NATIONAL OCEAN SERVICE
OPERATIONS RESEARCH AND FACILITIES
FY 2008 OVERVIEW

SUMMARIZED FINANCIAL DATA

($ in thousands)

Operations Research and Facilities	FY 2006 ACTUALS	FY 2007 CURRENTLY AVAILABLE	FY 2008 BASE PROGRAM	FY 2008 ESTIMATE	INCREASE / DECREASE
Navigation Services	171,197	112,300	142,071	143,771	1,700
Ocean Resources Conservation and Assessment	209,928	92,340	128,120	156,320	28,200
Ocean and Coastal Management	129,762	110,500	128,698	136,698	8,000
TOTAL	510,887	315,140	398,889	436,789	37,900
FTE	1,202	1,210	1,212	1,219	7

For FY 2008, NOAA requests an increase of $37,900,000 and 7 FTE for a total of $436,789,000 for the National Ocean Service (NOS) Operations, Research and Facilities account.

The National Ocean Service (NOS) is the primary Federal agency working for the Nation through the observation, measurement, assessment, and management of the Nation's coastal and ocean areas, as well as conducting response and restoration activities to protect vital coastal resources. An estimated 154 million people lived in coastal counties in 2004. Although coastal population growth has generally reflected the same rate of growth as the entire Nation since 1980, the limited land area of coastal counties is increasingly strained by the density of the population growth. This increasing density, coupled with the fast-growing economy of coastal areas, makes the task of managing coastal resources increasingly difficult, especially with the Nation's coastal population expected to increase by more than 6 million by 2008 and 11 million by 2015 (*Population Trends Along the Coastal United States: 1980-2008*).

As a national leader for coastal stewardship, NOS promotes a wide range of research activities to create the strong science foundation required to advance the sustainable use of our coastal systems. NOS provides improvements in the quality, quantity, geographic distribution, and timeliness of ocean and coastal observations. Observations by NOS assets and NOS partners are critical components of the Nation's Integrated Ocean Observing System, as well as fundamental contributors to the Global Earth Observation System of Systems. NOS mapping, charting, geodetic, and oceanographic activities build on marine and coastal observations collected to increase the efficiency and safety of maritime commerce, support coastal resource management and address

coastal flooding and water quality concerns. NOS protects and restores coastal resources injured by releases of oil and other hazardous materials. NOS also manages marine sanctuaries and, in partnership with the coastal states, helps manage the Nation's valuable coastal zones and nationally significant estuarine reserves. NOS helps federal, state, local, and international managers build the suite of skills needed to protect, restore, and use coastal ecosystems by providing technical assistance, process and technical skill training, and other capacity building activities.

NOS has three subactivities: Navigation Services, Ocean Resources Conservation and Assessment, and Ocean and Coastal Management.
The objectives of the Navigation Services subactivity are to:

- Build, maintain, and deliver a Nautical Charting Database
- Update nautical surveys
- Define the national shoreline
- Develop the National Spatial Reference System
- Provide real-time observations and forecasts of water levels, tides, and currents

To achieve these objectives, NOAA conducts activities in several program areas within the Office of Coast Survey, the National Geodetic Survey, and the Center for Operational Oceanographic Products and Services. NOAA also represents these programs on the Interagency Committee for the Marine Transportation System.

The objectives of the Ocean Resources Conservation and Assessment subactivity are to:

- Establish the framework through which the authorities of Federal and state agencies can be focused to protect and restore coastal resources.
- Recommend management actions to minimize the cumulative effects of coastal development on natural resources, especially NOAA's trust resources.
- Conduct research to define the nature and extent of human activities and conditions that threaten the health and productivity of the Nation's coastal resources.
- Conduct damage assessments to support negotiated settlements and litigation for recovering funds for restoration of injuries to NOAA's trust resources.
- Apply scientific expertise to mitigate the effects of human activities and facilitate environmental recovery, and undertake actions to restore ecosystem functions and resource values.
- Develop a Federal/state capability to research, monitor, assess, and predict coastal ecosystem structure and function to detect changes, evaluate management strategies, and identify actions to effectively manage threats to ecosystem health.
- Develop means for valuing non-market ecological resources and clarify the causes and significance of ecosystem changes.
- Facilitate the development and transfer of tools and technology that provide more effective mechanisms to protect, restore and use coastal ecosystems.

- Improve public understanding of functions and values of coastal ecosystems and enhance public access to information on coastal environmental quality and health risks from pollutants.
- Support NOAA's and the Nation's obligations under international treaties and conventions, and increase effectiveness of international programs for coastal environmental science and technology, integrated coastal zone management, and sustainability of coastal resources.

This subactivity contains the programs managed by the National Centers for Coastal Ocean Science (NCCOS), the Office of Response and Restoration (ORR), the Coastal Services Center (CSC) and the Cooperative Institute for Coastal and Estuarine Technology (CICEET), co-administered by NOS' Office of Ocean and Coastal Resource Management and the University of New Hampshire. The goals of this subactivity use the authorities established in the Clean Water Act, Coastal Zone Management (CZM) Act, Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA/Superfund), Oil Pollution Act, National Coastal Monitoring Act, Marine Protection Research and Sanctuaries Act, Harmful Algal Bloom and Hypoxia Research and Control Act, Estuaries Restoration Act, Coral Reef Conservation Act, and other legislation to protect, conserve, and restore natural resources and the environmental quality of the Nation's coastal ecosystems.

The objectives of the Ocean and Coastal Management subactivity are to:

- Maintain and improve the quality and utility of the Nation's coastal lands and waters through a national network of Federally-approved, coordinated, and supported state management programs.
- Maintain the balance between resource protection and coastal-dependent economic activity.
- Provide technical assistance to states in the development, implementation, and improvement of state CZM programs and estuarine research reserves.
- Identify areas of the marine environment of special national significance due to their resource or human-use values.
- Develop the framework for a national network of marine protected areas.
- Support and coordinate scientific research on, and monitoring of, resources in protected areas.
- Coordinate the development of information, tools, strategies, and guidance to enhance and expand the protection of marine protected areas.
- Conduct a comprehensive, coordinated program of conservation and management of special marine areas.
- Enhance public awareness and understanding of the marine environment.
- Facilitate public/private uses of the resources of special marine areas compatible with resource protection.

To achieve these objectives, NOAA conducts activities in several program areas within the Office of Ocean and Coastal Resource Management, the Marine Protected Areas Center and the National Marine Sanctuary Program Office.

In addition, NOS contributes significantly to achieving two of NOAA's Strategic Plan Mission Goals: Support the Nation's commerce with information for safe, efficient, and environmentally sound transportation, and Protect, restore, and manage the use of coastal and ocean resources through ecosystem-based

management. While these two goals capture much of the National Ocean Services' activities, NOS also supports and makes important contributions to NOAA's other mission goals: Understand climate variability and change to enhance society's ability to plan and respond, Serve society's needs for weather and water information, and Mission Support.

Research and Development Investments:

The NOAA FY 2008 Budget estimates for its activities, including research and development programs, are the result of an integrated, requirements-based Planning, Programming, Budgeting, and Execution System (PPBES) that provides the structure to link NOAA's strategic vision with programmatic detail, budget development, and the framework to maximize resources while optimizing capabilities. The PPBES process incorporates the President's Management Agenda and the Office of Science and Technology Policy's Research and Development Investment Criteria (relevance, quality, and performance) for NOAA's R&D programs, and leads to NOAA budget proposals that reflect the R&D investment criteria.

Significant Adjustments-to-Base (ATBs):

NOAA requests a net increase of two FTE and $4,434,000 to fund adjustments for National Ocean Service activities. Within this increase, program totals will fund inflationary adjustments for labor and non-labor.

In addition, NOAA has collapsed four Geodesy Height Modernization lines for NGS Implementation, CA, NC, and SC worth $2,541,000 into a single line called National Height Modernization. This technical ATB will allow NOAA to conduct Height Modernization work according to national priorities.

Subactivity: Navigation Services
Line Item: Mapping & Charting

GOAL STATEMENT:

NOAA's National Ocean Service (NOS) will reduce the risks to life, property and the coastal environment and enhance NOS' role of coastal stewardship by providing a comprehensive set of products and services to meet the Nation's need for accurate and up-to-date marine navigation information.

BASE DESCRIPTION:

NOAA's Mapping and Charting Program is carried out by the Office of Coast Survey. Established by President Thomas Jefferson in 1807, the Coast Survey is the oldest scientific organization in the U.S., with a long history of supporting and facilitating maritime commerce. Today, it continues to support safe and efficient transportation in U.S. waters by delivering navigation products to meet the needs of vastly larger ships carrying people, cargo and hazardous materials. NOAA collects, manages, and maintains a variety of marine data important to navigators, including the nature and form of the coast, the depths of the water, general character and configuration of the sea bottom, locations of dangers to navigation, the rise and fall of the tides, and locations of aids to navigation. These data enable NOAA to construct and maintain the national suite of 1,000 nautical charts, and develop other products such as the Coast Pilot publication, which is a series of books that supplement the nautical charts with valuable information difficult to portray on a chart (e.g. channel descriptions, ice conditions, pilotage). These products support commercial shipping, the fishing industry, U.S. Navy deployment and Coast Guard Homeland Security operations, state and local governments, and recreational boaters throughout the United States. The Mapping and Charting Program also conducts research and development activities to improve the accuracy, efficiency, and productivity of data collection, chart compilation and chart production.

The Mapping and Charting Line Item consists of five primary program elements. Each program element within the Mapping and Charting Line directly supports NOAA's Commerce and Transportation, Weather and Water, and Ecosystems goals. The Mapping and Charting Line Item also includes grant funding for the Joint Center for Hydrographic Excellence (JHC) at the University of New Hampshire, which operates in partnership with NOS. The program serves as a learning center for government and private sector hydrographers, as well as a research and development center for new hydrographic technologies and applications. The JHC is a national center for expertise in ocean mapping and hydrographic sciences.

Program Assessment and Rating Tool (PART): NOAA's Mapping and Charting program was reviewed with OMB's PART during FY 2006. As a result, NOAA's Mapping and Charting program will perform a rigorous analysis of hydrographic surveying components to ensure that NOAA uses the most effective approach to addressing hydrographic surveying requirements. The Budget also proposes investments in state-of-the-art technology to increase the efficiency of hydrographic survey data collection.

Base activities support the objective, "Support the Nation's commerce with information for safe, efficient, and environmentally sound transportation" under the Department of Commerce Strategic Goal of "Observe, protect, and manage the Earth's resources to promote environmental needs."

NAUTICAL CHARTING PROGRAM

The Nautical Charting Program is carried out by NOS' Office of Coast Survey (OCS). NOAA is responsible for surveying and charting U.S. and territorial waters to the limits of the Exclusive Economic Zone (EEZ), an area of about 3.4 million square nautical miles. NOAA is authorized by the Coast and Geodetic Survey Act of 1947 to provide nautical charts and products for safe maritime commerce. Title 33 of the Code of Federal Regulations requires NOAA charts be carried on all self-propelled vessels greater than 1600 gross tons. Nautical charts and related navigation publications are the basic tools for marine navigation, ocean operations, and marine resources planning and management. NOAA's digital nautical charting products, such as Electronic Navigational Charts (ENCs), serve as the basic information component required to operate new electronic navigation systems that will meet demands for greater protection of life, property, and the environment, as well as significantly improve the efficiency of maritime commerce. Products like NOAA's ENCs give the user more complete and valuable information than the paper chart, and will provide much greater accuracy than existing chart products. More than just a picture, ENCs are essentially a database of chart features that are intelligently processed and displayed by electronic charting systems. An ENC displayed by an electronic charting system, when combined with input from other sources such as GPS and real-time oceanographic data, is able to warn of hazards to navigation and situations where the vessel's current track will take it into danger. The U.S. Coast Guard will promulgate regulations for electronic chart carriage in U.S. waters in 2007.

HYDROGRAPHIC SURVEY PROGRAM

The Hydrographic Survey Program is also carried out by OCS. The program addresses the critical hydrographic surveys needed in U.S. waters. These hydrographic surveys provide the most basic data for the production of nautical charts. Coastal and ocean hydrographic data are also fundamental components of the Nation's Integrated Ocean Observing System. NOAA is responsible for surveying and charting U.S. and territorial waters to the limits of the EEZ, an area of about 3.4 million square nautical miles. In 1994, NOAA identified approximately 510,000 square nautical miles of the U.S. Exclusive Economic Zone as navigationally significant and in need of resurvey. Since that time, NOAA has focused primarily on surveying in the highest priority areas, many of which carry heavy commercial traffic, and are less than 30 meters deep. In addition, because of the dynamic nature of the commercial shipping industry, shipping lanes are changing constantly, and thus their charting needs change constantly as well. These characteristics significantly increase the risk to marine transportation. However, this critical area constitutes only a small portion (8%) of the entire navigationally significant area used by large commercial vessels and recreational boaters. NOAA's surveying activities employ the latest full bottom coverage sounding technologies to survey the Nation's coastal areas for navigation. NOAA utilizes private contractors to supplement its internal resources to conduct hydrographic data collection. All funding for the operation and maintenance of NOAA's hydrographic survey vessels is requested by NOAA's Office of Marine and Aviation Operations.

MARINE MODELING AND GEOSPATIAL TECHNOLOGY PROGRAM

OCS also carries out the Marine Modeling and Geospatial Technology Program, as the research and development focal point for NOAA's mapping and charting work. The program studies advancements in the cartographic, hydrographic, and oceanographic systems used by NOAA to provide products and services for the coastal marine community, particularly in support of safe and efficient navigation and the utilization and protection of the coast. The program develops techniques and methods for the analysis, simulation and accurate real-time prediction of oceanographic, atmospheric and water quality parameters. Projects include estuarine and port modeling and forecasting, coastal modeling and forecasting, and operational data resources. These models are an important contributor to the utility of a national Integrated Ocean Observing System, because they provide the capacity for data integration. The program also develops techniques and technology for improving nautical charts, providing vector data for marine Geographic Information Systems, efficiently and accurately measuring depths, shoreline and bottom characteristics, and locating underwater hazards. Efforts include bathymetric/topographic projects, vector electronic chart standards development, technology advances in shallow-water multibeam and high-speed high-resolution side-scan sonars, and on-the-fly Global Positioning System (GPS) for settlement and squat determination and vertical control of hydrographic surveys.

NAVIGATION SERVICES PROGRAM

Finally, OCS connects with stakeholders through the Navigation Services Program. This Program provides a focal point for customer requests and associated responses on charting issues, conducts fast-response hydrographic surveys to verify chart changes and accuracies, and maintains the Coast Pilot, a supplemental aid to the nautical chart. NOAA Navigation Managers are regionally based representatives who resolve charting and navigation questions, educate constituents on emerging charting technologies and their uses, and solicit feedback on NOAA's navigation products and services from the commercial maritime industry. This face-to-face contact improves NOAA's response to customer needs and issues. NOAA's Navigation Response Teams (NRTs) are another crucial means of connecting with the maritime community. These teams have proven their worth in a number of ways. Established under the guidelines of the Hydrographic Services Improvement Act of 1998, the NRTs are designed to be fully mobile regional survey teams. The NRTs conduct ENC validation surveys, chart discrepancy and shoreline boundary examinations using diving operations, data collection, and mapping support capabilities. Because NRTs operate and are on call 365 days a year, at any hour, they also provide a critical emergency response role for stakeholder survey requests following natural or man-made disasters. NOAA's NRTs perform post-hurricane surveys to ensure safety of navigation and resumption of maritime commerce, survey in the wake of maritime accidents to locate cause and debris, and support Homeland Security efforts through the testing of equipment and the supply of sea bottom data for the Defense Technology Support Working Group, U.S. Coast Guard, and U.S. Navy Mine Counter Measures. NOAA deployed four of its NRTs to the Hurricane Katrina/Rita/Wilma response in order to locate hazards to navigation and re-open impacted ports to maritime commerce and recovery efforts.

COASTAL MAPPING PROGRAM

The Coastal Mapping Program is carried out by NOS' National Geodetic Survey (NGS). The primary objective of the program is to define the national shoreline in support of nautical charting, although the program performs a number of other activities with important applications. The national shoreline is the delineation of the 95,000 miles of U.S. shoreline on a map or in a digital database. Since it is the official U.S. shoreline, measurements must be

accurate, consistent, and up-to-date. The national shoreline provides the critical baseline data for defining America's marine territorial limits, including its EEZ, and for the geographic reference needed to manage coastal resources and many other uses. These shoreline data are considered authoritative when determining the official shoreline for the United States. The Hydrographic Services Improvement Act of 1998 provides NOAA with explicit authority to promulgate national standards for all information acquired for nautical charting purposes, which includes shoreline. NOAA recommends that critical portions of the national shoreline around port areas be redefined on a 5-year cycle (a 10-year cycle is recommended for other areas). Products of the Coastal Mapping Program are essential to NOAA's nautical charting program and other environmental programs dealing with the coastal zone.

PROPOSED LEGISLATION:

NOAA will work with Congress to reauthorize the Hydrographic Services Improvement Act.

SUMMARIZED FINANCIAL DATA

(Dollars in thousands)

Subactivity: Navigation Services	FY 2006 ACTUALS	FY 2007 CURRENTLY AVAILABLE	FY 2008 BASE PROGRAM	FY 2008 ESTIMATE	INCREASE / DECREASE
Line Item: Mapping & Charting					
Mapping & Charting Base	58,135	39,300	44,757	45,457	700
Joint Hydrographic Center	7,391	-	7,424	7,424	-
Electronic Navigational Charts	4,241	-	6,128	6,128	-
Shoreline Mapping	2,415	-	2,424	2,424	-
Address Survey Backlog/Contracts	20,648	29,000	31,173	31,173	-
Address Survey Backlog-EEZ Outer Continental Shelf Ocean Bottom Claims	2,167	-	-	-	-
Address Survey Backlog-Gulf of Alaska	3,448	-	-	-	-
MS/LA Digital Coast	986	-	-	-	-
Vessel/Time Charter	11,191	-	-	-	-
Dune System Assessment & Shoreline Change Analysis	493	-	-	-	-
Coastal Environmental Mapping Consortium	789	-	-	-	-
River Studies	740	-	-	-	-
Subtotal: Mapping & Charting	112,644	68,300	91,906	92,606	700
TOTAL	112,644	68,300	91,906	92,606	700
FTE	306	311	313	313	-

Note: The dollars in this table represent budget authority.

PROGRAM CHANGES FOR FY 2008:

Mapping and Charting (0 FTE and +$700,000): NOAA requests an increase of $700,000 to integrate new technology into its ocean surveying and mapping efforts for more cost-effective, multi-mission operations. NOAA will incorporate hydrographic sensors on Autonomous Underwater Vehicles (AUVs) to maximize survey platform capacity and hydrographic survey data collection. The proposed area of investment contributes significantly to NOAA's efforts to: build an Integrated Ocean Observing System (IOOS); respond to the U.S. Ocean Commission's recommendations on sustaining IOOS, modernizing ocean data and information systems, and supporting marine commerce and transportation; and implement the Administration's Ocean Action Plan with respect to IOOS and Integrated Ocean and Coastal Mapping (IOCM).

Statement of Need
One of NOAA's primary missions is to deliver accurate nautical charts and related hydrographic information into the hands of mariners navigating on U.S. waters. NOAA's navigation products and services are designed to support safe marine transportation and efficient movement of commerce. As the Nation's dependence on the Marine Transportation System (MTS) grows with the impending doubling of container trade by 2020, it is crucial for mariners to know where and when changes occur in our ports, harbors, and waterways to help prevent accidents and groundings. Reducing these risks to lives, cargo and the environment will be achieved, in part, by improving the quality, quantity, and timeliness of navigation information that NOAA provides to the Nation.

NOAA is responsible for surveying the 3.4 million square nautical miles of the U.S. Exclusive Economic Zone (EEZ). NOAA has evaluated the EEZ to determine which areas truly are navigationally significant, and of these, which are the top priority for survey. At present survey capacity, it will take over 12 years to survey the most critical areas. Incorporating AUVs into NOAA survey operations will expand the capacity of NOAA's existing platforms to collect more data on each survey project in less time.

Proposed Actions
The requested funds will improve navigation safety by enabling NOAA to transition from ongoing AUV research to AUV operations in FY 2008. AUVs can gather more survey data more quickly and can operate in areas where surface vessels cannot, such as rough seas or between sheltered inshore and open water. AUVs will initially be used with side scan sonar, which will conservatively increase launch survey performance by 25%.

NOAA's research into hydrographic AUVs has occurred on a small scale and in partnership with the Defense Department's Technology Support Working Group to assess the utility of AUVs in underwater object detection for Homeland Security. In FY 2006, NOAA finalized Phase 1 accuracy and efficiency testing with its prototype AUV. In FY 2007, the team will deploy an AUV aboard an operational hydrographic survey vessel for development of operational methods and infrastructure requirements. By FY 2008, Phase 1 AUVs will be ready for deployment. However, additional funding is needed for deployment. At $500K to fund hardware and $200K for ship readiness activities, the deployment aboard NOAA vessels will allow adequate time for installation of required infrastructure and shipboard training.

Benefits
The primary function of NOAA's hydrographic data is to support safe and efficient marine navigation, but it also supports multiple NOAA missions and applications, and provides basic data for engineering, scientific and other commercial and industrial activities. The integration of AUVs into NOAA's current hydrographic survey operations offers the following potential gains:

- In a one-to-one comparison with a NOAA hydrographic survey launch, the AUV will conservatively increase launch performance by 25%. Survey coverage will be increased by approximately 50 square nautical miles per year per AUV. When fully incorporated into NOAA's

survey fleet, the relatively low additional operating cost of AUVs will substantially decrease the overall cost per square nautical mile over time of surveying the navigationally significant areas in U.S. waters.

- More effective deployment of personnel and fleet resources to survey complicated inshore areas while AUVs survey relatively simple regions in open water.
- Increased survey operation hours - because AUVs operate while submerged, they are able to acquire more high-quality data under a wider range of weather conditions than surface vessels, therefore leading to less surveying "down-time."
- Greater accuracy and efficiency in ship-based multibeam surveying by using AUVs to automate water column sampling for data validation.

Performance Goals and Measurement Data

This increase will support the objectives, "Support the Nation's commerce with information for safe, efficient, and environmentally sound transportation" and "Protect, restore, and manage the use of coastal and ocean resources through an ecosystem approach to management" under the Department of Commerce Strategic Goal of "Observe, protect, and manage the Earth's resources to promote environmental needs."

Performance Goal: Commerce and Transportation Performance Measure: Reduce the hydrographic survey backlog within navigationally significant areas (snm per year)	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Without Increase	2500	1350	3200	3200	3200	3200
With Increase – one AUV added per year	N/A	N/A	3250	3300	3350	3400

Subactivity: Navigation Services
Line Item: Geodesy

GOAL STATEMENT:

Within the United States and its territories, anyone should be able to obtain centimeter level accuracy in positions (latitude, longitude, and height) anywhere, anyplace, anytime.

BASE DESCRIPTION:

The mission of the NOAA Geodesy Program is to evolve and deliver the Nation's foundation of reference for positioning activities to support public safety, economic prosperity, and environmental well being. NOAA's Geodesy Program is carried out by the National Geodetic Survey (NGS), which manages the National Spatial Reference System (NSRS) – the national coordinate system that specifies latitude, longitude, height, scale, gravity, and orientation throughout the Nation. NSRS must continually evolve to meet the growing demand for more accurate, timely, and consistent positioning services. The Geodesy Line Item can be grouped into five major overlapping program elements: Permanent Network infrastructure, Continuously Operating Reference Stations (CORS) support, Height Modernization, Data Access and Outreach, and Tool and Model Development. Each program element within the Geodesy Line directly supports NOAA's Commerce and Transportation Goal.

Base activities support the objective, "Support the Nation's commerce with information for safe, efficient, and environmentally sound transportation" under the Department of Commerce Strategic Goal of "Observe, protect, and manage the Earth's resources to promote environmental needs."

PERMANENT NETWORK

A major component of NSRS is a network of permanently marked points including the Federal Base Network (FBN), the Cooperative Base Network, and the User Densification Network. These networks form a crucial foundation for all geographically referenced activities conducted in the U.S.

NOAA's primary network responsibility is the development of the national geodetic framework, the FBN. NOAA is committed to establishing, observing, monitoring, and maintaining a very high-accuracy, four-dimensional network of monumented stations at a 1 degree by 1 degree (75 km to 125 km) nominal spacing throughout the U.S. and its territories. The network contains additional stations as needed in areas of crustal motion in support of Federal aircraft navigational requirements. The goal of the FBN is to supply the highest level accuracies of geodetic latitudes, longitudes, and heights to benefit all users of positioning services.

NATIONAL CORS

NOAA collects and distributes GPS observational data from a nationwide network of permanently operating GPS receivers. The CORS System, consisting of these stations, a central data facility and a mirror-site in Boulder, CO, make observational data available over the Internet from the network presently consisting of over 500 GPS receivers, with 100 percent of the conterminous U.S. being within 200 km of at least one CORS. The primary

objective of National CORS is to provide local users with ties to the NSRS for post-processing position determination. CORS stations have been positioned, three dimensionally, at the 1-to 3-centimeter level (1/2 to 1 1/2 inches), and are used to greatly improve the accuracy of users' GPS positioning activities through the use of Differential GPS (DGPS) techniques. National CORS primarily serves the surveying, civil engineering, and geographic information system communities for locating, building, monitoring, and maintaining the Nation's physical infrastructure in support of the broader national economy.

The US Department of Transportation operates the Coast Guard Maritime DGPS and the Nationwide DGPS. Both systems are used for transportation and navigation and both systems are incorporated into the National CORS network. NOAA, through National CORS, provides the integrity monitoring for these systems, helping to ensure their reliability for real-time transportation applications.

HEIGHT MODERNIZATION

Height Modernization is an NGS-led effort to enhance the vertical aspect of NSRS through the establishment of accurate, reliable heights using GPS technology in conjunction with traditional leveling, gravity work, and remote sensing information. Height Modernization will provide better access to accurate and consistent height data at the local level. Applications that benefit include:

- Sea level rise monitoring,
- Coastal erosion rates,
- Floodplain mapping,
- Storm surge modeling,
- Subsidence and uplift monitoring,
- Pollution trajectory modeling,
- Navigation: under-keel and under-bridge clearance,
- Precision agriculture,
- Structural monitoring: bridges, dams, and buildings,
- Intelligent transportation systems, and
- Surveying and mapping.

NOAA administers the national Height Modernization program through four cornerstone states: California, Wisconsin, Louisiana, and North Carolina (partnering with South Carolina). In NOAA's plan for national implementation of Height Modernization, these four states will serve as regional leaders for nationwide expansion of the Height Modernization program. Establishing one regional center to serve several states with common issues will establish the program management structure that is more likely to optimize the resources, technology, and benefits.

To fully expand Height Modernization nationwide is an enormous undertaking that will take many years. The task cannot be carried out entirely by the Federal Government. NOAA has been implementing Height Modernization since 1999 through collaboration with state governments, local partners, the private sector, and other federal agencies. NOAA has determined that rather than implementing Height Modernization on a state-by-state basis, a regional approach is preferable for a number of reasons. Many of the elevation issues addressed by Height Modernization are regional in nature. Issues such as coastal and riverine flooding in the Mid-Atlantic, tectonic movement along the West Coast, post-glacial rebound and improved efficiencies of intermodal transportation in the Great Lakes, and subsidence along the Gulf of Mexico, reach across state boundaries to affect entire geographical regions. A regional approach is also a more efficient use of both NOAA and partner funds and workforce.

NSRS TOOLS AND MODELS

NOAA's NGS develops standards, specifications, guidelines, and best practices for the surveying and positioning industry, as well as a variety of models describing geophysical and atmospheric phenomena that affect spatial measurements. These tools and models are crucial to scientific and commercial positioning activities.

NSRS DATA ACCESS AND OUTREACH

NOAA's NGS archives and provides access to geodetic control, shoreline, and aeronautical survey data from its own surveys and from cooperating organizations. These data are made available via the Internet on a full time basis. As part of its technology transfer efforts, NGS conducts a series of workshops and constituent forums in various parts of the country. NGS also manages the State Geodetic Advisor Program, which is a cost-sharing program that provides a liaison between NOAA and the host state to guide and assist the state's geodetic and surveying programs. This program covers over half the states, and responds to the states' desire to improve their surveying techniques to meet Federal standards and specifications.

PROPOSED LEGISLATION:

No legislation is proposed.

SUMMARIZED FINANCIAL DATA

(Dollars in thousands)

Subactivity: Navigation Services	FY 2006 ACTUALS	FY 2007 CURRENTLY AVAILABLE	FY 2008 BASE PROGRAM	FY 2008 ESTIMATE	INCREASE / DECREASE
Line Item: Geodesy					
Geodesy Base	19,860	22,000	22,261	22,261	-
National Spatial Reference System	1,942	-	-	-	-
National Height Modernization	-	-	2,541	2,541	-
Height Modernization Regional Expansion - NGS Implementation	222	-	-	-	-
Height Modernization Regional Expansion - AL	1,943	-	-	-	-
Height Modernization Regional Expansion - CA	920	-	-	-	-
Height Modernization Regional Expansion - NC	920	-	-	-	-
Height Modernization Study - MS	590	-	-	-	-
Height Modernization Regional Expansion - SC	461	-	-	-	-
Height Modernization - TX	740	-	-	-	-
Geodetic Survey - AL	(4)	-	-	-	-
Geodetic Survey - AZ	494	-	-	-	-
Geodetic Survey - KY	493	-	-	-	-
Geodetic Survey - WI	2,959	-	-	-	-
TOTAL	31,540	22,000	24,802	24,802	-
FTE	183	183	183	183	-

Note: The dollars in this table represent budget authority.

PROGRAM CHANGES FOR FY 2008:

No program changes are proposed for FY 2008.

Subactivity: Navigation Services
Line Item: Tide & Current Data

GOAL STATEMENT:

Provide the navigation community with access to real-time data and predictions of current speed and direction, water levels, and meteorological data (wind speed and direction, gusts, barometric pressure, etc.) to enable safer and more efficient vessel routing, flood warnings, emergency response operations to spills of hazardous materials, homeland security, and for real-time control of harbor maintenance dredging.

BASE DESCRIPTION:

The Tide and Current Data Program (TCDP) is a significant component of the integrated, comprehensive suite of NOAA information products required by the maritime community to ensure safe and efficient navigation, homeland security, improve oil and other hazardous material spill response, and support coastal resource management. NOAA is statutorily authorized to collect, analyze, and provide datums related to tide and water levels. The Act of August 6, 1947 (61 STAT, 787) 33 U.S.C. §§ 883 a-f authorizes collection and dissemination of water level data; Section 883a authorizes NOAA to conduct "Hydrographic ... tide and current observations;" Section 883b authorizes NOAA "to analyze and predict tide and current data, and process and publish data, information, compilations, and reports." The TCDP is operated by the Center for Operational Oceanographic Products and Services (CO-OPS). Observations and predictions of water levels and currents are collected, quality controlled, and distributed to the marine transportation community and other users. The Tide and Current Data Line Item is composed of four primary program elements, each of which contributes to NOAA's Commerce and Transportation Goal and Weather and Water Goal.

Base activities support the objective, "Support the Nation's commerce with information for safe, efficient, and environmentally sound transportation" under the Department of Commerce Strategic Goal of "Observe, protect, and manage the Earth's resources to promote environmental needs."

NATIONAL WATER LEVEL PROGRAM

CO-OPS operates and maintains the National Water Level Observation Network (NWLON), a system of 187 long-term observation stations located in U.S. coastal areas, the Great Lakes, and U.S. Territories and possessions. Information from the NWLON ranges from the high frequency content in the record (tsunamis and storm surge) to the long-term content (sea level trends and lake level trends). It provides vertical reference datums for all marine boundary applications, for national shoreline and nautical chart products, for coastal construction, dredging, for habitat restoration projects and for hurricane evacuation route planning. The NWLON system provides a nationwide capability for storm surge monitoring, and serves as an observing system for the NOAA Tsunami Warning System. Some of the records stretch over 150 years and represent some of the oldest continuous geophysical records in the U.S. The data are increasingly valuable to climate change researchers.

CO-OPS performs quality assurance procedures on the data from NWLON stations, computes tidal and Great Lakes datums and predicts tides for all U.S. coastal areas. NWLON is a critical underpinning for tools such as the Physical Oceanographic Real-Time System (PORTS®) and also serves as a federal backbone for the Integrated Ocean Observation System. NOAA is in the process of enhancing all of the NWLON stations to provide real-time data. Data collected by the NWLON supports all four of NOAA's Strategic Mission Goals.

NATIONAL CURRENT PROGRAM

NOAA and its predecessor agencies have been collecting information on the currents in various ports and harbors, and the Gulf Stream, since the mid-1800's. The Coast and Geodetic Survey first published tidal current predictions for use by mariners in 1890 for the East Coast and in 1898 for the West Coast. The program is presently operated by NOAA's Center for Operational Oceanographic Products and Services. NOAA's tidal current prediction tables are used by the largest ship operators down to the fishing industry, and the small recreational boater, kayakers, and wind surfers. Updated, accurate predictions are essential for these users to support safe and efficient navigation and for fishers to determine best catch times. In addition, accurate measurements of the currents are essential to test oil spill response strategies and provide on-site response to an emergency spill. The data are used to fine tune strategies and verify current trajectories for models.

PHYSICAL OCEANOGRAPHIC REAL TIME SYSTEMS (PORTS®)

Physical Oceanographic Real Time Systems (PORTS®) is a decision support tool that integrates and disseminates real-time environmental observations, forecasts and other geospatial information. In partnership with local port authorities, pilot associations, the U.S. Coast Guard, the U.S. Army Corps of Engineers, the U.S. Navy, academia, and others, PORTS® has been implemented in various bays and harbors in the U.S. to measure and disseminate water levels, currents, salinity, winds, and atmospheric pressure to various users. PORTS® is a cost-sharing program requiring local partners to bear the cost of installation, operation and maintenance of the sensor systems. This recognizes the local benefits of such systems. NOAA's responsibility is to provide the basic oceanography and design for the systems, as well as the ongoing quality control of the real time data. Thirteen PORTS® (Tampa, New York, San Francisco, Narragansett Bay, Chesapeake Bay, Anchorage, Soo Locks (MI), Los Angeles/Long Beach, Delaware Bay, Houston/Galveston, Tacoma, New Haven, and Columbia River) are currently operating around the U.S. These PORTS® service 39 U.S. seaports through which 42 percent of U.S. cargo by tonnage transits on an annual basis. PORTS® information is used by mariners, port authorities, and the shipping industry to support safe and efficient navigation. Access to accurate real-time water level data and model forecast guidance allows U.S. port authorities and maritime shippers to make sound decisions regarding maximizing tonnage (based on available bottom clearance), and limiting passage times, without compromising safety.

OPERATIONAL FORECAST MODELS PROGRAM

CO-OPS also operates nowcast and forecast models, typically in conjunction with PORTS®, that provide short-term water level and other environmental forecasts that enable better planning and decision making, particularly for vessel transits.

Historically, mariners in the United States have had only NOAA's Tide and Tidal Current Prediction Tables to depend on for the best estimate of expected water levels and currents at a given time in the future. While these tables provide accurate predictions of the astronomic tide, they do not account for a

number of other physical factors that affect water levels, such as wind, air pressure, and river flow. NOAA has developed and is currently operating three dimensional hydrodynamic models which take such variables into account, and are able to forecast water levels and currents up to 24 hours in advance. Operational Systems currently exist for the Chesapeake Bay, the Port of New York / New Jersey, Houston/Galveston, the St. John's River, and all five Great Lakes. NOAA's models of oceanographic and atmospheric conditions, which are provided through PORTS®, provide crucial advance data for re-routing of vessel traffic, port conditions forecasts, and low visibility navigation to keep traffic moving and prevent congestion or delays in other less affected areas. Marine modeling also supports predictions of the oceanic and atmospheric dispersion of hazardous materials to protect people and the environment.

PROPOSED LEGISLATION:

No legislation is proposed.

SUMMARIZED FINANCIAL DATA

(Dollars in thousands)

Subactivity: Navigation Services	FY 2006 ACTUALS	FY 2007 CURRENTLY AVAILABLE	FY 2008 BASE PROGRAM	FY 2008 ESTIMATE	INCREASE / DECREASE
Line Item: Tide & Current Data					
Tide & Current Data Base	18,114	22,000	25,363	26,363	1,000
PORTS (CT)	3,477	-	-	-	-
Great Lakes NWLON	1,965	-	-	-	-
National Water Level Observation Network	3,457	-	-	-	-
TOTAL	27,013	22,000	25,363	26,363	1,000
FTE	107	107	107	107	-

Note: The dollars in this table represent budget authority.

PROGRAM CHANGES FOR FY 2008:

Tide and Current Data (0 FTE and +$1,000,000): NOAA requests an increase of $1,000,000 to improve and enhance the delivery of real time navigation information through the National Water Level Program (NWLP) by upgrading 45 priority National Water Level Observation Network (NWLON) stations with meteorological sensors per year beginning in FY 2008. This funding supports the U.S. Ocean Action Plan and NOAA's effort to advance the Integrated Ocean Observing System (IOOS). This increase builds on the President's FY 2007 request to harden NWLON stations, further enhancing NOAA's ability to deliver real time navigation information. Accurate, reliable, and timely information is critical to ensure that marine transportation at U.S. ports is safe and efficient, thus enhancing commerce and economic growth, and protecting the environment from marine accidents that spill hazardous materials and cause other damage. Through the NWLP, NOAA provides water level data, predictions and vertical control (tidal datums) to support safe marine navigation by users of the US Marine Transportation System (MTS). Multi-tasking technology utilized by the National Water Level Observation Network, the observing component of the NWLP, also allows other environmental parameters such as winds, air and water temperature, and barometric pressure to be monitored and used in support of multiple NOAA missions such as forecasting storm surge and responding to hurricanes, tsunamis, and other extreme events that threaten the Nation’s coastal areas.

Statement of Need

Physical environmental data is crucial when extreme weather and water events including hurricanes, tsunamis, and nor’easters impact U.S. coasts. Accurate real time storm tide and associated meteorological data improves NWS forecasts and provides emergency responders with actual conditions upon

which to base better decisions. As demonstrated by the devastating impacts of Hurricanes Katrina and Rita in 2005, coastal communities need improved, robust products and services to help them plan for, respond to, and recover from coastal storms. Economic losses from Hurricane Katrina are expected to exceed $125B due to the impacts of storm surge, flooding and wind associated with the storm (Source: Risk Management Solutions, Newark, CA). Faced with increasing vulnerability of coastal communities, coastal and emergency managers have expressed a need for comprehensive, timely and accessible information to aid in making decisions at critical times.

The US Coast and Geodetic Survey Act of 1947 mandates that NOAA collect tide and current data to support safe and efficient marine navigation. The 1999 "Assessment of the Marine Transportation System" report provided to Congress by the interagency Marine Transportation System Task Force noted that the highest priority for MTS stakeholders was the need for accurate, reliable, and timely navigation information. The Nation's commerce which passes through our seaports is an economic lifeline of our country. More than 95 percent of U.S. overseas trade by volume and 37 percent by value, including nine million barrels of imported oil daily, transits through our seaports. Mariners need decision support tools that provide them with a complete understanding of the physical environment in which they operate.

Proposed Actions

With the requested funding NOAA will upgrade 45 priority NWLON sites per year beginning in FY 2008 that have been identified by the NWS ($450,000 for equipment and $550,000 for contracts). The requested funds will procure meteorological sensors and supporting components such as towers, and utilize contract services to add meteorological packages to NWLON stations. The NWLON has traditionally been an oceanographic observing system established and operated primarily to service the marine transportation sector. However, NWLON technology allows multiple other types of sensors to be added, including meteorological sensors such as wind speed/direction/gusts, air temperature, and barometric pressure. Navigation data users require a complete picture of their operating environment to make the best safety and efficiency decisions, and local meteorological data is a part of that. Optimization through augmentation of existing platforms is a fundamental principle of IOOS as integration into the existing observing infrastructure is much more cost effective than establishing new observing platforms. To date, 80 NWLON stations have been upgraded with meteorological packages in piecemeal fashion at high priority locations identified by the navigation community and NWS. All NWLON data, both oceanographic and meteorological, are passed directly through the NWS telecommunications gateway to users such as NCEP, the WFOs, the River Forecast Centers and others. In addition, with the conversion of the entire NWLON to real time data dissemination completed by the end of FY 2007 (an Ocean Action Plan deliverable), the meteorological data will also be made available directly to the marine transportation sector, emergency responders and other users in real time via the internet and voice based systems.

Benefits

The additional meteorological data will improve the accuracy of NWS forecasts of storm surge, marine wind speed, and marine wave heights for use by both the marine navigation and coastal communities when extreme weather events occur. The real time information will be used by emergency responders to make sound decisions based upon what coastal areas are flooding, which evacuation routes are still viable, and other situations requiring a good understanding of the current state of the physical environment.

In a typical large port, the shipping and port industries alone may have an economic impact of approximately $12 billion dollars to the local economy. The safe and efficient transit of the ever-larger and deeper draft vessels in our Nation's constricted ports and harbors relies on accurate and timely navigation data. Knowledge of accurate oceanographic data such as tides and currents helps vessels to avoid groundings, collisions, and allisions with stationary objects such as bridges, rocks, and docks. Meteorological data such as wind speed and direction are critical to the safe maneuvering of large commercial vessels within constrained harbors and shipping channels. The economic and environmental consequences of a marine accident, particularly when hazardous materials are spilled, can run into the millions or even billions of dollars.

Performance Goals and Measurement Data

This increase will support the objectives, "Support the nation's commerce with information for safe, efficient, and environmentally sound transportation" and "Serve society's needs for weather and water information" under the Department of Commerce strategic goal of "Observe, protect, and manage the Earth's resources to promote environmental needs." This increase supports NOAA's Weather and Water Performance Goal "To improve accuracy and timeliness of weather and water information so as to improve the ability to reduce coastal hazard impacts" and the Commerce and Transportation performance objective "Enhance navigational safety and efficiency by improving information products and services" and the following performance measures.

Performance Goal: Commerce and Transportation **Performance Measure:** Number of NWLON stations providing real time meteorological data to improve navigation safety (cumulative)	**FY 2006**	**FY 2007**	**FY 2008**	**FY 2009**	**FY 2010**	**FY 2011**
Without Increase	80	80	80	80	80	80
With Increase	--	--	125	170	170	170

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Subactivity: Ocean Resources Conservation and Assessment
Line Item: Ocean Assessment Program (OAP)

GOAL STATEMENT:

NOAA's National Ocean Service (NOS) promotes healthy coastal ecosystems by ensuring that economic development in coastal areas of the U.S. is managed in ways that maintain biodiversity and long-term productivity necessary for sustained use. Working in partnerships with Federal and State agencies NOAA provides coastal managers with the scientific understanding, information, products and services needed to balance the environmental, social, and economic goals of coastal communities and NOAA.

BASE DESCRIPTION:

Several NOS programs are located within the Ocean Assessment Program Line Item, including NOAA's Coastal Services Center, the NOAA Coral Reef Program, NOAA's Coastal Storms Program, and the Cooperative Institute for Coastal and Estuarine Environmental Technology.

Base activities support the objective, "Protect, restore, and manage the use of coastal and ocean resources through an ecosystem approach to management" under the Department of Commerce Strategic Goal of "Observe, protect, and manage the Earth's resources to promote environmental needs."

COASTAL SERVICES CENTER

The NOAA Coastal Services Center's (Center) mission is to build capacity for informed decision making about our coasts. The Center conducts its mission under several authorities, including 16 U.S.C. 1456c, which authorizes NOAA to provide coastal managers with technical assistance. The Center's primary customers are the Nation's coastal managers, including natural resource managers, planners, and emergency officials. The Center provides services, products, and expertise to this community that would otherwise be unavailable or unaffordable. By doing so, the Center is effectively "buying down" the cost of improving state and local coastal management programs, thereby enabling more effective and targeted implementation of the Coastal Zone Management Act. Partnerships between the Center and state and local coastal management organizations and their partners give rise to more than 100 projects each year. These projects produce new tools and approaches that often are applied nationwide. The Center has developed a collaborative strategy, building effective working relationships not only across NOAA but also with other federal mission agencies.

In developing projects, the Center focuses on issues identified as important to the coastal resource management community—including hazards, habitat, the national spatial data infrastructure, coastal growth, and ocean and coastal observing systems. Customer requirements for programs and activities are determined through statutory guidance, direct interactions, needs assessments, surveys, evaluations, prototyping, CONOPS processes, competitive analysis, and partnering. Projects and activities must be 1) customer oriented; 2) focused on results; 3) undertaken in partnership; and 4) national in scope, yet local in approach. The Center is composed of employees from throughout the bureau, and the Center's annual operating plan is coordinated among all of NOAA's Line Offices. The Center's functional areas of expertise include coastal management; access to information and technology; data development, integration and management; geographic information systems; remote sensing; technical assistance and training; and capacity building. The Center also

leads the NOS-wide coordination of the Pacific Services Center in Hawaii, which brings NOS services to the State of Hawaii and other U.S. Pacific flag islands territories, and is deploying assets to other coastal areas to support and enhance NOAA's regional interactions and delivery of products and services. The Center is co-coordinating the Coastal Storms Program, a cross-NOAA Line Office effort, with the National Weather Service, and is working with multiple NOAA, interagency, and non-federal partners to help establish a combined regional and national framework and sustained capacity for an Integrated Ocean Observing System.

CORAL REEF PROGRAM

The NOAA Coral Reef Conservation Program implements priority actions to fulfill the Coral Reef Conservation Act and the U.S. Coral Reef Task Force's National Action Plan to Conserve Coral Reefs. NOAA is undertaking a series of activities to reduce human impacts on coral reefs and restore reef environments. The rapid decline and loss of these valuable marine ecosystems has significant social, economic, and environmental consequences in the U.S. and around the world. With government and non-government partners, the program supports a wide variety of priority activities including mapping and monitoring of reef ecosystems, support for state/territorial coral reef management, improved management of reef fisheries and implementation of coral reef marine protected areas.

Coral reefs are some of the most biologically rich and economically valuable ecosystems on Earth. These biologically complex ecosystems have great economic, social and cultural importance to the U.S. and other countries. They provide a wide variety of valuable products and services including:

- economic stability and food security for millions of people;
- chemicals and pharmaceuticals that contribute to improved human health;
- environmental services such as shoreline protection and climate change mitigation;
- areas of natural beauty and biodiversity; and
- significant sources of revenue and employment through tourism and other industries.

The global value of products and services from coral reef ecosystems has been estimated at over $300 billion. Coral reef ecosystems and their products and services are now seriously threatened by a variety of human impacts and environmental factors. Key threats include: over-exploitation and destructive fishing practices; pollution and sedimentation associated with urban development, deforestation and agriculture; habitat loss resulting from dredging and shoreline modification; vessel groundings and other direct physical impacts; invasive species; disease outbreaks; and impacts associated with climate change such as coral bleaching.

COASTAL STORMS

The Coastal Storms Program will harness and leverage NOAA and community resources to reduce the adverse impacts of coastal storms by developing improved and integrated products and services that address specific state/local decision-maker needs. The Coastal Storms Program brings NOAA-wide

expertise, products, and services to specific regions to address challenges unique to those regions. Efforts to integrate existing product service lines to meet unique needs are also included. Targeted geographies include the St. John's water management district in northeast Florida, the coastal portion of the Lower Columbia River watershed, and the Southern California Bight. The specific issues addressed are determined by regional needs as articulated by users. Commonalities are emerging in observations, modeling, outreach, risk and vulnerability, and decision-maker needs assessments among pilot regions.

COOPERATIVE INSTITUTE FOR COASTAL AND ESTUARINE ENVIRONMENTAL TECHNOLOGY

The Cooperative Institute for Coastal and Estuarine Environmental Technology (CICEET) was established in 1997 as a partnership between the University of New Hampshire (UNH) and NOAA. The mission of CICEET is to provide the scientific basis for understanding and reversing the impacts of coastal and estuarine degradation through the development and application of environmental technologies and methods. CICEET operates in partnership with the National Estuarine Research Reserve System, which enables research to be conducted at controlled, relatively undisturbed sites. CICEET works with coastal managers to select projects relevant to their technology needs and transfer technology when completed.

PROPOSED LEGISLATION:

NOAA will work with Congress to reauthorize the Coral Reef Conservation Act.

SUMMARIZED FINANCIAL DATA

(Dollars in thousands)

Subactivity: Ocean Resources Conservation and Assessment	FY 2006 ACTUALS	FY 2007 CURRENTLY AVAILABLE	FY 2008 BASE PROGRAM	FY 2008 ESTIMATE	INCREASE / DECREASE
Line Item: Ocean Assessment Program (OAP)					
Ocean Assessment Program Base (ECO)	7,784	-	-	-	-
Ocean Research Priorities Plan Implementation	-	-	-	10,000	10,000
IOOS Regional Observations	-	-	-	11,500	11,500
Gulf of Mexico Regional Collaboration	-	-	-	5,000	5,000
Coastal Ocean Research & Monitoring Program	493	-	-	-	-
NOAA IOOS	7,392	-	-	2,500	2,500
NOAA/UNH Joint Ocean Observing Technology Center	1,972	-	-	-	-
Gulf of Alaska Ecosystem Monitoring Program	1,676	-	-	-	-
Gulf of Maine Observing System	493	-	-	-	-
Long Island Sound Observing System	986	-	-	-	-
Central Gulf of Mexico Observing System (USM)	1,972	-	-	-	-
So Cal Coastal Ocean Observing System (Scripps)	1,480	-	-	-	-
Center for Integrated Marine Technologies	2,022	-	-	-	-
Alliance for Coastal Technologies	2,959	-	-	-	-
Center for Coastal Ocean Observation and Analysis	2,466	-	-	-	-
Carolina Coastal Ocean Observing and Prediction System	2,022	-	-	-	-
Wallops Ocean Observation Project	1,963	-	-	-	-
Coastal Storms	1,225	-	2,874	2,874	-
Cook Inlet Coastal Monitoring and Habitat	986	-	-	-	-
Coastal Services Center	19,721	10,000	19,835	19,835	-
Digital Earth Model - MS	2,959	-	-	-	-
Pacific Coastal Services Center	4,433	-	-	-	-
Coastal Change Analysis	493	-	-	-	-
Lake Pontchartrain	1,972	-	-	-	-
CREST	986	-	-	-	-

Subactivity: Ocean Resources Conservation and Assessment	FY 2006 ACTUALS	FY 2007 CURRENTLY AVAILABLE	FY 2008 BASE PROGRAM	FY 2008 ESTIMATE	INCREASE / DECREASE
CI-CORE	2,466	-	-	-	-
Aquatic Research Consortium MS	2,466	-	-	-	-
Coop Institute for Coastal and Estuarine Enviro Tech	6,697	-	6,662	6,662	-
Hawaii Coral Reef Initiative	1,480	-	-	-	-
Nat'l Coral Reef Institute - Florida	986	-	-	-	-
Coral Reef - Puerto Rico	493	-	-	-	-
Coral Reef	24,632	26,000	25,797	25,797	-
National Fish and Wildlife Foundation - NFWF	690	-	-	-	-
Ocean Health Initiative	4,808	-	-	1,000	1,000
White Water to Blue Water	986	-	-	-	-
Oregon Ocean Observing	493	-	-	-	-
SURA Coastal Ocean Observing System	2,466	-	-	-	-
National Maritime Center	1,972	-	-	-	-
Lake Erie Monitoring	494	-	-	-	-
Louisiana Long Term Estuary Assessment	986	-	-	-	-
TOTAL	120,570	36,000	55,168	85,168	30,000
FTE	65	65	65	68	3

Note: The dollars in this table represent budget authority.

PROGRAM CHANGES FOR FY 2008:

Integrated Ocean Observing System (0 FTE and $2,500,000): NOAA requests an increase of $2,500,000 to build an Initial Operating Capability for the Integrated Ocean Observing System (IOOS). This increase will support the initial implementation of Data Management and Communications (DMAC) by a phased integration of core IOOS variables within a data integration framework that relies on the development and deployment of interoperability standards and protocols. The First IOOS Development Plan identified 20 priority core variables (i.e. temperature, salinity, bathymetry, etc.) required to address the seven societal goals: Weather & Climate, Marine Operations, Natural hazards, National Security, Public Health, Healthy Ecosystems, and Sustained Resources. This investment will demonstrate data interoperability, on a variable by variable basis, beginning with core IOOS variables collected by NOAA's existing systems, and establish methods and procedures for future integration with other NOAA and non-NOAA elements of the national network. The goal is to provide an understandable data integration framework and business process that improves customer access to integrated data

streams. This will aid development of new and improved data products and services, and will enable the test, evaluation, verification and benchmarking of product improvements**.** The requested increase will allow NOAA to provide national leadership in implementing the President's Ocean Action Plan, assist in execution of the NOAA elements of the Global Earth Observing System of Systems (GEOSS), and help NOAA fulfill the First U.S. IOOS Development Plan recommendations.

Statement of Need

NOAA's need for integrated data is derived from its mission goals. The inability to share data and information between existing federal observing systems is a critical gap. In addition, existing non-federal observing systems cannot be integrated into the system due to a lack of a common framework. NOAA needs a coordinated approach and methodology to successfully integrate data streams to meet NOAA and IOOS objectives. Without resources for coordinating IOOS data integration across NOAA, the full value of existing ocean observing system data cannot be realized due to the fragmented nature of legacy observing systems and their data production techniques. This investment is necessary to maximize the value of taxpayer investments in observation systems through complete access to interoperable core IOOS data, enabling NOAA and other end users to develop new or enhanced decision tools and information services to serve the Nation's needs.

Proposed Actions

NOAA proposes building an Initial Operating Capability for IOOS. This will be achieved through the development of a data integration framework that will enable integration of an initial set of 5 variables by FY2009. The 5 variables are temperature, salinity, sea level, surface currents, and ocean color. The FY2008 request will fund integration of temperature, salinity, and sea level. The 5 variables selected for initial integration by FY2009 are among the set of 20 core variables identified as priority in the First Annual IOOS Development Plan. The data integration framework will enable identification of data streams and data distribution nodes and focus technical work on developing interoperability through:

- Development of FGDC compliant metadata which is cataloged and discoverable by any public user
- Standardization of the content and format of the data products
- Development of documented and standard data quality control protocols
- Use of community defined, open data transport and data access protocols for use on the public internet
- Internet Data Registration
- Documentation and definition of archive service requirements
- Implement Information Technology security protocols to ensure data integrity and availability over the public internet

Modelers will use the newly interoperable data sets within their models. Once a model, using the new data, provides an improved product that meets its desired purpose and use, the improved product will be benchmarked for operational use.

The requested increase will fund standards development in collaboration with the NOAA data integration processes, and the interagency DMAC Steering Team, consistent with national efforts to implement GEOSS. The selection of additional core IOOS variables for integration will be based on an assessment of which variables are most likely to provide measurable improvements to current decision-making tools or enable new product developments, and maximize opportunities to leverage other data integration and management efforts undertaken by other federal agencies and stakeholders.

Benefits

The data integration framework enables integrated data sets and modernizes the way NOAA delivers data, products, and services. Integrated data has the potential to expedite new product development and improve model accuracy for a suite of existing NOAA products and services including, but not limited to, hurricane intensity models, harmful algal bloom (HAB) forecasts, integrated ecosystem assessments, and coastal inundation models. Interoperable data sets have the potential to stimulate private sector investments in the development of new commercial products and services as evidenced by commercial access to interoperable weather data. The integrated data framework supports data integration for not only ocean data, but for other NOAA data systems, agency partners and stakeholders. With more than half of the U.S. population living within coastal regions, the need for timely, accurate access to information is critical for saving lives, livelihoods, and improving quality of life. Ultimately an integrated approach will allow optimization of observing system investments and provide a consistent capability for all users to build value-added products and services and realize a wide range of social, environmental, and economic benefits.

Performance Goals and Measurement Data

This increase will support all objectives under the Department of Commerce strategic goal of "Observe, protect, and manage the Earth's resources to promote environmental needs."

Performance Goal: All Goals **Performance Measure:** Proposed GPRA –Number of IOOS Core variables integrated into NOAA's Data Integration Framework (20 total)	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Without Increase	0	0	0	0	0	0
With Increase	0	0	3	5	7	9

Performance Goal: All Goals **Performance Measure:** Proposed GPRA –Number of data products (models and assessments) tested and evaluated for baseline improvements	FY 2006	FY 2007	FY 2008	FY 20009	FY 2010	FY 2011
Without Increase	0	0	0	0	0	0
With Increase	0	0	1	2	3	4

Oceans and Human Health Initiative (0 FTE and +$1,000,000): NOAA requests an increase of $1,000,000 to implement Ocean and Human Health initiative strategic plan developed in response to the US Ocean Action Plan (OAP) and the Oceans and Human Health Act (P.L. 108-447). The OAP specifically highlights action to "Implement New Legislation on Oceans and Human Health." The goal of the Oceans and Human Health Initiative (OHHI) is to understand and predict the connections between the condition of oceans, coasts, Great Lakes waters, and human health, while providing information focused on reducing current and future risks to public health, and enhancing efforts to provide curative agents and natural products from the sea. This initiative also supports expanding science education in direct support of NOAA's mission.

Statement of Need

As the coastal population increases, so does the number of people who are exposed to infectious diseases, harmful algal bloom toxins and a broad range of pollutants through eating contaminated seafood or coming into direct contact with contaminated coastal waters. Across the country, the number of shellfish bed and recreational beach closures is on the rise, resulting in substantial economic losses as well as threats to human health. Marine-derived toxins in

seafood alone are likely responsible for at least 60,000 illnesses a year on a global basis and additional risks are posed by consumption of contaminated seafood.

Proposed Action
With the proposed funds, the OHHI will:

- Continue support for NOAA's **National Centers of Excellence in Oceans and Human Health** ($500,000). NOAA's OHH Centers build on regional partnerships and exemplify in practice the "One NOAA" philosophy as they are located, respectively in NOAA's Ocean Service (OHH Center at the Hollings Marine Laboratory, Charleston, SC), NOAA Research (OHH Center at the Great Lakes Environmental Research Laboratory, Ann Arbor, MI), and NOAA Fisheries (OHH Center at the Northwest Fisheries Science Center, Seattle, WA). The Centers conduct and coordinate research, outreach, education and data management programs across NOAA and with a host of external partners. Additional NOAA offices such as the National Weather Service and National Satellite and Information Service are also active partners
- Support **Traineeship activities** to build a cadre of scientists skilled in working at the interface of ocean and biomedical and public health disciplines ($500,000).

Benefits
The OHHI will continue to develop tools, technologies and environmental health information to discover, identify, monitor, detect, predict, reduce and prevent coastal and ocean related human health risks. OHHI will deliver and transfer information, tools, and technologies to public health and natural resource managers, decision-makers and the public. Through the combined efforts of NOAA scientists and the external research community, the OHHI will continue to conduct research leading to new understanding of ocean health-human health relationships in nearly every coastal region of the United States in order to:

- Identify existing and emerging marine and coastal related risks to public health;
- Produce biological and chemical sensors to rapidly measure threats to human health in ocean and coastal waters and incorporate them into the Integrated Ocean Observing System;
- Identify sentinel species and habitats to aid in understanding and monitoring coastal conditions;
- Develop and transfer environmental and public health monitoring and assessment capabilities;
- Develop and transfer early warning systems and forecasts for existing and emerging ocean and coastal health risks;
- Leverage partnerships to discover and identify marine natural products and pharmaceuticals for human health benefits;
- Assess and improve the safety and health benefits of seafood;
- Coordinate environmental sampling and analysis for emergency response to natural disasters;
- Improve ability to forecast likely effects of extreme events and natural disasters on the movement and fate of pathogens, contaminants; and toxins in estuarine, coastal and marine environments to reduce human exposure and prevent human disease.

Human interaction with the oceans is central to NOAA's ecosystem-based approach to management of the Nation's living marine resources and the habitats on which they depend. The NOAA OHHI will bring NOAA's understanding and assessment of the oceans full circle since it evaluates both the impact of humans on the oceans, as well as the impact of the oceans on human health.

Performance Measures
This increase will support the objective, "Protect, restore, and manage the use of coastal and ocean resources through an ecosystem approach to management" under the Department of Commerce Strategic Goal of "Observe, protect, and manage the Earth's resources to promote environmental stewardship.

Performance Goal: Ecosystem **Performance Measure:** Number of tools and technologies developed through OHHI partnerships and research activities for science-based warning systems that decrease human health risks.	**FY 2006**	**FY2007**	**FY 2008**	**FY 2009**	**FY 2010**	**FY 2011**
Without increase	3	0	0	0	0	0
With increase	3	0	1	1	1	1

Regional Development of the Integrated Ocean Observing Systems (2 FTE and +$11,500,000): NOAA requests an increase of $11,500,000 to develop the regional component of the Integrated Ocean Observing System (IOOS) through the activities of the 11 Regional Associations. This increase builds on competitively-awarded cooperative agreements funded to initiate the Regional Associations as the entities responsible for identifying local and regional needs for ocean information. The regional component of IOOS complements Federal ocean observing assets by providing additional data, models, and information products tailored to the economic and environmental requirements of the community. The Regional Associations are developing criteria that will allow them to be the mechanism to: 1) leverage regional resources, 2) coordinate regional coastal observing system (RCOOS) assets to meet regional requirements, and 3) ensure Federal data management and observing system standards are met. The Regional Association activities will broaden the impact of Federal observing system assets by enhancing the NOAA partnership network at the regional and local levels including augmentation of federal observing capabilities to improve resolution. The resulting partnerships, data, and products will support multiple NOAA missions such as forecasting storm surge and responding to other coastal hazards, improving navigation and transportation information, protecting public health, and managing coastal resources using an ecosystem-based approach.

Statement of Need

The Integrated Ocean Observing System Development Plan (OceanUS, 2006) calls for an integrated system of observations that support national and regional priorities. NOAA has been designated the lead agency for the implementation of IOOS. The IOOS Development Plan distinguishes between those observing and data infrastructure components managed directly by Federal agencies to meet national priorities and those infrastructure components managed at the regional level, termed Regional Coastal Ocean Observing Systems (RCOOS). The two are co-dependent components of IOOS.

The responsibility for identifying regional priorities is directed to the Regional Associations. The Regional Associations are assisting NOAA in its mission by determining how national priorities will be addressed in the diverse regions of the country. While there are efforts underway to integrate observing system assets within regions, development of regional observing system capacity has taken place largely at the sub-regional level, through the efforts of individual institutions, companies, and organizations. With the funding provided by this program change, the Regional Associations will provide the guidance that will allow the RCOOS to be developed in a manner that leverages existing observing and data infrastructure components within the region, addresses the regional priorities, and complements federal efforts. The Regional Associations will have the opportunity to demonstrate the capability to provide NOAA with a sustainable integrated ocean observing data stream and to develop products and services that meet regional needs and address national priorities. Through these Regional Associations, NOAA will have access to the more than 550 partners representing local, tribal, state government, industry, non-profit organizations, education institution, and regional federal agencies that have been engaged by the Regional Associations.

Proposed Actions

With the requested increase, NOAA will further enhance development of the regional component of IOOS through the Regional Associations that provide coordination of regional assets with Federal, local, and regional partners. The funding will allow NOAA to award competitive grants and contracts within the 11 regions to engage stakeholders, determine regional priorities, coordinate and integrate regional observing systems, and demonstrate the capability of the regions to collect and integrate data and to provide useful products to stakeholders. A competitive grants process will be used to award funding to lead each Regional Association. Regional Associations that meet criteria approved by the Interagency Working Group on Ocean Observations (IWGOO) will be eligible to compete for contracts to further develop infrastructure and demonstrate capabilities for delivering data and products. Criteria for the eligibility of Regional Associations will include existence of an organization that has the structure to make decisions on behalf of its members, the capacity to receive and disburse funds, and has completed a business plan that guides investment to address regional (and national) priorities for observational information and products. NOAA will work with the IWGOO to establish appropriate selection and performance criteria for the Regional Associations. The funding mechanisms will accommodate a competitive process, allow for the variability that is inherent in regional partnerships, data collection, and product development, and ensure accountability in data and product development. Funding the administrative functions of Regional Associations will be limited (approx $300K each) so that resources will be applied to demonstrate the regional IOOS concept. Additional personnel (2 FTE) will administer funding, conduct site visits to monitor progress, and coordinate regional with federal efforts.

Benefits
Integrating federal and regional observing system assets will improve our understanding, forecasting, stewardship, and use of coastal waters. In the current state, observing systems have been developed by individual agencies and entities to accomplish their own missions and needs and operate under different protocols and standards. The IOOS will make more effective use of these resources and establish an integrated information network that will help NOAA to address national priorities. Support to develop the operational capabilities of the regions will establish coastal and ocean observing systems that complement the federal capabilities to manage and deliver region-specific data and information to users, while at the same time contributing data and information for national priorities.

Performance Goals and Measurement Data
This increase will support the objectives "Serve Society's needs for weather and water information" under the Department of Commerce strategic goal of "Observe, protect, and manage the Earth's resources to promote environmental needs."

Performance Goal: Weather and Water **Performance Measure:** Number of RAs supported	**FY 2006**	**FY 2007**	**FY 2008**	**FY 2009**	**FY 2010**	**FY 2011**
Without Increase	--	--	0	0	0	0
With Increase	--	--	11	11	11	11

Ocean Research Priorities Plan – Response of Coastal Ecosystems to Persistent Forcing and Extreme Events (0 FTE and +$5,000,000): NOAA requests an increase of $5,000,000 to support end-to-end development and integration of observations, research, and forecast models. Specifically, this development and integration will lead to decision-support tools to help policy makers and mangers (coastal, resource, and emergency) anticipate and prepare for the response to extreme weather events, natural disasters, and changing natural and human influences.

Effective integration of observational and forecast systems with research products will provide coastal resource managers, coastal zone planners, and emergency and public health officials with short and long-term forecasts of changing coastal conditions. Key federal partners include USGS, EPA , US Army Corps of Engineers, and the National Science Foundation. Building off of the US Group on Earth Observations and NSTC Subcommittee for Disaster Reduction's Improved Observations for Disaster Reduction Near Term Opportunity Plan, this near-term priority identified in the Ocean Research Priorities Plan (ORPP) will focus on three pilot regions: the northern Gulf of Mexico, Southern California, and the Southeast U.S. Initial efforts in all three pilot regions would begin in FY 2008. For the pilot regions, these managers and officials will have the tools and knowledge to ensure that decisions about land and resource use, management practices, and development in the coastal zone and adjacent watersheds will be evaluated with a complete understanding of the probable effects on public health, coastal ecosystems, and community hazard resilience. The leveraging of capabilities across all sectors and the development of regionally relevant decision support tools will be clearly demonstrated in the pilot areas with lessons learned identified for broader national implementation.

Statement of Need

Every year, natural and technological hazards in the United States cost an estimated $1 billion per week in the form of lives lost and public and private properties destroyed. In 2004, more than 60 major disasters, including floods, hurricanes, earthquakes, tornadoes, and wildfires, struck the United States. The 2005 hurricane season was the costliest ever, with losses estimated at $200 billion, due to the impacts of storm surge, flooding and wind associated with the storms. In 2005, Southern California experienced severe winter storms that resulted in debris flows that destroyed property and adversely affected water quality. El Nino conditions are pointing to increased storm activity for this region this winter. Although we have greatly reduced the number of lives lost each year to natural disasters, the costs of major disasters continue to rise, as 71 percent ($7B) of annual U.S. disaster losses occur in coastal areas where dense populations live and work in the paths of strong storms.

As demonstrated by the devastating impacts of Hurricanes Katrina and Rita in 2005, coastal communities need improved, robust products and services to help them plan for, respond to, and recover from coastal storms. Faced with increasing vulnerability of coastal communities, coastal and emergency managers have expressed a need for comprehensive, timely and accessible information to aid in making decisions at critical times. As such, this increase will support priorities identified by State, regional, and interagency alliances and working groups (including, for example, the Gulf of Mexico Alliance, the California Sediment Management Working Group, and the National Science & Technology Council's Group on Earth Observations, Joint Subcommittee on Ocean Science and Technology, and NSTC Subcommittee on Disaster Reduction).

Proposed Actions

With the requested funding, NOAA will provide and integrate observations, research results, forecasts and decision-support tools at regional and system-scales for the Ocean Research Priority Plan's near-term opportunities. Initial implementation of this research priority will require assessment of Federal, regional and state programs, needs and capabilities, as well as the "state of knowledge," to identify the requirements for specific forecasts and tools. Initial activities will build on ongoing agency activities and focuses on three primary capability areas: observations, forecasting and applications. Specific actions include the following:

- Acquisition, integration and assimilation of monitoring and mapping data from existing and enhanced observation platforms including tide and water levels. Workshops conducted with stakeholders to develop specific regional requirements for forecasts, and tools for preparedness, planning, response, and recovery. Collaborate directly with USGS on the geospatial framework (as part of the National Map) and implementation of the National Water Quality Monitoring Network (NWQMN). The RCOOS FY2008 budget request also supports this effort and will coordinate with implementation of the Hurricanes and Watershed Influences near term opportunity plan. Specifically, observation parameters collected by the Regional Coastal Ocean Observing Systems (RCOOS) (e.g., tides, water levels) will be important contributors to this effort. The IOOS Regional Associations will contribute to stakeholder outreach regarding observing needs and the integration of observations into decision support tools. ($1,675,000)
- Community inundation and ecosystem modeling to provide critical information for anticipating storm vulnerability, oil spill movements, and ecological and human dimension impacts. ($1,835,000)
- Building a geospatial framework and digital elevation models (DEM) in pilot areas essential for decision support tools including socio-economic indices to address regional decision making, planning and community awareness. For example, DEMs would contribute to the development of GIS

based decision support tools that include model output and real time and historical observations related to coastal inundation (e.g., storm surge) for emergency, floodplain and coastal managers. ($1,490,000)

Benefits

Reducing economic, environmental and social losses requires collaboration at all levels and a coordinated, interagency approach. These activities will address regional needs and leverage and advance national efforts. Integration of existing federal and non-federal programs and capabilities will provide the full suite of observational, research, and modeling assets required for meaningful application of research results in support of coastal policy, planning, management, and response. High-priority research and technology investments, coupled with sound decision-making at all levels, will dramatically enhance community resilience and reduce vulnerability. In particular, improved understanding and integration of information related to the ecosystem impacts of coastal storms (water quality, transport of nutrients, sediment, and contaminants, waves and water levels, and the coastal response to hurricane processes) will be addressed. In five years, coastal planners, resource and emergency managers, and policy makers at all governmental levels will have a wider variety of decision support tools, borne of diverse observations and models, at their disposal to make the best decisions for their coastal constituents and economies regarding to coastal hazards.

Performance Goals and Measurement Data

This increase will support all objectives, under the Department of Commerce strategic goal of "Observe, protect, and manage the Earth's resources to promote environmental needs."

Performance Goal: Weather & Water **Performance Measure:** Number of regions with benchmark data and decision support tools to address watershed impacts of coastal storms.	**FY 2006**	**FY 2007**	**FY 2008**	**FY 2009**	**FY 2010**	**FY 2011**
Without Increase	--	--	0	0	0	0
With Increase	--	--	1	2	3	3

Ocean Research Priorities Plan -- Sensors for Marine Ecosystems (1 FTE and +$5,000,000): NOAA requests an increase of $5,000,000 and 1 FTE to develop and improve sensors for ocean biological and physical parameters at multiple spatial (from individual cells to the global ocean) and temporal (from seconds to decades) scales. These multi-scale oceanographic observations, combined with existing data, will provide a new way of "seeing" and better understanding ecosystem function and response to environmental stressors including climate variability and change. This information will be used to support improved ecosystem management strategies and protection of public health, including use for beach closure forecasts related to pathogens and harmful algal blooms, fisheries and protected species management, and coastal ecosystem health assessments. This request is in direct response to the near-

term priorities in the Ocean Research Priorities Plan (ORPP) and consistent with the goals and objectives of the Interagency Oceans and Human Health Research Implementation Plan.

Statement of Need

Through recreation, residential and commercial development, and employment, human populations are coming into increasing contact with our oceans and coastal waters. Continued coastal development, changes in land use, a varying climate, and altered ecosystem diversity add a complexity of environmental and human stresses, the consequences of which we do not yet fully understand and are ill prepared to manage. Approximately 100 million Americans use the marine environment for recreation each year, yet pollution impairs the use of 51 percent of assessed estuarine square miles. In 2004, there were nearly 20,000 days of closings and advisories at ocean, bay and Great Lakes beaches, of which 73 percent were attributed to unknown sources and cost millions to local economies. *Vibrio parahaemolyticus*, long linked to seafood-borne infections in Asia, is increasing in US waters; a recent outbreak in Prince William Sound was attributed in part to warmer than usual ocean temperatures. Management of our Nation's fisheries—for food supply and for economic security—could be significantly improved with appropriate information about overall ecosystem functions necessary to sustain and optimize fisheries yield.

Great strides are being made in observing the ocean at large spatial scales, such as overall circulation patterns, changes in sea surface temperature and salinity, and the movement of large masses of algae. In order to use these tools to improve ecosystem-based management of fisheries, protected species, and public health, however, additional small scale and more rapidly delivered information about water quality in the near shore and coastal environments, and about the ocean biology underpinning fisheries production and protected species management is necessary. The ability to rapidly and accurately monitor and assess biodiversity and marine ecosystem health, at levels from the genetic to the ecosystem, is an essential component of any effort to effectively implement an ecosystem approach to resource management and protect public health. Efforts to develop marine genomic tools and technologies and employ them to construct biosensors are just beginning and must be supported in order to garner a more complete understanding of ecosystem health and the effects of environmental stressors on marine organisms and humans. Similarly, the ability to rapidly and accurately identify and enumerate planktonic stages of marine organisms is crucial to understanding the feeding, reproduction and recruitment of species of particular interest. Currently, taxonomy and identification of marine organisms is labor intensive, slow, and subject to misinterpretation. Plankton video recorders are now being used in a highly-specialized research mode but must be enhanced to become operational for routine deployment across a broader range of applications, including the management of protected species, including Right Whales. To integrate these innovative tools into future environmental monitoring, assessment, and management programs, we must gain a clearer understanding of both the genomic level responses and the ecosystem context for these responses. Both biosensors and plankton recorders have significant potential for development and deployment as part of the IOOS within the next five to seven years, although both require further development and testing

NOAA-supported researchers already can accurately test for the presence of up to ten species of toxic algae in less than four hours; are linking remotely sensed sea surface data with the presence of the human disease-causing organism, *Vibrio parahaemolyticus;* and are remotely tracking and modeling sewage spills in the Great Lakes and correlating pathogens with surface temperature for the development of a functional beach closure forecast. While promising technologies are currently being developed and used by NOAA and its partners (e.g., DNA bar-coding of some organisms under the Census of

Marine Life effort, and video plankton recorders), there is no common library of marine genomics or barcodes, and plankton recorder technology remains limited. Because the volume of data generated is so high, this approach must also include investment in building extensive libraries of DNA and video taxonomic information, a strong bioinformatics component, and development of additional computer processing capabilities from the outset. These building blocks for health forecasting systems and fisheries management have already proven their worth, but require additional investment and effort to become operational on a routine, nationwide basis.

Proposed Actions

Over the next five years, NOAA and its partners will markedly increase our efforts to develop and apply genomic microarrays and other technologies that will allow rapid and accurate detection, identification, and quantification of numerous species of microbes in marine waters and seafood, and of health threats in sentinel marine organisms which may indicate health risks to humans. NOAA will transition a highly sophisticated research-based plankton video recording technology to an operational mode with expanded range of applications, including both fisheries and protected species. The agency will significantly expand work to develop and share DNA libraries for numerous marine organisms, and to investigate changes in gene expression in oysters, shrimp, marine mammals, and other species in response to environmental conditions and disease.

With the requested funding NOAA will:

- Develop ***in situ*** sensors for rapid detection of pathogens, harmful algae and their toxins and determine how such sensors can be deployed within the Integrated Ocean Observing System including methods to integrate biosensor data with other ocean observations, especially those associated with extreme events such as hurricanes ($1,500,000)

- Develop, evaluate, and validate microarrays and other genomic and proteomic tools and essential supporting bioinformatics infrastructure to elucidate effects of multiple environmental stressors on key marine organisms, leading to new levels of understanding of ecosystem processes and impacts of individual and cumulative stresses, including climate change ($1,500,000)

- Develop genomic libraries and associated information to support DNA-based identification of a range of marine organisms in order to advance understanding of marine biodiversity and its role in ecosystem processes, as well as species abundance and distribution ($1,000,000)

- Improve video plankton recorders and related technology and demonstrate utility for recruitment process studies, leading to improved resource management ($1,000,000)

The first four years of the proposed activity would be spent in laboratory and field studies, while the fifth year would be used to synthesize, assess, and report findings and identify the most useful new technologies, including documentation of accuracy, precision, and reliability. The program would be managed through the NOAA Coastal Services Center's (CSC) Oceans and Human Health Initiative (OHHI) in coordination with other ORPP activities. Funds would be distributed both internally within NOS and NMFS and through an external grant competition. Limited funds would be provided to the

OHHI for program management. If appropriate, funds may also be spent collaboratively with NSF and NASA on marine sensors. If other agencies are also working on the development of marine sensors, consideration will be given to making funds for the external research community available through a joint interagency process such as the NOPP Broad Agency Announcement.

Benefits

These funds will allow NOAA and its external partners to advance the development of marine biological sensors to initial operational phases and begin testing their use for operational beach closure forecasts and coastal ecosystem health assessments. These funds will also allow the transition of currently used highly-specialized, research-oriented plankton video recorders to dependable and deployable operational technology which will be used to improve ecosystem based management for fisheries and protected species. Linking the work of external scientists directly to NOAA's efforts will ensure rapid testing and transfer of technologies to operational observing systems. The development of multi-scale oceanographic biological sensors, genomic and proteomic tools, and plankton recorders, and the transition of these to operational status will significantly improve NOAA's ability to support ecosystem-based management of critical marine and coastal systems and protected species, provide crucial information to safeguard public health and provide useful beach forecasts, and support IOOS and GEOSS societal goals.

Performance Goals and Measurement Data

This increase will support two of NOAA's primary mission goals –"to protect, restore and manage the use of coastal and ocean resources through ecosystem-based management" and "to understand climate variability and change to enhance society's ability to plan and respond."

Performance Goal: Ecosystem **Performance Measure:** Number of new marine sensors and ecosystem tools developed or applied to enhance ecosystem-based management for fisheries, protected species, and public health	**FY 2006**	**FY 2007**	**FY 2008**	**FY 2009**	**FY 2010**	**FY 2011**
Without Increase	0	0	0	0	0	0
With Increase	0	0	1	2	3	4

Gulf of Mexico Regional Alliance (0 FTE and +$5,000,000): NOAA requests an increase of $5,000,000 to support the Gulf of Mexico Alliance in advancing regional coastal resource priorities defined collaboratively by the five Gulf States in the Gulf of Mexico Alliance's March 2006 regional action plan, the *Governors' Action Plan for Healthy and Resilient Coasts*. Through this plan, the five Gulf State governors have outlined focused, short-term actions that address key regional deficiencies; integrate ongoing state, local, and federal efforts; and maximize the impact of resources applied to six priority regional issues in the Gulf of Mexico – hazard resilient coastal communities; healthy beaches and shellfish beds; wetland and coastal restoration; environmental education; identification and characterization of Gulf habitats; and reducing nutrient inputs to coastal ecosystems. This increase allows

NOAA to provide a targeted, competitive grant program, which will leverage additional state and federal partner investments, to support Gulf of Mexico Alliance efforts to implement these actions. At the request of the Council on Environmental Quality (CEQ), and working through the President's new ocean governance structure, NOAA and EPA co-chair a Federal Workgroup coordinating support from 13 federal agencies to the Gulf of Mexico Alliance. This increase will allow NOAA and EPA to ensure collaboration among all federal partners, thereby increasing effective and efficient of federal action in the Gulf of Mexico region.

Statement of Need

In accordance with the President's U.S. Ocean Action Plan (OAP), CEQ directed NOAA and EPA to coordinate federal support for the Gulf of Mexico Alliance. This increase allows NOAA to provide support for all mission-relevant actions in the *Governors' Action Plan*, and ensure coordination and communication among state, local, and federal implementation partners. The socioeconomic need for a regional, ecosystem-based, collaborative approach – as devised by the Gulf of Mexico Alliance – is compelling, and is strongly linked to NOAA mission goals to "Protect, restore, and manage the use of coastal and ocean resources through an ecosystem approach to management" and to "Serve society's needs for weather and water information." The Gulf of Mexico's population grew by 45 percent from 1980 to 2003 and is expected to grow an additional seven percent from 2003 to 2008, making it the second fastest growing coastal region in the United States (Source: NOAA). As demonstrated by the devastating impacts of Hurricanes Katrina and Rita in 2005, coastal communities need improved, robust products and services to help them plan for, respond to, and recover from coastal storms. Economic losses from Hurricane Katrina are expected to exceed $125B due to the impacts of storm surge, flooding and wind associated with the storm (Source: Risk Management Solutions, Newark, CA). Faced with increasing vulnerability of coastal communities, coastal and emergency managers have expressed a need for comprehensive, timely and accessible information to aid in making decisions at critical times. Keeping the Gulf of Mexico's beaches safe and clean is an economic imperative, as the Gulf tourist industry encompasses tens of thousands of jobs and brings in over $20 billion annually (Source: Gulf Coastal Ocean Observing System). Of the Nation's ten leading ports in waterborne tonnage, seven are found in the Gulf of Mexico; of the top seven ports in the world, two are in the Gulf (Source: USACE). In 2000, the commercial fish and shellfish harvest from the five Gulf States was estimated to be 1.7 billion pounds, which was nearly 20 percent of the total domestic landing in the United States (Source: National Ocean Economics Program). Gulf recreational fishing generates nearly 30 percent of U.S. saltwater fishing expenditures and nearly one-quarter of all U.S. saltwater recreational jobs are on the Gulf of Mexico (Source: USEPA Gulf of Mexico Program).

Proposed Actions

With the requested funding NOAA will provide targeted, competitive grant funds – $4,500,000 in grants and $500,000 in coordination and administrative costs for NOAA, EPA, and other federal agencies partners – to accomplish regional coastal resource priorities in the *Governors' Action Plan* that are aligned with NOAA's mandates and mission. The NOAA grant program will be strategically-designed to solicit and competitively fund applications for a selection of the 73 action blueprint steps listed in the *Governors' Action Plan*. Eligible grant recipients will include state, local, and tribal governments, institutions of higher education, and non-profit, for-profit, and international organizations. It is anticipated that project awards will range from $100,000 to $500,000 each, for one to three year projects, providing from 10 to 30 project awards across the six priority areas – create hazard resilient coastal communities; ensure healthy beaches and shellfish beds; support wetland and coastal restoration; increase environmental education; identify and

characterize Gulf habitats; and reduce nutrient inputs to coastal ecosystems. The review of grant applications will use strict criteria with assigned weights, and will be conducted by at least three independent reviewers, with a focus on strengthening regionally–collaborative solutions. NOAA's grant program will coordinate closely with other federal partners supporting the Gulf of Mexico Alliance and *Governors' Action Plan*, and will not cover action steps where the Gulf States indicate that implementation is guaranteed by another partner or source of funding.

Benefits

The benefits of a regional, ecosystem-based, collaborative approach are numerous, and are particularly germane in the Gulf of Mexico given the region's historical hurdles to collaboration, including lack of resources. The regional approach put forth by the five Gulf State governors will greatly increase coordination at the state and federal level, resulting in more efficient and effective government. All actions in the *Governors' Action Plan* directly support Gulf Coast recovery and contribute to more resilient coastal communities that protect lives and livelihoods. By working together, the five Gulf State Governors are building regional political strength, and are providing a working model of regional ocean governance called for in the President's OAP and in the U.S. Commission on Ocean Policy report. Action-oriented and working to make on the ground change within 36 months, the *Governors' Action Plan* intends to build trust in Gulf of Mexico regional collaboration, which should set the stage for a longer-term regional partnership that can address an expanded suite of issues.

The federal agencies represented on the Federal Workgroup bring diverse expertise and established experience – coordinating and integrating these capabilities will maximize the impact of federal resources. Federal Workgroup support to the Gulf of Mexico Alliance will focus on providing Gulf managers with information and knowledge rather than just data. The Federal Workgroup will advance federal collaboration using the Gulf of Mexico as a laboratory for exploring better mechanisms for regional management, applying ecosystem-based management principles, applying integrated coastal and ocean observations for management purposes, and strengthening state-local-federal collaboration.

Performance Goals and Measurement Data

This increase will directly support the objective, "Enhance the conservation and management of coastal and marine resources to meet America's economic, social, and environmental needs" under the Department of Commerce strategic goal of "Observe, protect, and manage the Earth's resources to promote environmental needs." This increase directly supports the performance objectives "Increase number of coastal communities incorporating ecosystem and sustainable development principles into planning and management," and "Increase portion of population that is knowledgeable of and acting as stewards for coastal and marine ecosystems" under NOAA's Ecosystems Mission Goal "Protect, restore, and manage the use of coastal and ocean resources through an ecosystem approach to management." Under NOAA's Weather and Water Mission Goal "Serve society's needs for weather and water information," this increase supports the performance objectives "Increase coordination of weather and water information and services with integration of local, regional, and global observation systems," and "Enhance environmental literacy and improve understanding, value, and use of weather and water information and services."

The *Governors' Action Plan* includes 21 specific, measurable 36-month outcomes to track progress and completion of the plan's 11 actions. This increase will directly support the accomplishment of all of these outcomes. The five Gulf States, with support from NOAA and EPA, will track implementation progress using these measures on an annual basis, and report this progress to the Gulf State Governors, CEQ, and the general public.

Performance Goal: Ecosystems **Performance Measure:** Percent of the 21 outcomes in the Gulf of Mexico Alliance *Governors' Action Plan* accomplished.	**FY 2006**	**FY 2007**	**FY 2008**	**FY 2009**	**FY 2010**	**FY 2011**
Without Increase *	--	5	10	15	20	20
With Increase	--	--	25	50	75	75

** Assumes funding provided by the U.S. EPA Gulf of Mexico Program*

Subactivity: Ocean Resources Conservation and Assessment
Line Item: Response and Restoration

GOAL STATEMENT:

The Office of Response and Restoration (OR&R) responds to threats in order to protect and restore coastal resources.

BASE DESCRIPTION:

NOAA responds to approximately 100 significant oil or chemical spills each year as scientific advisors to the U.S. Coast Guard, and provides solutions to cleanup agencies that protect and restore coastal resources at more than 200 hazardous waste sites each year along the Nation's ocean and Great Lakes coasts. When oil or hazardous substances threaten or injure coastal and marine resources, NOAA and other state and federal natural resource trustees are responsible for ensuring that cleanup actions protect those resources from further injury; for assessing and recovering natural resource damages to restore the injured resources; and for seeking compensation on behalf of the public for the loss of services that the natural resources provided. NOAA's authorities for responding to threats to the Nation's trust resources derive from the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA or Superfund) and the Oil Pollution Act of 1990 (OPA). NOAA's Office of Response and Restoration (OR&R) implements CERCLA and OPA requirements by providing interdisciplinary scientific response to releases of oil, chemicals, and contaminants; protecting and restoring NOAA trust resources; and extending core expertise to address critical local and regional coastal challenges. OR&R's three primary program elements contribute to NOAA's Strategic Plan Mission Goals to "Support the Nation's commerce with information for safe, efficient, and environmentally sound transportation", and "Protect, restore, and manage the use of coastal and ocean resources through ecosystem-based management."

Base activities support the objective, "Protect, restore, and manage the use of coastal and ocean resources through an ecosystem approach to management" under the Department of Commerce Strategic Goal of "Observe, protect, and manage the Earth's resources to promote environmental needs."

EMERGENCY RESPONSE PROGRAM

OR&R's interdisciplinary scientific response team responds to oil and chemical spills and other emergencies. It is a key part of the NOAA Emergency Response Program. The team provides scientific advice to support of federal response efforts. OR&R scientists forecast the movement and behavior of spilled oil and chemicals, evaluate the risk to natural resources, and recommend protection priorities and appropriate cleanup actions. OR&R strengthens the Nation's response capabilities by conducting research and monitoring in areas impacted by spills, developing software and technical guidance, and passing on these tools and expertise via local, national, and international training programs.

OR&R field staff is co-located with regional U.S. Coast Guard offices to ensure close cooperation and coordination for planning and responding to spill events and other emergencies. In addition to maintaining a highly prepared response team that coordinates on-scene scientific activities and provides

scientific support for operational decisions during oil or hazardous material spills or other threats, OR&R supports local communities in developing and evaluating oil and hazardous materials response plans, fulfills trustee responsibilities as the Department of Commerce Regional Response Team representative, serves as the Department of Commerce's representative on the National Response Team (NRT), and chairs the NRT's Science and Technology Committee.

HABITAT PROGRAM

OR&R assessment, protection, and restoration activities carry out NOAA's trust mission as part of the agency's Habitat Program. OR&R regional coordinators, scientists, and economists work in partnership with government agencies, the public, and industry to:

- Provide technical advice on ecological risk, contaminated sediments, brownfields, and remedial issues to accelerate natural resource recovery and community and waterfront revitalization.
- Assess impacts to NOAA trust resources by collecting data and conducting studies to determine whether coastal resources have sustained injury.
- Develop cooperative settlements to resolve liability for that damage.
- Plan for restoration and determine how much restoration is required for each injury.
- Work with co-trustees, responsible parties, and communities to implement resource restoration.

To improve protection of trust resources and to advance the field of restoration, OR&R develops and tests new approaches, techniques, and procedures for improved and cost-effective protection and cleanup strategies, damage assessment and remediation, and restoration of trust resources. This knowledge is passed on to other natural resource trustees, coastal managers, and decision-makers through training, technical assistance, and decision-making tools that promote planning—and so efficiencies in protection, clean up, and restoration--within a watershed management context.

Another significant arena of activity is through OR&R's partnership with the NOAA Fisheries Service Restoration Center and General Counsel under the Habitat program. This partnership, known as the Damage Assessment, Remediation, and Restoration Program (DARP) allows NOAA to approach harm to coastal trust resources in an integrated way. During the past decade, DARP injury scientists, economists, restoration specialists, and attorneys have provided expertise and leadership to restore wetlands, fisheries, wildlife, and human uses of these resources.

This program also supports NOAA-wide activities mandated by the Estuary Restoration Act of 2000. NOAA works with other partners to implement a national estuary habitat restoration strategy designed to ensure a comprehensive approach towards habitat restoration projects. NOAA's activities include the development of scientifically sound monitoring protocols and standards for coastal habitat restoration projects. In addition, NOAA is developing restoration databases that provide quick and easy access to accurate and up to date information regarding all projects funded under the Estuary Restoration Act of 2000, as well as information on projects throughout the country that meet the standards established as a part of the Act for monitoring and data collection to provide scientists and resource managers with information critical to successful estuary habitat restoration efforts.

PRIBILOF ISLANDS CLEANUP

Under The Fur Seal Act, The Pribilof Environmental Restoration Act, and the Pribilof Islands Transaction Act, NOAA is responsible for conducting environmental restoration on designated properties, and for transferring those properties to the native Aleuts when restoration is complete. NOAA performs site characterizations, assesses the magnitude and extent of the contamination, evaluates the risk to human health and the environment, and develops corrective action plans for environmental restoration. Site cleanup includes removal of debris, disposal of barrels containing hazardous materials, treatment of petroleum contaminated soils, and ground water monitoring.

PROPOSED LEGISLATION:

No legislation is proposed.

SUMMARIZED FINANCIAL DATA

(Dollars in thousands)

Subactivity: Ocean Resources Conservation and Assessment	FY 2006 ACTUALS	FY 2007 CURRENTLY AVAILABLE	FY 2008 BASE PROGRAM	FY 2008 ESTIMATE	INCREASE / DECREASE
Line Item: Response and Restoration					
Response and Restoration Base	10,454	15,600	16,763	16,763	-
Estuary Restoration Program	1,184	-	1,188	1,188	-
Damage Assessment Program	2,959	-	-	-	-
Mitigating Coastal Development Impacts/MS State Univ.	986	-	-	-	-
Marine Wildlife Noise Impacts/Univ of RI	493	-	-	-	-
Marine Debris	3,909	-	-	-	-
Marine Debris Removal-Alaska	1,123	-	-	-	-
Aquatic Resources Environmental Initiative	4,438	-	-	-	-
Vieques	986	-	-	-	-
Center for Marine Spill Response Project	2,959	-	-	-	-
Pribilof Islands Cleanup	6,903	7,000	7,227	5,427	(1,800)
TOTAL	36,394	22,600	25,178	23,378	(1,800)
FTE	110	110	110	110	-

Note: The dollars in this table represent budget authority.

PROGRAM CHANGES FOR FY 2008:

Pribilof Islands Environmental Cleanup, Long-term monitoring, and Property Transfer (0 FTE and -$1,800,000): NOAA proposes a decrease of $1,800,000, for a total of $5,427,000, to support cleanup, long term monitoring, and land transfer activities on the Pribilof Islands. NOAA is responsible for performing environmental cleanup and restoration activities related to past commercial fur sealing on the Pribilof Islands in Alaska's Bering Sea. The requested funding level will allow NOAA to achieve 100 percent completion of environmental remediation of the Pribilof Islands in cooperation with the State of Alaska by the end of FY 2008. In addition, NOAA will identify any remaining diesel free product recovery needs, continue the process of transferring properties back to the local entities, and begin the transition from active clean-up to long-term monitoring on the islands.

Subactivity: Ocean Resources Conservation and Assessment
Line Item: National Centers for Coastal Ocean Science

GOAL STATEMENT:

NOAA's National Ocean Service (NOS) will conduct and support monitoring, research, assessment, and assistance for the range of NOAA's coastal stewardship responsibilities. Through the National Centers for Coastal Ocean Science, NOS provides a sound scientific and applied basis for effective coastal management decisions and conducts the high-quality science needed to predict the potential impacts of multiple stressors on coastal ecosystems and living resources.

BASE DESCRIPTION:

NOAA's National Centers for Coastal Ocean Science (NCCOS) provide national leadership in ocean, coastal, and Great Lakes science by conducting research, monitoring, and assessments to build the strong scientific foundation essential for sustainable use of coastal resources. NCCOS supports NOAA's coastal mission and builds better linkages among coastal programs of NOS by developing and maintaining a broad base of scientific experts and science capabilities through both intramural and extramural research. Coastal ecosystems are subjected to a variety of stressors including climate change, extreme natural events, invasive species, land and resource use, and pollution. As a focal point for coastal resource research within NOAA, NCCOS' activities primarily support NOAA's Strategic Plan Mission Goal to "Protect, restore, and manage the use of coastal and ocean resources through ecosystem-based management." Through its research into the effects of climate change and freshwater inflow on coastal ecosystems, NCCOS also contributes to NOAA's goals to "Understand climate variability and change to enhance society's ability to plan and respond", and "Serve society's needs for weather and water information."

NCCOS is governed by statutes defining the national oceans policy and much of NCCOS research responds to its legal mandates, including the new Oceans and Human Health Act, the reauthorized Harmful Algal Bloom and Hypoxia Research and Control Act, and the Great Lakes Task Force Executive Order. As part of NOAA's Ecosystem Goal Team and Ecosystem Research Program, NCCOS conducts integrated assessments and ecological forecasts at a regional scale to inform ecosystem-based management.

NCCOS is comprised of four research centers: The Center for Coastal Monitoring and Assessment (CCMA), the Center for Coastal Fisheries Habitat Research (CCFHR), the Center for Coastal Environmental Health and Biomolecular Research (CCEHBR), and the Center for Sponsored Coastal Ocean Research (CSCOR). Each center brings unique and complementary expertise and capabilities to address critical coastal resource issues. NCCOS also includes the Hollings Marine Laboratory, the Kasitsna Bay Laboratory, and the Cooperative Oxford Laboratory.

Base activities support the objective, "Protect, restore, and manage the use of coastal and ocean resources through an ecosystem approach to management" under the Department of Commerce Strategic Goal of "Observe, protect, and manage the Earth's resources to promote environmental needs."

COASTAL MONITORING AND ASSESSMENT (Silver Spring, MD)

Through monitoring, applied research, and assessment programs, NCCOS' Center for Coastal Monitoring and Assessment (CCMA) evaluates the environmental quality of U.S. coastal, estuarine, and Great Lakes areas and the ecosystem consequences of current and potential anthropogenic stresses on these areas. CCMA monitors toxic contaminants, nutrients, and related properties in biota, water, and sediments at over 300 sites through the National Status and Trends program. The data are used to evaluate the environmental quality at each site, to detect changes, and to determine associated biological effects of chemical contaminants. CCMA also conducts programs in applied research, monitoring, biogeography, and assessment to determine: the distribution of anoxia/hypoxia; the occurrences and environmental relationships of harmful algal blooms (HABs); and the biodiversity, habitat and other ecological characteristics of U.S. estuarine, coastal, and Great Lakes areas.

COASTAL FISHERIES AND HABITAT RESEARCH (Beaufort, NC and Kasitsna Bay, AK)

NCCOS' Center for Coastal Fisheries Habitat Research (CCFHR) in Beaufort, North Carolina has been a focal point for coastal habitat and fisheries research for nearly a century. The Center's research efforts are focused on estuarine processes, near-shore ocean ecosystems, biological productivity, dynamics of reef fishery resources, harmful algal blooms, and the effects of anthropogenic influence on resource productivity. Results of the Center's research are utilized by coastal managers at the Federal, state, and local level to address important environmental issues, such as controversial permit applications, environmental litigation, and the development of effective management policies.

A new CCFHR facility in Kasitsna Bay, AK is improving the capacity of NCCOS researchers to identify the stressors affecting the condition of the sub-arctic ecosystem of Kachemak Bay, determine the processes by which they act, identify their short- and long-term impacts, and forecast future conditions with and without management intervention. Research priorities are based on management-driven information needs as identified by resource managers, scientists, and other key stakeholders.

COASTAL ENVIRONMENTAL HEALTH AND BIOMOLECULAR RESEARCH (Charleston, SC and Oxford, MD)

The Center for Environmental Health and Biomolecular Research (CCEHBR) in Charleston, South Carolina, conducts applied research programs to: develop methods to characterize and detect marine biotoxins and harmful algal blooms (e.g., *Pfiesteria*) and identify hazards to marine resources and seafood consumers; develop and implement new techniques for field assessment of environmental quality and marine ecosystem health; improve detection and measurement of contaminants and evaluation of their significance to marine species and their habitats; and understand the factors linking land use in the coastal zones with the distribution and effect of environmental contaminants on living marine resources and habitats. The CCEHBR Resources Forensics program supports law enforcement agencies by providing technical support and analyses for cases involving protected, threatened, or endangered species, consumer fraud, violation of fisheries closures, and illegal taking of game fish. Identification analyses are used to prosecute illegal activities such as importing and selling sea turtle eggs and meat, selling illegal game fish, and fishing during closure periods, as well as determination of wild versus cultured marine animals.

The Cooperative Oxford Lab in Oxford, MD is affiliated with CCEHBR and provides scientific information required to resolve important issues related to the health of coastal ecosystems. The Oxford Lab specializes in shellfish pathology and habitat restoration research. Scientists investigate the role of

disease in the distribution, abundance, marketability, and edibility of marine animal resources, determine the influence of natural and man-made environmental factors on the occurrence and persistence of diseases, and explore the use of marine animal health as an indicator of environmental health. The Oxford laboratory is the only Federal aquatic research facility on the Chesapeake Bay.

HOLLINGS MARINE LAB (Charleston, SC)

The Hollings Marine Laboratory (HML), located in Charleston, SC, provides science and biotechnology applications to sustain, protect, and restore coastal ecosystems, emphasizing linkages between oceans and human health. HML was formed to integrate the knowledge of marine scientists with that of the medical community. Technologies developed for human health are being applied to better understand and assess the state of marine ecosystems, and to examine the interrelationships between human health and marine environmental health. By applying genomics techniques to define gene sequences that indicate immune responses and disease resistance in marine organisms to various stressors, scientists can make connections between biochemical changes, organism responses, and ecosystem alterations. HML scientists are also developing faster and cheaper indicators of physiological and ecosystem health for use in monitoring and evaluating the status of ecosystems and organisms of interest. Other studies examine the biomolecular effects of different chemical contaminants resulting from human activities. HML was established as a Joint Project Agreement between NOAA, the National Institute of Standards and Technology, the South Carolina Department of Natural Resources, the University of Charleston, SC, and the Medical University of South Carolina.

SPONSORED COASTAL OCEAN RESEARCH (Silver Spring, MD)

The Center for Sponsored Coastal Ocean Research (CSCOR) addresses emerging coastal ocean issues across NOAA's mission responsibilities. CSCOR supports competitive, peer-reviewed, interdisciplinary research investigations with finite life cycles conducted on a regional scale over a 3-5 year period. Funded subject areas, as well as corresponding funding levels, vary from year to year over these life cycles. These operating principles were incorporated into the design for the program to ensure the timeliness and relevance of its research in addressing coastal ocean mandates across the agency. The program relies upon established processes that reflect the requirements and advice of both the management and science communities in setting its priorities to ensure the utility and credibility of its research.

CSCOR coordinates NOAA's research efforts on a number of issues critical to effective coastal resource management. Research funded by CSCOR is designed to improve our ability to forecast the ecological effects of ecosystem stressors to support coastal management decisions. Major ecosystem studies on the joint impact of climate and harvesting on marine populations in the Gulf of Maine, the Pacific Northwest coastal waters, and the coastal Gulf of Alaska are being conducted as the United States component of the Global Ocean Ecosystems Dynamics initiative. The program also seeks to understand the biological, physical, and chemical processes that regulate HABs in major ecosystems like the Gulf of Maine, Chesapeake Bay, and Florida's Gulf Coast, while developing methods to prevent, control and mitigates the impacts of HABs. Land and resource use research focuses on the poorly understood impacts of population shifts to U.S. coastal regions, including habitat modification, nutrient and toxic chemical inputs, and fresh water diversions. CSCOR funded research efforts were integral to the formulation of the Action Plan for Reducing, Mitigating, and Controlling Hypoxia in the Northern Gulf of Mexico, and CSCOR research will aid in determining the impact of mitigation efforts proposed under the Action Plan.

PROPOSED LEGISLATION:

NOAA will continue to work with Congress to reauthorize the Nonindigenous Aquatic Nuisance Prevention and Control Act.

SUMMARIZED FINANCIAL DATA

(Dollars in thousands)

Subactivity: Ocean Resources Conservation and Assessment	FY 2006 ACTUALS	FY 2007 CURRENTLY AVAILABLE	FY 2008 BASE PROGRAM	FY 2008 ESTIMATE	INCREASE / DECREASE
Line Item: National Centers for Coastal Ocean Science					
National Center for Coastal Ocean Science (NCCOS)	-	21,740	31,973	31,973	-
Competitive Research	9,862	12,000	15,801	15,801	-
Center for Coastal Environmental Health & Biomolecular Base	14,748	-	-	-	-
Oxford, MD	4,421	-	-	-	-
Oxford, MD Extramural Research	(2)	-	-	-	-
Subtotal: Center for Coastal Environmental Health & Biomolecular Research	19,167	-	-	-	-
CCFHR Base	5,921	-	-	-	-
Subtotal: Center for Coastal Fisheries Habitat Research	5,921	-	-	-	-
CCMA Base	5,650	-	-	-	-
Subtotal: Center for Coastal Monitoring & Assessment	5,650	-	-	-	-
Center for Sponsored Coastal Ocean Research	3,649	-	-	-	-
Coastal Ocean Research Grants (HAB/Pfisteria/GLOBEC)	(1)	-	-	-	-
NCCOS Headquarters	4,776	-	-	-	-
Marine Env Health Research Lab - MEHRL	3,940	-	-	-	-
TOTAL	52,964	33,740	47,774	47,774	-
FTE	239	241	241	241	-

Note: The dollars in this table represent budget authority.

PROGRAM CHANGES FOR FY 2008:

No program changes are proposed for FY 2008.

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Subactivity: Ocean and Coastal Management
Line Item: Coastal Management

GOAL STATEMENT:

The goal of the Coastal Zone Management Act (CZMA) of 1972, as amended, (16 U.S.C. 1451 et seq.), administered by NOS' Office of Ocean and Coastal Resource Management (OCRM), is to ensure the rational use and conservation of the lands and waters of the Nation's 35 coastal and Great Lakes states and territories. OCRM provides financial and management assistance to 34 coastal states and territories, enabling them to: (1) develop and implement comprehensive coastal resource management programs; (2) undertake new and innovative projects to enhance management and protection of the coastal zone; and (3) establish and manage estuarine research reserves to protect estuarine areas for long-term research and education, and support coastal decision-making. OCRM also administers NOAA's implementation of Executive Order 13158, which has the following goals: (1) to develop a national system of marine protected areas (MPAs) and (2) to improve the stewardship of existing MPAs.

BASE DESCRIPTION:

The Nation's coastal and ocean areas represent some of its most ecologically and economically important regions. Congress recognized this fact in 1972 when it passed the CZMA. This act created a national framework for coastal protection through the Coastal Zone Management program and National Estuarine Research Reserve System. Executive Order 13158 recognized the importance of these areas as well, by directing the federal government to significantly strengthen and expand the national system of marine protected areas (MPAs), working closely with state, territorial, local and tribal trustees and other stakeholders.

NOS' OCRM supports this national framework and provides leadership to balance the use and protection of the Nation's coasts and oceans. All programs administered by this Office directly support NOAA's Strategic Plan Mission Goal to **"**Protect, restore, and manage the use of coastal and ocean resources through ecosystem-based management."

Program Assessment and Rating Tool (PART): A significant portion of NOAA's Coastal Management program was reviewed with OMB's Program Assessment and Rating Tool (PART) during the FY 2005 and 2006 budget processes. NOAA is on track in meeting OMB's PART recommendations, including developing meaningful long-term measures. The program has developed a suite of measures, which have begun to be implemented. In addition, the National Estuarine Research Reserve program continues to integrate with NOAA's research programs by ensuring that the Graduate Research Fellowship Program's focus areas are aligned with NOAA's strategic plan, and by developing links between its environmental monitoring programs and the Nation's Integrated Ocean Observing System.

Base activities support the objective, "Protect, restore, and manage the use of coastal and ocean resources through an ecosystem approach to management" under the Department of Commerce Strategic Goal of "Observe, protect, and manage the Earth's resources to promote environmental needs."

CZM GRANTS

The purpose of the national Coastal Zone Management (CZM) Program is to maintain and improve the quality and utility of the Nation's coastal lands and waters through a national network of federally-approved, coordinated, and supported state management programs that seek to maintain the balance between the needs of resource protection and coastal-dependent economic activity. This program recognizes the significance of coastal resources to our Nation's population and economy and promotes improved management of these important assets. Federal matching funds are provided through cooperative agreements to support state staff and community projects that address the broad spectrum of coastal management issues ranging from habitat conservation and protection of life and property from coastal hazards, to urban waterfront and port revitalization (Section 306/306A CZMA).

The 2008 budget continues the proposal to increase the amount of CZM grant funding that is awarded competitively under sections 306A and 309, with a goal of awarding 50 percent of CZMA funding competitively within in three years. Increased competition and funding flexibility will enable the coastal management program to better focus on significant national issues. NOAA is currently working the coastal management community to undertake a revisioning effort to better define and prioritize those significant national issues. The results of this revisioning effort will be reflected in the grants awards process.

NATIONAL ESTUARINE RESEARCH RESERVE SYSTEM (NERRS)

NERRS (Section 315 CZMA) is a national network of estuarine protected areas representing the diverse biological and physical characteristics of estuarine systems of the United States. Reserves are owned and operated by state agencies or universities and serve as local, regional, and national sources of technical information and testing grounds for the improvement of coastal resource management. As of FY 2006, there are 27 designated reserves in 22 states and territories covering over one million acres of estuarine lands and waters.

CZM PROGRAM ADMINISTRATION

The programs described above, CZM Grants and NERRS, are administered with the resources provided in the budget for CZM Program Administration. In addition to the processing of over 100 grant awards each year, OCRM staff carries out numerous critical functions necessary to execute these programs. These functions include:

- Providing management assistance to states in the development, implementation, and improvement of state CZM program and estuarine research reserves;
- Reviewing federal agency actions for compliance with the federal consistency provisions of Section 307 of the CZMA;
- Conducting outreach and education activities concerning coastal issues;
- Conducting programmatic evaluations of each state CZM program and NERR every three to five years;
- Analyzing national issues and trends in coastal resource management;

- Providing policy guidance and assistance to states on interpretation of CZMA requirements, as well as those of other federal statutes and programs, and;
- Administering outstanding loans and repayments to the Coastal Zone Management Fund from the Coastal Energy Impact Assistance Program.

MARINE PROTECTED AREAS (MPA) PROGRAM

NOAA's MPA Program, in coordination with the Department of the Interior, fills a long-standing need for objective science, analysis and tools that support the effective and equitable use of MPAs for diverse conservation and management objectives. The MPA Center's primary goal is to work with MPA managers and stakeholders to develop a representative national system of MPAs to more effectively conserve and protect our significant areas of natural and cultural marine heritage. Moreover, the Center coordinates the work of these disparate federal, state and tribal MPA programs to address conservation goals that could not be accomplished by individual programs. With a small headquarters in Silver Spring, MD, the MPA Center has regional and scientific support in Boston, Massachusetts, and Monterey and Santa Cruz, California. A diverse MPA Federal Advisory Committee (MPAFAC) -- including representatives of industry, user groups, scientists, and others -- was established in 2003 to provide advice on the establishment and management of MPAs.

PROPOSED LEGISLATION:

NOAA will continue to work with Congress to reauthorize the Coastal Zone Management Act.

SUMMARIZED FINANCIAL DATA

(Dollars in thousands)

Subactivity: Ocean and Coastal Management	FY 2006 ACTUALS	FY 2007 CURRENTLY AVAILABLE	FY 2008 BASE PROGRAM	FY 2008 ESTIMATE	INCREASE / DECREASE
Line Item: Coastal Management					
CZM Grants	66,080	55,000	66,146	66,146	-
CZMA Program Administration	3,885	6,000	7,854	7,854	-
National Estuarine Research Reserve System	16,171	16,000	16,806	16,806	-
Nonpoint Pollution Implementation Grants	2,754	1,500	-	-	-
Marine Protected Areas	1,480	-	2,128	2,128	-
Baldwin Educational Program	986	-	-	-	-
TOTAL	91,356	78,500	92,934	92,934	-
FTE	55	56	56	56	-

Note: The dollars in this table represent budget authority.

PROGRAM CHANGES FOR FY 2008:

No program changes are proposed for FY 2008.

Subactivity: Ocean and Coastal Management
Line Item: Ocean Management (Marine Sanctuary Program)

GOAL STATEMENT:

The goal of the National Marine Sanctuaries Act (NMSA), as amended, (16 U.S.C. 1431 et seq.), administered by the National Marine Sanctuary Program (NMSP), is to designate, manage, and protect areas of the marine environment which possess conservation, recreational, ecological, historical, research, educational or aesthetic qualities which give them special national significance. The primary purpose of the NMSA is resource conservation and protection.

BASE DESCRIPTION:

In the Ocean Management Line Item, NOAA administers the National Marine Sanctuary System under authority of the NMSA. There are 13 designated national marine sanctuaries and a National Monument in the Northwestern Hawaiian Islands (NWHI). The NWHI Monument (established by the President on June 15, 2006) is the largest single area dedicated to conservation and stretches 1, 200 miles, the distance from Chicago to Miami. In addition to the NWHI Monument the 13 designated sanctuaries include: Monitor (NC), Channel Islands (CA), Gray's Reef (GA), Gulf of the Farallones (CA), Fagatele Bay (AS), Cordell Bank (CA), Florida Keys (FL), Flower Garden Banks (TX/LA), Gerry Studds Stellwagen Bank (MA), Monterey Bay (CA), Olympic Coast (WA), Thunder Bay Underwater Preserve (MI) and Hawaiian Islands Humpback Whale (HI). The sanctuaries range in size from one-quarter square mile in Fagatele Bay to over 5,300 square miles in Monterey Bay. Together, these sanctuaries encompass over 18,000 square miles of waters and marine habitats. The special habitats of the sanctuaries include deep ocean and near-shore coral reefs, live bottom, whale migration corridors, deep sea canyons, areas of deep water upwelling, submerged banks that rise close to the ocean surface, kelp forests, and sea grass beds. With the increasing environmental pressures on our Nation's coastal areas, the importance of maintaining a system of marine protected areas is evident. The National Marine Sanctuary System is increasing our knowledge and understanding of complex marine ecosystems. By monitoring human and natural changes, NOAA's marine sanctuaries help preserve the Nation's marine environments.

To support all of these functions, the NMSP has implemented a Small Boat Program, to ensure the safe and efficient operations of the small boats, including maintenance. An inventory of all small boats, incorporating a record of safety inspections, operators, licenses, and safety classes, is also maintained in accordance with the NOS Small Boat Policy. To address the increased requirement for new or replacement boats, the Program also is implementing the recommendations identified in its "Small Boat Requirements Study" (November 2005).

Base activities support the objective, "Protect, restore, and manage the use of coastal and ocean resources through an ecosystem approach to management" under the Department of Commerce Strategic Goal of "Observe, protect, and manage the Earth's resources to promote environmental needs."

NATIONAL MARINE SANCTUARY PROGRAM (NMSP)

The NMSP operates and coordinates the Nation's system of marine sanctuaries. Individual sanctuary offices are responsible for the daily operation of a wide variety of education, research, monitoring and management programs. The activities that each site undertakes include: development, implementation, and systematic review of comprehensive management plans to protect these unique areas; development and implementation of local research and monitoring programs to better understand the resources and potential impacts on those resources; development and implementation of cultural resource programs to survey and inventory resources to ensure their long-term protection; development and implementation of education and outreach activities to inform the public about the value of marine resources and how human activities impact the marine environment; enforcement of sanctuary regulations; permitting of otherwise prohibited activities to allow valuable research and education activities; management of volunteer programs that monitor and educate on marine resources; and management of citizen advisory councils to ensure that each sanctuary is responsive to community needs. In addition, each site is engaged in a number of partnership relationships with other federal agencies, state agencies, local universities, and other local institutions.

Programmatic oversight, guidance, and support from the headquarters office ensure that the sites function as a coordinated system. Headquarters functions include the development of programmatic initiatives, such as system-wide research, monitoring, cultural resource, education, and outreach programs; policy development; budget development and tracking; legislative and regulatory initiatives; review and revisions of management plans; development and designation of new sites; and overall guidance and program direction. These functions ensure that the NMSP is an integrated system that has greater national impact than the sum of the individual site actions.

PROPOSED LEGISLATION:

NOAA will continue to work with Congress to reauthorize the National Marine Sanctuaries Act.

SUMMARIZED FINANCIAL DATA

(Dollars in thousands)

Subactivity: Ocean and Coastal Management	FY 2006 ACTUALS	FY 2007 CURRENTLY AVAILABLE	FY 2008 BASE PROGRAM	FY 2008 ESTIMATE	INCREASE / DECREASE
Line Item: Ocean Management (Marine Sanctuary Program)					
Marine Sanctuary Program Base	34,805	32,000	35,764	43,764	8,000
Northeast Hawaiian Islands Research / HI Institute of Marine Biology	2,220	-	-	-	-
Northwest Straits Citizens Advisory Commission	1,381	-	-	-	-
TOTAL	38,406	32,000	35,764	43,764	8,000
FTE	137	137	137	141	4

Note: The dollars in this table represent budget authority.

PROGRAM CHANGES FOR FY 2008:

Northwestern Hawaiian Islands Marine National Monument (4 FTE and +$8,000,000): NOAA requests an increase of $8,000,000 and 4 FTE for management responsibilities associated with the Northwestern Hawaiian Islands (NWHI) Marine National Monument. This Presidential initiative permanently and immediately protects the NWHI. This National Monument is the largest marine protected area in the world dedicated to conservation. In accordance with the Presidential mandate, this marine national monument requires immediate and permanent protection for nearly 140,000 square nautical miles, including the 10 islands and atolls and surrounding waters and submerged lands of the NWHI. To fulfill the requirements of Presidential Proclamation 8031, which established the Northwestern Hawaiian Islands Marine National Monument and meet the high priority needs outlined in the draft monument management plan, additional resources are necessary.

The Presidential Proclamation states,

"The Secretary of Commerce through the National Oceanic and Atmospheric Administration (NOAA), will have the primary responsibility regarding management of the marine areas, in consultation with the Secretary of the Interior. The Secretary of the Interior, through the Fish and Wildlife (FWS), will have sole responsibility for management of the areas of the monument that overlay the Midway Atoll National Wildlife Refuge, the Battle of Midway National Memorial, and the Hawaiian Islands National Wildlife Refuge, in consultation with the Secretary of Commerce."

Statement of Need:

In order to fulfill the President's commitments, the NMSP requires an additional $8,000,000 for operation of the Monument in FY2008. These additional funds are needed in order to successfully carry out the action plans and activities outlined in the Monument management plan including ecosystem-level monitoring and research, permitting, enforcement, ocean literacy (education), and Midway Atoll infrastructure and field operations among others. The NMSP will also require 4 additional FTE positions to implement and carry out management activities, particularly impact mitigation, permitting, and research.

Proposed Action:

As mandated by the President, the National monument will:

- Preserve access for Native Hawaiian culture activities;
- Provide for carefully regulated educational and scientific activities;
- Enhance visitation in a special area around Midway Island;
- Prohibit unauthorized access to the monument;
- Phase out commercial fishing over a five-year period; and
- Ban other types of resource extraction and dumping of waste.

To fulfill the requirements of Proclamation 8031, which established the Northwestern Hawaiian Islands Marine National Monument and meet the priority management needs outlined in the draft monument management plan additional resources are need in FY 2008 beyond those originally anticipated during sanctuary designation. The $8.0M provides funds for the following areas:

1) Management and Administration ($2,542,000). These funds provide for:
   - rent and utilities for the Honolulu and Hilo offices:
   - operating and maintaining information systems for management, research, enforcement, permitting, and education purposes; and
   - funding State of Hawaii participation for co-management and other partnerships with various Hawaii institutions for education.

2) Vessel Tracking and Enforcement ($1,940,000). The President's proclamation details a number of acitivites that are prohibited or regulated within the Mounument. These funds provide for:
   - conducting a basic threat assessment;

- vessel tracking and remote surveillance efforts;
- support for on-the-water patrol and response; and
- coordination on joint enforcement issues through NWHI Interagency Enforcement Team.

3) Visitors and Education ($1,032,000). As mandated by the President, these funds will help bring an understanding of the unique ecosystems of the NWHI to all Americans and the world, specifically by:

- supporting ocean literacy efforts for field-based education programs at Midway;
- developing and acquiring distance learning technologies to "bring the place to the people;" and
- developing outreach materials and educational events/programs for the public regarding the NWHI Marine National Monument.

4) Coordinated Field Operations ($1,390,000). Establishment of field operations capacity at Midway Atoll is critical to meeting requirements of the Proclamation. The requested increase will establish a NOAA presence at Midway in order to participate fully as a Monument co-trustee. Activities include:

- installation of two 50,000 gallon diesel fuel tanks and one 5,000 gallon gas tank required for small vessel operations;
- initiation of the harbor build-out (upgrade) project at Midway;
- continuation of planning and NEPA document preparations;
- initiation of the build out of dive operations, including recompression chamber, compressor, and small boat needs; and
- development of plans to satisfy all future infrastructure requirements.

5) Ecosystem Characterization and Monitoring ($906,000). Knowledge of the ecosystem is critical to implementing seamless management for this vast area. These funds provide for:

- funding for ecosystem characterization, monitoring and research efforts focused on the 95 percent of the monument that is deeper than 100ft;
- collaborations with the NOAA Pacific Islands Fisheries Science Center regarding establishment of a baseline for bottomfish and the monitoring of changes over time;
- analyzing and integrating data to inform management decisions; and
- collaboration with monument agencies and other partners on biogeographic assessments and deep-water mapping

6) Marine Debris ($190,000). Provides funds for the removal of debris. Also, requested funds will increase 'detection-at-sea' methods to prevent derelict fishing gear from reaching fragile shallow-water habitats where it can cause greater damage and is more costly to clean up.

Benefits:

The Northwestern Hawaiian Islands are a high priority in the President's Ocean Action Plan. This request provides for the management of the Monument as outlined by the Presidential Proclamation. The Monument permanently protects the area's pristine coral reefs and unique marine species. This status provides immediate and permanent protection for 140,000 square miles, including 10 islands and atolls, surrounding waters and submerged islands. In addition, investments in the NWHI Marine National Monument will provide a living laboratory that offers opportunities to pursue advances in science and allow us to better manage ocean ecosystems.

Performance Measures

This increase will support the objective, "Protect, restore, and manage the use of coastal and ocean resources through an ecosystem approach to management" under the Department of Commerce Strategic Goal of "Observe, protect, and manage the Earth's resources to promote environmental stewardship. Implementation of the management plan will reach 100 percent in FY 2012.

Performance Goal: Ecosystem **Performance Measure:** Percent of management plan implemented	**FY 2006**	**FY2007**	**FY 2008**	**FY 2009**	**FY 2010**	**FY 2011**
Without increase	0	0	0	0	0	0
With increase	0	10%	30%	50%	70%	90%

Exhibit 13

Department of Commerce
National Oceanic and Atmospheric Administration
National Ocean Service
Contribution to the NOAA Strategic Planning Goals and Objectives
(Dollar amounts in thousands)

National Ocean Service	FY 2006 Actuals Amount	FY 2007 Currently Available Amount	FY 2008 Base Program Amount	FY 2008 Estimate Amount	Inc/Dec from Base Amount
Commerce and Transportation					
Commerce and Transportation	174,848	104,565	132,838	134,538	1,700
Total CT	174,848	104,565	132,838	134,538	1,700
Ecosystems					
Ecosystems	272,081	178,038	222,925	241,925	19,000
Total ECO	272,081	178,038	222,925	241,925	19,000
Mission Support					
MS	23,998	26,592	31,222	29,422	(1,800)
Total MS	23,998	26,592	31,222	29,422	(1,800)
Weather and Water					
Weather and Water	39,960	5,945	11,904	30,904	19,000
Total WW	39,960	5,945	11,904	30,904	19,000
Total National Ocean Service	510,887	315,140	398,889	436,789	37,900

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Exhibit 10

Department of Commerce
National Oceanic and Atmospheric Administration
Operations Research and Facilities
PROGRAM AND PERFORMANCE: DIRECT OBLIGATIONS
(Dollar amounts in thousands)

Activity: National Ocean Service		FY 2006 Actuals Personnel	FY 2006 Actuals Amount	FY 2007 Currently Available Personnel	FY 2007 Currently Available Amount	FY 2008 Base Program Personnel	FY 2008 Base Program Amount	FY 2008 Estimate Personnel	FY 2008 Estimate Amount	Inc/Dec from Base Personnel	Inc/Dec from Base Amount
Navigation Services											
Mapping & Charting	Pos/BA	307	112,644	313	68,300	313	91,906	313	92,606	-	700
	FTE/OBL	294	109,807	311	73,212	313	91,906	313	92,606	-	700
Geodesy	Pos/BA	175	31,540	175	22,000	175	24,802	175	24,802	-	-
	FTE/OBL	141	31,840	183	22,009	183	24,802	183	24,802	-	-
Tide & Current Data	Pos/BA	118	27,013	118	22,000	118	25,363	118	26,363	-	1,000
	FTE/OBL	106	25,260	107	24,392	107	25,363	107	26,363	-	1,000
Total: Navigation Services	Pos/BA	600	171,197	606	112,300	606	142,071	606	143,771	-	1,700
	FTE/OBL	541	166,907	601	119,613	603	142,071	603	143,771	-	1,700
Ocean Resources Conservation and Assessment											
Ocean Assessment Program	Pos/BA	69	120,570	69	36,000	69	55,168	73	85,168	4	30,000
(OAP)	FTE/OBL	134	122,491	65	36,288	65	55,168	68	85,168	3	30,000
Response and Restoration	Pos/BA	115	36,394	115	22,600	115	25,178	115	23,378	-	(1,800)
	FTE/OBL	103	37,235	110	23,248	110	25,178	110	23,378	-	(1,800)
National Centers for Coastal	Pos/BA	247	52,964	247	33,740	247	47,774	247	47,774	-	-
Ocean Science	FTE/OBL	180	53,655	241	33,881	241	47,774	241	47,774	-	-
Total: Ocean Resources	Pos/BA	431	209,928	431	92,340	431	128,120	435	156,320	4	28,200

Exhibit 10

Department of Commerce
National Oceanic and Atmospheric Administration
Operations Research and Facilities
PROGRAM AND PERFORMANCE: DIRECT OBLIGATIONS
(Dollar amounts in thousands)

Conservation and Assessment	FTE/OBL	417	213,381	416	93,417	416	128,120	419	156,320	3	28,200
Ocean and Coastal Management											
Coastal Management	Pos/BA	72	91,356	73	78,500	73	92,934	73	92,934	-	-
	FTE/OBL	58	98,576	56	79,868	56	92,934	56	92,934	-	-
Ocean Management (Marine Sanctuary Program)	Pos/BA	136	38,406	136	32,000	136	35,764	142	43,764	6	8,000
	FTE/OBL	135	39,940	137	32,101	137	35,764	141	43,764	4	8,000
Total: Ocean and Coastal Management	Pos/BA	208	129,762	209	110,500	209	128,698	215	136,698	6	8,000
	FTE/OBL	193	138,516	193	111,969	193	128,698	197	136,698	4	8,000

Exhibit 14

Department of Commerce
National Oceanic and Atmospheric Administration
Operations Research and Facilities
PROGRAM CHANGE PERSONNEL DETAIL

Activity: National Ocean Service
Subactivity: Ocean Resources Conservation and Assessment

Title		Grade	Number	Annual Salary	Total Salaries
Physical Scientist	Silver Spring, MD	ZP4	1	91,407	91,407
Program Analyst	Charleston, SC	ZP3	3	76,082	228,246
Total			4		319,653
Less Lapse	25%		-1		(79,913)
Total full-time permanent (FTE)			3		239,740
2007 Pay Adjustment (2.2%)					5,274
2008 Pay Adjustment (3%)					7,350
Total					252,364

Personnel Data	Number
Full-time permanent	3
Other than full-time permanent	0
Total	3
Authorized Positions	
Full-time permanent	4
Total	4

Exhibit 14

Department of Commerce
National Oceanic and Atmospheric Administration
Operations Research and Facilities
PROGRAM CHANGE PERSONNEL DETAIL

Activity: National Ocean Service
Subactivity: Ocean and Coastal Management

Title		Grade	Number	Annual Salary	Total Salaries
Physical Scientist	Honolulu, HI	ZP4	1	87,533	87,533
Program Analyst	Honolulu, HI	ZP3	4	62,291	249,164
Regulatory/Permit Specialist	Honolulu, HI	ZP4	1	87,533	87,533
Total			6		424,230
Less Lapse	25%		-2		(106,058)
Total full-time permanent (FTE)			4		318,173
2007 Pay Adjustment (2.2%)					7,000
2008 Pay Adjustment (3%)					9,755
Total					334,927

Personnel Data	Number
Full-time permanent	4
Other than full-time permanent	0
Total	4
Authorized Positions	
Full-time permanent	6
Total	6

Exhibit 15

Department of Commerce
National Oceanic and Atmospheric Administration
Operations Research and Facilities
PROGRAM CHANGE DETAIL BY OBJECT CLASS
(Dollar amounts in thousands)

Activity: National Ocean Service
Subactivity: Navigation Services

	Object Class	2008 Increase
25.1	Advisory and assistance services	550
26	Supplies and materials	80
31	Equipment	1,070
99	Total Obligations	1,700

Exhibit 15

Department of Commerce
National Oceanic and Atmospheric Administration
Operations Research and Facilities
PROGRAM CHANGE DETAIL BY OBJECT CLASS
(Dollar amounts in thousands)

Activity: National Ocean Service
Subactivity: Ocean Resources Conservation and Assessment

	Object Class	2008 Increase
11	Personnel compensation	
11.1	Full-time permanent	239
11.5	Other personnel compensation	7
11.9	Total personnel compensation	246
12	Civilian personnel benefits	73
21	Travel and transportation of persons	202
24	Printing and reproduction	24
25.1	Advisory and assistance services	2,400
25.2	Other services	12,663
25.3	Other purchases of goods and services from Govt accounts	3,514
26	Supplies and materials	46
31	Equipment	197
41	Grants, subsides and contributions	10,635
99	Total Obligations	30,000

Exhibit 15

Department of Commerce
National Oceanic and Atmospheric Administration
Operations Research and Facilities
PROGRAM CHANGE DETAIL BY OBJECT CLASS
(Dollar amounts in thousands)

Activity: National Ocean Service
Subactivity: Ocean Resources Conservation and Assessment

	Object Class	2008 Decrease
22	Transportation of things	(50)
25.2	Other services	(1,700)
31	Equipment	(50)
99	Total Obligations	(1,800)

Exhibit 15

Department of Commerce
National Oceanic and Atmospheric Administration
Operations Research and Facilities
PROGRAM CHANGE DETAIL BY OBJECT CLASS
(Dollar amounts in thousands)

Activity: National Ocean Service
Subactivity: Ocean and Coastal Management

	Object Class	2008 Increase
11	Personnel compensation	
11.1	Full-time permanent	318
11.5	Other personnel compensation	10
11.9	Total personnel compensation	328
12	Civilian personnel benefits	96
21	Travel and transportation of persons	315
22	Transportation of things	10
23.1	Rental payments to GSA	615
23.3	Communications, utilities and miscellaneous charges	605
24	Printing and reproduction	125
25.2	Other services	4,601
26	Supplies and materials	220
31	Equipment	285
41	Grants, subsides and contributions	800
99	Total Obligations	8,000