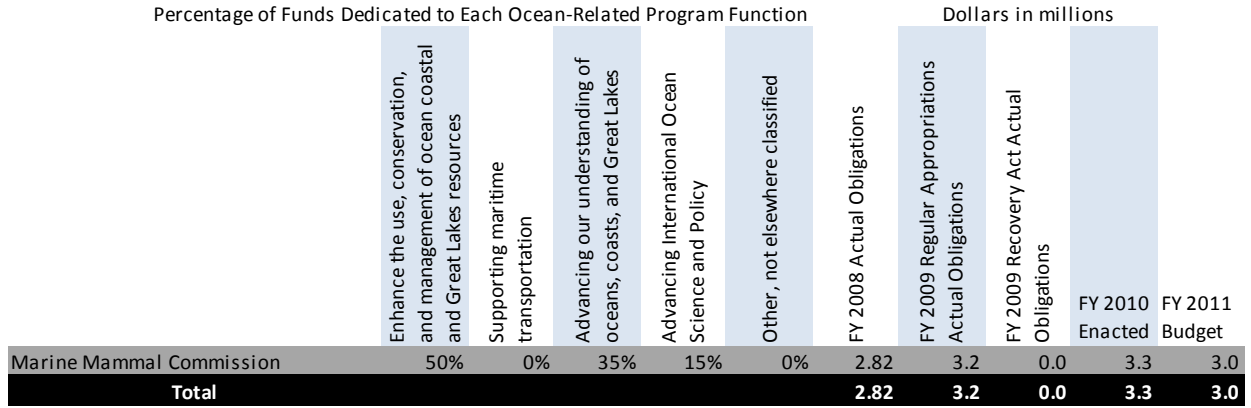
MARINE MAMMAL COMMISSION

Congress passed the Marine Mammal Protection Act in 1972 in response to growing concern that certain species and population stocks of marine mammals were in danger of extinction or depletion as a result of human activities. The Act created the Marine Mammal Commission, consisting of three members appointed by the President with the consent of the Senate, and its nine-member Committee of Scientific Advisors on Marine Mammals. The Act established a national policy to prevent such depletion and directed Federal agencies to take measures to replenish marine mammal species or population stocks.

The Commission conducts special projects and prepares special reports, either at the request of Congress or independently, to evaluate marine mammal conservation issues and identify effective and cost-effective solutions. The Marine Mammal Commission manages a research program to address issues of importance to the protection and conservation of marine mammals and their habitat in accordance with the Marine Mammal Protection Act. The research program is managed to avoid redundancy with studies carried out by other agencies, although Commission research funds often are used as seed money to encourage additional support by other agencies with larger research budgets. The program also focuses on key studies that could provide significant advances in knowledge, management, or conservation of marine mammals, such as investigating responses of marine mammals to climate change.

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MARINE MAMMAL COMMISSION



NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

NASA's primary role in oceans and coastal activities is developing the next generation of techniques and capabilities for satellite-based global and coastal ocean observation, demonstrating the techniques' utility, and pioneering the utilization of the acquired data. In addition to developing and implementing observing capabilities, NASA develops and implements data systems and computing advances in connection with ocean and Earth system modeling.

NASA provides new and better products in terms of absolute accuracy and stability of observations for both climate requirements (MODIS and ASTER on Terra, MODIS on Aqua, TMI on the Tropical Rainfall Measuring Mission (TRMM)) and improving understanding of the role of ocean biology and biogeochemistry in the Earth system. NASA develops and implements satellite missions to explore new techniques or new geophysical variables. The Gravity Recovery and Climate Experiment (GRACE) mission, launched in March 2002, contributes to oceanography by measuring the time varying gravity field. NASA is examining other exploratory measurements such as: a) ocean surface salinity from space; b) reflected signals from the Global Positioning System satellites for sea level and wind vector measurement; c) LIDAR to estimate oceanic plant groups and particle types (unknowns in carbon cycle, ecological, and biogeochemical models); and d) pulse and probe laser techniques to study phytoplankton photosynthetic efficiency or changes in plant biochemistry as a response to environmental variability or change.

Additionally, understanding of the ice-covered polar regions, believed to be the most vulnerable to changes in climate, is a high priority within NASA's research activities. NASA has led the way in using satellite sensors to derive ice

concentration, extent, temperature, and motion to understand high-latitude oceanographic processes, particularly in the context of significant climate changes in the Arctic and Antarctic.

The primary objectives of NASA's ocean research programs are to describe, understand, and predict the time-varying three-dimensional circulation of the ocean and the biological regimes of the upper ocean. Aspects of ocean modeling (e.g., global circulation, air/sea gas exchange, carbon cycle, ecology) are also supported by the programs in partnership with the Global Modeling and Analysis Program. Research and modeling activities for the high-latitude ice-covered oceans are supported by the Cryospheric Sciences Program. Ocean-relevant research is integrated with other aspects of the Earth system through NASA's interdisciplinary program.

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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

	Percentage of Funds Dedicated to Each Ocean-Related Program Function					Dollars in millions				
	Enhance the use, conservation, and management of ocean coastal and Great Lakes resources	Supporting maritime transportation	Advancing our understanding of oceans, coasts, and Great Lakes	Advancing International Ocean Science and Policy	Other, not elsewhere classified	FY 2008 Actual Obligations	FY 2009 Regular Appropriations Actual Obligations	FY 2009 Recovery Act Actual Obligations	FY 2010 Enacted	FY 2011 Budget
Science Mission Directorate										
Earth Systematic Missions										
Ocean Surface Topography Mission			100%			28.7	4.7	0.0	6.7	7.6
Ocean Winds Science Team			100%			8.6	5.8	0.0	3.8	4.7
QuikSCAT			100%			0.0	2.6	0.0	2.4	3.6
Terra and Aqua (Ocean Science)			100%			1.2	3.6	0.0	3.6	3.0
Jason			100%			4.3	4.2	0.0	4.5	4.6
NPP (subset)			100%			0.6	0.6	0.0	0.6	1.0
Earth System Science Pathfinder										
Aquarius			100%			33.4	31.3	8.5	22.3	16.6
Ocean Salinity Science Team			100%			0.0	0.0	0.0	1.0	2.5
Earth Science Research										
Research and Analysis (Ocean Research Subset)			100%			18.4	18.3	0.0	18.3	15.1
Interdisciplinary Science (Ocean Subset)			100%			2.1	3.8	0.0	5.6	4.7
Earth Science Multi-Mission Operations										
Multi-Mission Operations (Physical Oceanography DAAC)			100%			5.9	6.1	0.0	5.8	6.5
EOSDIS (Reason/Measures Ocean Subset)			100%			1.4	1.8	0.0	1.9	2.1
Total						104.6	82.7	8.5	76.4	72.0

NATIONAL SCIENCE FOUNDATION

The National Science Foundation (NSF) is the largest Federal supporter of academic basic research in the ocean sciences, with investments in disciplinary and interdisciplinary research and education efforts. NSF also supports academic research vessels, instrumentation and other facilities necessary to access the marine environment. The NSF Directorates and Programs with the most direct interest in ocean sciences are described below.

Directorate for Geosciences, Division of Ocean Sciences

The Division of Ocean Sciences in the Directorate for Geosciences supports basic research and education to further understanding of the global oceans and Great Lakes and its interactions with the earth and atmosphere. The Division also supports the operation, maintenance, acquisition, construction, and conversion of major shared-use oceanographic facilities needed to conduct this research. Partnerships are fundamental to agency activities, and the Division collaborates with other Federal ocean agencies on a range of efforts. This often involves joint funding of individual projects, special competitions or entire programs. Partnerships also extend to specific research programs within the Division selected for emphasis on the basis of special scientific opportunities, such as oceans and human health, global change, and coastal processes. Climate change research is a priority across the Directorate for Geosciences. The Division of Ocean Sciences is contributing to this effort with a new research program emphasizing the impact of decreasing pH levels in oceanic environments (ocean acidification).

The Division supports research and education activities through three Sections. The Ocean Section funds research on biological, chemical and physical processes occurring within the water column from the air/sea interface to the ocean floor. The Marine Geosciences Section supports research on processes that occur on and

below the seafloor and at the interface with water, sediment and rocks. This includes the Integrated Ocean Drilling Program (IODP), an international marine research program to expand exploration beneath the oceans. The *JOIDES Resolution*, a drill ship that is the U.S. contribution to the IODP platform array, recently underwent a modernization to extend its life and enhance its science capabilities. The vessel supports expeditions examining various aspects of climate change and its impacts. The Integrative Programs Section supports activities, including oceanographic facilities, necessary to advance NSF-funded research and training of oceanographers across disciplines. Examples of research and training support include technology development and dedicated educational activities. The Section provides significant support to facilities and technologies that enable access to various regions of the ocean and ensure effective research and communication capabilities.

NSF is supporting construction of the Research Vessel (R/V) *Sikuliaq* formerly the Alaska Region Research Vessel (ARRV). The *Sikuliaq* is a 242-foot research ship specifically designed to operate in seasonal Arctic sea ice and open waters surrounding Alaska. The vessel will support research expeditions to explore such timely issues as sea ice recession, changing ocean currents, Arctic habitats, and ocean acidification. NSF is also supporting the construction of the Ocean Observatories Initiative (OOI). OOI will allow continuous interactive connectivity to seafloor, water column and air-sea sensors, providing the means to collect unique, sustained time-series data sets that shed light on complex, interlinked processes throughout the global ocean. The R/V *Sikuliaq* and OOI are both managed by GEO but funded through NSF's Major Research Equipment and Facilities Construction (MREFC) account.

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Office of Polar Programs (Ocean-Related Research)

NSF's polar programs, most of which are supported through the Office of Polar Programs, provide support for investigations in a range of scientific disciplines, including a number of areas of ocean-related research. The goal of the NSF Arctic Research Programs is to gain a better understanding of the Earth's biological, geological, chemical, and social processes, and the interactions of ocean, land, atmosphere, biological, and human systems. Ocean-related research is supported within the Arctic Natural Sciences and Arctic System Science programs, and the Arctic Observing Network. NSF is charged with managing all U.S. activities in the Antarctic as a single, integrated program. Funding for the U.S. Antarctic Program includes research and the science support directly linked to specific research projects, as well as support for the broader operations and logistics infrastructure that make it possible to conduct science on the remote and uninhabited continent. Four Antarctic programs fund ocean-related research: Antarctic Earth Sciences, Antarctic Organisms and Ecosystems, Antarctic Ocean and Atmospheric Science, and Antarctic Integrated System Science.

Directorate for Biological Sciences (Ocean- Related Research)

The Directorate for Biological Sciences provides support for research to advance understanding of the underlying principles and mechanisms governing life. The Directorate is organized into five divisions that fund research on marine organisms and research related to marine ecosystems. The Directorate also supports marine research infrastructure. The Division of Environmental Biology (DEB) supports fundamental research on the systematics, population genetics, and diversity of marine

organisms, and research on the terrestrial components of coastal communities and ecosystems. DEB funds projects on the ecology and ecosystem dynamics of the world's Great Lakes, excluding the Laurentian Great Lakes, and coastal zones. DEB jointly supports five coastal Long-Term Ecological Research sites in Florida, Georgia, California, Massachusetts, and Virginia with the Directorate for Geosciences, Division of Ocean Sciences. The Long-Term Ecological Research community has identified "Climate effects on coastal ecosystems" as a grand challenge research focus. The Division of Integrative Organismal Systems supports research aimed at an integrative understanding of organisms through innovative applications of systems level approaches including neural, behavioral, developmental, and physiological and structural systems. Specific ocean-related research includes studies on behavioral ecology, symbiosis and defense, organism-environment interactions, and processes, structures and integrity, of marine species. The Division of Molecular and Cellular Biosciences supports research to enhance fundamental understanding of life processes at the molecular, subcellular, and cellular levels. Experimental organisms used include marine species. In addition, the division funds microbial observatories that focus on marine and near shore ecosystems. The Division of Biological Infrastructure (DBI) supports activities that provide infrastructure for biological research. This includes improvement of marine research laboratories and living collections of marine organisms widely used in basic biological research. In addition, DBI also supports the Center for Microbial Oceanography Research and Education, which focuses on the identities, roles and impacts of microorganisms in the world's largest biome - the ocean - including increased understanding of potential responses to global environmental variability and climate change.

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NATIONAL SCIENCE FOUNDATION

		Percentage of Funds Dedicated to Each Ocean-Related Program Function					Dollars in millions				
		Enhance the use, conservation, and management of ocean coastal and Great Lakes resources	Supporting maritime transportation	Advancing our understanding of oceans, coasts, and Great Lakes	Advancing International Ocean Science and Policy	Other, not elsewhere classified	FY 2008 Actual Obligations	FY 2009 Regular Appropriations Actual Obligations	FY 2009 Recovery Act Actual Obligations	FY 2010 Enacted	FY 2011 Budget
National Science Foundation*											
Directorate for Geosciences											
<i>Division of Ocean Sciences</i>											
	Ocean Section			100%			115.5	117.8	33.1	128.0	133.8
	Integrative Programs Section			100%			114.6	121.8	43.0	132.4	140.4
	Marine Geosciences Section			100%			82.9	90.8	37.9	98.7	103.7
Office of Polar Programs											
	Polar Icebreaking			47%	53%		50.9	54.0	0.0	0.0	54.0
<i>Arctic Sciences Division</i>											
	Arctic Natural and System Science	14%		86%			11.0	11.0	11.0	12.0	12.0
	Arctic Natural Science	14%		86%			5.0	5.0	5.0	6.0	6.0
	Arctic System Sciences	14%		86%			6.0	6.0	6.0	6.0	6.0
	Arctic Observing Network			80%	20%		6.0	6.0	6.0	6.0	6.0
<i>Antarctic Sciences Division</i>											
	Antarctic Earth Sciences			100%			2.0	3.0	3.0	3.5	4.0
	Antarctic Organisms & Ecosystems			100%			6.0	6.0	6.0	6.0	6.5
	Antarctic Oceans & Atmospheric Science			100%			4.5	4.5	5.0	5.0	5.5
	Antarctic Integrated			100%			0.0	0.0	0.0	2.0	2.0
Directorate for Biological Sciences**											
<i>Division of Environmental Biology</i>											
	Systematic Biology & Biodiversity Inventories			100%			1.7	2.2	3.3	2.7	2.7
	Population & Evolutionary Processes			100%			0.9	1.2	2.4	1.3	1.0
	Ecosystem Science			100%			3.8	4.6	0.3	5.2	5.2
	Ecological Biology			100%			0.4	0.5	0.0	0.3	0.4
<i>Division of Integrative Organismal Systems</i>											
	Developmental Systems			100%			5.7	6.4	1.3	6.5	6.6
	Neural Systems			100%			0.8	0.8	0.0	0.8	0.9
	Neural Systems			100%			0.4	0.7	1.3	0.7	0.7
	Behavioral Systems			100%			1.6	1.6	0.0	1.6	1.7
	Physiological and Structural Systems			100%			3.0	3.3	0.0	3.4	3.5
<i>Division of Molecular & Cellular Biosciences</i>											
	Biomolecular Systems			100%			2.7	3.0	0.9	2.0	2.2
	Cellular Systems			100%			1.2	1.0	0.6	1.0	1.1
	Genes and Genome Systems			100%			0.7	1.8	0.0	0.5	0.5
<i>Division of Biological Infrastructure</i>											
	Advances in Biological Informatics			100%			0.8	0.2	0.3	0.5	0.6
	Improvements in Facilities, Communications, and			100%			6.5	6.6	0.0	6.6	6.6
	Microbial Genome Sequencing			100%			0.8	0.9	0.0	0.9	0.9
	Center for Microbial Oceanography			100%			0.9	0.9	0.0	1.0	1.0
<i>Division of Emerging Frontiers</i>											
	Ocean Acidification			100%			0.8	0.8	0.0	0.8	0.8
	Ocean Acidification			100%			4.0	4.0	0.0	4.0	4.0
Major Research Equipment and Facilities Construction											
	Alaska Region Research Vessel			100%			0.0	0.0	0.0	0.0	4.0
	Ocean Observatories Initiative			100%			1.5	0.0	148.1	0.0	0.0
	Ocean Observatories Initiative			100%			0.0	0.0	105.9	14.3	90.7
Total							416.7	439.5	407.2	432.6	587.3

*The funding levels shown in this table are direct program costs and do not include administrative costs.

** With the exception of the Center for Microbial Oceanography and the Ocean Acidification activity, the Directorate of Biological Sciences does not have programs that only fund marine and coastal activities. The level of funding for ocean ecosystems will fluctuate with the number, type and quality of proposals that are submitted each year.

SMITHSONIAN INSTITUTION

In 1829, James Smithson, a British scientist, bequeathed his estate to the American people for the “increase and diffusion of knowledge.” Today the Smithsonian Institution supports that goal through its operation of National museums and research institutes. Three organizations within the Smithsonian Institution contribute to coastal and ocean activities. All three contribute to the U.S. Ocean Action Plan priority objective to “Inform Decisions and Improve Understanding: Increase knowledge to continually inform and improve management and policy decisions and the capacity to respond to change and challenges. Better educate through formal and informal programs the public about the ocean, our coasts, and the Great Lakes”.

National Museum of Natural History

The National Museum of Natural History (NMNH) manages a marine field station on Carrie Bow Cay, located on the Mesoamerican Barrier Reef in central Belize. This laboratory is part of the Smithsonian Marine Science Network that supports the Institution’s marine scientists’ research projects on a year-round basis. The precursor to the Caribbean Coral Reef Ecosystems Program was established in 1972 and over 850 publications have resulted through FY 2010. The NMNH first appropriated base Federal funding for this program in 1985. Since 1999, improved facilities now include dry and wet labs, housing, generator, compressor, small boats and scuba cylinders, and essential facilities such as solar power, running-seawater system, and a weather station. The majority of recent Caribbean Coral Reef Ecosystems marine research can be described by the following four main areas of interest: (1) Biodiversity, morphology and developmental biology; (2) Species interactions and behavior; (3) Ecophysiology and responses to environmental change; and (4) Processes linking species and environment.

Smithsonian Environmental Research Center

The Smithsonian Environmental Research Center (SERC) Marine Environmental Sciences Program measures long-term changes in water quality and nutrient loading, as well as species composition and population dynamics of fish, invertebrates, plankton and marshes in the Rhode River sub-estuary as a model system of the Chesapeake Bay. The long-term data are used to assess human impacts and natural variation in the Nation’s largest estuary.

Smithsonian Tropical Research Institute

The Smithsonian Tropical Research Institute’s (STRI) Marine Environmental Sciences Program (MESP) monitors a variety of physical and biological parameters on the Atlantic and Pacific coasts of the Republic of Panama at Naos Island, Bocas del Toro, Galeta, San Blas and Golfo de Chiriqui. This monitoring is designed to reveal local long-term changes in the environment as well as to provide background data to support marine research.

The Marine Environmental Sciences Program (MESP) at the Smithsonian Tropical Research Institute (STRI) monitors a variety of physical and biological parameters on the Atlantic and Pacific coasts of the Republic of Panama at Naos Island, Bocas del Toro, Galeta, San Blas and Golfo de Chiriqui. This monitoring is designed to reveal local long-term changes in the environment as well as to provide background data to support marine research.

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SMITHSONIAN

Percentage of Funds Dedicated to Each Ocean-Related Program Function

Dollars in millions

	Enhance the use, conservation, and management of ocean coastal and Great Lakes resources	Supporting maritime transportation	Advancing our understanding of oceans, coasts, and Great Lakes	Advancing International Ocean Science and Policy	Other, not elsewhere classified	FY 2008 Actual Obligations	FY 2009 Regular Appropriations Actual Obligations	FY 2009 Recovery Act Actual Obligations	FY 2010 Enacted	FY 2011 Budget
National Museum of Natural History										
Caribbean Coral Reef Ecosystems Program			100%			0.2	0.2		0.2	0.2
Smithsonian Environmental Research Center										
Marine Environmental Sciences Program			100%			0.27	0.27		0.27	0.27
Smithsonian Tropical Research Institute										
Marine Environmental Sciences Program			100%			0.20	0.20		0.20	0.20
Total						0.67	0.67	0.00	0.67	0.67

DEPARTMENT OF STATE AND USAID

The Department of State works around the world to protect and advance U.S. interests with respect to uses of the ocean and conservation and management of marine resources. In this regard, the Department works to: (1) negotiate and implement agreements to protect the world's oceans and to conserve and manage marine living and non-living resources; (2) raise awareness of the environmental and economic costs associated with a lack of effective long-term conservation and management of such resources both at home and around the world; and (3) advance the United States' strategic goals by addressing challenges that require international consultation and coordination.

The Department works in close coordination with multiple stakeholders, both within and outside government, to protect and advance U.S. interests in the following ocean-related areas: commercial fisheries, including mitigating their impacts on the marine environment, marine mammals, seabirds, sea turtles, and non-target fish stocks; aquaculture; aquatic invasive species; biodiversity; coral reefs; marine debris; Antarctic and Arctic affairs; homeland security, including maritime domain awareness; the Law of the Sea Convention, including deep seabed mining, marine scientific research, maritime boundaries and national maritime claims, continental shelf claims, marine pollution, commercial and military navigation/transport; regional seas programs; small island developing States; underwater cultural heritage; and whales. Within the Department, primary responsibility for these issues rests with the Bureau of Oceans and International Environmental and Scientific Affairs (OES), supported by other bureaus and an extensive network of Missions around the globe.

Department of State: Bureau of Oceans, Environment and Science (OES)

International Fisheries Commissions

The international commissions and programs funded by this account were established by treaties and agreements negotiated by the United States and

ratified by the President, with the advice and consent of the Senate. The United States entered into these treaties to protect its access to shared international fisheries resources and to support other vital economic and environmental interests. The commissions and organizations funded by this account enable the United States to promote critical U.S. economic and conservation interests. Each facilitates international cooperation by conducting or coordinating scientific studies of fish stocks and other living marine resources and establishing common management measures to be implemented by member governments based on their results. Many also oversee the allocation of fishing rights to their members. U.S. funding of the International Fisheries Commissions account supports the Department's strategic goals of securing a sustainable global environment and ensuring economic prosperity and security by funding U.S. shares of operating expenses for ten international fisheries commissions and organizations, the International Whaling Commission, two international marine science organizations, the Antarctic Treaty, and international sea turtle conservation initiatives. The account also provides for travel expenses of the U.S. Commissioners and their advisors, as well as compensation to non-government employees of the Pacific Salmon Commission for days actually worked as U.S. commissioners, panel members, advisors, and/or alternates.

Economic Support Funds (ESF), OES Partnerships

The United States contributes \$18 million in Economic Support Funds (ESF) annually to certain Pacific Island States under the 2003 Economic Assistance Agreement (EAA) associated with the 1987 Multilateral Treaty on Fisheries between the Governments of Certain Pacific Island States and the United States ("the Treaty"). The Treaty sets forth the terms and conditions for U.S. tuna vessels to fish in a broad area of the Pacific, including the 200-mile zones of the Pacific Island Parties, which contributes \$400-\$600 million annually to the U.S. economy. The United States provides these funds to the Parties

to the Treaty through the Pacific Forum Fisheries Agency (the Administrator of the Treaty), to be used solely for economic development. This targeted aid assists developing countries while also providing tangible benefits to an important sector of the U.S. economy and is considered a vital component of the political and economic relationship between the United States and the Pacific Island Parties.

Diplomatic & Consular Programs

OES annually funds a Sea Grant Fellow for the Office of Marine Conservation. The Knauss Marine Policy Fellowship Program is administered by NOAA and provides a valuable opportunity both for Fellows to gain experience in public policy related to the ocean and for host offices to gain fresh perspectives and connections with emerging professionals in the ocean policy and science fields. The Department of State leads United States participation in the Arctic Council and overall Arctic foreign policy. Funds under this account are used to support U.S.-led projects and initiatives through expertise in other Federal agencies which in turn informs decision-making and improves understanding in responding to changing conditions in the Arctic. The Extended Continental Shelf (ECS) Task Force, led by the Department, uses the funds under this account to coordinate and support efforts related to the collection and analysis of data among a dozen Federal agencies that will establish the outer limit of the U.S. ECS. The ECS effort will delineate an enormous area where the United States can exercise sovereign rights over the resources on and below the seabed.

The U.S. Agency for International Development

The United States has a long history of extending a helping hand to those people overseas struggling to make a better life, recover from a disaster or striving to live in a free and democratic country. The U.S. Agency for International Development (USAID) has been the principal U.S. agency to extend economic and social assistance to developing countries since 1961. While it is an independent agency, USAID receives foreign policy guidance from the Secretary of State.

Development Assistance Accounts

U.S. foreign assistance has always had the two-fold purpose of furthering America's foreign policy interests while improving the lives of the citizens of the developing world. Sound and equitable development is recognized as one of the three key pillars – Diplomacy, Development, and Defense - of a strong U.S. national security strategy.

Healthy and productive marine ecosystems are critical to U.S. diplomatic and development strategies to promote global food security, adaptation to climate change, biodiversity conservation, economic security and competitiveness, social stability and conflict prevention, improved human health, and disaster mitigation. U.S. assistance also aims to empower communities and stakeholders to participate in decision-making affecting their interests, contributing to efforts to build the foundations of transparent, responsive, and accountable governance.

USAID assistance to developing countries contributes to the US National Ocean Policy and international interests by promoting ocean stewardship with respect to the management, sustainable use, and conservation of coastal and marine resources. Maintaining ecosystem integrity through an ecosystem-based approach, improving resilience of coastal resources, and establishing science-based decision-making processes will be critical to achieving global food security and adaptation to climate change. Sustainably managing fisheries can ease competition for these critical and high value resources and result in lessening of a cause for local and regional conflict. In these regards, USAID works to: (1) build the necessary capacity for local communities, institutions and governments to manage and conserve their resources; (2) raise awareness and promote behavioral changes that lead to sustainable resource use and resilient ecosystems and communities; (3) promote open, transparent, and participatory governance and policy frameworks; (4) build public-private partnerships and alliances to address local and global challenges; (5) integrate population, health, and environment approaches for increased impacts; and (6) promote international leadership

and coordination in advancing successful management and conservation approaches.

To achieve these objectives, USAID works in close partnership with international and local non-government organizations, private voluntary organizations, indigenous organizations, universities, American businesses, international agencies, other governments, and other U.S. government agencies. USAID works in over 30 countries on projects that directly promote the conservation and improved resource management of coastal and marine ecosystems.

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DEPARTMENT OF STATE

Percentage of Funds Dedicated to Each Ocean-Related Program Function

Dollars in millions

	Enhance the use, conservation, and management of ocean coastal and Great Lakes resources	Supporting maritime transportation	Advancing our understanding of oceans, coasts, and Great Lakes	Advancing International Ocean Science and Policy	Other, not elsewhere classified	FY 2008 Actual Obligations	FY 2009 Regular Appropriations Actual Obligations	FY 2009 Recovery Act Actual Obligations	FY 2010 Enacted	FY 2011 Budget
Bureau of Oceans, Environment and Science (OES)										
International Fisheries Commissions										
Inter-American Tropical Tuna Commission			50%	50%		1.8	1.8	0.0	1.8	1.8
Great Lakes Fisheries Commission	30%		30%	40%		16.6	19.2	0.0	28.2	17.8
International Pacific Halibut Commission			50%	50%		2.8	3.5	0.0	3.2	3.2
Pacific Salmon Commission	30%		30%	40%		3.0	3.2	0.0	3.2	3.2
Pacific Salmon Treaty Commitment	100%					0.0	0.0	0.0	15.0	15.0
Other				100%		2.1	2.2	0.0	2.5	2.6
Economic Support Funds, OES Partnerships										
Land-Based Marine Pollution	100%					0.3	0.4	0.0	0.2	0.2
SPFAA	40%			60%		18.0	18.0	0.0	18.0	18.0
Coral Reef Conservation	100%					0.2	0.4	0.0	0.2	0.0
Diplomatic & Consular Affairs Program										
Arctic Council			100%			0.2	0.2	0.0	0.2	0.2
Sea Grant Fellow			50%	50%		0.0	0.0	0.0	0.0	0.1
Extended Continental Shelf			100%			0.0	0.2	0.0	0.6	0.6
Total State						45.0	49.1	0.0	73.1	62.6

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U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT

Percentage of Funds Dedicated to Each Ocean-Related Program Function

Dollars in Millions

	Enhance the use, conservation, and management of ocean coastal and Great Lakes resources	Supporting maritime transportation	Advancing our understanding of oceans, coasts, and Great Lakes	Advancing International Ocean Science and Policy	Other, not elsewhere classified	FY 2008 Actual Obligations	FY 2009 Regular Appropriations Actual Obligations	FY 2009 Recovery Act Actual Obligations	FY 2010 Enacted	FY 2011 Budget
Latin America and Caribbean Bureau										
<i>Development Assistance</i>										
Dominican Republic	100%					0.5	0.7	0.0	0.5	0.0
Ecuador	100%					2.2	2.2	0.0	2.2	2.2
El Salvador	100%					0.3	0.3	0.0	0.3	0.3
Haiti	100%					20.1	1.5	0.0	5.0	0.0
Honduras	100%					2.5	1.0	0.0	1.0	1.0
Jamaica	100%					0.5	0.0	0.0	0.3	0.0
Mexico	100%					0.2	0.2	0.0	0.2	0.0
Nicaragua	100%					0.3	0.0	0.0	0.3	0.3
Panama	100%					2.0	1.7	0.0	1.7	1.7
Central America Regional Mission (Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, Panama)	100%					3.0	1.5	0.0	3.0	3.0
Eastern Caribbean Regional (Antigua and Barbuda, Dominica, Grenada, St. Kitts and Nevis, St. Vincent and Grenadines, St. Lucia)	100%					2.0	2.0	0.0	5.0	5.0
Latin America and Caribbean regional program	100%					0.0	0.4	0.0	0.4	0.4
Asia Bureau										
<i>Development Assistance</i>										
Indonesia	100%					1.0	5.1	0.0	5.0	0.0
Philippines	100%					4.9	4.6	0.0	4.5	0.0
Bangladesh	100%					0.0	0.5	0.0	3.0	0.0
Maldives	100%					0.0	1.0	0.0	1.0	0.0
Regional Development Mission/Asia (East Timor, Indonesia, Malaysia, Papua New Guinea, Philippines, Solomon Islands)	100%					5.7	4.2	0.0	4.0	0.0
Africa Bureau										
<i>Development Assistance</i>										
Ghana	100%					0.0	2.1	0.0	2.4	0.0
Kenya	100%					0.8	0.7	0.0	1.0	0.0
Madagascar	100%					0.2	0.0	0.0	0.0	1.3
Mozambique	100%					0.4	0.4	0.0	0.4	0.0
Senegal	100%					0.2	0.5	0.0	0.5	0.0
West African Regional Mission	100%					0.8	0.5	0.0	0.5	0.0
Europe and Eurasia										
<i>Freedom Support Act</i>										
Russia	100%					0.0	0.1	0.0	0.1	0.0
Economic Growth, Agriculture and Trade Bureau										
<i>Development Assistance</i>										
Natural Resources Management	50%			50%		2.1	1.5	0.0	2.2	1.0
Consultative Group on International Agricultural Research (CGIAR) - WorldFish Center	50%			50%		0.3	0.5	0.0	0.5	0.0
Middle East Regional Cooperaton Program	60%			40%		0.3	0.0	0.0	0.0	0.0
Environmental Science Policy	50%			50%		0.0	0.4	0.0	0.0	0.0
Global Health Bureau										
<i>Children Survival Health</i>										
Population, Health and Environment	70%			30%		0.2	0.2	0.0	0.2	0.0
Totals for all bureaus						50.3	33.7	0.0	45.0	16.1
Total State and U.S.AID						95.3	82.7	0.0	118.2	78.8

DEPARTMENT OF TRANSPORTATION

Saint Lawrence Seaway Development Corporation

The Saint Lawrence Seaway Development Corporation (SLSDC), a wholly-owned government corporation within the U.S. Department of Transportation, is responsible for the operations and maintenance of the U.S. portion of the St. Lawrence Seaway. This responsibility includes maintaining and operating the two U.S. Seaway locks in Massena, NY, and vessel traffic control areas of the St. Lawrence River and Lake Ontario. The SLSDC coordinates its activities with its Canadian counterpart, the St. Lawrence Seaway Management Corporation (SLSMC), particularly with respect to rules and regulations, overall day-to-day operations, traffic management, navigation aids, safety, environmental programs, operating dates, and trade development programs. The SLSDC's activities and budgetary resources are split between two programs – Agency Operations and Asset Renewal Program (ARP).

Agency Operations

The SLSDC's agency operations program consists of all agency activities, except for capital and non-capital infrastructure improvements. Primary program activities include lock operations and maintenance, vessel traffic control, vessel safety and environmental inspections, and customer outreach. The SLSDC has taken a pro-active approach in recent years in addressing the issue of aquatic invasive species on the Great Lakes St. Lawrence Seaway System. The SLSDC, its Canadian counterpart, and other U.S. and Canadian Federal partners, continue to make notable progress in ballast water management and efforts to prevent any new introductions of aquatic invasive species via commercial ships entering Seaway waters.

Asset Renewal Program

The SLSDC's 10-year ARP was initiated in Fiscal Year 2009 and focuses on improving aging U.S. Seaway infrastructure, conducting maintenance

dredging, investing in new technologies, purchasing new equipment, and refurbishing old facilities. The program marks the first time in the Seaway's history that a coordinated effort to repair and modernize the U.S. Seaway infrastructure has taken place.

Maritime Administration

The Maritime Administration (MARAD) supports national economic and environmental outcomes. MARAD programs advance: (1) economic competitiveness by sustaining a vital, viable, safe, and secure U.S. merchant marine for commerce, emergency response, and national security, and supporting job-producing businesses with efficient transportation options to reach their suppliers and customers; and (2) marine transportation that is sensitive to environmental impacts on communities.

Environmental Initiatives:

Ballast Water and Related Technologies.

MARAD has contributed ship platforms for testing, scientific, technical, engineering, and marine architectural support and funding to the effort to develop technical and scientific protocols for ballast water treatment technology testing and verification. MARAD has worked to coordinate and provide Federal support for the development of a network of independent facilities for testing and verification of technologies. The Environmental Spending Plan for 2010 is specifically designed to address the Congressional expectation of establishing the verification and certification infrastructure in the U.S.

Air Emissions/Energy. MARAD's port and vessel air emissions and energy efforts, like those of ballast water, have been ongoing since the early 2000s. The breadth and intensity of those efforts, however, has not yet matched that of ballast water. Those efforts have also been

cooperative efforts that involve other federal, state, local government partners.

Other Discharges. MARAD has more recently engaged in efforts to address other discharges from vessels such as those being addressed by the recently enacted Vessel General Permit.

Marine Generated Noise. Marine generated noise has been an ongoing issue in which MARAD is also engaged. However, it has taken on new importance as concerns have grown regarding the potential impacts of marine generated noise on marine mammals and endangered marine species. The issue is also gaining attention with the focus on port improvements and expansion, which adds additional traffic into sensitive estuaries.

Operations and Training

The FY 2009 DOD authorization created the Port of Guam Improvement Enterprise Fund with the intent of consolidating all resources dedicated to the Guam Port Improvement project within the Fund. The project will affect the substantial improvement of the Jose D. Leon Guerrero Commercial Port to provide modern and efficient transportation access to the island of Guam and to the region to meet the Department of Defense requirements for the Guam build-up needed for the relocation of troops from Okinawa. The FY 2010 Supplemental Appropriations provided up to \$50 million for transfer to the fund from DOD.

MARAD programs also help ensure the readiness of sealift capacity to respond to national crises and DOD mobilizations. The U.S. Merchant Marine Academy and State maritime academies educate and graduate merchant marine officers ready to serve the maritime industry and Armed Forces. Both the U.S. Merchant Marine Academy and the State maritime academies support marine-related commerce by educating young men and women to become officers in the American merchant marine. The U.S. Merchant Marine Academy is a Federally-operated institution. MARAD provides funding and other assistance to the six State maritime academies.

Assistance to Small Shipyards

MARAD's Title XI and Assistance to Small Shipyards programs provide loan guarantees and grants supporting the industry, and providing an engine for capacity and economic growth. MARAD awarded \$15 million in grants in FY 2010 to support capital improvements at qualified shipyards to improve the ability of domestic shipyards to compete for domestic and international commercial ship construction.

MARAD's Maritime Security Program (MSP)

MSP assists U.S.-flag operators to ensure that an active U.S.-flag merchant fleet of militarily useful general cargo vessels continue to operate in international trade, and the trained personnel needed to operate both active commercial and Government-owned reserve vessels, are available to meet U.S. economic and national security requirements. The Maritime Security Program sustains a fleet of commercial vessels capable of supporting national security and Federal emergency response requirements.

The Maritime Guaranteed Loan Program (Title XI)

The Maritime Guaranteed Loan Program authorizes MARAD to guarantee up to 87.5 percent of the obligations on private sector debt financing for ships constructed, reconstructed, or reconditioned in the United States, including vessels for export, and to guarantee shipyard obligations of indebtedness for eligible domestic and exports vessels and for shipyard modernization and improvement. Guarantees in force and commitments to guarantee include a large portion of the U.S.-flag fleet, including vessels on the coastal and inland waterways.

The Ocean Freight Differential Program

The Ocean Freight Differential Program oversees the administration of and compliance with U.S. cargo preference laws and regulations. Those laws require shippers to use U.S.-flag vessels to transport any

government-impelled ocean-borne cargoes. The ocean freight revenue provided to the entire U.S. flag merchant fleet by the cargo preference program provides an economic incentive to remain under U.S. flag to support mobility, and national economic and system capacity and defense needs. The Ocean Freight Differential program supports the transport of U.S. food aid by U.S.-flag vessels.

Ship Disposal Program

MARAD is the U.S. government's disposal agent for merchant type vessels 1,500 gross tons or more and has custody of a fleet of over one hundred obsolete ships owned by the Federal government that are designated for disposal. Due to the presence of onboard hazardous materials such as residual fuel, asbestos and solid polychlorinated biphenyls (PCBs) on these ships, they pose a risk to the surrounding environment and must be disposed of properly. MARAD programs support the disposal of obsolete ships from the National Defense Reserve Fleet (NDRF) and management of the inactive Nuclear Ship SAVANNAH.

Committee On The Marine Transportation System (CMTS)

. Among a range of mandates, the CMTS is directed to improve program coordination and policy implementation for the marine transportation system and promote the environmentally sound integration of marine transportation with other modes of transportation and with other ocean, coastal and Great Lakes uses. In July 2008, the CMTS issued a *National Strategy of the Marine Transportation System: a Framework for Action* (www.cmts.gov). The CMTS has developed a dynamic work plan to promote coordination of Federal marine transportation programs and activities.

Office of the Secretary

Transportation Planning, Research and Development

This account finances research activities and studies concerned with planning, analysis, and information development needed to support the Secretary's responsibilities in the formulation of national transportation policies. The program is carried out primarily through contracts with other Federal agencies, educational institutions, non-profit research organizations, and private firms. Activities support the development of transportation policy, coordination of national-level transportation planning, and such issues as regulatory modernization, energy conservation, and environmental and safety impacts of transportation. These funds also support departmental leadership on aviation economic policy and international transportation issues.

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DEPARTMENT OF TRANSPORTATION

		Percentage of Funds Dedicated to Each Ocean-Related Program Function					Dollars in millions				
		Enhance the use, conservation, and management of ocean coastal and Great Lakes resources	Supporting maritime transportation	Advancing our understanding of oceans, coasts, and Great Lakes	Advancing International Ocean Science and Policy	Other, not elsewhere classified	FY 2008 Actual Obligations	FY 2009 Regular Appropriations Actual Obligations	FY 2009 Recovery Act Actual Obligations	FY 2010 Enacted	FY 2011 Budget
Saint Lawrence Seaway Development Corporation											
	SLSDC Fund	5%	95%	0%	0%	0%	18	16	0	17	18
Maritime Administration											
<i>Operations and Training</i>											
	Marad Operations	7%	93%				46	47	2	60	49
	Maritime Academies		100%				76	76	0	90	115
	Assistance to Small Shipyards		100%				10	18	98	15	0
	Ship Disposal	100%					17	15	0	15	10
	Maritime Guaranteed Loan Program		100%				8	4		9	4
	Ocean Freight Differential		100%				201	175	0	175	175
	Maritime Security Program		100%				156	174	0	174	174
<i>Office of the Secretary</i>											
	Great Lakes Maritime Research Institute		100%				1.0	1.0	0.0	0.0	0.0
TOTAL							533	526	100	555	545

DEPARTMENT OF TREASURY

Global Environment Facility

The Department of the Treasury is responsible for oversight of U.S. participation in the Global Environment Facility (GEF) which, among other things, funds projects to address international water pollution and over fishing. Other portions of the GEF portfolio also advance U.S. objectives on oceans policy by supporting marine and coastal biodiversity projects, phasing-out the use and manufacture of persistent organic pollutants (POPs), and by fighting desertification, which can impact ocean and coastal ecosystem health.

The GEF was created in 1991 to help developing countries address global environmental problems that may affect the United States and the rest of the world, including those related to international water pollution and protecting fisheries. GEF funding is also focused on expanding clean energy production and efficient energy use, conserving biological diversity, phasing out ozone depleting substances, reducing persistent organic pollutants, and preventing desertification.

GEF Operations

The GEF focuses on innovative and cost-effective projects that can be duplicated elsewhere with financing from non-GEF sources. These projects are implemented by developing countries through three implementing agencies (the World Bank, the U.N. Development Program, and the U.N. Environment Program) and seven executing agencies (the four regional multilateral development banks, the Food and Agricultural Organization (FAO), the International Fund for Agriculture Development (IFAD), and the U.N. Industrial Development Organization (UNIDO)). GEF projects are co-financed by developing country governments, bilateral aid agencies, GEF implementing and executing agencies, private sector investors, and non-governmental organizations.

GEF operations generally take two forms: (1) Technical assistance to help developing countries develop and implement environmentally sound policies and practices; and (2) direct investments to demonstrate innovative technologies or improve in practices, such as installation of new equipment on fishing boats to reduce by-catch of non-target species, including sea turtles and mammals. GEF operations to reverse the degradation of international waters are grouped into three categories: (1) international water bodies; (2) integrated land and water projects; and (3) projects that address contaminants, including nutrient over-enrichment and persistent toxic substances, including mercury. Its land and water resources management projects help countries put together plans to reduce pollution, conserve fish stocks, address water scarcity, and prevent conflicts over shared, transboundary resources.

Among other things, the GEF international waters program has facilitated international agreements that have enhanced the governance over international bodies of water.

2010 Federal Ocean and Coastal Activities Report to the U.S. Congress

DEPARTMENT OF TREASURY

Percentage of Funds Dedicated to Each Ocean-Related Program Function

Dollars in millions

	Enhance the use, conservation, and management of ocean coastal and Great Lakes resources	Supporting maritime transportation	Advancing our understanding of oceans, coasts, and Great Lakes	Advancing International Ocean Science and Policy	Other, not elsewhere classified	FY 2008 Actual Obligations	FY 2009 Regular Appropriations Actual Obligations	FY 2009 Recovery Act Actual Obligations	FY 2010 Enacted	FY 2011 Budget
International Assistance Programs										
<i>Multilateral Assistance</i>										
Contributions to the International Bank for Reconstruction Development										
Global Environment Facility Trust Fund*					100%	9.6	9.6	0.0	9.6	17.2
Total						9.6	9.6	0.0	9.6	17.2