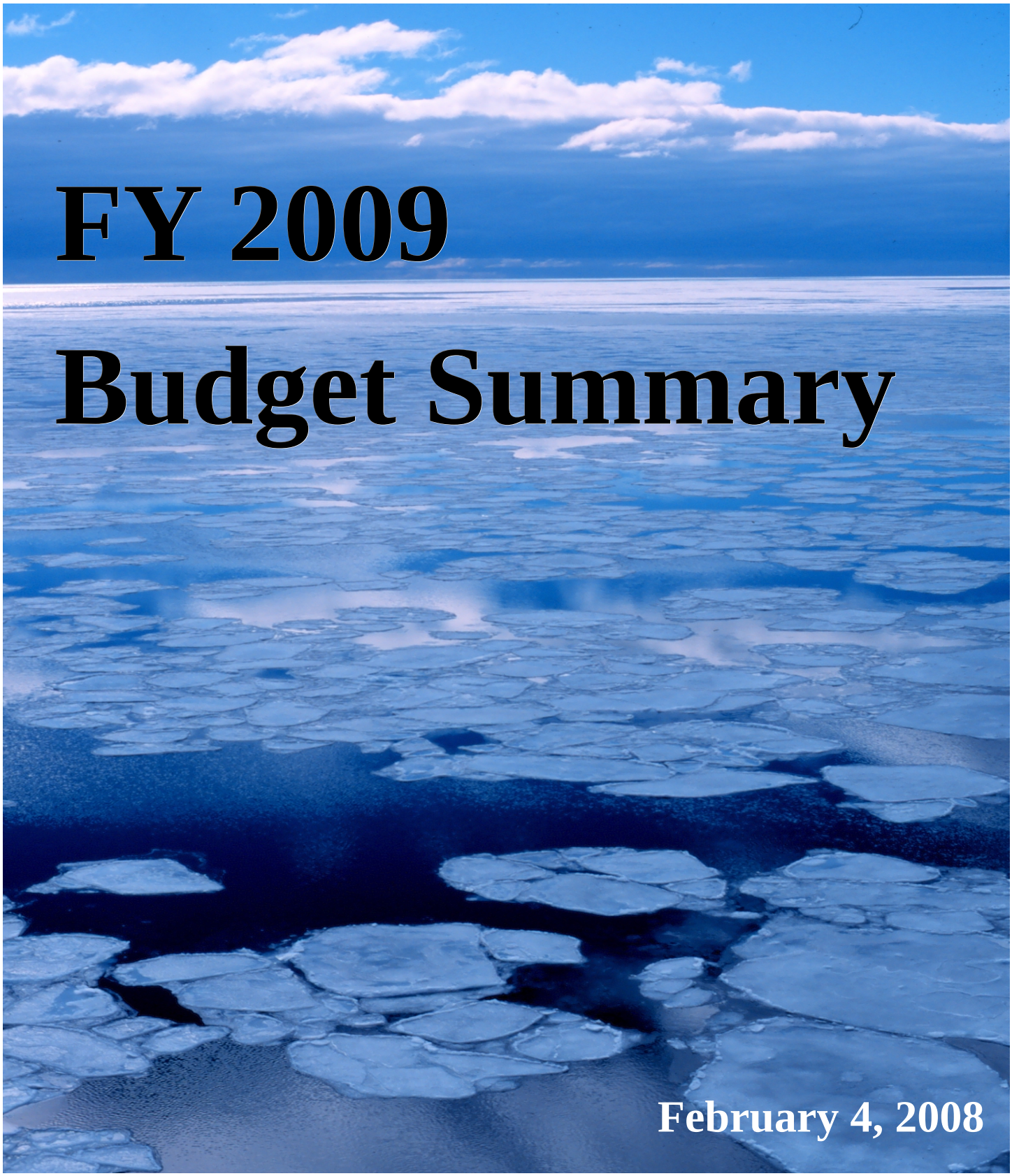
National Oceanic and Atmospheric Administration



FY 2009

Budget Summary

February 4, 2008

Cover: Pancake ice adrift on the Ross Sea, Antarctica. January 1999. Photographer: Michael Van Woert

NOAA

"Protecting Lives and Livelihoods"

NOAA's VISION

An informed society that uses a comprehensive understanding of the role of the oceans, coasts, and atmosphere in the global ecosystem to make the best social and economic decisions.

NOAA's MISSION

To understand and predict changes in Earth's environment and conserve and manage coastal and marine resources to meet our Nation's economic, social, and environmental needs.

NOAA's CORE VALUES

People, Integrity, Excellence, Teamwork, and Ingenuity
Science, Service, and Stewardship

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To the Reader:

I am pleased to present the Budget Summary for the National Oceanic and Atmospheric Administration (NOAA) for Fiscal Year 2009. As in the past, this summary is designed to provide information in a concise and user-friendly format. We provide these descriptions and data on NOAA's budget and programs for the information of members of Congress and their staffs, the media, and NOAA's constituents and customers. This summary describes how NOAA supports and enhances the goals of the Commerce Department and the President.

NOAA is where science gains value for the Nation. As the stresses upon our natural resources grow, NOAA continues its pursuit to increase that value and protect lives and livelihoods for all Americans. Americans depend upon NOAA for a wide variety of services and support, including the local weather forecast, a sustainable supply of quality seafood, the safe transport of millions of tons of waterborne cargo, a safe and vibrant coastline, and detailed research on the climate from the frozen arctic to the depths of the oceans. Through our newly updated website at www.noaa.gov, NOAA provides a wealth of knowledge to the general public, as well as to schools, industry, and scientific enterprises.

This year has seen increased attention to the phenomenon of global climate change, as well as continued emphasis on the need to conserve and restore our natural resources and the state of our oceans and coasts. The challenges facing the nation are evolving, but so too are the technologies that can help us meet those challenges, create solutions, and produce results.

NOAA is a critical part of the Nation's economy — its products and services impact the daily lives of every one of our citizens, and are tied directly to promoting the economic vitality of our country. In fact, weather and climate-sensitive industries account for about 33 percent of the Nation's GDP — about $4 trillion of the American economy in 2006. Drought is estimated to result in average annual losses to all sectors of the economy of $6-8 billion. The integrated and sustained observations of the Earth's physical and biological systems, and the web of science and management that forms the foundation of NOAA exploration and observation missions, work together to allow us to improve our understanding of the complex interactions taking place on our planet.

The major issues we face today are complex and involve the global community. In order to resolve future problems, we continue to build a NOAA that leverages partnerships and is responsive to constituent concerns. Using the President's Ocean Initiative as the foundation, we are developing new approaches to ocean management – approaches that will require a sustained effort to improve processes government-wide and implement a cross-cutting, ecosystems-based approach to management. These new approaches will make the oceans, coasts, and Great Lakes cleaner, healthier, and more productive, while ensuring that these valuable resources are available for current and future generations to enjoy.

Under the leadership of Commerce Secretary Carlos Gutierrez, NOAA remains committed to improving the level of service provided to the American people. Finally and most importantly, we appreciate the support NOAA continues to receive from the members of Congress and our constituents.

Conrad C. Lautenbacher, Jr.
Vice Admiral, U.S. Navy (Ret.)
Under Secretary of Commerce for
Oceans and Atmosphere

Organization Chart

U.S. DEPARTMENT OF COMMERCE

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

Exhibit 1 to DOO 25-5

1/23/08

- Under Secretary of Commerce for Oceans and Atmosphere and Administrator
- Assistant Secretary of Commerce for Oceans and Atmosphere and Deputy Administrator
  - Military Affairs
- Deputy Under Secretary for Oceans and Atmosphere
- Chief of Staff

Legislative Affairs | Deputy Assistant Secretary for International Affairs | Deputy Assistant Secretary for Oceans & Atmosphere | General Counsel | Program Coordination | Decision Coordination

Communications | Education | Program Analysis and Evaluation | Marine and Aviation Operations | Federal Coordinator for Meteorology | Chief Information Officer/ High Performance Computing and Communications

Chief Administrative Officer | Chief Financial Officer | Workforce Management | Acquisition and Grants

National Marine Fisheries Service Assistant Administrator Fisheries	National Ocean Service Assistant Administrator Ocean Services & Coastal Zone Management	Oceanic & Atmospheric Research Assistant Administrator Oceans & Atmospheric Research	National Weather Service Assistant Administrator Weather Services	National Environmental Satellite, Data, and Information Service Assistant Administrator Satellite & Information Services	Program Planning & Integration Assistant Administrator Program Planning & Integration
• Sustainable Fisheries • Protected Resources • Habitat Conservation • Science & Technology • Constituent Services	• Coast Survey • National Geodetic Survey • Ocean and Coastal Resource Management • Response and Restoration • National Centers for Coastal Ocean Science • National Marine Sanctuaries • NOAA Coastal Services Center • Center for Operational Oceanographic Products and Services	• Policy, Planning, and Evaluation • Climate Program • National Sea Grant College Program • Ocean Exploration and Research	• Climate, Water, and Weather Services • Science & Technology • Hydrologic Development • Operational Systems • National Centers for Environmental Prediction • Regional Offices	• Satellite Operations • Satellite Data Processing and Distribution • Center for Satellite Research and Applications • Systems Development • National Climatic Data Center • National Oceanographic Data Center • National Geophysical Data Center • Office of Space Commercialization	• Strategic Planning

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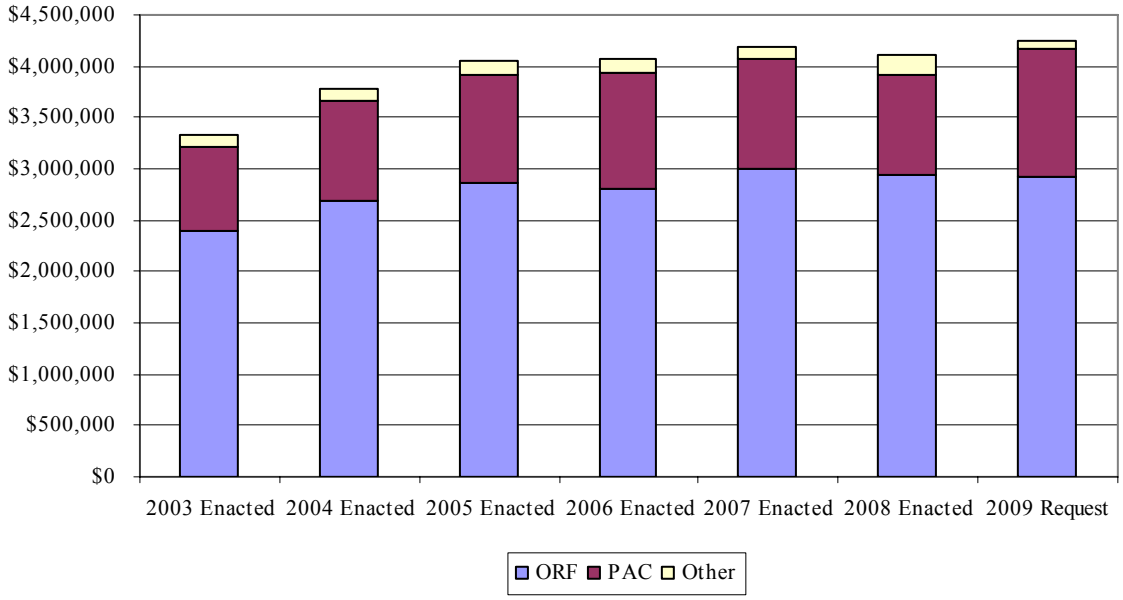
Introduction

Introduction

(Dollars in Thousands)	FY 2007 Enacted	FY 2008 Enacted	FY 2009 Request	Increase (Decrease)
National Oceanic & Atmospheric Administration				
Operations, Research and Facilities	$2,990,828	$2,941,042	$2,924,253	-$17,835
Procurement, Acquisition and Construction	1,085,032	979,207	1,240,660	262,432
Other Funds	116,165	155,243	95,918	(59,258)
Financing	(126,491)	(168,206)	(150,984)	17,222
Total NOAA Discretionary Appropriation	$4,065,534	$3,907,286	$4,109,847	$202,561
FTE	11,935	12,066	12,120	54

Budget Trends, FY 2003 – 2009

(Dollars in thousands)



ORF: Operations, Research, and Facilities
PAC: Procurement, Acquisition, and Construction
Other: Other Accounts

Introduction

In the Fiscal Year (FY) 2009 President's Budget, the Department of Commerce's National Oceanic and Atmospheric Administration (NOAA) requests a total of $4,109,847, an increase of $202,561 or 5.2 percent over the FY 2008 Enacted level. This request reflects NOAA's continuing effort to better serve the American people through the advancement of mission-critical services. The NOAA staff of dedicated professionals, working with extramural researchers and our international partners, are extending our knowledge of climate change, expanding meteorological prediction capabilities, improving coastal resource management, charting more of our seas and coasts, and enhancing environmental stewardship.

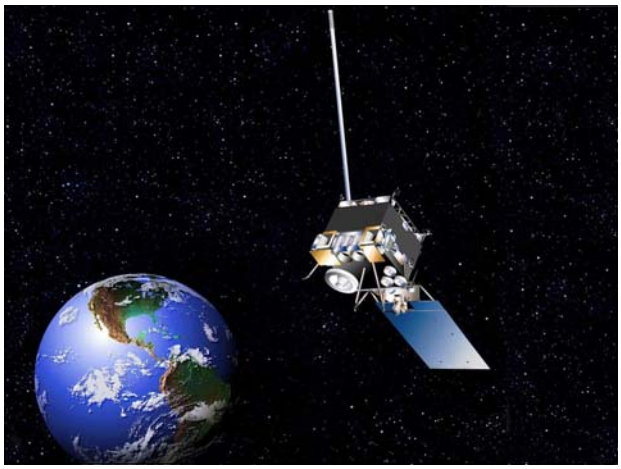
Total requested Adjustments to Base (ATBs) are $40,320,000. These adjustments focus on maintaining and investing in our workforce and supporting NOAA's most important resource — our people. NOAA leverages this most valuable asset by applying our people's knowledge, experience, ingenuity, and dedication to the challenges of the 21st century. With this increase, the FY 2009 base level will fund the estimated FY 2009 Federal pay raise of 2.9 percent and annualize the FY 2008 pay raise of 3.5 percent. The base level will provide inflationary increases for non-labor activities, including service contracts, utilities, field office lease payments, and rent charges from the General Services Administration. Also included are technical adjustments to more accurately reflect the alignment of base resources with base programs.

Priority Program Change Highlights

NOAA's total requested program changes fall into two categories: Sustaining Critical Operations and priority program changes. The total requested program changes will include investments in four key areas: Supporting the President's Ocean Initiative, Improving Weather Warnings and Forecasting, Climate Monitoring and Prediction, and Critical Facility Investments. Summaries of the highest priority items in this Budget Summary are highlighted throughout the rest of this section.

Sustaining Critical Operations

NOAA's core values are people, integrity, excellence, teamwork, ingenuity, science, service, and stewardship. Our ability to serve the nation and accomplish the missions outlined below is determined by the quality of our people and the tools they employ. Our facilities, ships, aircraft, environmental satellites, data-processing systems, computing and communications systems, and our approach to management provide the foundation of support for all of our programs. Approximately $42.0 million in net increases will support our workforce inflation factors, including **$37.5 million** for salaries and benefits and $4.5 million for non-labor-related adjustments, such as fuel costs. This year, we have focused our increases in this area on satellite continuity and additional operations and maintenance support for our aircraft and NOAA vessels. A funding increase of **$242.2 million** is requested to continue support of the Geostationary Operational Satellites (GOES) – R program. GOES satellites provide critical atmospheric, oceanic, climatic, and solar products supporting weather forecasting and warnings, climatologic analysis and prediction, ecosystems management, and safe and efficient public and private transportation. This increase will be used for continued systems engineering, development of satellite instruments, risk reduction activities, and transition to the systems-level acquisition and operations phase of the program. Funding of **$6.1 million** is also requested in support of a Major Repair Period for the RAINIER, NOAA's most productive hydrographic vessel. At 39 years old, the RAINIER requires a major capital investment in its mechanical and electrical systems in order to maintain its current operational tempo and reduce risks to personnel, property, and mission capability. Finally, NOAA requests an increase of **$4.0 million** in support of additional flight hours and operations and maintenance for our aircraft. The requested funds will provide an additional 1,295 flight hours for hurricane research, surveillance, and reconnaissance, as well as for other research and forecasting requirements. NOAA also asks this year for restoration to several of our base programs, most notably in the National Weather Service and the National Marine Fisheries Service. These requested increases in our base accounts will allow NOAA to complete projects that were anticipated in the



FY 2008 President's Budget but which are unable to be completed with the FY 2008 Omnibus Language.

1) Supporting the President's Ocean Initiative

Building on last year's investment in Ocean Action Plan related activities, the FY 2009 President's Request includes $49.1 million in new increases in support of the President's Ocean Initiative. In response to the reauthorization last year of the Magnuson-Stevens Fishery Conservation and Management Act (MSRA), NOAA this year requests $20.8 million in new funding in direct support of the additional requirements of the reauthorized bill. These requests, and others, are included within the three main areas of the Ocean Initiative: ocean science and research ($17.8 million in new increases), protecting and restoring marine and coastal areas ($5.0 million in new increases), and ensuring sustainable use of marine resources ($26.3 million in new increases).

Ocean Science and Research:

New investments in ocean science are aimed at monitoring and better understanding marine ecosystems. Increased funding of **$7.0 million** is included for the Integrated Ocean Observing System (IOOS) to support Data Management and Communications, Regional Observations, and the Data Assembly Center (DAC), which delivers real-time, quality controlled data from NOAA and regional observing systems An increase of **$1 million** is requested to manage the escalating size and quantity of hydrographic datasets collected by NOAA and other providers. This increase in funding will help NOAA update the nautical charts provided to mariners navigating on U.S. waters in a more timely fashion. In addition, NOAA is requesting **$2 million** in increased funding for the PORTS® program, to improve and expand the delivery of real-time and forecasted navigation information. A recent economic benefits study of the Houston/Galveston PORTS® program, released in May 2007, showed that the program brought the Houston/Galveston area significant economic benefits and has helped to achieve a 50 percent reduction in groundings.

Protecting and Restoring Marine Coastal Areas:

Projects to protect and restore valuable marine and coastal areas include funding of **$4 million** to implement the newly enacted Marine Debris Research, Prevention, and Reduction Act. This funding will allow NOAA to provide competitive grants and to develop

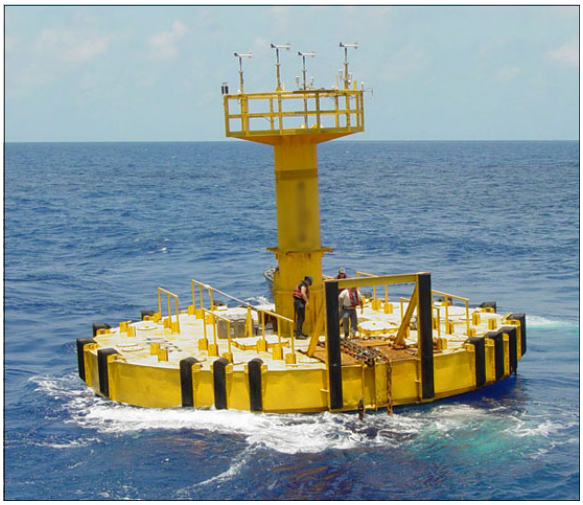
the first Federal clearinghouse on marine debris. NOAA also requests increased funding of **$5.4 million** for the Open Rivers program to restore stream miles of fish habitat through watershed-level projects with multiple fish passage opportunities.

Ensuring Sustainable Use of Ocean Resources:

Finally, the budget provides support to ensure sustainable access to seafood through the development of offshore aquaculture and better management of fish harvests. In direct support of new provisions of the MSRA, and to provide better management of fish harvests, NOAA requests increased funding of **$31.8 million**. Of this, **$5.1 million** is requested to enhance the independent peer-review process for scientific data required to appropriately set the annual catch limits for all managed fisheries, **$7.7 million** will initiate new and expand existing sampling programs and management procedures in order to end overfishing by the MSRA mandated FY 2011, and **$2.7 million** will complete the final implementation phase of a new registry system for recreational fishermen and for-hire fishing vehicles. An additional **$1.5 million** increase is requested in support of deep sea coral research, allowing NOAA to begin identifying, understanding, and providing the information needed in order to protect deep coral habitats.

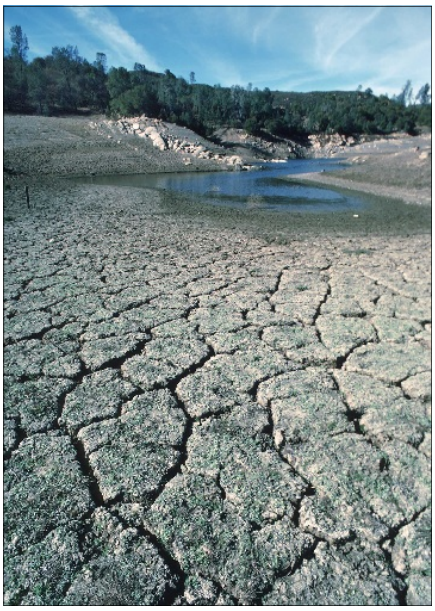
2) Improving Weather Warnings and Forecasts

Severe weather events cause $11 billion in damages and approximately 7,000 weather-related fatalities yearly in the United States. Nearly one-third of the U.S. economy is sensitive to weather and climate. Realizing this, NOAA seeks to provide decision makers with key observations, analyses, predictions, and warnings for a variety of weather and water conditions to help protect the health, life, and property of the U.S. and its economy. Landfalling hurricanes are one of the most physically destructive and economically disruptive extreme events that impact the U.S., often causing billions of dollars of damage in their wake. In FY 2009, NOAA will continue to improve our hurricane research and modeling capabilities with a requested increase of **$4.0 million** for operational support and maintenance of the next-generation Hurricane Weather Research and Forecasting (HWRF) model and storm surge prediction system, as well as accelerated improvements to that system. Increased funding of **$3.0**



million will support the operations and maintenance of 15 hurricane data buoys in the Caribbean, Gulf of Mexico, and the Atlantic Ocean, enhancing our real-time hurricane storm monitoring and observations. NOAA also continues to improve and maintain our weather warning infrastructure, with requested funding of **$6.6 million** to upgrade the Advanced Weather Interactive Processing System (AWIPS), the nation's weather and flood warning system. Increased funding of **$4.8 million** will be used to upgrade twelve NOAA Wind Profilers and to perform a tech-refresh on this twenty-year-old transmitter system. Finally, NOAA is requesting **$2.9 million** in increased funding for modernization of the NOAA Weather Radio network.

3) Climate Monitoring and Prediction



Society exists in a highly variable climate system, and major climatic events can impose serious consequences on society. Preliminary estimates of the impact of the severe drought which affected the Great Plains and the Eastern U.S. throughout all of 2007 are in the range of $5 billion, with major reductions in crop yields and low stream and lake levels. Continued drought and high winds in the Western U.S. in 2007 resulted in numerous wildfires, with 3,000 homes and over 8.9 million acres burned, and at least 12 deaths. Climate conditions change over the span of seasons, years, decades, and even longer, intersecting with a complexity of interdisciplinary issues ranging from ecosystems and resource management to agriculture, energy production, and responses to extreme weather events. NOAA continues to build a suite of information, products, and services that will enable society to respond to changing climate conditions. In FY 2009, NOAA will support the critical National Integrated Drought Information System (NIDIS) with increases of **$2 million** to develop and bring into operation by FY 2010 the next-generation Climate Forecast System, leading to improved climate forecasting products. An increase of **$74 million** will be used to develop *Clouds and the Earth's Radiant Energy System* (CERES) and *Total Solar Irradiance Sensor* (TSIS) climate sensors to preserve decades long climate data records. The CERES sensor will measure the Earth's radiation budget, an essential measurement for determining the causes of climate variability and change. The TSIS sensor measures the total energy of the sun falling on the Earth, a measurement used to identify and isolate natural solar variations that impact climate in contrast to other factors, such as human influences on climate.

4) Critical Facility Investments

NOAA continues to invest in our critical facility management and modernization efforts in order to provide a safe and efficient work environment for our employees. For FY 2009, NOAA will concentrate their modernization efforts on three main projects. NOAA requests **$40.2 million** for the continued construction of the new Pacific Region Center on Ford Island in Honolulu, HI. This increase in funding will support the continued construction and renovation of two buildings, enabling NOAA to relocate operations from their current location in the deteriorating Kewalo Basin and Dole Street Lab Facilities. An increase of **$12.1 million** will complete the design and initial preparations for a replacement facility for the Southwest Fisheries Science Center. Finally, **$11.7 million** is requested to support the installation of a semi-permanent replacement structure for the at-risk Operations Complex at the NESDIS Command and Data Acquisition Station in Fairbanks, AK. The current facility is at risk to experience a major structural failure in the next five years; the requested funding will ensure that NOAA maintains crucial mission operations support for the polar-orbiting satellites, as well as backup support for others.

The program changes highlighted above will be addressed in greater detail in the remaining

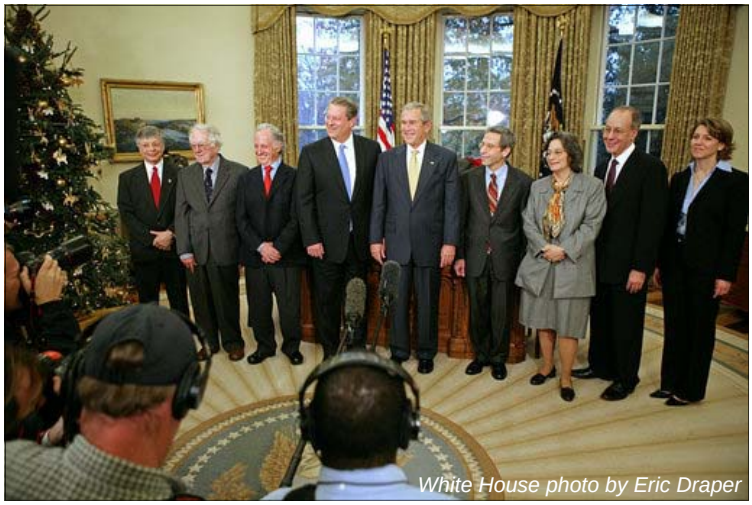
parts of the FY 2009 NOAA Budget Summary. We hope to build on our prior successes by addressing future challenges through implementing the management, operational, and technical enhancements proposed in this Summary.

Chapter 1

2007 NOAA Accomplishments and Performance Results

2007 Accomplishments

NOAA Is Major Contributor to Nobel Prize-Winning Intergovernmental Panel on Climate Change Reports


White House photo by Eric Draper

Many NOAA scientists, as well as NOAA technology and models, contributed to the Intergovernmental Panel on Climate Change (IPCC) climate science reports since the IPCC was established in 1988. For their collective efforts, the nearly 2,000 scientists who comprised the IPCC were awarded the 2007 Nobel Peace Prize. NOAA scientists served as contributors and government reviewers of the Fourth IPCC Assessment Report and its associated chapters issued this year. Dr. Susan Solomon of NOAA's Earth System Research Laboratory served as co-chair of IPCC Working Group 1 and was instrumental in the production of the group's report, *The Physical Science Basis for Climate Change*. Nine lead and review authors were NOAA scientists, and NOAA observation networks, computer modeling labs, and research programs provided data and analysis. NOAA's Geophysical Fluid Dynamics Laboratory provided model runs that enhanced the projections used in the IPCC report and contributed improved climate models coupling the interactions of the atmosphere and the oceans.

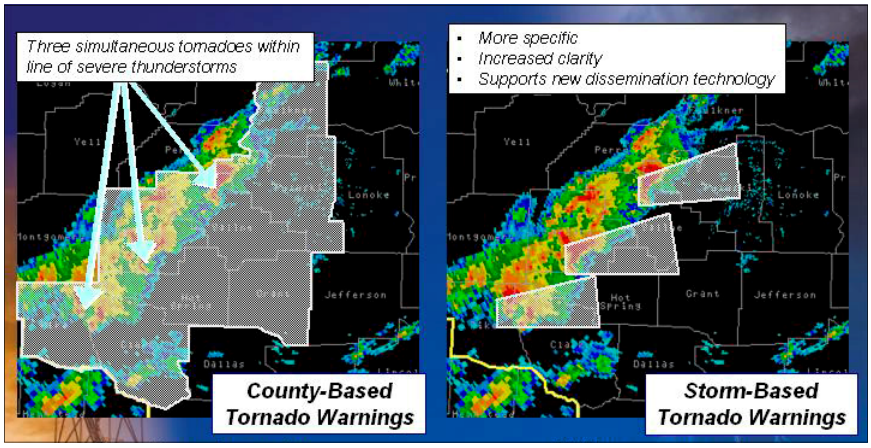
Magnuson-Stevens Act Implementation

The Magnuson-Stevens Fishery Conservation and Management Reauthorization Act of 2006 was signed on January 12, 2007. The reauthorized Act contains significant new provisions to end overfishing, promote market-based approaches to fisheries management, improve the science used in fisheries management, improve recreational data collection, enhance international cooperation in fisheries management, and address illegal, unreported, and unregulated fishing as well as bycatch of protected living marine resources. Especially notable is the requirement to establish an annual catch limit for each fishery, which for the first time creates a mandate with a timetable to end overfishing. The Act includes over 100 requirements for reports, studies, Secretarial determinations, and other activities to be completed by specific dates. NOAA has made important progress on many of these, such as establishing a web site devoted to the reautho-

rized Act, forming an implementation team, meeting with Regional Fishery Management Councils and State Marine Fisheries Directors, holding public meetings on annual catch limit guidelines and the environmental review processes, and holding a roundtable with conservation organizations and a workshop on annual catch limit data needs. The reauthorized Magnuson-Stevens Act added new provisions that support the Administration's goal to increase the number of market-based fisheries management programs. NOAA Fisheries added three new market- based management programs in FY 2007. At the end of FY 2007, NOAA Fisheries has 11 Limited Access Privileged programs in operation, with one being implemented, and five in various stages of development.

NOAA's National Weather Service Provides More Specific Warning Information for Severe Weather

NOAA's National Weather Service (NWS) began issuing more geographically specific warnings for tornadoes, severe thunderstorms, floods, and marine hazards on October 1, 2007. The new "storm-based warnings" allow forecasters to pinpoint the specific area where severe weather threats are highest, thereby reducing the area warned by as much as 70 percent when compared to the previously used county-by-county warning system. Storm-based warnings are displayed graphically and are extremely adaptable to cell phones, PDAs, and the Internet. The Emergency Alert System (EAS) is geared toward counties and NOAA Weather Radio (NWR) All Hazards will still sound an alarm if there is a warning anywhere in a county. However, text and audio messages will provide more specific information about the location of the storm in the county, and the direction in which it is moving. Storm-based warnings will reference landmarks such as highways, shopping centers, and parks, and will use directional delimiters to indicate county location.



National Water Level Observation Network Upgraded to Real-time Status

NOS completed a three-year effort to upgrade the technology of its National Water Level Observation Network (NWLON). NWLON stations provide mariners, first responders, and the public with real-time tide and water-level information. A major benefit of the upgrade is that network stations normally equipped to transmit water-level and other environmental data at hourly increments via NOAA Geostationary Operational Environmental Satellites now transmit data every six minutes, thus enabling users to access data much more quickly.

Moved Forward on Next Generation Geostationary Satellite Program

Geostationary satellites remain the weather sentinels for NOAA. The next-generation geostationary satellite series, GOES-R, will provide new and improved atmospheric, climatic, solar, and space data. In 2007, NOAA revised the management and acquisition strategy for the GOES-R program, partnering more closely with NASA to take advantage of each agency's technical expertise. In February 2007, the Advanced Baseline Imager (ABI), the main instrument on GOES-R, completed a key milestone, enabling the contractor to begin building the first instrument. Throughout 2007, NOAA awarded the three remaining instrument contracts for the Solar Ultraviolet Imager, Extreme Ultra Violet and X-Ray Irradiance Sensors, and Geostationary Lightning Mapper. These instruments will help us to understand and forecast solar disturbances as well as track lightning strikes from space.

Pilotless Aircraft Flies Toward Eye of Hurricane for First Time

NOAA scientists from the Atlantic Oceanographic and Meteorological Laboratory and the Earth System Research Laboratory, and NASA flew an unmanned aircraft system (UAS) into Hurricane Noel, giving researchers the first real-time, low-altitude look at a storm with hurricane category 1 winds hovering around 80 miles per hour. NOAA hurricane researchers are leading efforts to test the ability of using a remotely controlled UAS to fly into the eyewall of a hurricane at altitudes as low as 500 feet. Scientists hope using unmanned aircraft will help fill a gap in near-surface data. The data have been hard to gather because of the safety risks of low-level flight. The five-foot-long Aerosonde UAS aircraft with a wing span of 10 feet is owned and operated by AAI Corporation subsidiary, Aerosonde Pty Ltd., located in Victoria, Australia.

Fleet Modernization Moves Ahead

In June 2007, NOAA celebrated the keel laying of NOAA ships BELL M. SHIMADA (Fisheries Survey Vessel 4) and FERDINAND R. HASSLER (SWATH CMV--small waterplane area twin hull coastal mapping vessel) at the VT Halter Marine shipyard in Moss Point, Mississippi. This marked the first time NOAA has celebrated this important construction milestone for two ships simultaneously. HENRY B. BIGELOW, second of the four fisheries survey vessels of the same class being built by VT Halter Marine, was commissioned into the fleet in July before beginning operations in New England. Prior to commissioning, the U.S. Navy completed a battery of underwater acoustic tests that found BIGELOW's acoustics exceed international standards set by the International Council for the Exploration of the Sea to optimize fish-

eries research worldwide. In September, Phase I of conversion of NOAA Ship OKEANOS EXPLORER (formerly USNS CAPABLE) to an ocean exploration ship was completed by Todd Pacific Shipyards of Seattle, Washington, following successful completion of sea trials. NOAA Ship PISCES (Fisheries Survey Vessel 3) passed a significant construction milestone in December with her christening by Dr. Annette Nevin Shelby, wife of Senator Richard Shelby (R-AL), and subsequent launching at the VT Halter Marine shipyard.

NOAA Aids in the Recovery of Fisheries and Fishing Communities Damaged by Hurricanes

NOAA funded and conducted a number of activities aimed at helping Gulf Coast fisheries recover from the devastating impacts of Hurricanes Katrina, Rita, and Wilma, which struck the Gulf Coast in 2005. Through two cooperative agreements with the Gulf States Marine Fisheries Commission, NOAA awarded the Gulf Coast states about $85.0 million in emergency supplemental funds for fishery-related hurricane recovery activities. This is in addition to the $127.3 million provided to the Gulf States Marine Fisheries Commission for Hurricane recovery efforts in 2006. The states are using these funds to restore and rehabilitate oyster, shrimp, and other marine fishery habitats damaged or destroyed by hurricane events, and to conduct cooperative research and monitoring and other activities designed to recover and rebuild Gulf of Mexico fisheries and fishing communities.

NOAA Weather Radio All Hazards Activities: Meeting the Expectations of the Nation for Weather and All Hazard Warning Information

NOAA's National Weather Service added 16 broadcast stations to the NOAA Weather Radio (NWR) All Hazards network in 2007. In addition to achieving 100 percent coverage of high-risk areas, NOAA refurbished 62 broadcast stations with technology upgrades that significantly improved reliability and availability, while decreasing maintenance costs. This allows the network to meet expectations of availability as the Nation's weather and all hazard warning system. NWR is a reliable and inexpensive means of communicating weather, hazard, and emergency information directly to the public. The network infrastructure consists of 986 broadcast stations covering 98 percent of the Nation's population and has the ability to deliver messages to individuals monitoring their own receivers as well as the ability to reach millions of listeners and viewers through the Emergency Alert System, which is monitored by television and radio license holders. The network is re-

quired to broadcast to all areas of the United States identified as being at high risk of experiencing severe weather and to sustain a high level of reliability and maintainability in those areas.

New State-of-the-Art Satellite Operations Facility Officially Opened

In June 2007, NOAA and the General Services Administration officially opened the new state-of-the-art NOAA Satellite Operations Facility (NSOF). NSOF is the new home for NOAA's around-the-clock environmental satellite operations, which provides data critical for weather and climate prediction. NSOF spans 208,271 gross square feet and supports more than $50 million of high technology equipment, including 16 antennas monitoring the operations of 16 on-orbit satellites. NOAA engineers developed effective transition plans so that NOAA maintained over 99.5 percent recovery of its satellite data while moving into the new building!

Marine Reserves Established in Channel Island National Marine Sanctuary

In 2007, NOS established the Federal portion of the marine reserves and conservation area network within the Channel Islands National Marine Sanctuary. This is the largest network of marine reserves in Federal waters in the continental United States. This action complements the State of California establishment a network of marine reserves and conservation areas within the State waters of the sanctuary in 2003.

Expanding U.S. Tsunami Preparedness

NOAA's National Weather Service (NWS) is responsible for the expansion of the U.S. network of tsunami detection sensors. During 2007, 14 Deep-ocean Assessment and Reporting of Tsunamis (DART™) buoys were established: four in the Western Pacific Ocean, three off the Pacific Coast of Central America, five in the northwestern Pacific Ocean, and two in the North Atlantic Ocean, bringing the total number of U.S. DART™ stations to 34. The U.S., with NOAA as lead agency, is currently working with approximately 70 countries, the European Commission, and over 50 non-governmental agencies in planning and implementing the Global Earth Observation System of Systems (GEOSS), which includes a global tsunami warning system. In addition, NWS works with communities to prepare for tsunamis through the TsunamiReady™ Program. As of De-

cember 12, 2007, there are 47 TsunamiReady™ sites in 10 states, Puerto Rico, and Guam. The National Weather Service reached its goal of recognizing 10 new TsunamiReady™ communities in fiscal year 2007.

First Buoy to Measure Acidification Launched

The first buoy to monitor directly ocean acidification, a result of carbon dioxide absorbed by the ocean, was launched in the Gulf of Alaska. This new buoy, part of a National Science Foundation project awarded to PMEL and the University of Washington in Seattle, in collaboration with Fisheries and Oceans Canada and the Institute of Ocean Sciences in British Columbia, measures the air-sea exchange of carbon dioxide, oxygen, and nitrogen gas, in addition to the pH — a measure of ocean acidity — of the surface waters. The buoy is anchored in water nearly 5,000 meters deep and transmits data via satellite. Rising acidity in the ocean could have a detrimental effect on ocean organisms, with resulting impacts on ocean life and the food chain. This system is the first specifically designed to monitor for ocean acidification.

NOAA Ships Arrive at New Home Port in Hawaii

OSCAR ELTON SETTE, HI'IALAKAI, and KA'IMIMOANA relocated to piers F-9 and F-10 at historic Ford Island, Pearl Harbor, Hawaii, heralding the permanent presence of NOAA on Ford Island. This was a major milestone in the multi-year, multi-phase construction of the NOAA Pacific Regional Center, a project to consolidate NOAA programs and operations on the island of Oahu into a single facility on Ford Island.

NOAA's Open Rivers Initiative Completes First Projects

In its first year, NOAA's Open Rivers Initiative completed three projects that restored over 30 miles of spawning and rearing habitat for migratory fish. The obsolete Brownsville Dam, located on the Calapooia River in Oregon, was removed in August 2007, effectively eliminating an obstruction to migratory fish and a safety hazard to the local human community. In California, two failing and undersized culverts were removed, allowing endangered salmon to reach their historic spawning and rearing grounds. In collaboration with local communities, NOAA's

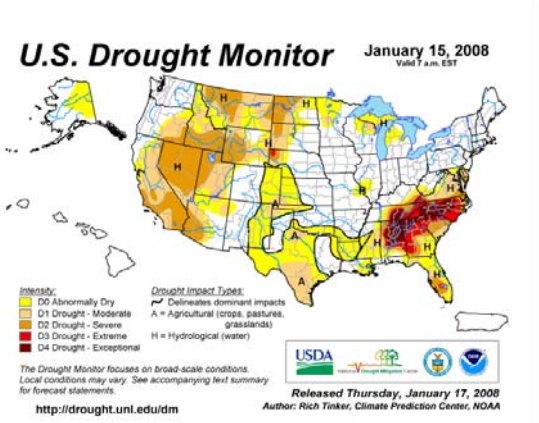
Open Rivers Initiative will continue to restore free-flowing river systems and yield unimpeded fish passage to historic habitat by removing obsolete dams and barriers that dot the rivers of coastal states.

Delivering Real-Time Data to Help Shellfish Growers

Shellfish growers in the Pacific Northwest can get near real-time water quality data from the System-wide Monitoring Program operating at National Estuarine Research Reserves in Alaska, Washington, and Oregon. The data are available through telemetering capabilities, which measure, receive, and transmit data automatically from distant sources. Through a Web site (*http://www.nanoos-shellfish.org/*) jointly sponsored by NOS and the Northwest Association of Networked Ocean Observing Systems (NANOOS), growers can view up-to-date water temperature, salinity, oxygen, turbidity, pH, and chlorophyll data from reserves in Kachemak Bay, Alaska; South Slough, Oregon; and Padilla Bay, Washington. Data are also available from four buoys operated by the University of Washington in Hood Canal, a long arm of Puget Sound west of the main basin. The project received funding support from NOS, the National Estuarine Research Reserve Association, and NANOOS. The Pacific Coast Shellfish Growers Association and the Pacific Shellfish Institute provided technical assistance. Water quality and weather data are transmitted every 30 minutes via satellite from monitoring stations at all 27 National Estuarine Research Reserves, providing information to the growing Integrated Ocean Observing System (IOOS).

Provided Better Access to Drought Information

NOAA's National Climatic Data Center is continuing to work with other U.S. Government agencies on the National Integrated Drought Information System (NIDIS). NIDIS is a drought risk information system that provides users with the ability to determine the potential impacts of drought. It also provides the decision support tools necessary to better prepare for and mitigate the effects of drought. November 2007, the U.S. Government unveiled a new website for the public and civic managers to monitor U.S. drought conditions, get forecasts, know how drought impacts their communities, and know what mitigation measures exist. Called the U.S. Drought Portal, the www.drought.gov site provides a weekly updated map on drought conditions. Along with the existing international cooperation on a monthly product



called the North American Drought Monitor, these tools serve as an international model to help coordinate drought preparedness, response, mitigation, and recovery activities.

Great Lakes Lab Recognized for 'Green' Research Vessels

NOAA's Great Lakes Environmental Research Laboratory (GLERL) converted a fleet of research vessels from petroleum-based to 100 percent bio-based fuel and lubricants, earning a White House Closing-the-Circle Award in the green purchasing category. GLERL operates research vessels throughout the Great Lakes region as scientific platforms for ecosystems research and other NOAA interests in the area. The lab has focused efforts on innovative ways to engineer, operate, and maintain these ships to support scientific missions and advance NOAA's larger mission as a steward of the marine environment. The conversion was a result of a call for "greening" of Government agencies through waste reduction, recycling, and the use of environmentally friendly and sustainable products including bio-products. GLERL's approach to this federal program was to focus on the use of bio-products with a goal of demonstrating the environmental and operational benefits.

Web-Based Product Brings Weather Forecasts Instantly to Fire Management Agencies

NOAA's National Weather Service (NWS) Fire Weather Dynamic Point Forecast Matrix (PFM) is helping land managers and fire agency officials better plan for and manage fire activity, from prescribed burns to large wildfires. Activated in January 2007, PFM is an experimental Web-based product available across the western United States that provides dynamic forecast updates with enhanced usability for fire management officials. A typical PFM weather forecast is produced for seven days, once every three hours for the first three days and then every six hours for the last four days. By clicking on a map on the Web-based PFM interface, fire agencies are able to quickly receive a dynamic forecast generated from the latest information available for the specific point of interest. Use of this new tool allows for more efficient fire administration, resulting in cost savings to the Nation and improved management of our public lands and forest ecosystems.

America COMPETES Act Signed into Law

On August 9, 2007, The President signed into law the America Creating Opportunities to Meaningfully Promote Excellence in Technology, Education and Science Act (America COMPETES) which gives NOAA a mandate to do education. The Act states that NOAA shall conduct, develop, support, promote, and coordinate education activities to enhance awareness and understanding of mission-related sciences.

NOAA Earns Unqualified Audit Opinion for 9th Straight Year

NOAA has been under the scrutiny of an external audit of our financial statements since 1994, and has received an "unqualified opinion" on its statements each year since 1998. An unqualified opinion is an independent auditor's opinion of our financial statements, given without any reservations. This opinion states that the auditor believes NOAA followed all accounting rules appropriately and that the financial reports are an accurate representation of the agency's financial management. The Commerce Business Systems (CBS) and accounting and financial controls are a strength for NOAA.

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NOAA GPRA Performance Results

NOAA's mission goals in ecosystems, climate, weather and water, and commerce and transportation are matrixed, from a funding and organizational perspective, to maximize our support of the Departmental performance goal to observe, protect, and manage the Earth's resources to promote environmental stewardship. NOAA currently has 30 Government Performance & Results Act (GPRA) measure targets. In FY 2007, NOAA achieved or exceeded targets on 27 of 30 measures, or 90 percent of the targets. We expect to improve on our GPRA measures to make them more outcome-oriented and to better improve upon our performance results now and in the future. The funding requested in this budget is essential to improving our scorecard results, and we are employing new and modified measures in FY 2008 to better represent and assess NOAA's performance in achieving our mission.

NOAA GPRA successes include increasing the lead time for severe weather warnings for flash floods and the number of habitat acres restored as well as protected. In addition, accomplishments also consist of reductions to the hydrographic survey backlog within navigationally significant areas, and an increase to the fish stock sustainability index.

NOAA's GPRA goals are focused on the results of key programs and services, support decision making and congressional oversight, and are designed to measure and improve the performance of NOAA in meeting its mission. GPRA is unique in its requirement that agency "results" be integrated into the budgetary decision-making process. NOAA continuously strives to improve its measures to better the service it provides to the American public.

For more information on NOAA's FY 2007 performance, please refer to the Department of Commerce FY 2007 Performance and Accountability Report (PAR), found here: http://www.osec.doc.gov/bmi/budget/FY07PAR.htm. Some of the actuals reported here are slightly different from what was reported in the FY 2007 PAR because estimates, as noted, were provided in the PAR.

Key to Color Coding:

Exceeded Target | Met Target | Slightly Below Target | Did Not Meet Target

NOAA Performance Summary for FY 2007

Goal	Measure	FY 2007 Target	FY 2007 Actual	Met/ Unmet
Weather and Water	Lead Time (Minutes), Accuracy (%), and False Alarm Rate (FAR) (%) for Severe Weather Warnings for Tornados (county based)	Lead Time: 13 Accuracy: 76% FAR: 75%	13 78% 76%	Met Met Unmet
	Lead Time (Minutes) and Accuracy (%) for Severe Weather Warnings for Flash Floods	Lead Time: 48 Accuracy: 98%	60 90%	Met Met
	Hurricane Forecast Track Error, 48 Hour (Nautical Miles)	110	97	Met
	Accuracy (%) (Threat Score) of Day 1 Precipitation Forecasts	29%	31%	Met
	Lead Time (Hours) and Accuracy (%) for Winter Storm Warnings	Lead Time: 15 Accuracy: 90%	18 92%	Met Met
	Cumulative Percentage of U.S. Shoreline and Inland Areas that have Improved Ability to Reduce Coastal Hazard Impacts	32%	32%	Met
Climate	U.S. Temperature Forecasts (Cumulative Skill Score)	19	29	Exceeded
	Reduce the Uncertainty in the Magnitude of the North American (NA) Carbon Uptake	0.4 GtC/yr	0.4 GtC/yr	Met
	Reduce the Uncertainty in the Model Simulations of the Influence of Aerosols on Climate	10% Improvement	10% Improvement	Met
	Determine the National Explained Variance (%) for Temperature and Precipitation for the Contiguous United States using USRCN Stations	Captured 97.2% - Annual National Temperature Trend 96.2% - Annual National Precipitation Trend	Temp: 97.7% Precip: 93.8%	Met
	Reduce the Error in Global Measurement of Sea Surface Temperature	0.5^0 C	0.5^0 C	Unmet
	Improve Society's Ability to Plan and Respond to Climate Variability and Change Using NOAA Climate Products and Information	32 risk assess-ments/evaluations communicated to decision makers	32 assessments/ evaluations	Met

Goal	Measure	FY 2007 Target	FY 2007 Actual	Met/ Unmet
Ecosystems	Fish Stock Sustainability Index (FSSI)	505	524	
	Percentage of Living Marine Resources (LMR) with Adequate Population Assessments and Forecasts	40%	40.6%	
	Number of Protected Species Designated as Threatened, Endangered, or Depleted with Stable or Increasing Population Levels	26	26	
	Number of Habitat Acres Restored (Annual/Cumulative)	5,000/ 37,514	5,974/ 38,488	
	Annual Number of Coastal, Marine, and Great Lakes Ecological Characterizations that Meet Management Needs	27	27	
	Cumulative Number of Coastal, Marine, and Great Lakes Issue-Based Forecasting Capabilities Developed and Used for Management	35	35	
	Percentage of Tools Technologies, and Information Services that are Used by NOAA Partners/Customers to Improve Ecosystem-Based Management	85%	85%	
	Annual Number of Coastal, Marine, and Great Lakes Habitat Acres Acquired or Designated for Long-Term Protection (Annual)	2,000	3,020	
Commerce & Transportation	Reduce the Hydrographic Survey Backlog within Navigationally Significant Areas (square nautical miles surveyed per year)	1,350	3,198	
	Percentage of U.S. Counties Rated as Enabled or Substantially Enabled with Accurate Positioning Capacity	49%	51.6%	
	Accuracy (%) and FAR (%) of Aviation Forecasts for Ceiling and Visibility (3 miles / 1000 feet)	Accuracy: 62% FAR: 45%	61% 40%	
	Accuracy (%) of Forecast for Wind Speed and Wave Height	Wind Speed: 68% Wave Height: 73%	73% 78%	
Mission Support	There are no GPRA measures associated with the Mission Support Goal			

Chapter 2

Program Changes Summary Table

FY 2009 Program Changes

(dollars in thousands)

Program Changes	FY 2008 Enacted	Program Change (activity)	Program Change (PPA)	FY 2009 Request
Operations, Research and Facilities				
NOS				
Mapping and Charting Base	44,326		2,086	47,639
Ping to Chart Infastructure		1,000		
Autonomous Underwater Vehicles (AUV)		700		
Restoration to Base		386		
Tide and Current Base	26,142		2,195	28,837
PORTS		2,000		
Restoration to Base		195		
NOAA IOOS			4,000	6,500
IOOS Regional Observations			3,000	14,555
Integrated Ocean Observing System	26,334			
Ocean Research Priorities Plan			10,000	10,000
CICEET	6,496		(6,496)	
Response and Restoration Base	11,506		5,245	17,266
Marine Debris	3,169		4,000	4,000
Pribilof Islands	5,292		(4,565)	
National Estuarine Rsch Reserves System	16,388		5,634	22,326
National Estuarine Rsch Reserves System		5,232		
Restoration to Base		402		
Subtotal, NOS	**$139,653**	**$9,915**	**$25,099**	**$151,123**
NMFS				
Protected Species Research & Mgmt	33,154		1,066	34,766
Marine Mammals	40,415		1,500	41,340
Atlantic Salmon	5,753		4,167	9,996
Atlantic Salmon		4,000		
Restoration to Base		167		
Pacific Salmon	58,507		3,169	62,879
Pacific Salmon		(6,055)		
ESA Recovery & Research		9,224		
Fisheries Research & Mgmt Progams	135,473		21,505	159,585
Regional Councils		5,050		
Pacific Whiting Treaty		250		
WCPF Commission		1,000		
LAPPs		4,826		
Regulatory Streamlining		2,829		
Highly Migratory Species		3,000		
Catch & Release Research		1,000		
CAMEO - ORPP		3,750		
EAM Reductions		(200)		
Expand Annual Stock Assessments	31,599		8,484	40,504
Expand Annual Stock Assessments		7,710		
Restoration to Base		774		
Economics & Social Sciences Research	5,851		4,729	10,658

Program Changes	FY 2008 Enacted	Program Change (activity)	Program Change (PPA)	FY 2009 Request
Fisheries Statistics	12,855		3,015	16,152
Fisheries Statistics		2,700		
Restoration to Base		315		
Survey & Monitoring Projects	14,627		8,224	23,270
Reducing Bycatch	2,738		567	3,360
Enforcement	53,318		2,407	56,405
IUU Fishing		1,084		
Cooperative Agreements with States		1,323		
Sustainable Habitat Mgmt	18,666		1,958	20,952
Sustainable Habitat Mgmt		1,500		
Restoration to Base		458		
Fisheries Habitat Restoration & Open Rivers	25,354		(3,107)	22,453
Open Rivers Initiative		5,397		
GL Habitat Restoration Program		1,496		
Penobscot Rivers Habitat Restoration	10,000	(10,000)		0
Antarctic Research	3,029		497	2,639
Cooperative Research	10,058		1,247	11,455
Subtotal, NMFS	**$150,645**	**$4,273**	**$14,808**	**$156,686**
OAR				
Competitive Research Program	129,986		4,186	134,702
NIDIS		2,000		
Water Vapor Research		880		
UAS - IPY		308		
AMOC		998		
Laboratories & Cooperative Institutes	45,954		4,000	49,089
Improvements to Operational Wx Forecasts		1,000		
UAS - Research		3,000		
Subtotal, OAR	**$175,940**	**$8,186**	**$8,186**	**$183,791**
NWS				
Local Warnings and Forecasts Base	578,421		13,065	601,876
Hurricane Data Buoys O&M		3,000		
Hurricane Supplemental Systems O&M		1,230		
TAO Buoy Array		1,100		
Data Buoy Ocean Sensor O&M		1,350		
Fire Weather		600		
Restoration to Base		5,785		
Aviation Weather	4,537		711	5,253
Aviation Weather		600		
Restoration to Base		111		
Central Forecast Guidance	51,923		4,273	57,253
Central Forecast Guidance		4,040		
Restoration to Base		233		
ASOS	8,670		712	9,657

Program Changes	FY 2008 Enacted	Program Change (activity)	Program Change (PPA)	FY 2009 Request
Restoration to Base		212		
Subtotal, NWS	**$0**	**$212**	**$0**	**$0**
NESDIS				
Satellite Command & Control	36,048		1,384	38,729
Satellite Command & Control		500		
Restoration to Base		884		
Product Processing & Distribution	29,651		1,227	31,457
Product Processing & Distribution		500		
Restoration to Base		727		
Ocean Surface Vector Wind Studies			3,000	3,000
Subtotal, NESDIS	**$65,699**	**$2,611**	**$5,611**	**$73,186**
Program Support				
NOAA Wide Corporate Svc & Agency Mgmt	113,788		6,235	115,561
Acquisition & Grants Mgmt		1,200		
End to End Resource Mgmt System		(1,798)		
Restoration to Base		6,833		
Payment to DOC Working Capital Fund	34,130		1,803	36,583
JASON Education & Outreach	2,207		(1,000)	0
Competitive Educational Grants	4,876		995	1,000
Subtotal, PS	**$155,001**	**$6,235**	**$8,033**	**$153,144**
OMAO				
Data Acquisition	109,781		2,117	113,451
Maritime Crew Safety & Rotation		1,700		
JOHN N. COBB O&M		(584)		
Restoration to Base		1,001		
Fleet Planning & Maintenance	16,756		261	17,034
Fleet Planning & Maintenance		(150)		
Restoration to Base		411		
Aircraft Services	25,152		4,616	30,044
Aircraft Services		4,000		
Restoration to Base		616		
Subtotal, OMAO	**$151,689**	**$6,994**	**$6,994**	**$160,529**
Total, ORF	**$1,792,930**	**$94,300**	**$132,112**	**$1,912,226**
Procurement, Acquisition, and Construction				
Coastal and Estuarine Land Cons. Program	7,992		7,000	15,000
Subtotal, NOS	**$7,992**	**$0**	**$7,000**	**$15,000**
AWIPS	12,447		6,605	19,064
AWIPS		6,280		
Restoration to Base		325		

Program Changes	FY 2008 Enacted	Program Change (activity)	Program Change (PPA)	FY 2009 Request
Complete & Sustain NWR	5,455		2,877	11,337
Complete & Sustain NWR		2,743		
Restoration to Base		134		
NOAA Profiler Conversion	4,973		4,752	9,730
NOAA Profiler Conversion		4,630		
Restoration to Base		122		
Subtotal, NWS	**$10,428**	**$7,629**	**$7,629**	**$21,067**
Geostationary Systems - N	80,299		(7,036)	73,263
Geostationary Systems - N		(7,116)		
Restoration to Base		80		
Geostationary Systems - R	234,538		242,227	477,000
Geostationary Systems - R		198,000		
Restoration to Base		44,227		
Polar Orbiting Systems - POES	114,791		(48,872)	65,419
Polar Orbiting Systems - POES		(48,987)		
Restoration to Base		115		
Polar Orbiting Systems - NPOESS	330,969		(42,984)	287,985
Polar Orbiting Systems - NPOESS		(43,315)		
Restoration to Base		331		
Restoration of Climate Sensors			74,000	74,000
Subtotal, NESDIS	**$760,597**	**$143,335**	**$217,335**	**$977,667**
Pacific Regional Center	19,980		40,250	60,250
Southwest Fisheries Science Center	2,925		12,072	15,000
Fairbanks, AK CDA			11,700	11,700
Subtotal, PS	**$22,905**	**$0**	**$64,022**	**$86,950**
FSV Calibration			1,000	1,000
Ship Acquisition, Conversion & Maint.			6,100	6,100
Subtotal, OMAO	**$0**	**$0**	**$7,100**	**$7,100**
Total, PAC	**$814,369**	**$157,569**	**$309,691**	**$1,126,848**
Total, NOAA ORF and PAC only	**$2,607,299**	**$251,869**	**$441,803**	**$3,039,074**

Summary Program Changes by Line Office	FY 2008 Enacted	Program Change (activity)	Program Change (PPA)	FY 2009 Request
NOS	147,645	9,915	32,099	166,123
NMFS	461,397	41,598	59,428	516,414
OAR	175,940	8,186	8,186	183,791
NWS	666,426	32,995	32,995	714,170
NESDIS	826,296	145,946	222,946	1,050,853
PS	177,906	6,235	72,055	240,094
OMAO	151,689	6,994	14,094	167,629
Total, NOAA	**$2,607,299**	**$251,869**	**$441,803**	**$3,039,074**

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Chapter 3

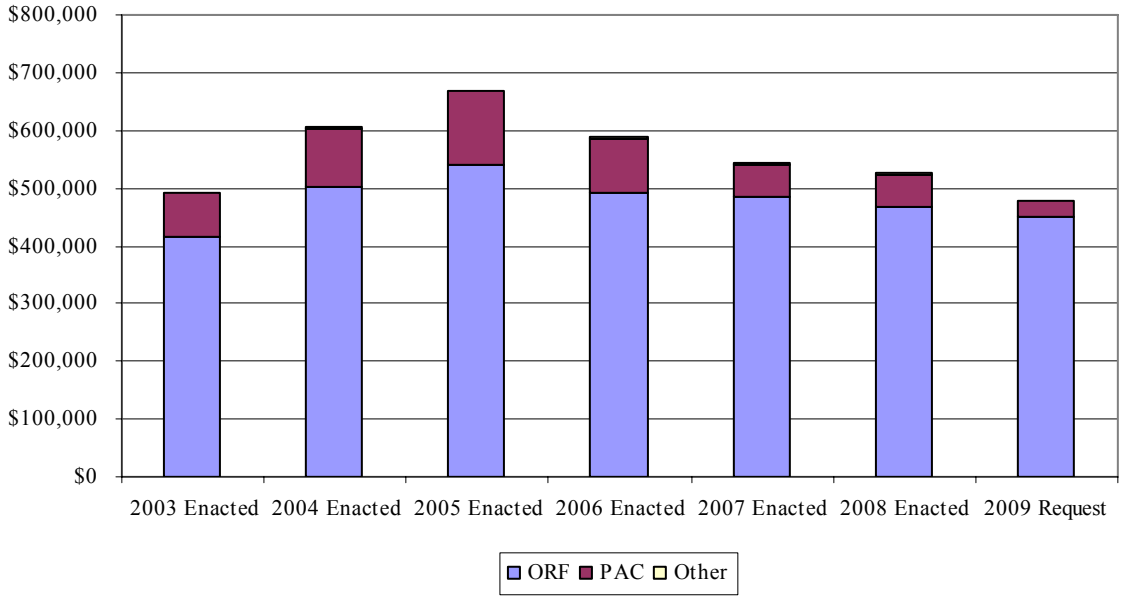
Operations, Research, and Facilities

National Ocean Service

(Dollars in Thousands)	FY 2007 Enacted	FY 2008 Enacted	FY 2009 Request	Increase (Decrease)
National Ocean Service -- Operations, Research and Facilities (ORF)				
Navigation Services	$165,891	$141,576	$149,026	$7,450
Ocean Resources Conservation and Assessment	175,014	182,752	157,093	(25,659)
Ocean and Coastal Management	143,273	143,602	143,133	(469)
Total, National Ocean Service - ORF	484,178	467,930	449,252	(18,678)
Other National Ocean Service Accounts				
Total, National Ocean Service - PAC	56,945	56,599	27,385	(29,214)
Total, National Ocean Service - Other	1,000	11,600	11,600	0
GRAND TOTAL NATIONAL OCEAN SERVICE (Direct Obligations)	$542,123	$536,129	$488,237	(47,892)
Total FTE	1,226	1,236	1,240	4

Budget Trends, FY 2003– 2009

(Dollars in thousands)



ORF: Operations, Research, and Facilities
PAC: Procurement, Acquisition, & Construction
Other: Environmental Improvement and Restoration Fund; Coastal Impact Assistance Fund; Coastal Zone Management Fund; Damage Assessment and Restoration Revolving Fund

NOAA's National Ocean Service (NOS) is the primary Federal agency working to preserve America's coastal resources. NOS provides observation, measurement, assessment, and management of the Nation's coastal and ocean areas, delivers critical navigation products and services, and conducts response and restoration activities. NOS balances environmental protection with economic development by providing the scientific, technical, and management expertise necessary to address the complex challenges of our coastal regions, including the Great Lakes.

An estimated 154 million people resided in coastal counties in 2004. The population in these coastal areas is expected to rise to approximately 165 million by the year 2015. This increase in density, coupled with the fast-growing economy of coastal areas, makes the task of managing coastal resources increasingly difficult. Growth in coastal areas creates jobs, generates economic prosperity, adds new industries, enhances educational opportunities, and increases tax revenues. However, it also burdens local environments, threatening the very resources that draw people to the coast.

As a national leader for coastal stewardship, NOS promotes a wide range of research activities aimed at better understanding ocean, coastal and Great Lakes ecosystems. This research provides the strong science foundation required to effectively manage and advance the sustainable use of our coastal and ocean 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 (IOOS) as well as fundamental contributors to the Global Earth Observation System of Systems (GEOSS). NOS mapping, charting, geodetic, and oceanographic activities build on the marine and coastal observations collected to increase the efficiency and safety of marine commerce, and to more effectively manage coastal resources. NOS protects and restores coastal resources damaged by releases of oil and other hazardous materials. NOS also manages the Papahānaumokuākea Marine National Monument, marine

sanctuaries, and through partnerships with coastal states, manages and protects the Nation's valuable coastal zones and nationally significant estuarine reserves. Understanding of the coastal environment is enhanced through coastal ocean activities that support science and resource management programs. 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 training, and other capacity-building activities.

NOS contributes significantly to achieving two of NOAA's four Strategic Mission Goals: (1) support the Nation's commerce with information for safe, efficient, and environmentally sound transportation, and (2) 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 Service's activities, NOS also supports and makes important contributions to NOAA's other two mission goals: (1) understand climate variability and change in order to enhance society's ability to plan and respond, and (2) serve society's needs for weather and water information.

FY 2009 Budget Summary

NOAA requests a total of $488,237,000 and 1,240 FTE to support the continued and enhanced operations of the National Ocean Service. This total includes $4,613,000 for Adjustments to Base (ATB), and a net program change of $49,482,000 and 3 FTE.

ADJUSTMENTS TO BASE:

The above ATB request includes a net increase of $4,632,000 and 10 FTE to fund the estimated FY 2009 Federal pay raise of 2.9 percent and annualize the FY 2008 pay raise of 3.5 percent. Program totals will provide inflationary increases for non-labor activities, including service contracts, utilities, field office lease payments, and rent charges from the General Services Administration.

NOS — ORF PROGRAM CHANGE HIGHLIGHTS FOR FY 2009:

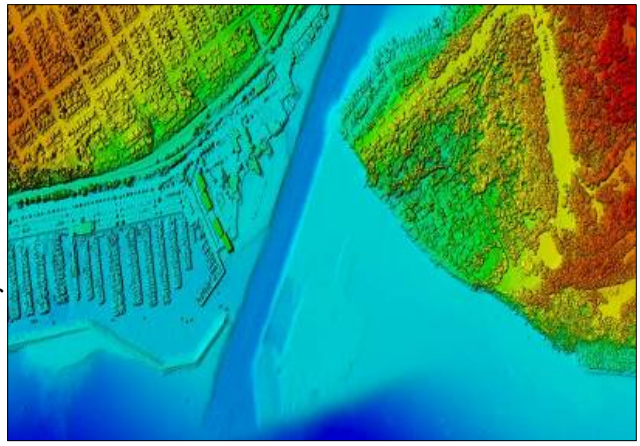
Program changes are summarized at the sub-activity level below. Detailed numeric breakouts are located in Chapter 6, *Special Exhibits.* Descriptions of each request by line item are located in the NOAA FY 2009 Technical Budget.

Navigation Services **$149,026,000**

A net increase of $11,602,000 and 1 FTE above the base is requested in the Navigation Services subactivity, for a total of $149,026,000 and 603 FTE. The FY 2009 President's Budget requests funding for a suite of navigation products and services which help ensure the safety of marine transportation, while improving the economic efficiency and competitiveness of American commerce. Of this increase, NOAA requests $7,902,000 and 0 FTE to increase the base levels of funding for various on-going programs within this subactivity to that recommended in the FY 2008 President's Budget.

- **Mapping and Charting:** A net increase of $1,700,000 and 0 FTE above the base for a total of $94,788,000 and 312 FTE under the Mapping and Charting line item of the Navigation Services subactivity. Of this increase, $7,175,000 will be used to increase the base levels of funding for various on-going programs within this subactivity to that recommended in the FY 2008 President's Budget.

  - **NOAA requests an increase of $1,000,000 and 0 FTE to manage the increasing size and quantity of hydrographic datasets collected by NOAA, contract and third-party data providers.** 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. Currently, however, the time between collection of data and production of nautical charts is too long, compromising navigation safety and limiting the value of survey backlog reduction. The data processing, storage and archiving must be modernized to accommodate increased volumes of data from contractors and new survey technologies. This requested increase upgrades NOAA's Information Technology (IT) capacity to support quick, reliable data transfer and storage of hydrographic survey data, in addition to an updated backup and recovery system that allows NOAA to transition away from tape media. The increase will prevent the loss of critical data from the large investment NOAA makes in hydrographic surveys. It will also enable direct access to all files and improve the flow of survey data from collection to processing, and on to users. The increase helps to bring NOAA's data management and processing capacity more in line with the rate of hydrographic data (the sonar "ping") collection. This data management systems upgrade is a key part of NOAA's goal to reduce "ping to chart" time and improve NOAA's ability to process the data and get it to nautical chart users in a timely fashion.



    The requested funds will allow NOAA to begin overhauling the storage and communications capacity of NOAA survey platforms and the processing branches to improve reliability and accommodate the expected increases in data volume in a robust way by:

    - Acquiring the necessary communication bandwidth sufficient to mirror collected and processed data for all collection and processing points;
    - Establishing and maintaining a central data repository with sufficient space to store, archive and meet Continuity of Operations (COOP) requirements at NOAA's National Geophysical Data Center in Boulder, Colorado;

- Transferring data currently stored on tape that can degrade and corrupt to the new archive system and phasing out long term tape storage; and
- Implementing continual upgrades to data storage, software and maintenance at the processing branches and on NOAA hydrographic platforms.

- **NOAA requests an increase of $700,000 and 0 FTE to begin incorporating Autonomous Underwater Vehicles (AUV) into hydrographic survey operations.** Incorporating AUVs will maximize existing survey platform capacity, allowing multi-mission operations that collect more data on each survey project in less time.

  NOAA's research into hydrographic AUVs has occurred on a small scale in partnership with the Defense Department's Technology Support Working Group to assess the utility of AUVs in underwater object detection for Homeland Security. By FY 2009, Phase 1 AUVs will be ready for deployment. Additional funding is needed for deployment and continued research into a Type 2 AUV that will enhance AUV functionality by carrying multibeam sensors to further satisfy NOAA's survey requirements. The requested funds will improve navigation safety by enabling NOAA to transition from ongoing AUV research to AUV operations in FY 2009. AUVs can gather more survey data faster and can operate in areas where surface vessels cannot, such as rough seas or between sheltered inshore and open water.

  The integration of AUVs into NOAA's current hydrographic survey operations has the potential to:

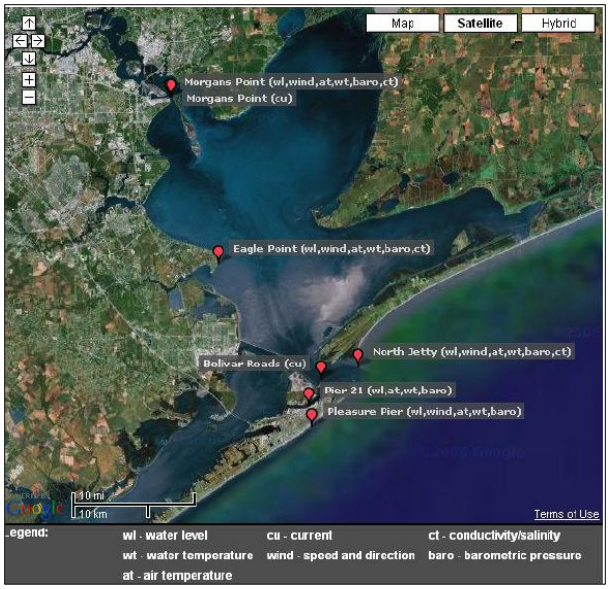
  - Increase survey launch performance by 25 percent, and coverage by approximately 50 square nautical miles per year per AUV. AUVs decrease the cost per square nautical mile of surveying;
  - Increase efficiency by deploying personnel and fleet resources to survey complicated inshore areas while using AUVs to survey relatively simple regions in open water;
  - Increase survey operation hours: since AUVs operate while submerged, they can acquire more high-quality data under a wider range of weather conditions than surface vessels, leading to less surveying downtime; and
  - Increase accuracy and efficiency in ship-based multibeam surveys by using AUVs to

automate water column sampling for data validation.

- **Tide and Current Data:** A net increase of $2,195,000 and 1 FTE above the base for a total of $28,837,000 and 108 FTE are requested under the Tide and Current Data line item of the Navigation Services subactivity. Of this increase, $195,000 will be used to increase the base levels of funding for various on-going programs within this subactivity to that recommended in the FY 2008 President's Budget.

  - **NOAA requests an increase of $2,000,000 and 1 FTE to improve and expand the delivery of real time and forecasted navigation information through the PORTS® and Operational Forecast Model Programs.** 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 can spill hazardous materials and cause other damage. The Physical Oceanographic Real Time System (PORTS®) Program is a cost shared partnership program that provides US Marine Transportation System (MTS) users with access to quality controlled real time oceanographic and meteorological data critical for safe and efficient navigation. PORTS® is a decision support tool that integrates and disseminates real-time environmental observations, forecasts and other geospatial information. Coupling PORTS® data to a nowcast/forecast model that projects accurate environmental forecasts 24-30 hours into the future significantly expands the window of time a user has accurate information with which to make important safety and efficiency decisions.

    To support the further expansion of PORTS®, the requested funds will support NOAA's ability to work with an expanding circle of partners, to quality control and manage the increasing volume of continuous real time data collected by PORTS® instruments and sensors, to ensure that sensor performance issues are promptly analyzed and corrective actions implemented to minimize sensor down times, to operate additional nowcast/forecast models, and provide adequate customer outreach, onsite management and product feedback.



    Tailored to the specific needs of local communities, PORTS® measures, integrates, and disseminates observations of water levels, currents, salinity, wind, and bridge clearance, all of which help mariners successfully guide ships into and out of the nations busiest ports. A recent study indicates that the PORTS® program in Houston-Galveston reduced groundings by over 50% and has economic impacts of $14-$18M

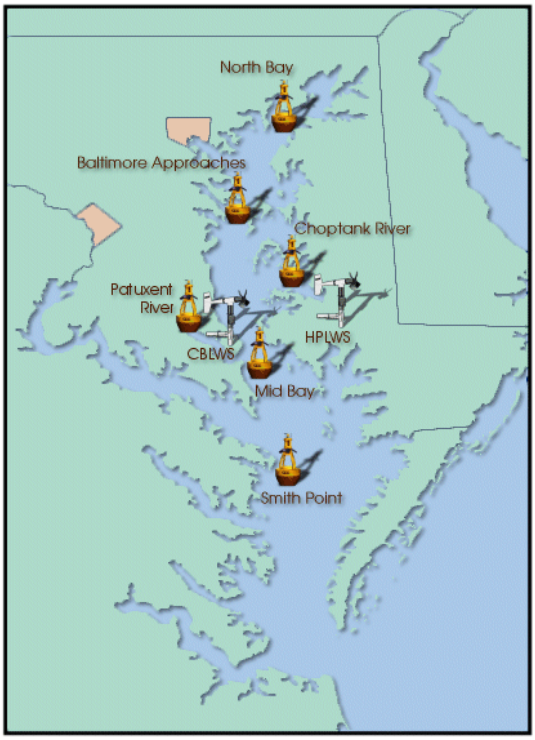
annually. This year, NOAA recently installed the 14th PORTS® in Mobile, Alabama. The Port of Mobile is the only deep-water port in the State of Alabama and the 11th largest in the United States.

Ocean Resources Conservation and Assessment **$157,093,000**

A net increase of $21,605,000 and 2 FTE above the base is requested under the Ocean Resources Conservation and Assessment subactivity for a total of $157,093,000 and 421 FTE. NOAA requests an increase of $5,837,000 and 0 FTE to increase the base levels of funding for various on-going programs within this subactivity to that recommended in the FY 2008 President's Budget.

- **Ocean Assessment Program:** $12,034,000 and 1 FTE in net increases above the base, for a total of $86,080,000 and 69 FTE, are requested under the Ocean Assessment Program line item of the Ocean Resources Conservation and Assessment subactivity. Of this increase, $34,000 will be used to increase the base levels of funding for various on-going programs within this subactivity to that recommended in the FY 2008 President's Budget.

  - **NOAA requests an increase of $7,000,000 and 0 FTE for the Integrated Ocean Observing System (IOOS).** This requested increase will: 1) support a national technical capability within NOAA ($3.0M); 2) improve capacity for the data assembly center at the National Data Buoy Center ($1.0M) in Stennis, Mississippi; and 3) provide additional support for the regional component of IOOS ($3.0M).



IOOS implementation requires intensive coordination and cooperation among existing ocean observing activities and capabilities at the federal and regional levels, including the publication and adoption of standards necessary to operate IOOS both within a national and global framework. To this end, NOAA will continue to build a dedicated IOOS Program with technical capabilities to serve as the hub for coordinating and integrating IOOS activities across NOAA and among Federal agencies, regions, and States. The NOAA IOOS Program is working to 1) establish the national structure for the adoption of standards necessary to operate IOOS both within the National and International Framework, 2) bring the capacity of the regional components and the Federal components into an operational status, and 3) assess the

operational gaps and ensure regional IOOS components develop regional system design plans.

Through the National Data Buoy Center, NOAA has pioneered the 24/7 delivery of quality controlled real-time data to create a more highly resolved picture of available in-situ coastal conditions and provide the initial quality control checks of this data before delivering to the Global Telecommunications System (GTS). The pilot effort has demonstrated the ability to deliver 2.5 million quality controlled real-time observations per year from regional IOOS components. With the requested increase, NOAA will transition this capability to operational status and maintain the existing data delivery capability. Specifically, the requested funding will be used to purchase contract support for data processing and QA/QC support.

NOAA is also working to develop the regional component of IOOS, which complements Federal ocean observing assets by providing additional data, models, and information products tailored to the economic and environmental requirements of the community. Integrating Federal and regional observing system assets will improve our understanding, forecasting, stewardship, and use of coastal waters. Ultimately an integrated approach will allow optimization of observing system investments and provide a consistent capability for all users. NOAA will continue to support the regional component of IOOS (both the Regional Associations (RAs) and the Regional Coastal Ocean Observing Systems (RCOOSs)). The requested increase of $3M will allow NOAA to increase the level of funding available for its competitive selection process of grants and cooperative agreements establishing a regional network of observing systems to serve National and regional needs for ocean observing data and information services.

- **Ocean Research Priorities Plan: NOAA requests an increase of $5,000,000 and 0 FTE for forecasting the response of coastal ecosystems to persistent forcing and extreme events.** This increase supports one of the near-term priorities identified by the Ocean Research Priorities Plan (ORPP) -- Response of Coastal Ecosystems to Persistent Forcing and Extreme Events. These funds will be used to develop and integrate decision-support tools to help policy makers and managers (coastal, resource, and emergency) anticipate, prepare for and respond to extreme weather events, natural disasters, and changing natural and human influences. Reducing economic, environmental, and social losses requires collaboration at all levels and a coordinated interagency approach. Key federal partners

include the U.S. Geological Survey, the Environmental Protection Agency, the US Army Corps of Engineers, and the National Science Foundation. Activities include community inundation and ecosystem modeling; building a geospatial framework and digital elevation models.

These efforts not only support one of the near-term priorities of the ORPP, but also support efforts outlined in the U.S. Group on Earth Observations and NSTC Subcommittee on Disaster Reduction's Improved Observations for Disaster Reduction: Near-Term Opportunity Plan. Efforts will initially focus on two pilot regions: the northern Gulf of Mexico and the Great Lakes. For the pilot regions, managers and officials will have the tools and resources to ensure that decisions about land and resource use, management practices, and development in the coastal zone and adjacent watersheds can be evaluated with a complete understanding of the probable effects on public health, coastal ecosystems, and community hazard resilience. Within the pilot areas, the leveraging of capabilities across all sectors, the development of regionally relevant decision support tools, and the lessons learned will lead the way for broader national implementation. In addition, NOAA and the USGS will support competitive research proposals to compare various coastal inundation models and develop the observation requirements associated with these models.

- **Ocean Research Priorities Plan: NOAA requests an increase of $5,000,000 and 1 FTE to develop sensors for rapid detection of pathogens, harmful algae, and their toxins.** This increase supports one of the near-term priorities identified by the ORPP – Sensors for Marine Ecosystems. The ability to rapidly and accurately monitor and assess biodiversity and marine ecosystem health, from the genetic to the ecosystem level, is an essential component of any effort to protect human health and to more effectively implement an ecosystem approach to resource management. 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.

The $5.0 million will provide funds for in-situ sensor development. In addition, funds would be used to develop genomic libraries and associated information to support DNA-based identification of a range of marine organisms. Finally, funds would also be used to improve video plankton recorders and related technology. This increase is consistent with the goals and objectives of the Oceans and Human Health Initiative strategic plan.

- **NOAA requests a decrease of $6,496,000 and 0 FTE for the Cooperative Institute for Coastal and Estuarine Environmental Technology (CICEET).** This reduction reflects a reassessment of NOAA's required level of funding. This reduction is taken to reallocate funding to a competitive research grants program that will be administered by the National Estuarine Research Reserves System (NERRS) Program**.** Funds will be used to conduct research and transform the best available science into practical innovative tools that coastal managers can use to detect, prevent and reverse the impacts of coastal pollution and habitat degradation. Coastal and estuarine managers need to better understand what tools are available, how well they work, and how best to apply them to detect, prevent, and reverse the impacts of coastal pollution and habitat degradation.

- **Response and Restoration:** $4,708,000 and 1 FTE in net increases above the base, for a total of $22,454,000 and 111 FTE, are requested under the Response and Restoration line item of the Ocean Resources Conservation and Assessment activity. Of this increase, $708,000 will be used to increase the base levels of funding for various on-going programs within this subactivity to that recommended in the FY 2008 President's Budget.

  - **NOAA requests a restoration of $5,245,000 in base funding for a total of $17,266,000 and 110 FTE for response and restoration activities of the Ocean Resources Conservation and Assessment subactivity.** NOAA's Office of Response and Restoration (OR&R) responds to approximately 100 significant oil or chemical spills each year as scientific advisors to the U.S. Coast Guard, and provides cleanup solutions to 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. Specifically, OR&R works with the U.S. Coast Guard to forecast the movement and behavior of spilled oil and chemicals, evaluates the risks to resources, and recommends protective and clean up actions. When oil or hazardous substances threaten or injure coastal and marine resources, NOAA and other Federal and state 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 requests an increase of $4,000,000 and 1 FTE to implement the Marine Debris Research, Prevention, and Reduction Act**. This request supports NOAA's commitment to implement the Administration's Ocean Action Plan and the Marine Debris Initiative (announced in November, 2007).

Every year, marine debris injures and kills marine wildlife, harms ocean habitats, interferes with navigation safety, causes economic losses to shipping, fishing, and coastal industries, and poses a threat to human health. The urgent need to address marine debris has been highlighted by a number of recent events. For example, the permanent protection of the Northwestern Hawaiian Islands as a Marine National Monument highlighted their vulnerability to derelict fishing gear and plastic debris. In the Gulf of Mexico, the tremendous amount of marine debris generated by Hurricane Katrina continues to threaten navigation safety and fishermen's livelihoods throughout the region. These events and others add to the growing awareness of the extent and impacts of debris on the Nation's resources.

Human impacts are significant as well. Coastal communities spend millions of dollars cleaning up marine debris on their beaches. U.S. ports and harbors are in a constant battle to keep the nation's waterways free of hazardous debris and allow maritime commerce to flow efficiently.

To protect NOAA trust resources and fishing livelihoods, it is essential to identify marine debris locations, types, and densities in known hotspots such as the Gulf, the Northwestern Hawaiian Islands, Alaska, Puget Sound, the Chesapeake Bay, and the eastern coast of Florida. With the $4 million requested, NOAA will provide competitive grants and develop the first Federal information clearinghouse on marine debris. This clearinghouse will track all research, assessments and removal efforts around the U.S. and identify needs to be supported by competitive grants. Targeted prevention and removal activities will protect the nation's trust resources and navigation safety from the threats of marine debris, with special emphasis on NOAA's National Marine Sanctuaries and Monument and other areas where habitats and marine species are most threatened by derelict fishing gear, plastics, and other marine debris.

Ocean and Coastal Management **$143,133,000**

A net increase of $9,140,000 and 0 FTE above the base is requested for a total of $143,133,000 and 199 FTE for the Ocean and Coastal Management subactivity. The Nation's ocean and coastal areas represent some of the most ecologically and economically important regions and this request will continue to support and advance NOAA's important work to sustain these regions. This increase includes $3,908,000 and 0 FTE to restore funding to complete projects that

were anticipated in the FY 2008 President's Budget but were not able to be completed with the FY 2008 Omnibus Language.

- **Coastal Management:** A net increase of $9,140,000 and 0 FTE above the base, for a total of $98,755,000 and 56 FTE under the Coastal Management line item of the Ocean and Coastal Management subactivity.

  - **NOAA requests an increase of $5,232,000 and 0 FTE to establish a competitive national coastal and estuarine research and technology program which operates in partnership with the National Estuarine Research Reserve System (NERRS).** Funds will be used to conduct research and transform the best available science into practical innovative tools that coastal managers can use to detect, prevent and reverse the impacts of coastal pollution and habitat degradation. Coastal and estuarine managers need to better understand what tools are available, how well they work, and how best to apply them to detect, prevent, and reverse the impacts of coastal pollution and habitat degradation.

Every year, new residents and visitors pour into coastal areas, and with them come development and impacts to coastal and estuarine resources. New homes, roads, parking lots and businesses enrich local economies, but they can also compromise the very qualities that make coastal living so attractive - clean water, thriving ecosystems, and the natural beauty where the land meets the sea. Balancing the use of coastal and estuarine resources with the need to protect human and environmental health is a national challenge for coastal resource managers. To address it, coastal managers need the right science, tools, and technologies.

Using the system of 27 National Estuarine Research Reserves and state agency and university partners as living laboratories for research and development of science-based solutions to coastal pollution and habitat degradation, the requested increase will foster targeted, competitive research to understand the impacts of human activities on coasts and estuaries through the development of demonstrated and applied tools and technologies to detect, prevent, or reverse impacts. These tools and technologies can then be operationalized through the NERRS sites, National Marine Sanctuaries, and other NOAA programs. This effort will catalyze collaboration across geographic and organizational boundaries, bringing local, State, and Federal government, academia, cooperative insti-

tutes, and the private sector together to work on solutions to coastal and estuarine environmental problems.

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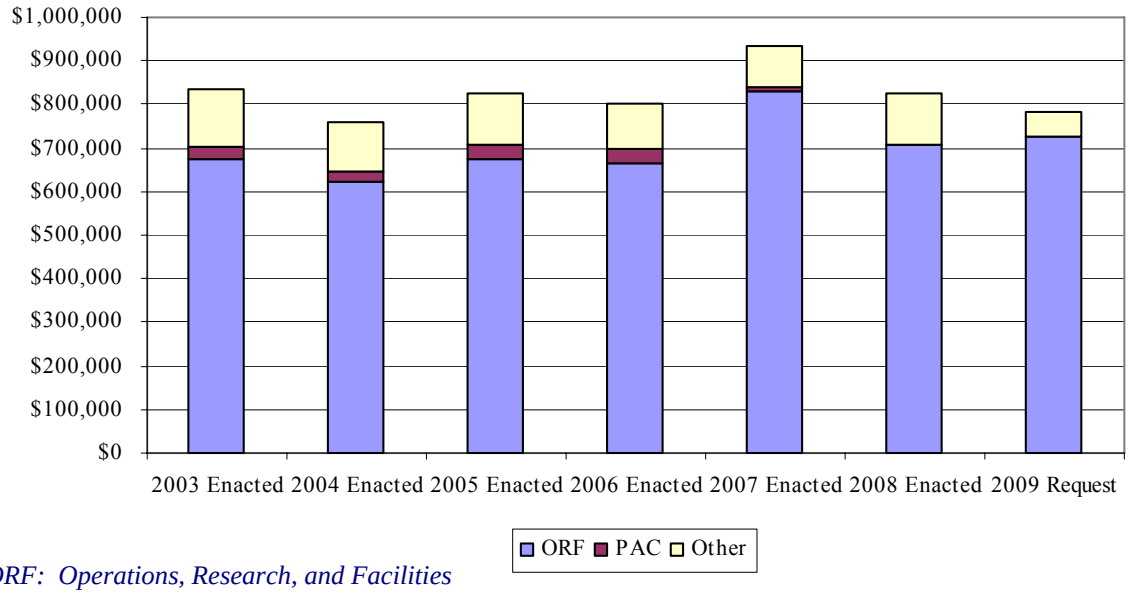
National Marine Fisheries Service

(Dollars in Thousands)	FY 2007 Enacted	FY 2008 Enacted	FY 2009 Request	Increase (Decrease)
National Marine Fisheries Service -- Operations, Research and Facilities (ORF)				
Protected Species Research and Management	$141,015	$163,992	$167,241	$3,249
Fisheries Research and Management	301,580	327,260	344,806	17,546
Enforcement and Observers	78,126	84,894	89,085	4,191
Habitat Conservation and Restoration	43,544	50,245	43,405	(6,840)
Other Activities Supporting Fisheries	213,721	81,949	79,674	(2,275)
AK Composite Research & Development Program	50,730	0	0	0
Total, National Marine Fisheries Service - ORF	828,716	708,340	724,211	15,871
Other National Marine Fisheries Service Accounts				
Total, National Marine Fisheries Service - PAC	11,190	2,021	0	(2,021)
Total, National Marine Fisheries Service - Other	94,023	118,722	58,112	(60,610)
GRAND TOTAL NATIONAL MARINE FISHERIES (Direct Obligations)	$933,929	$829,083	$782,323	($46,760)
Total FTE	2,586	2,625	2,651	26

Budget Trends, FY 2003– 2009

(Dollars in thousands)



ORF: Operations, Research, and Facilities
PAC: Procurement, Acquisition, & Construction
Other: Fishermen's Contingency Fund; Foreign Fishing Observer Fund; Fisheries Finance Program Account; Promote and Develop; Pacific Coastal Salmon Recovery Fund; Marine Mammal Unusual Mortality Event Fund; Federal Ship Financing Fund; Environmental Improvement and Restoration Fund; Limited Access System Administration Fund

NOAA's National Marine Fisheries Service (NMFS) is responsible for the management and conservation of living marine resources within the United States Exclusive Economic Zone (EEZ), the area extending from three to 200 nautical miles from the U.S. coastline. NMFS also provides critical scientific and policy leadership in the international arena and plays a key role in the management of living marine resources in coastal areas under state jurisdiction. NMFS implements science-based conservation and management measures and actions aimed at sustaining long-term use and promoting the health of coastal and marine ecosystems.

NMFS' mission is to maximize benefits to the Nation from the protection and use (commercial, recreational, and aesthetic) of living marine resources. To achieve its mandates, NMFS works to ensure the long-term health, productivity, and diversity of our Nation's ocean and coastal resources including fish, invertebrates, sea turtles, whales, and other marine and coastal species and their habitats. NMFS is charged with balancing these protection mandates with multiple uses and interests in marine resources, including commercial, recreational, and subsistence fishing; aquaculture; and marine and coastal observation and research. Successful management relies upon NMFS' strong scientific and research competency to support the challenging public decision-making processes associated with NMFS' stewardship responsibilities.

NMFS continues to develop and track key performance measures that demonstrate meaningful results to the American public. In FY 2009, NMFS will continue to focus its resources on building and maintaining fish stocks at productive levels; improving the status of overfished fisheries and endangered and threatened species and ensuring those species have adequate

population assessments and forecasts; implementing plans to rebuild, recover, and conserve major fish stocks and protected species; and restoring habitat for NOAA trust resources.

In FY 2009, NMFS will continue to support new requirements under the reauthorized Magnuson-Stevens Act including an end to overfishing, promote market-based management approaches, improve recreational fisheries data collection, reduce bycatch of protected living marine resources, and address illegal, unregulated, and unreported (IUU) fishing.

In addition, the Administration's U.S. Ocean Action Plan specifies that an effective U.S. ocean policy must be grounded in an understanding and management of ecosystems. This ecosystem approach is the principal management tool that will help NMFS meet its immediate and long-term goals, including:

- Implementing the reauthorized Magnuson-Stevens Fishery Conservation and Management Act (MSRA);
- Doubling the number of Limited Access Privilege Programs (LAPPs) to 16 by 2010;
- Building a strong aquaculture program;
- Ending overfishing;
- Providing adequate consultations under the Endangered Species Act (ESA) and Marine Mammal Protection Act (MMPA);
- Ensuring effective science and management;
- Strengthening environmental compliance for defense and energy-related activities in our oceans and coastal areas;
- Serving as an environmental leader, domestically and internationally.

NMFS will also collaborate with other agencies and organizations on an ecosystem-based approach to develop indicators of ecosystem status and trends, and on joint strategies to address priority regional ecosystem issues.

The FY 2009 President's Budget Request supports funding and program requirements to enable NMFS to be effective stewards of living marine resources for the benefit of the Nation through science-based conservation and management and the promotion of ecosystem health.

FY 2009 Budget Summary

NOAA requests a total of $782,323,000 and 2,656 FTE to support the continued and enhanced operations of the National Marine Fisheries Service. This total includes $10,145,000 for Adjustments to Base (ATB), and a net program change of $34,318,000 and 45 FTE.

ADJUSTMENTS TO BASE:

The above ATB request of $9,086,000 and 20 FTE is to fund the estimated FY 2009 Federal pay raise of 2.9 percent and annualize the FY 2008 pay raise of 3.5 percent. Program totals will provide inflationary increases for non-labor activities, including service contracts, utilities, field office lease payments, and rent charges from the General Services Administration.

NMFS – ORF PROGRAM CHANGE HIGHLIGHTS FOR FY 2009:

Program changes are summarized at the sub-activity level below. Detailed numeric breakouts are located in Chapter 6, *Special Exhibits*. Descriptions of each request by line item are located in the NOAA FY 2009 Technical Budget.

The Reauthorized Magnuson-Stevens Fishery Conservation and Management Act (MSRA)

NOAA requests $31.8 million for a total of $45.4 million for activities supporting the mandates of the reauthorized Magnuson-Stevens Act of 2006. The new requirements under MSRA to end overfishing in federal waters include improving fisheries management and data collection procedures, employing market-based approaches to management, addressing issues in management of International fisheries, and expanding the use of ecosystem-based approaches to management. The major components of this initiative are detailed in the sub-activities below.

Protected Species Research and Management $167,241,000

A net increase of $10,097,000 and 7 FTE above the base is requested in the Protected Species Research and Management sub-activity, for a total of $167,241,000 and 670 FTE. Of this increase, NOAA requests $1,261,000 and 0 FTE to increase the base level of funding for other protected species programs to that recommended in the FY 2008 President's Budget.

- **Marine Mammals: NOAA requests an increase of $1,500,000 and 7 FTE for a total of $41,340,000 to conduct conservation and recovery actions for marine mammals.** This increase will maintain efforts to reduce the bycatch of marine mammals in fisheries, implement non-fishery-related conservation actions, respond to strandings of marine mammals, and improve permit issuance efficiency. Specific activities supported by these funds include stranding and unusual mortality event (UME) response coordination, collection and analysis of samples from strandings/UMEs, protected species stock assessments, Take Reduction Team activities, and permitting. This increase will enhance NMFS capability to

conserve and recover marine mammals, particularly for developing precise estimates of population status and identifying and mitigating human causes of injury and death of marine mammals. These funds will also enable NMFS to sustain the reduction in time required for processing permits that has been achieved since 2005.

- **Pacific Salmon: NOAA requests a net increase of $3,169,000 for a total of $62,879,000 for Pacific Salmon.** This net increase includes increases of $9,224,000 for the Pacific Salmon ESA Recovery and Research line item. The ESA Pacific salmon program conducts ESA listings; develops recovery plans; issues research, enhancement, and incidental take permits; develops habitat conservation plans; completes ESA section 7 consultations; and implements recovery actions for Pacific salmon. The program provides a foundation for Pacific salmon recovery on the West Coast and at the requested level will allow NOAA to meet its basic ESA requirements and maintain the core activities of baseline monitoring . This request also includes a decrease of $6,055,000 to the Columbia River Biological Opinion to address higher priority needs.

- **Atlantic Salmon: NOAA requests $4,167,000 for a total of $9,996,000 to support the recovery of endangered Atlantic salmon and to address habitat needs in key watersheds historically used by Atlantic salmon.** Due to habitat impacts such as dam construction, pollution, and over-harvesting, Atlantic salmon populations have declined precipitously throughout their range. With the requested funds, NOAA will support ecosystem-based habitat restoration efforts to improve habitat for all stages of the salmon life cycle. NOAA will provide technical assistance to projects addressing river barriers and habitat threats that prevent Atlantic salmon from utilizing upstream habitat critical for reproduction and growth. This funding supports the Atlantic Salmon Recovery Plan and will supplement ongoing management and research recovery efforts.

Fisheries Research and Management **$344,806,000**

A net increase of $48,869,000 and 34 FTE above the base is requested in the Fisheries Research and Management sub-activity, for a total of $344,806,000 and 1,485 FTE. Of this increase, NOAA requests $21,927,000 and 12 FTE to increase the base levels of funding for various ongoing programs within this sub-activity to that recommended in the FY2008 President's Budget.

- **Fisheries Research and Management Programs:** $21,505,000 and 19 FTE in net increases above the base, for a total of $159,585,000 and 1,386 FTE, are requested under the Fisheries Research and Management line item. Of this increase, $6,629,000 and 0 FTE to increase the base level of funding for other protected species programs to that recommended in the FY 2008 President's Budget.

  - **NOAA requests an increase of $5,050,000 and 0 FTE for a total of $6,050,000 for Council Committees, Annual Catch Limits and Stipends to support the new re-**

quirements of the Magnuson Stevens Fishery Conservation and Management Act (MSRA). NMFS requests an increase of $5,050,000 to enhance the independent peer-review process for scientific data required to appropriately set the annual catch limits for all managed fisheries. To reach the goal of ending overfishing by 2010 required under MSRA, NMFS will support the payments or stipends to the Councils' Scientific and Statistical Committees (SSC) and enhance the interaction with the domestic Councils. This request will support the independent peer review of scientific data (including stock assessments), and will provide recommendations for the sustainable management of marine fisheries resources that are under NMFS purview. The funds will also support stipends for non-government-employee SSC members to cover their participation at meetings so these committees can attract and retain high-quality scientists. In addition, this funding will provide support to NOAA to ensure that annual catch limits are developed and implemented consistently with the administrative procedural requirements of the National Environmental Policy Act, the Magnuson-Stevens Act, the Endangered Species Act, the Marine Mammal Protection Act, and other laws and Executive Orders.

- **NOAA requests an increase of $250,000 and 1 FTE for a total of $750,000 for the Pacific Whiting Treaty implementation.** NMFS will use the requested funding to work with its Canadian counterparts to establish an advisory panel, joint management and technical committees, as well as the scientific review group required for implementation of the Pacific Whiting Treaty as required under the reauthorized Magnuson-Stevens Act. This process will lead to a sustainable Pacific Hake/Whiting fishery and sustained economic benefits to the U.S. fleet.

- **NMFS requests an increase of $1,000,000 and 3 FTE for a total of $1,000,000 to provide leadership for the U.S. delegation to the Western and Central Pacific Fisheries Commission (WCPFC) as mandated by MSRA.** The WCPFC is a new regional fishery management organization responsible for the conservation and management of highly migratory fish stocks in the Western and Central Pacific Ocean. NMFS will work to ensure the long-term sustainability of highly migratory fish stocks in the Convention area and ensure that measures taken to achieve this objective are based on the best scientific evidence available.

- **NOAA requests an increase of $4,826,000 and 8 FTEs for a total of $6,000,000 to**

support the Administration's goal to double the number of Limited Access Privilege Programs (LAPPs). LAPP programs—e.g., individual fishing quota (IFQ), community development, cooperative, and area-based quota programs— can reduce overcapacity and end the "race for fish." The Administration's *U.S. Ocean Action Plan* committed to the greater use of these market-based systems for fisheries management, and subsequently set a goal to double the eight programs in place in 2006 to 16.

- **NMFS is requesting an increase of $3,750,000 and 0 FTE for a total of $5,000,000 to restore funding to improve forecasting of marine ecosystem responses to management strategies through the Comparative Analysis of Marine Ecosystems Organization (CAMEO).** This activity is a near-term priority of the Administration's Ocean Research Priorities Plan. This request will support research focused on developing cutting-edge quantitative models and science-based forecasting tools to assess how marine ecosystems respond to human impacts and environmental variation. NOAA's request for CAMEO will improve the management of the nation's marine ecosystems, as recommended in the Administration's *U.S. Ocean Action Plan,* by advancing our understanding of the underlying dynamics affecting ecosystem processes at various scales. This request will not only provide a greater basic understanding of these processes but will support enhanced coordination between resource management communities and the ocean science community.

- **Expand Stock Assessments: NMFS requests an increase of $8,484,000 and 10 FTE for a total of $8,484,000 to initiate new and expand existing sampling programs and management procedures to end overfishing in all fisheries by 2011.** NMFS' stock assessments provide the scientific and technical basis for setting Annual Catch Limits, a requirement of the Magnuson-Stevens Fishery Conservation and Management Reauthorization Act of 2006 and an integral component of the President's U.S. Ocean Action Plan. NMFS will update fish stock assessments from to produce the best technical advice to the Fishery Management Councils and support the implementation of Annual Catch Limits (ACL). This increase will also support fishery independent surveys, expand fishery-dependent biological sampling at sea and in ports, and develop enhanced stock assessment models to improve ACL forecasts. This initiative provides high quality scientific data for NMFS and Regional Fishery Management Councils to promote the use of a market-based system for fisheries management. This investment will help prevent overfishing for additional fish stocks and provide more timely determinations when overfished stocks have been rebuilt. NMFS' enhanced stock assessment research will provide a comprehensive understanding of living marine ecosystems to meet the environmental, economic, and public safety needs of the nation.

- **Fisheries Statistics: NOAA requests an increase of $3,015,000 and 0 FTE for a total of $6,515,000 to complete the final implementation phase of a new registry system for recreational fishermen and for-hire fishing vessels by January 1, 2009.** NMFS must meet this congressionally-mandated deadline to execute the new requirements of the

Magnuson-Stevens Fishery Conservation and Management Reauthorization Act of 2006 pertaining to improvements in data collection, the redesign of survey and statistical methodologies, and coordination between state and federal programs. This request will enable NMFS to launch a marine recreational information program that provides the most accurate data on recreational catch and fishing effort. High-quality data on recreational fishing trends will lead to confident decision-making about how best to conserve marine ecosystems for present and future generations. NMFS will lead state and federal cooperative efforts to establish regionally-based federal registry programs for anglers and for-hire fishing vessels. NMFS will also implement appropriate methodological improvements that will utilize the registries and improve the comprehensiveness, accuracy, and timeliness of recreational fisheries statistics needed to support fish stock assessments and fishery management decisions.

- **Bycatch Reduction: $567,000 and 0 FTE for a total of $567,000 is requested to implement the MSRA-mandated Bycatch Reduction Engineering Program to reduce mortality of non-target species and keep fisheries open by minimizing impacts to protected species**. Bycatch of non-target species and habitat damage from fishing gear are two of the most serious impacts of fishing activities. These funds will support development of gear technology to reduce bycatch of fish, seabirds, and protected species such as sea turtles and marine mammals. NOAA will provide grants to partner organizations to develop bycatch reduction techniques and encourage adoption of these new gears and fishing techniques to reduce adverse fishing gear effects.

Enforcement and Observers/Training **$89,085,000**

A net increase of $3,179,000 and 4 FTE above the base is requested in the Enforcement and Observers/Training subactivity, for a total of $89,085,000 and 255 FTE. Of this increase, NOAA requests $2,095,000 and 0 FTE to increase the base levels of funding for various on-going programs within this subactivity to that recommended in the FY 2008 President's Budget.

- **Enforcement: NMFS requests an increase of $1,084,000 and 4 FTE for a total of $2,584,000 for Enforcement and Surveillance. This funding will allow NOAA to address the Illegal, Unregulated and Unreported (IUU) fishing requirements in the Reauthorized Magnuson-Stevens Act.** Specifically, the funding will support NOAA's efforts to control and reduce IUU fishing on the high seas by reducing the amount of IUU product imported into the United States. The increase will provide for con-

tinued active participation within Regional Fishery Management Organizations; and will expand collaboration with the U.S. Coast Guard, U.S. Customs and Border Protection, the U.S. Fish and Wildlife Service, the U.S. Food and Drug Administration, and the U.S. Department of Agriculture in their efforts to control illegal trade in regulated products from living marine resources.

Habitat Conservation and Restoration **$43,405,000**

A net decrease of $1,149,000 and 0 FTE from the base is requested in the Habitat Conservation and Restoration sub-activity, for a total of $43,405,000 and 234 FTE. Of this increase, NOAA requests $1,496,000 and 0 FTE to increase the base levels of funding for various on-going programs within this subactivity to that recommended in the FY 2008 President's Budget.

- **Sustainable Habitat Management: NMFS requests an increase of $1,500,000 and 0 FTE for a total of $1,500,000 to implement the new Deep Coral Research and Technology Program mandated by Congress in the reauthorized Magnuson-Stevens Act.** NMFS will use funding to understand and provide information needed to protect deep coral habitats. Deep sea corals serve as habitat for rich and diverse fish and invertebrate communities, including some commercially important fish species, such as grouper, snapper, sea bass, rockfish, and crab. The funds sought will support pilot projects undertaken by NOAA and in coordination with the Fishery Management Councils, other federal agencies and research institutions to understand the ecology of deep sea coral communities, to monitor fishing and other activities in locations where deep-sea corals are known or are likely to occur, to locate and map locations of deep-sea corals, and to report annually on steps taken by NOAA to the public.

- **Fisheries Habitat Restoration: NOAA requests an increase of $5,397,000 to the Open Rivers Initiative for a total of $7,000,000 to restore stream miles of fish habitat through watershed-level projects with multiple fish passage opportunities.** The ORI builds on NOAA's existing capabilities in barrier removal projects and employs a cooperative model (i.e., working with state and local agencies, NGOs, and dam owners) to remove dam and river barri-

ers in coastal states. The $5,397,000 increase will address on-the-ground river enhancements that restore lost fish habitat. The model catalyzes partnerships at the national and local levels by providing funding, technical assistance, and encouraging volunteer stewardship. Using a community-based model, NOAA has removed more than 80 dams and stream blockages, opening 700 miles of high quality river habitat for migratory fish. These projects enhance river and coastal ecosystems and provide benefits to communities residing near these barriers.

- **Penobscot River Habitat Restoration:** NOAA requests a decrease of $10,000,000 and 0 FTE from the Fisheries Habitat Restoration line. This requested decrease reflects the completion of the purchase of three dams on the Penobscot river and will allow NOAA to conduct other fisheries habitat restoration activities.

Other Activities Supporting Fisheries **$79,674,000**

A net increase of $5,322,000 and 0 FTE above the base is requested in the Other Activities Supporting Fisheries subactivity, for a total of $79,674,000 and 7 FTE. Of this increase, NOAA requests $3,578,000 and 0 FTE to increase the base levels of funding for various on-going programs within this subactivity to that recommended in the FY 2008 President's Budget.

- **Cooperative Research: NMFS requests a net increase of $1,247,000 and 0 FTE for a total of $11,455,000 for Cooperative Research to expand and fully implement a nationwide, regionally based cooperative research and management program as directed by the reauthorized Magnuson-Stevens Act.** This increase will provide a means for commercial and recreational fishermen to become involved in the collection of fundamental fisheries information to support the development and evaluation of NOAA's management options for recreational and commercial fisheries. NMFS will support critical needs identified by the Councils with priority to the following focus areas: data collection that will improve, supplement, or enhance stock assessments; estimates of bycatch or post-release mortality occurring in a fishery; and conservation engineering projects designed to reduce bycatch.

- **Antarctic Research: NOAA requests an increase of $497,000 and 0 FTE for a total of $2,639,000 for the Antarctic Research to support NOAA's goal of managing Southern Ocean resources through an ecosystem approach.** The 2009 field season represents the 23rd year of NOAA's only ecosystem-based Antarctic program collecting biological and oceanographic information as a part of the U.S. commitment to the international treaty to preserve

the Antarctic - the Convention for the Conservation of Antarctic Marine Living Resources (CCAMLR). This request will provide funds for increased ship charter days including technical staffing and increased scientific personnel costs enabling the continuation of one of NOAA's longest running data streams on the Antarctic marine ecosystem. The principle mission of this research is to collect the scientific information needed to detect, monitor, and predict the effects of harvesting and changing environmental conditions on targeted species (krill and fishes) and protected species (marine mammals and seabirds). Program scientists operate land-based predator research and ship-based research, conducting oceanographic, trawling, acoustic biomass sensing, and small boat operations to examine the relationship between krill, krill predators, finfish, and key environmental variables under changing sea ice conditions.

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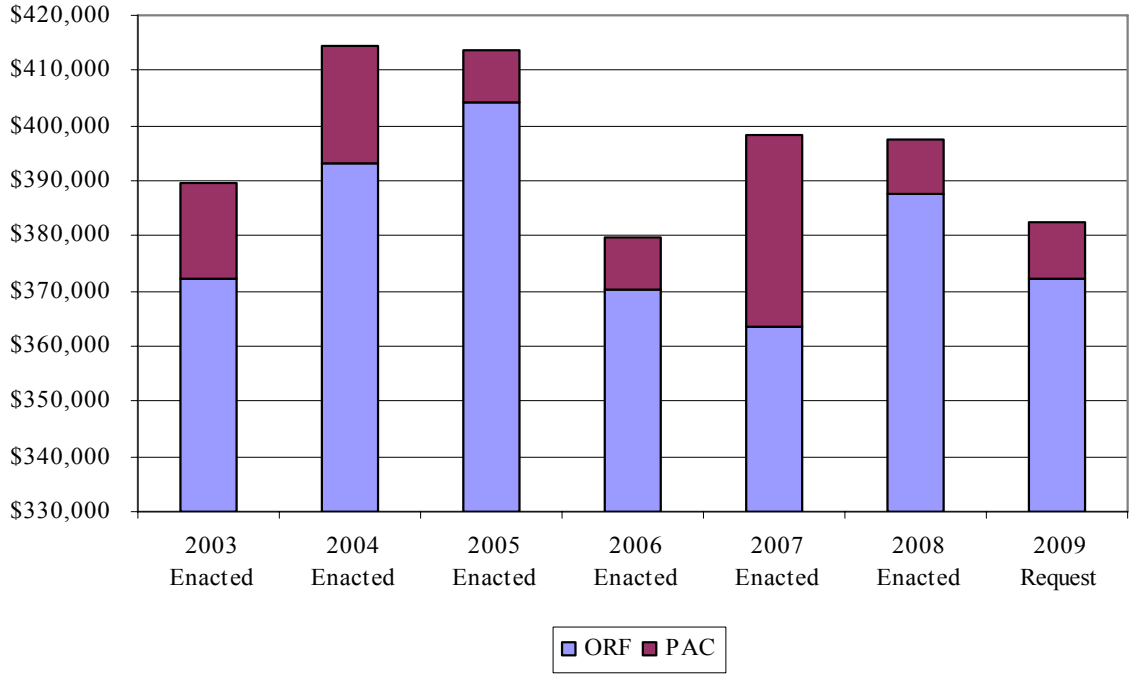
Office of Oceanic & Atmospheric Research

(Dollars in Thousands)	FY 2007 Enacted	FY 2008 Enacted	FY 2009 Request	Increase (Decrease)
Office of Oceanic & Atmospheric Research -- Operations, Research and Facilities (ORF)				
Climate Research	$176,296	$192,812	$195,477	$2,665
Weather and Air Quality Research	58,238	52,070	57,561	5,491
Ocean, Coastal, and Great Lakes Research	116,029	130,401	106,204	(24,197)
Information Technology, R&D, and Science Education	12,975	12,659	13,028	369
Total, Office of Oceanic & Atmospheric Research - ORF	363,538	387,942	372,270	(15,672)
Other Office of Oceanic & Atmospheric Research Accounts				
Total, Office of Oceanic & Atmospheric Research - PAC	34,900	10,131	10,379	248
Total, Office of Oceanic & Atmospheric Research - Other	0	0	0	0
GRAND TOTAL OFFICE OF OCEANIC & ATMOSPHERIC (Direct Obligations)	$398,438	$398,073	$382,649	(15,424)
Total FTE	714	717	735	18

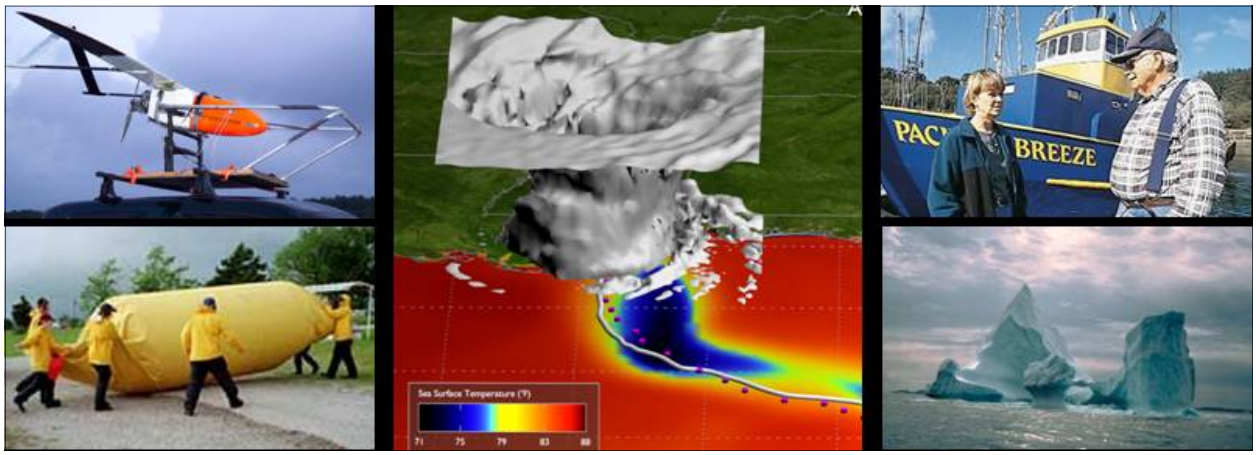
Budget Trends, FY 2003– 2009

(Dollars in thousands)



ORF: Operations, Research, and Facilities
PAC: Procurement, Acquisition, & Construction

www.oar.noaa.gov



The primary focus for research and development within NOAA is the Office of Oceanic and Atmospheric Research (OAR), often referred to as NOAA Research. OAR conducts the scientific research, environmental studies, and technology development needed to improve NOAA's operations and broaden our understanding of the Earth's atmospheric and marine environmental systems. OAR currently consists of 7 internal research laboratories and manages or facilitates extramural research at 30 National Sea Grant colleges, universities, and research programs; several undersea research centers; a research grants program through the Climate Program Office; and 13 cooperative institutes with academia.

OAR's activities are organized along four themes: (1) Climate Research; (2) Weather and Air Quality Research; (3) Ocean, Coastal and Great Lakes Research; and (4) Information Technology R&D and Science Education. The goals of these four theme areas are to:

- Understand complex climate systems to improve predictions;
- Understand atmospheric events to assist in saving lives and property worldwide;
- Explore, investigate, and understand the complexities of all our coastal, Great Lakes, and ocean habitats and resources;
- Accelerate adoption of advanced computing, communications, and information technology throughout NOAA and support science education, expanding the pipeline of potential future environmental scientists and researchers for industry, academia, and government.

The research is carried out through a national network of more than fifty Federal laboratories and university-based research programs. With this diverse research "tool kit," OAR:

- Provides national and international leadership on critical environmental issues;
- Addresses the environmental R&D needs of internal NOAA customers, states, industry, the Department of Commerce, and other Federal agencies.

OAR researchers represent the cutting edge in sustained, long-term environmental observations and modeling; their contributions enhance the health and economic well-being of society.

FY 2009 Budget Summary

NOAA requests a total of $382,649,000 and 735 FTE to support the continued and enhanced operations of OAR. The total includes $8,914,000 for Adjustments to Base (ATB), and a net program change increase of $10,042,000 and 0 FTE.

ADJUSTMENTS TO BASE:

NOAA requests a net increase of $3,071,000 and 21 FTE to fund adjustments to base across all accounts in the OAR activities. This increased program total will fund the estimated FY 2009 Federal pay raise of 2.9 percent and annualize the FY 2008 pay raise of 3.5 percent. Program totals will provide inflationary increases for non-labor activities, including service contracts, utilities, field office lease payments, and rent charges from the General Services Administration

OAR – ORF PROGRAM CHANGE HIGHLIGHTS FOR FY 2009:

Program changes are summarized at the sub-activity level below. Detailed numeric breakouts are located in Chapter 6, *Special Exhibits*. Descriptions of each request by line item are located in the NOAA FY 2009 Technical Budget.

Climate Research **$195,477,000**

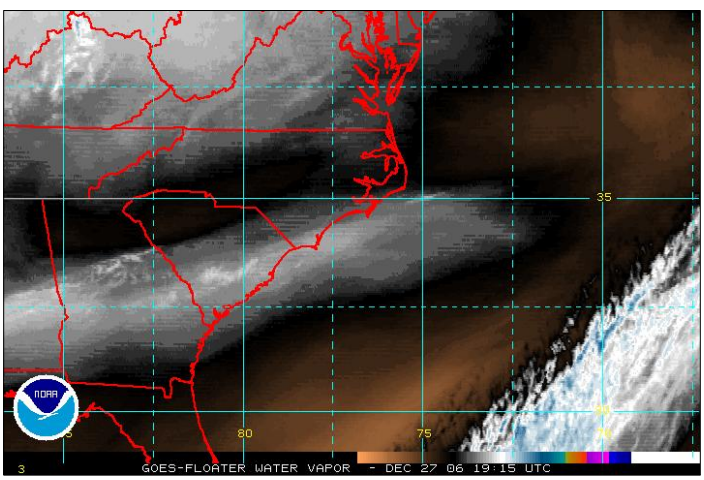
An increase of $5,270,000 and 0 FTE above the base is requested in the Climate Research subactivity, for a total of $195,477,000 and 354 FTE. Of this increase, NOAA requests $1,084,000 and 0 FTE to increase the base levels of funding for various on-going programs within this subactivity to that recommended in the FY 2008 President's Budget.

Competitive Research Program: NOAA requests an increase of $4,186,000 and 0 FTE above the base for a total of $134,702,000 and 102 FTE under the Competitive Research Program line item of the Climate Research subactivity. This increase is comprised of four parts:

- **National Integrated Drought Information System (NIDIS): Improving NOAA Climate Forecasts. NOAA requests an increase of $2,000,000 and 0 FTE for a total of $10,365,000 to develop and bring into operation by 2010 the next generation Climate Forecast System (CFS), which will lead to improved NOAA climate forecast products.** In response to the NIDIS Act of 2006, NOAA has taken the lead on the development and implementation of a National Integrated Drought Information System in partnership with other Federal, regional and state

organizations. Persistent periods of drought have a cumulative effect on humans and society with significant impacts on the economies of the affected regions in the United States. Recent evidence points to the possibility that U.S. droughts may intensify over the next 10 years, and during the next 10-25 years scientists believe the U.S. may experience more frequent and prolonged droughts, which may cover a larger portion of the U.S. This initiative will strengthen cooperative partnerships between NOAA operational centers and the broader research community and allow NOAA to facilitate and enhance the transition of research advances in drought monitoring and prediction to further improve its climate forecasts and increase the scope and applicability of those forecasts for the external user community.

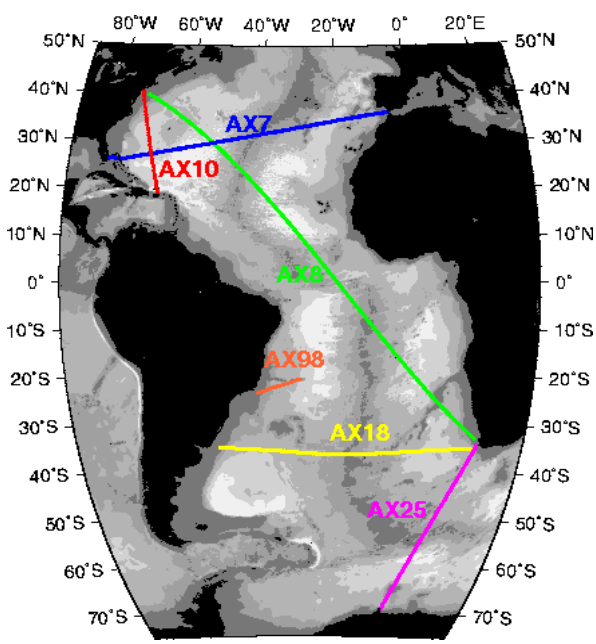
- **Water Vapor Process Research. NOAA requests an increase of $880,000 and 0 FTE for a total of $880,000 to initiate and enhance measurements of water vapor in the lower atmosphere (mid and upper troposphere) to elucidate its role in altering forcing by greenhouse gases, aerosols and clouds.** Water vapor has the potential to contribute to global climate change because it: (1) accounts for most of the greenhouse effect, (2) amplifies the greenhouse warming capability ascribed to CO_2 and other greenhouse gases, (3) enhances the ability of aerosols to induce climate change, (4) plays a crucial role in aerosol-cloud interactions, (5) alters the concentrations of other greenhouse gases, and (6) is a key component for calculating climate feedbacks. Furthermore, it is becoming increasingly apparent that water vapor is also an anthropogenic climate-forcing agent. Yet, the distribution of water vapor in the mid-to-upper troposphere and the lower stratosphere is poorly mapped out for climate purposes and is not well represented in models. The funding requested will be used to develop and deploy instruments to measure water vapor and conduct impact analysis and assessments to develop and improve models. NOAA is uniquely placed to address an important sub-set of the many needed efforts in this area because of its technical expertise in measuring water vapor, its ability to deploy instruments on NOAA aircraft, and its scientific expertise to elucidate the processes involved. Further, NOAA can conduct this work in a highly cost-efficient manner because these measurements can be carried out during existing on-going NOAA missions (e.g., G-IV flights as a part of the Winter Storm Program, the field studies using WP-3 and Twin Otter aircraft).



- **Analysis of Unmanned Aircraft Systems (UAS) Data from the Arctic Test Base. NOAA requests $308,000 and 0 FTE for a total of $308,000 to provide focused applica-**

tion of data from Unmanned Aircraft Systems (UAS) to be deployed from the Arctic Test Base. Specifically, NOAA believes deployment of UAS from the Arctic Test Base will provide a significant new type of data to complement that available from satellites and infrequent ship-based observations of the Arctic atmosphere. The analyses to be conducted will also demonstrate the utility of UAS in climate observations in the Arctic and the value of these observations in improving the output from global and regional climate models and forecasts.

- **Assessing Atlantic Meridional Overturning Circulation Variability: Implications for Rapid Climate Change.** NOAA requests an increase of $998,000 and 0 FTE to improve understanding of the mechanisms behind fluctuations of the Atlantic Meridional Overturning Circulation (A-MOC) and the impact of those fluctuations. This request, added to base and redirected funding, will support a $5,000,000 effort focused on one of the four key near-term priorities outlined in the draft implementation plan of the Ocean Action Information Plan. Decadal variability in the Atlantic Ocean has been linked to the recent upswing in Atlantic hurricane seasons, persistent droughts in surrounding continental areas, and enhanced warming in the Arctic. Although these changes were not anticipated, their persistence would require us to make major adaptations. This decadal variability is partly linked to changes in the A-MOC, an element of the global-scale ocean circulation responsible for long-term climate variations. A-MOC changes are thought to play a key role in the abrupt changes evident in the paleoclimate record. This research activity will lead to new capabilities for monitoring and predicting A-MOC changes, which serve as an abrupt-change early-warning system. This effort will build upon NOAA's existing research, modeling and forecasting in this region. Specifically, $2,500,000 of this total program effort will cover research to describe the A-MOC, its variability, and its critical processes. An additional $1,750,000 will be used to develop now-casting capabilities and experimental products critical to predicting the current A-MOC state as well as changes on a decadal scale and assessing the potential for abrupt changes. Finally, NOAA will use $750,000 to assess potential decadal impacts of rapid A-MOC changes on ecosystems, car-



bon budgets, regional sea-level changes, and regional climate.

Weather and Air Quality Research **$57,561,000**

NOAA requests an increase of $4,214,000 and 0 FTE above the base in the Weather and Air Quality Research subactivity for a total of $57,561,000 and 205 FTE. Of this increase, NOAA requests $214,000 and 0 FTE to increase the base levels of funding for various on-going programs within this subactivity to that recommended in the FY 2008 President's Budget.

Weather & Air Quality Research Laboratories and Cooperative Institutes: NOAA requests an increase of $4,000,000 and 0 FTE above the base for a total of $49,089,000 and 186 FTE under the Weather & Air Quality Research Laboratories and Cooperative Institutes line item:

- **Unmanned Aircraft Systems (UAS). NOAA requests an increase of 0 FTE and $3,000,000 for a total of $6,000,000 to implement an end-to-end initiative to accelerate research, development, and transition to operations of innovative new observational platforms and forecast tools to advance NOAA's Earth-system product, service, and information enterprise.** Specifically, NOAA will develop, test, and evaluate UAS platforms to determine their role in filling critical observational gaps currently impeding NOAA's environmental monitoring and prediction capabilities. High-altitude long-endurance (HALE) tests will be conducted to explore how best to fill gaps in global observations in some of the most remote areas of the planet, including the Arctic, Pacific and Atlantic Oceans. This UAS initiative advances the development of 21st century observing systems and forecast tools and accelerates their infusion into the operational forecast environment. UAS platforms represent a collaborative effort of several organizations within NOAA, including NOAA laboratories, National Weather Service, National Ocean Service, Marine and Aircraft Operations, and Cooperative Institutes. This initiative is linked closely to the needs of multiple Federal, state, and local agencies. Specific applications that will be explored through this FY'08 investment include:

- *Climate:* The proposed UAS project will test two important climate issues: (1) Climate models show that the upper atmosphere over the Arctic Ocean should have warmed by 3° F by late in the current decade. Existing measurements taken at different spatial loca-

tions do not allow comparison of temperatures at the same location over time. By dropping sondes at locations chosen during the International Polar Year, we can address this important question of whether or not the models are right. (An additional $308,000 is requested under the Climate Competitive Research Program for enhanced analyses of the data resulting from these experiments.) (2) Similarly, the change of water vapor in the upper and lower atmosphere over the tropics is crucial to evaluating climate models. The proposed Pacific test will measure water vapor with higher accuracy and denser spatial specificity than has been possible in the past and will test the ability of UASs to monitor atmospheric rivers, which currently are poorly observed but yet are believed to be crucial to both the global water budget and weather prediction.

- *Weather Research:* The potential for UAS to aid in hurricane reconnaissance and research will be evaluated. The central Pacific UAS project will test the ability of UAS to fill gaps in satellite data that currently limit our ability to monitor water vapor transport over the ocean.

- *Fisheries Enforcement:* Over parts of both Alaska and Hawaii, NOAA will test new concepts of fisheries enforcement using advanced sensors on UAS platforms.

- *Coastal Zone Studies:* NOAA will test and evaluate UAS applications in Marine Sanctuaries for monitoring whale migrations and other phenomena occurring over extensive areas that currently cannot be monitored using manned ships or aircraft.

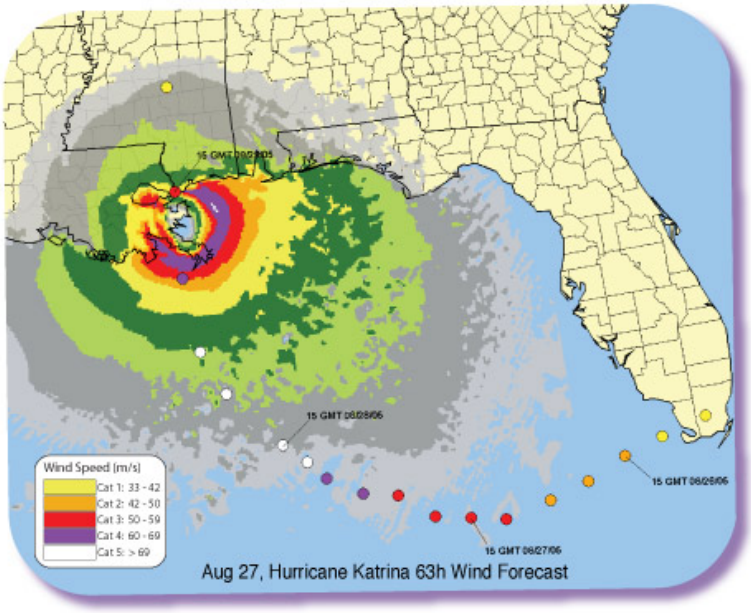
- **Improvements to Operational Weather Forecasts: NOAA requests an increase of $1,000,000 and 0 FTE for a total of $1,000,000 to accelerate the rate at which hurricane forecasts improve through the five–day forecast window.** The primary focus of this increase is to improve the accuracy of the storm track and intensity forecasts. To ensure that innovative research is utilized in an operational setting as quickly as possible, NOAA has developed the Numerical Prediction Developmental Testbed Center (DTC). The DTC is a facility where operational numerical weather prediction codes and the latest research codes are maintained and made available to scientific researchers in academic institutions and non-NOAA operational centers. The DTC will enable the research and operational communities to collaborate in accelerating improvements in operational numerical weather forecasting, first with hurricane prediction and, eventually, with other numerical forecasting problems.

  Specifically, the DTC will:

  - Serve as a library/support center for the Weather Research Forecast (WRF) operational model computer codes for improved hurricane forecasting and for short-range (24-hour) and medium-range (days 1-5) weather forecasting. The codes will include ocean and wave models that are coupled to the hurricane model. In addition to the codes, the research & operational communities will be able to access tutorials, docu-

mentation, and responses to user questions.

- Acquire model computer code from the research and development communities, test this code, and certify it as Reference code.
- Establish and maintain a test environment complete with test data sets and corresponding model outputs to allow researchers to evaluate and compare their proposed research model improvements.
- Perform formal configuration computer code management to maintain the integrity of the Reference Code library.



Hurricane Katrina was the deadliest hurricane to strike the US since 1928. Approximately 1,300 deaths were documented. Hurricanes Katrina, Rita, and Wilma produced a record 2.773 million insurance claims. Combined insured losses for these three hurricanes are estimated at $50.8 billion. The DTC is designed to accelerate forecast improvements to mitigate such loss of life and property. Further, DTC is designed to ensure that promising research results are translated quickly into forecast improvements by the operational community. The DTC will take better advantage of NOAA, DOD, and NSF basic, applied, and operational research model investments, helping to ensure projected gains in hurricane forecast improvements (6% improvement per year out to 5 days) and NWS's overall success in accelerating Hurricane forecast improvements.

Information Technology R&D **$13,028,000**

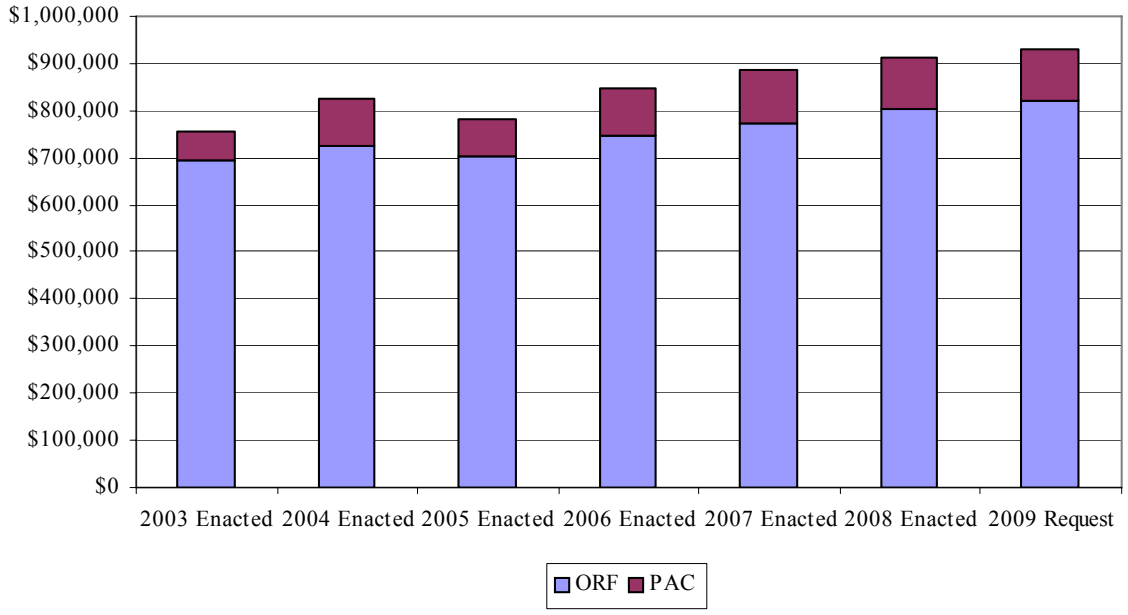
NOAA requests an increase of $310,000 and 0 FTE above the base in the Information Technology R&D subactivity for a total of $13,028,000 and 13 FTE. This increase restores funding to

National Weather Service

(Dollars in Thousands)	FY 2007 Enacted	FY 2008 Enacted	FY 2009 Request	Increase (Decrease)
National Weather Service -- Operations, Research and Facilities (ORF)				
Operations and Research	$684,342	$711,252	$720,478	$9,226
Systems Operation & Maintenance (O&M)	90,621	94,042	98,355	4,313
Total, National Weather Service - ORF	774,963	805,294	818,833	13,539
Other National Weather Service Accounts				
Total, National Weather Service - PAC	109,429	106,112	111,858	5,746
Total, National Weather Service - Other	0	0	0	0
GRAND TOTAL NATIONAL WEATHER SERVICE (Direct Obligations)	$884,392	$911,406	$930,691	$19,285
Total FTE	4,656	4,658	4,639	(19)

Budget Trends, FY 2003– 2009

(Dollars in thousands)



ORF: Operations, Research, and Facilities
PAC: Procurement, Acquisition, & Construction

The National Weather Service (NWS) is the Nation's first line of defense against severe weather. The NWS provides weather, hydrologic, and climate forecasts and warnings for the United States, its territories, adjacent waters, and ocean areas for the protection of life and property and the enhancement of the national economy. NWS data and products form a national information database and infrastructure that can be used by other government agencies, the private sector, the public, and the global community.

The United States is one of the most severe-weather-prone countries on Earth. Each year, Americans cope with an average of 10,000 thunderstorms, 5,000 floods, 1,000 tornadoes, and six deadly hurricanes. Some 90 percent of all Presidentially-declared disasters are weather-related, causing approximately 500 deaths per year and $14 billion in damage. According to the American Meteorological Society, weather is directly linked to public safety, and about one-third of the U.S. economy (about $3 trillion) is weather-sensitive.

More and more sectors of the U.S. economy recognize the impacts of weather, water, and climate on their businesses and are becoming more sophisticated at using weather, water, and climate information to make better decisions. To meet this growing demand for information and to improve the timeliness and accuracy of warnings for all weather- related hazards, the NWS will continue to enhance observing capabilities; improve data assimilation to effectively use all

the relevant data collected; improve collaboration with the research community; make NWS information available quickly, efficiently, and in a useful form (e.g., the National Digital Forecast Database); and include information on forecast uncertainty to help customers make fully informed decisions.

With approximately 4,700 employees throughout 122 weather forecast offices, 13 river forecast centers, nine national centers, and supporting offices around the country, NWS provides a national infrastructure to gather and process data worldwide from the land, sea, and air. This infrastructure enables data collection using technologies such as Doppler weather radars; satellites operated by NOAA's National Environmental Satellite, Data, and Information Service (NESDIS); data buoys for marine observations; surface observing systems; and instruments for monitoring space weather and air quality. These data feed sophisticated environmental prediction models running on high-speed supercomputers. Our highly trained and skilled workforce uses powerful workstations to analyze all of these data to issue climate, public, aviation, marine, fire weather, air quality, space weather, river and flood forecasts and warnings around-the-clock. A high-speed communications hub allows for the efficient exchange of these data and products between NWS components, partners and customers. NWS forecasts and warnings are rapidly distributed via a diverse dissemination infrastructure including NOAA Weather Radio. Finally, customer outreach, education, and feedback are critical elements to effective public response and improvements to NWS services.

The FY 2009 President's Budget Request supports the funding and program requirements necessary to address established NOAA strategic goals and sets NWS on a path to achieve its vision to: produce and deliver forecasts that can be trusted, use cutting-edge technologies, provide services in a cost-effective manner, strive to eliminate weather-related fatalities, and improve the economic value of weather, water, and climate information.

FY 2009 Budget Summary

NOAA requests a total of $930,691,000 and 4,639 FTE to support the continued and enhanced operations of the National Weather Service. This total includes $9,840,000 for Adjustments to Base (ATB), and a net program change of $37,165,000 and 0 FTE above the FY 2008 President's Budget.

ADJUSTMENTS TO BASE:

The above ATB request includes a net increase of $13,379,000 and 1 FTE to fund the estimated FY 2009 Federal pay raise of 2.9 percent and annualize the FY 2008 pay raise of 3.5 percent. Program totals will provide inflationary increases for non-labor activities, including service contracts, utilities, field office lease payments, and rent charges from the General Services Administration.

NWS also requests the following transfers between line offices or appropriations for a net change to NOAA of zero:

- $5,857,000 and 17 FTE is transferred from the US Weather Research Program (USWRP) within the Local Warnings and Forecasts Base PPA in Operations, Research, and Facilities to the NOAA Line Office of Ocean and Atmospheric Research .
- $500,000 and 0 FTE is transferred from the Office of Oceanic and Atmospheric Research USWRP to the Local Warnings and Forecast Base PPA in Operations, Research, and Facilities for the Meteorological Assimilation Data Ingest System (MADIS).
- $210,000 and 2 FTE are transferred from Local Warnings and Forecasts Base PPA in Operations, Research, and Facilities to the NOAA Wide Corporate Services Program Support.
- $500,000 and 0 FTE is transferred from the Cooperative Observer Network Modernization (NERON) PPA in Procurement, Acquisition, and Construction to Local warnings and Forecast Base PPA in Operations, Research, and Facilities for MADIS.
- $3,000,000 and 0 FTE is transferred from the Local Warnings and Forecasts Base PPA in Operations, Research, and Facilities to the Complete and Sustain NOAA Weather Radio PPA in Procurement, Acquisition, and Construction.

NWS – ORF PROGRAM CHANGE HIGHLIGHTS FOR FY 2009:

Program changes are summarized at the sub-activity level below. Detailed numeric breakouts are located in Chapter 6, *Special Exhibits*. Descriptions of each request by line item are located in the NOAA FY 2009 Technical Budget.

Operations and Research **$720,478,000**

A net increase of $18,780,000 and 0 FTE above the base is requested in the Operations and Research subactivity, for a total of $720,478,000 and 4,420 FTE. Of this increase, NOAA requests $6,606,000 and 0 FTE to increase the base levels of funding for various on-going programs within this subactivity to that recommended in the FY 2008 President's Budget.

- **Local Warnings and Forecasts:** $13,477,000 and 0 FTE in net increases above the base, for a total of $642,322,000 and 4,114 FTE, are requested under the Local Warnings and

Forecasts line item of the Operations and Research subactivity. Of this increase, $5,486,000 and 0 FTE will be used to increase the base levels of funding for various on-going programs within this subactivity to that recommended in the FY 2008 President's Budget

- **NOAA requests an increase of $3,000,000 and 0 FTE for a total of $4,400,000 to operate and maintain 15 weather data buoys (eight buoys funded under the FY 2006 Hurricane Supplemental Appropriation and seven funded in by the FY 2005 Hurricane Supplemental Appropriation) for enhanced real time hurricane data observations and storm monitoring in the Caribbean, Gulf of Mexico, and the Atlantic Ocean to support the NOAA hurricane warning and forecast mission.** The FY 2006 Hurricane Supplemental provided one-time funding to procure and deploy these buoys. This increase will restore funds requested in the FY 2008 Presidents Budget but were not funded in the FY 08 Omnibus Appropriations Bill. This program adjustment requests the funding required for the long-term operation and maintenance of these platforms. This investment is one of the high priority investments required for NOAA's implementation of the Integrated Ocean Observing System (IOOS) as the coastal and open ocean component of the Global Earth Observing System of Systems (GEOSS). Combined with other like-identified IOOS investments across NOAA, it is part of NOAA's strategy to provide initial benefits of an integrated ocean observing system, focusing on enhancing key observational capabilities throughout NOAA, and our ability to provide customers with enhanced coastal data and information. The eight new Hurricane Supplemental data buoys consist of four 6-meter, and four 12-meter buoys. The seven FY 2005 Hurricane Supplemental data buoys consist of one 3-meter, two 6-meter, two 10-meter, and two 12-meter buoys. These buoys require increased ship-time for scheduled service due to their large distance from the U.S., are an average of four days of ship time apart, and require a ship with substantial lift capability (especially for the 12-meter buoys). The hired buoy tender vessel will provide scheduled maintenance to all buoys in one continuous trip to minimize ship cost as well as some dedicated service trips to the failed buoys out during hurricane season that must be repaired as soon as possible.

- **NOAA requests $1,230,000 and 0 FTE for Hurricane Supplemental O&M.** The FY06 Hurricane Supplemental provided $16.4 million for improved hurricane services and infrastructure support. This increase will restore funds requested in the FY 2008 Presidents Budget but were not funded in the FY 08 Omnibus Appropriations Bill. Full

funding provides ongoing operations and maintenance costs for Incident Meteorologist equipment, software support, and communications, ASOS and NWR backup power units, and backup communications for coastal Weather Forecast Offices and Next Generation Weather Radars. The FY 2006 Hurricane Supplemental provided funding to: (1) equip five coastal Weather Forecast Offices (WFOs) with all-hazards support capability for incident meteorologists deployed to provide on-site tactical forecasting in times of disaster, (2) equip 150 hurricane-prone Automated Surface Observing System (ASOS) sites, and (3) 126 NOAA Weather Radio (NWR) All Hazards transmitters located in hurricane-prone areas with backup power capability so that they can continue to provide critical weather observations and life-saving emergency broadcasts during times of disaster when commercial power is disrupted; and (4) backup satellite communications at 25 coastal WFOs and 10 NEXRAD sites to provide transmission of forecasts, watches, warnings, and radar products during times of disaster when landline communications have been disrupted. All of these systems and capabilities require ongoing funding to continue to be operated and maintained. Ongoing operations and maintenance funding is necessary to ensure that the capital investments made as a result of the Hurricane Supplemental continue to provide the live-saving services they were intended to support. Equipment for Incident Meteorologists facilitates rapid deployment of tactical meteorology capabilities to sites of hurricanes as well as to other disaster sites. Uninterrupted data from coastal ASOSs will provide forecasters with reliable real-time observations during any type of severe weather event, including hurricanes, and will also maintain the integrity of the climate record, particularly in recording extreme events, and aid research and understanding of tropical cyclone events. Emergency backup power for NWR all hazards will increase reliability of broadcasts of severe weather information, leading to lives and property saved. It will also ensure broadcast of critical information during homeland security events.

- **NOAA requests $1,100,000 and 0 FTE for Tropical Ocean Atmosphere (TAO) array technological refresh.** Total funding required to replace obsolete components for the 55 buoys in this array is $6.6 million over a six-year period beginning in FY 2008. Many components of TAO are no longer supported by their manufacturers, and alternate

components must be purchased to continue operation of this array of buoys designed to detect the onset of, and assess the intensity of, El Niño and La Niña. Early detection has substantial positive economic benefits for the global economy because it allows decision makers to more effectively manage agricultural and water resources, fisheries, and grain and fuel reserves. The U.S. Climate Change Science Program also relies on TAO data to further improve climate models for improved understanding and predictions of global climate. Funds are requested to replace obsolete components of the array with new components commercially available and to upgrade communications to provide reporting necessary to calibrate and validate the coupled ocean-atmosphere Climate Forecast System. Subsurface sensor arrays used to measure temperature and salinity at up to 11 depths, the topside CPU/data logger and modem, and the compass used to provide earth-referenced coordinates for wind velocity measurements are obsolete and no longer supportable. Continued reliance on these components will result in loss of buoys and data critical to our ability to detect and assess the strength of El Niño and La Niña and to plan for the impacts they create. The Tropical Moored Buoy network is being extended to all oceans by NOAA's Office of Oceanic and Atmospheric Research in cooperation with international partners. The technology-refreshed TAO buoys will eventually be used for the Atlantic and Indian Oceans as well as the Pacific. Without this investment, sustained operations of the arrays will deteriorate, and atmosphere and ocean models will be unable to adequately initialize to take into account the global components of ocean temperature and density and atmospheric forcing. Without measurements from these arrays, true understanding of the global heat engine, necessary to begin to understand the actual impacts of human activities on climate change, will be impossible. This funding will enable NWS to replace obsolete components of the TAO array for nine buoys and eight spares.

- **NOAA requests $1,350,000 and 0 FTE for NDBC Ocean Sensor O&M** for ongoing operation and maintenance of the Congressionally mandated ocean instrumentation which was funded and installed by National Ocean Service "Convert Weather Buoys Initiative." These sensors augment fixed and buoy observational sites. In keeping with NOAA's commitment of increased interoperability and cost effective approach to oceanographic observing, the NOS Convert Weather Buoy project augments existing National Weather Service buoys with oceanographic sensors. This national network of weather observing buoys has been augmented with oceans sensors to measure direc-

tional waves and wave heights, and ocean current, temperature, and salinity profiles. Congress has provided NOS over $12,000,000 to add oceanographic sensors to the existing NWS marine observational backbone. However, ongoing operations and maintenance funding has not been provided for long-term support of the systems. In FY 2008, 98 sites along the U.S. coastline will be outfitted with oceanographic sensors. Without operations and maintenance funding, this equipment will be unsupportable, and the $12,000,000 investment will become inoperable. Buoys require annual maintenance and shore-side operating/infrastructure support to maintain reliable data output. Buoys outfitted with weather sensors generally only require an at-sea replacement once every three years. However, subsurface oceanographic sensors require an at-sea maintenance visit every nine months. Thus the cost of ship time alone is four times greater. By converting weather buoys to dual-purpose buoys, NOAA obtains oceanographic data in an exceptionally cost-effective manner. These real-time ocean observations are used by weather forecasters in both the government and private sector, coastal managers, recreation and commercial fishing industries, search and rescue, and hazard spill mitigation. These data are also used by Industry to generate value-added products for the private sector. Continued operation of these sensors meets the international priorities of the Integrated Ocean Observing System (IOOS) and the recommendations of the U.S. Commission on Ocean Policy.

- **NOAA requests an increase of $600,000 for a total of $600,000 to accelerate improvements to begin development, in concert with NIST, of an advanced fire weather modeling capability.** This enhanced fire weather modeling capability will provide high-resolution, real-time predictions in the field from an atmospheric prediction model coupled with fire spread model. NOAA will work closely with NIST on the wildland-urban interface fire spread problem, as well as with the U.S. Forest Service and others. The nation is facing a crisis with fires increasing in number and intensity in areas with rapid growth in habitation, with the western states being particularly at risk. During the summer of 2006, there were, at one point, 53 fires burning simultaneously. In 2007, there were 85 large fires (over 100 acres in timber or 300 acres in grass/brush) burning simultaneously. On July 7th of 2007, there were 471 new fire starts (this includes all fires of any size). That day marked the peak number of fire starts for the season. Enhanced weather prediction, fire behavior prediction,

and fire modeling in habitation zones are critical to reducing the danger to life and property. In order to properly support and serve fire fighting, weather prediction needs to be at a very fine scale and allow coupling to fire behavior models. Current national scale models, while covering all areas of the U.S., are not at sufficient resolution to provide the high-resolution winds, temperature, and humidity forecasts needed. This request will begin the development of higher-resolution models.

- **NOAA requests an increase of $711,000 and 0 FTE for a total of $5,253,000 to expand this multi-year effort to improve aviation weather services. This requested increase supports the procurement and fielding of 30 additional water vapor sensors for a total of 160 as part of an Integrated Upper Air Observing system.** The purchase of water vapor sensors will result in improved forecast accuracy of moisture, convection, icing, and low ceiling and visibility, all of which could show increases of accuracy on the order of 10%. This improvement has wide-reaching impacts on many of NOAA's forecast capabilities inside and outside of aviation. These soundings are 100 times more cost-effective than today's balloon technology. Procuring and installing these 30 sensors will have a cascading impact on the modernization of the nation's Integrated Earth Observing System (IEOS), affecting NOAA's ability to improve hydrologic, climate, and severe weather forecast accuracy.

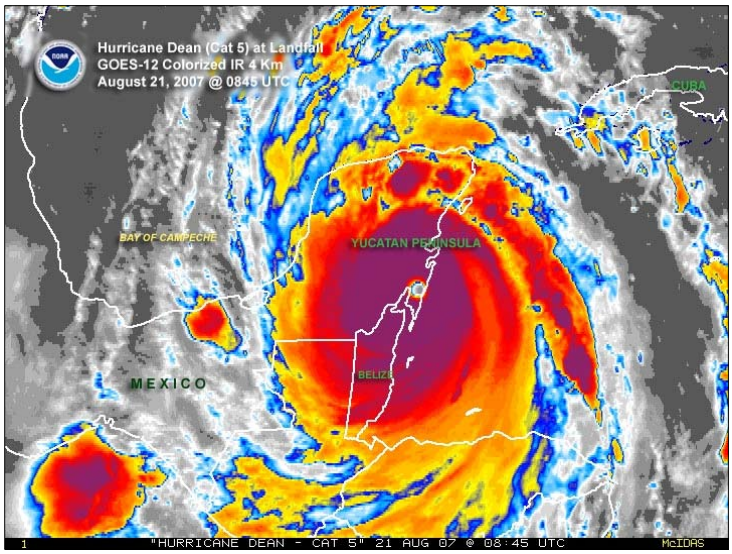
- **Central Forecast Guidance:** $4,273,000 and 0 FTE in net increases above the base, for a total of $57,253,000 and 306 FTE, are requested under the Central Forecast Guidance line item of the Operations and Research subactivity.

  - **NOAA requests an increase of $4,273,000 and 0 FTE for the operational support and maintenance of the next-generation Hurricane Weather Research and Forecasting (HWRF) model and storm surge prediction system and to accelerate improvements to its Hurricane and Storm Surge Modeling and Forecast systems.** As a result of the active 2005 hurricane season, NOAA was provided hurricane supplemental funding to accelerate the next-generation hurricane and storm surge prediction system. Of this increase, $946,000 will increase the base levels of funding to that recommended in the FY 2008 President's Budget. Full funding will provide the necessary operations and maintenance funding to support these systems on a daily, routine basis, leading to improved hurricane and storm surge prediction. This environmental modeling investment is necessary to operationally support the next-generation hurricane prediction system and to integrate NOAA's several environmental prediction models into a single environmental modeling prediction system to meet demands for more accurate forecast products in weather, climate, ocean and coastal oceans and ecosystems. Opera-

tional hurricane intensity and storm surge predictions at landfall will be highlighted in this effort, which will capitalize on proven research; lay the groundwork for a national prediction system meeting civil, military, and homeland defense needs; and regain NOAA's position as a world leader in environmental prediction.

Specifically**,** this increase will sustain the Administration's commitment to significantly accelerate the improvement in hurricane track and intensity and storm surge forecasts. Funds are required to increase the research, development, and engineering necessary to accelerate the improvement in the NOAA Hurricane Forecast System (NHFS) and to implement, operate and maintain the expanded NHFS (including coupled global, hurricane, ocean, wave, and storm surge models). The investments in model physics improvements can accelerate the infusion of cutting-edge science into hurricane track and intensity forecasts resulting in critically needed forecasts and warning improvements up to five years earlier than otherwise viable.

With this requested increase, NOAA will make a critical down-payment towards an integrated hurricane forecast improvement plan, which can yield an operational 20% improvement in hurricane intensity and track forecasting accuracy over the next decade. This level of improvement will, for the first time, enable the NWS to pinpoint changes in hurricane intensity (rapid strengthening or weakening), thus greatly reducing the potential for over-warning and associated evacuation costs, and reducing the risk of potentially missing a devastating high category storm warning. To put this in perspective, a 20% improvement would have reduced the number of people evacuated from Houston during Hurricane Rita by 320,000 and would have saved $140 million. Sustaining and increasing the commitment to improvement in FY 2009 is critical to provide the entire NOAA research and operations community a platform from which to evaluate the efficacy of specific model improvements and to identify where they can best be applied within the NHFS. While improvement efforts are underway and continue in FY 2008, NOAA does not today have the ability to rapidly transition hurricane research from NOAA labs and the broader research community into operations. Furthermore, emergency managers, DHS, and industry are demanding better lead time and improved precision on hurricane track and intensity forecasts in order to



improve key decisions on resource planning, evacuation planning, and business operations. This requested increase will allow NOAA to deliver these required improvements.

Systems, Operations & Maintenance (O&M) $98,355,000

A net increase of $2,803,000 and 0 FTE above the base is requested in the Systems, Operations & Maintenance subactivity, for a total of $98,355,000 and 188 FTE. Of this increase, NOAA requests $2,091,000 and 0 FTE to increase the base levels of funding for various on-going programs within this subactivity to that recommended in the FY 2008 President's Budget.

- **NOAA requests an increase of $712,000 and 0 FTE for a total of $9,657,000 to begin sustained IT refresh to the nation's $200M Automated Surface Observing System (ASOS).** This investment is required to avoid system obsolescence and meet mandated system IT security requirements. With this initial investment the NWS will ensure its ability to maintain critical surface observations used for nation wide aviation operations, local forecasting, and climate monitoring. The present ASOS configuration does not fully comply with NOAA and DOC security safeguards, policies, and procedures. The current operating system has not been supported since 2002, and a new operating system is required to fully meet current security requirements. System events need to be tracked to detect and diagnose intrusion attempts. Users accessing the system need to be fully authenticated. The current residual risk is within acceptable limits due to the limited connectivity of ASOS to other systems (no network connection). However, consumer demand for remote access to data already existing in the system is a driver for network connectivity, further exposing ASOS to security vulnerabilities. Failure to address these system limitations threatens the continued operation of ASOS in supporting its service requirements.

This investment will allow the current ASOS software to be ported to an operating system with ongoing support and security updates. Porting ASOS software to a supportable operating system and replacing Data Collection Package and Acquisition Control Unit hardware will yield the following benefits: (1) achieves full compliance with DOC IT Security policies; (2) replaces the antiquated ASOS Operating System (pSOS which has been unsup-

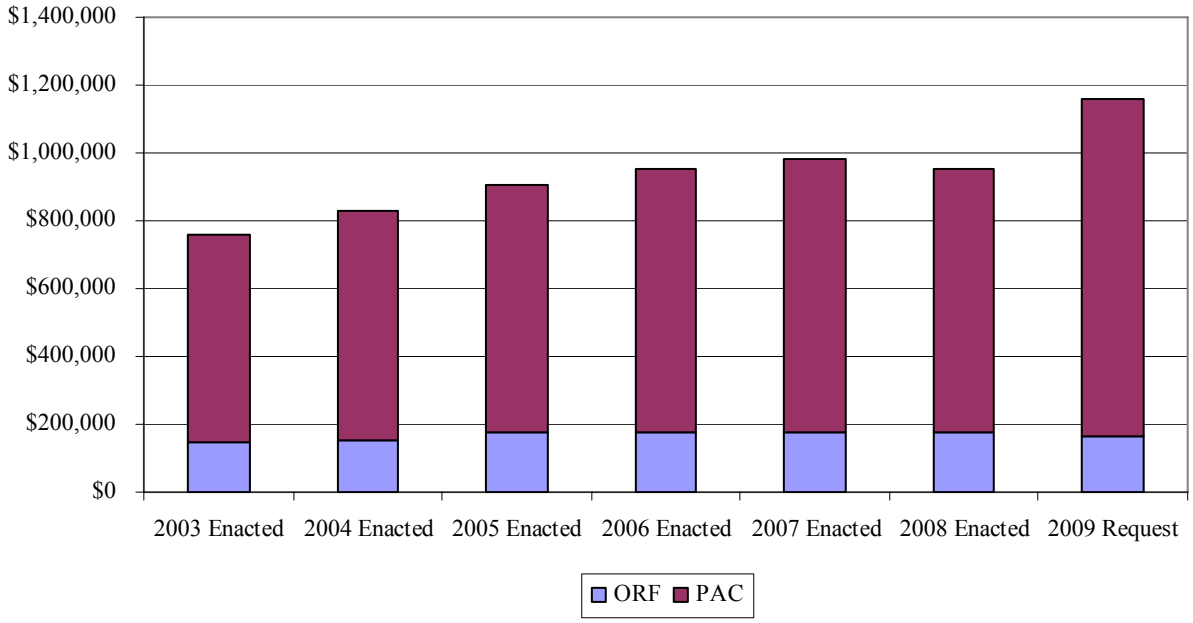
ported since 2002; (3) Provides computing capacity for improved sensor data; (4) Provides NOAA customers who are demanding access to high-resolution data the one minute observations recorded by ASOS that now are not available in real-time; (5) Allows remote download of software loads and (6) Provides the computing power necessary to provide Air Traffic Controllers and other users with improved, intuitive, graphic-based display of data.

National Environmental Satellite, Data, and Information Service

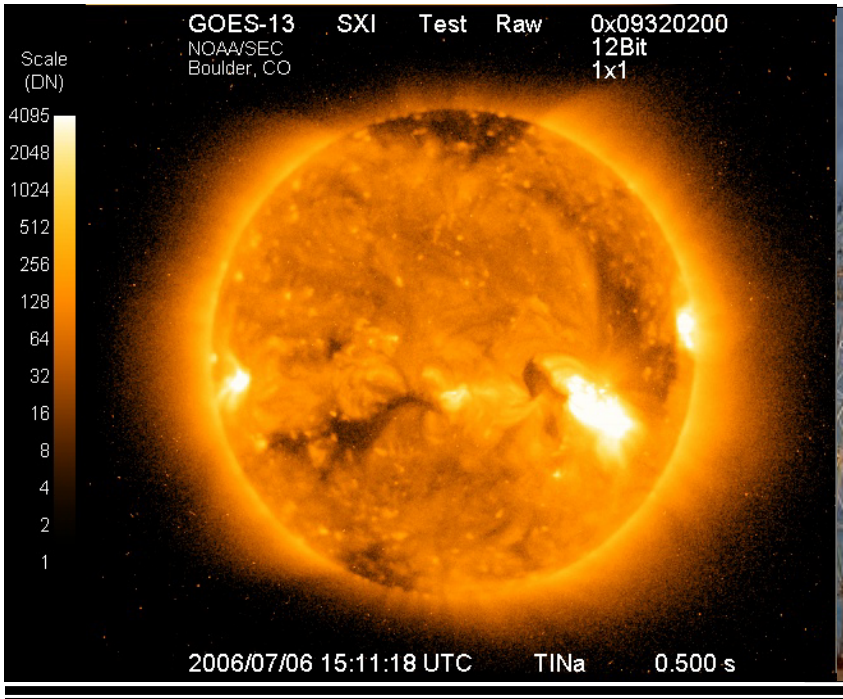
(Dollars in Thousands)	FY 2007 Enacted	FY 2008 Enacted	FY 2009 Request	Increase (Decrease)
National Environmental Satellite, Data, and Information Service -- Operations, Research and Facilities (ORF)				
Environmental Satellite Observing Systems	$105,141	$101,919	$111,633	$9,714
NOAA's Data Centers & Information Services	72,050	77,235	53,659	(23,576)
Total, NESDIS - ORF	177,191	179,154	165,292	(13,862)
Other National Environmental Satellite, Data, and Information Service Accounts				
Total, NESDIS - PAC	806,074	775,922	992,588	216,666
Total, NESDIS - Other	0	0	0	0
GRAND TOTAL NATIONAL ENVIRONMENTAL (Direct Obligations)	$983,265	$955,076	$1,157,880	$202,804
Total FTE	831	831	831	0

Budget Trends, FY 2003– 2009

(Dollars in thousands)



ORF: Operations, Research, and Facilities
PAC: Procurement, Acquisition, & Construction



The NOAA National Environmental Satellite, Data, and Information Service (NESDIS) manages the collection, distribution, and archiving of environmental data. This includes procurement, launch, operation, product development, and product distribution for the Nation's civil operational environmental satellites. Additionally, NESDIS manages the NOAA environmental data collections and disseminates data and information to meet the user needs in commerce, industry, agriculture, science, and engineering, as well as Federal, state, and local governments.

Through NESDIS, NOAA manages the Nation's operational environmental satellite systems; acquires environmental data, processes and distributes satellite-derived products and services; and archives and provides global environmental meteorological, oceanographic, solid earth geophysics, and solar-terrestrial data. NOAA's polar-orbiting satellites work together with geostationary satellites stationed at the equator over the Americas to provide daily global data on weather conditions, atmospheric temperature structure, volcanic activity, sea surface temperature, forest fires, ozone levels, hurricanes, and typhoons. These satellites monitor storms and support NOAA's National Weather Service and Federal and local emergency management agencies, enabling them to provide advance warnings of emerging severe weather such as hurricanes, tornadoes, flash floods, winter storms, and wildland fires. The satellites and the products and services NESDIS provides are essential to the protection of human life, property, and critical infrastructure. In support of the Nation's environmental data needs, NESDIS gathers global data regarding the oceans, Earth, air, space, the sun, and their interactions to describe and predict the state of the physical environment. NOAA's data centers archive the data, which are necessary for scientists, industry, and federal, state, and local governments to fully under-

stand Earth's systems and long-term climatic, oceanographic, and geophysical effects on the environment and the economy. Through the Office of Space Commercialization, NESDIS manages the commercialization of space activities for the Federal government. NESDIS also supports the President's priorities in climate sciences, ocean and coastal management, integrated earth observations, energy, and forest resources protection by developing products from its satellite and data archives. As an important part of this support, NESDIS seeks opportunities to transition research satellite capabilities to operational products and services.

FY 2008 Budget Summary

NOAA requests a total of $1,157,880,000 and 831 FTE to support the continued and enhanced operations of NESDIS. This total includes $3,388,000 for Adjustments to Base (ATB), and a net program change of $226,087,000 and 0 FTE.

ADJUSTMENTS TO BASE:

The above ATB request includes a net increase of $2,752,000 and 0 FTE to fund the estimated FY 2009 Federal pay raise of 2.9 percent and annualize the FY 2008 pay raise of 3.5 percent. Program totals will provide inflationary increases for non labor activities, including service contracts, utilities, field office lease payments, and rent charges from the General Services Administration.

NESDIS – ORF PROGRAM CHANGE HIGHLIGHTS FOR FY 2008:

Program changes are summarized at the sub-activity level below. Detailed numeric breakouts are located in Chapter 6, *Special Exhibits*. Descriptions of each request by line item are located in the NOAA FY 2008 Technical Budget.

Environmental Satellite Observing Systems **$111,633,000**

An increase of $7,233,000 and 0 FTE is requested in the Environmental Satellite Observing Systems subactivity, for a total of $111,633,000 and 409 FTE. Of this increase, NOAA requests $3,233,000 and 0 FTE to increase the base levels of funding for various on-going programs within this subactivity to that recommended in the FY 2008 President's Budget.

- **Satellite Command and Control:** An increase of $500,000 and 0 FTE, for a total of $38,729,000 and 179 FTE, is requested under the Satellite Command and Control line item to provide contract support for software engineering, as well as technical and network support for the day-to-day operations, maintenance, and modification of the GOES and POES/MetOp spacecraft ground systems. The GOES and POES/MetOp ground systems equipment is routinely replaced and upgraded. As a result, it is essential to upgrade the software and engineering support to maintain and operate the upgraded system. This increase will provide for a dedicated communications link between the NOAA Satellite Operations Facil-

ity and Centre National d'Etudes Spatiales (CNES), the French Space Agency in order to receive data from the MetOp satellite which is the primary mid-morning satellite. NOAA will also utilize this communications link to retrieve POES data from satellites passing over CNES ground stations and to deliver POES primary mission data from NOAA to CNES for their daily use per the agreement between our nations. The cost of the communications link makes up the largest portion of the requested increase. In addition, the increase would enable the Office of Satellite Operations to provide sufficient technical and network support for the day- to-day operations, maintenance, and modification of the GOES and POES/ MetOp spacecraft ground systems necessary to maintain operational capability.

- **Product Processing and Distribution:** An increase of $500,000 and 0 FTE is requested, for a total of $31,457,000 and 123 FTE, under the Product Processing and Distribution line item. The increase will provide procurement of a site license and Synthetic Aperture Radar (SAR) imagery scenes from ENVISAT, the European Space Agency's SAR satellite. The procurement of the site license will provide NOAA with the capability to procure roughly 1,200 scenes in FY 2010, which will mitigate the significant impact to the National Ice Center's (NIC) product delivery when its current no-cost data source, Canadian RADARSAT-1, goes offline in Spring 2007. The Ice Center's sea ice nowcasts and forecasts are critical information products used by commercial and government vessels to avoid ice and identify safe routes through ice-covered waters, as well as to plan efficient transits.

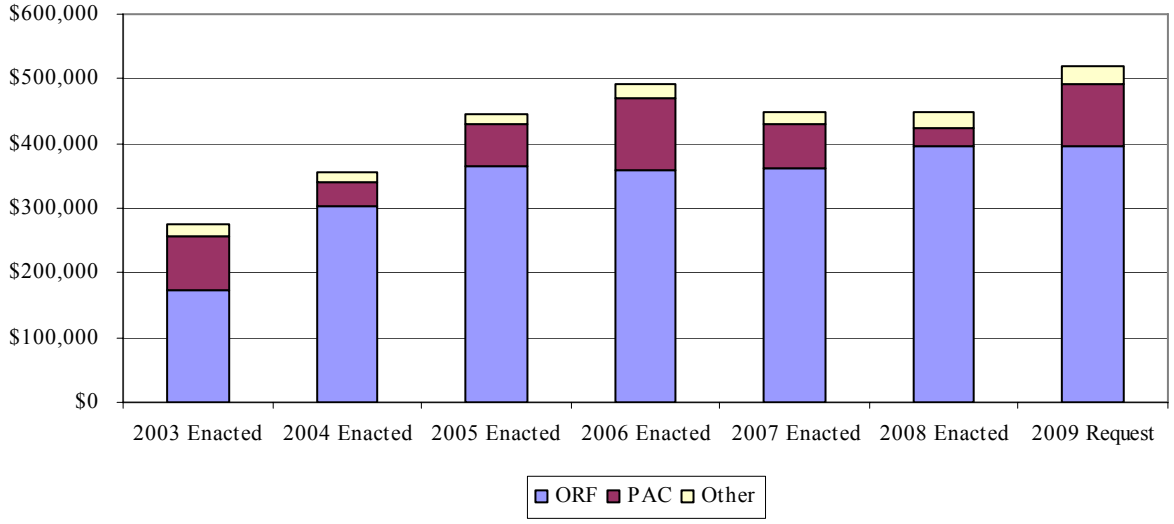
- **NOAA requests an increase of $3,000,000 and 0 FTE for Ocean Surface Vector Wind Studies.** This increase will develop alternatives for collecting ocean surface vector wind observations following NASA's QuikSCAT mission. These observations benefit weather forecasts, including hurricanes and other severe weather events, and climate monitoring. NOAA will complete design trade studies to determine the best alternative to meeting the ocean surface vector winds requirement, including non-space based alternatives.

Program Support

(Dollars in Thousands)	FY 2007 Enacted	FY 2008 Enacted	FY 2009 Request	Increase (Decrease)
Program Support -- Operations, Research and Facilities				
Corporate Services	$180,916	$187,983	$193,041	$5,058
NOAA Education Program	30,446	34,057	16,528	(17,529)
Facilities	21,767	18,501	24,297	5,796
Office of Marine & Aviation Operations	129,113	151,841	160,529	8,688
Total Program Support - ORF	362,242	392,382	394,395	2,013
Other Program Support Accounts				
Total Program Support - PAC	66,494	28,422	98,450	70,028
Total Program Support - Other	21,142	24,921	26,206	1,285
GRAND TOTAL PROGRAM SUPPORT (Direct Obligations)	$449,878	$445,725	$519,051	$73,326
Total FTE	1,917	1,994	2,019	25

Budget Trends, FY 2003– 2009

(Dollars in thousands)



ORF: Operations, Research, and Facilities
PAC: Procurement, Acquisition, & Construction
Other: NOAA Corps Commissioned Officers Retirement (Mandatory) and Medicare Eligible Retiree Healthcare (Discretionary)

www.corporateservices.noaa.gov/~noaa/

Program Support consists of Corporate Services, the NOAA Education Program, Facilities, and the Office of Marine and Aviation Operations (OMAO). NOAA Program Support provides the planning, administrative, financial, and infrastructure services that are essential to the successful performance of NOAA's mission. In addition to NOAA-wide corporate services and agency management, Program Support activities specifically support the people and programs of NOAA, ensuring that they have the proper work environment, the necessary tools and equipment, and the vital personnel and finance services which, in turn, allow them to provide the finest possible service to the American people, our economy and our environment. Through OMAO, Program Support provides data collection at sea and in the air to support NOAA program requirements.

FACILITIES

The NOAA Chief Administrative Officer (CAO), through the Facilities Management and Modernization Program, provides program direction and oversight to NOAA's major construction program and has been the focal point for facility master planning, project planning formulation and development, and project management oversight to support critical NOAA mission requirements. This program supports an integrated capital investment planning process, integrated facility condition inspection program, systems and technology tools to enable maximum efficiency in project and facility management planning, and investments required to support repair and modernization of NOAA' facilities.

NOAA owns more than 400 buildings, in addition to piers and other structures, which are valued at over $2 billion. These facilities are aging, with more than 61 facilities over 50 years old. NOAA's facilities are often subject to extremes of weather and climate conditions, and are, therefore, more prone to unplanned repairs. This program provides funding to conduct facility condition inspections and supports investments in necessary facility repairs and modernization needed to ensure that the facilities remain safe, effective, and efficient in support of NOAA's programs. It also supports operations at NOAA's state-of-the-art laboratory building in Boulder, Colorado. This facility houses staff and programs from three NOAA line organizations (OAR, NESDIS, and NWS) as well as NOAA's program support units for the region, and supports NOAA's climate and weather research.

The CAO organization is responsible for managing the total project life cycle for facility construction and modernization projects, including environmental and safety projects.

OFFICE OF MARINE AND AVIATION OPERATIONS (OMAO)

Marine Operations

OMAO operates NOAA's fleet of vessels and provides ship support to NOAA programs through outsourcing, operational readiness, and maximum platform utilization in support of NOAA's at-sea data collection requirements. OMAO provides centralized management for operations, fleet planning, and maintenance support. OMAO is also responsible for NOAA's fleet safety, diving, and Teacher-at-Sea program. Other mission responsibilities include training and certifying NOAA Corps Officers, crews, and scientists for at-sea duty.

NOAA's vessels support nautical charting, fisheries research, marine environmental assessments, coastal-ocean circulation studies, and oceanographic and atmospheric research, and operate on both the East and West Coasts. The 20 active ships will perform approximately 3,390 operating days in FY 2009 in support of NOAA programs. The fourth of four newly constructed Fisheries Survey Vessels (FSVs), the BELL M. SHIMADA, will be operational in

FY 2009 and will be homeported on the West Coast.

OMAO's Marine Operations Center (MOC) has Atlantic and Pacific regional offices located in Norfolk, Virginia, and Seattle, Washington, respectively, and the vessels are assisted by a small support staff at the home port of most ships. The centers provide maintenance, stores, supplies, and repair facilities for the vessels.

The NOAA Commissioned Corps is the nation's seventh and smallest uniformed service. NOAA Corps officers support the fleet and NOAA Line Offices. The majority of the NOAA Corps payroll is funded through the Marine Services line. The officers of the NOAA Corps command NOAA's research and survey vessels, fly NOAA's "hurricane hunter" and environmental monitoring aircraft, support field operations, and serve in a variety of technical and management positions throughout the agency.

Aviation Operations

OMAO's Aircraft Operations Center (AOC), located at MacDill Air Force Base in Tampa, Florida, ensures the availability and readiness of NOAA's uniquely configured aircraft. AOC provides centralized management of a fleet of 12 aircraft used as observation platforms equipped with comprehensive data-collection systems in support of missions related to the Earth's environment, coastal and marine resources, and severe weather.

In FY 2009, Aircraft Services will provide approximately 1,365 flight hours in support of NOAA missions. NOAA aircraft are fitted with specialized instrumentation for airborne research, airborne data collection, and observation. Two of NOAA's three WP-3D aircraft (the "Hurricane Hunters") and the G-IV high-altitude jet will be mission-ready with instruments and personnel for hurricane surveillance, reconnaissance, and research during the hurricane season from June 1 to December 1. NOAA's third P-3 has a mission that includes air chemistry and air quality research, remote sensing, oceanographic research, and other missions not involving flights in severe weather. The G-IV will also be mission-ready with instruments and personnel

to collect data for West Coast winter storm predictions from January 15 to April 1. NOAA's Jet Prop Commander and Shrikes will be mission-ready with equipment and personnel for snow radiation surveys, flood forecasts, water management, and other background surveys throughout the year in Alaska and Northern United States. The Twin Otters will continue to operate throughout the coastal Atlantic, Pacific, and Gulf of Mexico, surveying living marine resources and conducting remote sensing missions. NOAA's premier remote sensing aircraft, the Citation II, will continue to fly throughout the coastal United States responding and collecting damage assessment imagery, testing new remote sensing technologies, and performing coastal mapping missions.

NOAA Corps Retirement Pay (Mandatory)

The retirement system for the uniformed services provides a measure of financial security after release from active duty for service members and their survivors. It is an important factor in the choice of a career in the uniformed services and is mandated by Federal statutes under Title 10, United States Code. NOAA transfers retirement pay funds to the Coast Guard, which handles the payment function for retirees and annuitants. Health care funds for non-Medicare-eligible retirees, dependents, and annuitants are transferred to the U.S. Public Health Service, which administers the health care program.

FY 2009 Budget Summary

NOAA requests a total of $519,051,000 and 2,019 FTE for NOAA Program Support. This total includes $4,079,000 for Adjustments to Base, and a net program change of $86,522,000 and 38 FTE.

ADJUSTMENTS TO BASE:

The above ATB request includes a net increase of $3,392,000 and 3 FTE to fund the estimated FY 2009 Federal pay raise of 2.9 percent and annualize the FY 2008 pay raise of 3.5 percent. Program totals will provide inflationary increases for non-labor activities, including service contracts, utilities, field office lease payments, and rent charges from the General Services Administration.

OMAO

The above ATB request includes a net increase of $1,695,000 and 66 FTE for ATBs in OMAO, which includes increases for pay raises, expenses, fuel and data acquisition, fleet planning and maintenance, and Aircraft Services.

With these increases, program totals will fund the estimated FY 2009 pay raise of 2.9 percent and annualize the FY 2008 Federal pay raise of 3.5 percent. The FY 2009 base level will provide inflationary increases for non-labor activities, including service contracts, utilities, field

office lease payments, and rent charges from the General Services Administration.

Program Support – ORF PROGRAM CHANGE HIGHLIGHTS FOR FY 2009:

Program changes are summarized at the sub-activity level below. Detailed numeric breakouts are located in Chapter 6, *Special Exhibits*. Descriptions of each request by line item are located in the NOAA FY 2009 Technical Budget.

Corporate Services **$193,041,000**

A net increase of $9,145,000 and 9 FTE above the base is requested in the Corporate Services subactivity, for a total of $193,041,000 and 1,004 FTE. Of this increase, NOAA requests $7,945,000 and 0 FTE to maintain current service levels of direct administrative, technical, human resources and financial support to NOAA Staff offices. Funding will also be used to increase the base levels of funding for various on-going programs within this subactivity to that recommended in the FY 2008 President's Budget.

- **NOAA requests an increase of $1,200,000 and 9 FTE for the NOAA Wide Corporate Services and Agency Management to support the Acquisition and Grants Office (AGO) in providing acquisition and grants support to the Department of Commerce and NOAA.** NOAA's AGO provides annual acquisition and grants support to DOC and NOAA valued at approximately $2 billion ($1 billion in grants awards, $1 billion in contract awards), representing an increase in workload of approximately 300 percent in just five years. As this workload has increased, the complexity of the acquisitions conducted and the level of contract administration required as have similarly increased. This investment will enhance NOAA's ability to increase the number of dedicated acquisition and grants personnel to a level sufficient to ensure successful obligation of the increasing volume of contractual and financial assistance actions. Additionally, requested funding will provide dedicated personnel and funding sufficient to implement an effective procurement oversight program.

NOAA Education Program **$16,528,000**

A net increase of $336,000 and 0 FTE above the base is requested in the NOAA Education Program subactivity, for a total of $16,528,000 and 10 FTE. Of this increase, NOAA requests $341,000 to increase the base levels of funding for various on-going programs within this subactivity to that recommended in the FY 2008 President's Budget.

- **NOAA requests an increase of $995,000 and 0 FTE** to provide competitive educational grants and continue implementation of the NOAA Educational Plan. This funding will continue to improve coordination of NOAA's higher education activities directed at strengthening the candidates for a future NOAA workforce. This funding will also enhance NOAA's higher education activities and promote development of a highly trained, technologically capable workforce.

OMAO **$160,529,000**

Marine Operations and Maintenance

A net increase of $2,378,000 and 29 FTE above the base is requested in the Marine Operations and Maintenance subactivity, for a total of $130,485,000 and 896 FTE. Of this increase, NOAA requests $678,000 and 0 FTE to increase the base levels of funding for various on-going programs within this subactivity to that recommended in the FY 2008 President's Budget.

- **NOAA requests an increase of $1,700,000 and 29 FTEs for Marine Crew Safety and Rotation.** The request will improve safety aboard NOAA vessels and improve crew rotation by providing sufficient manpower to reduce the high attrition rate on NOAA ships, safely navigate the NOAA platforms, conduct safe operations, respond to emergencies (fire, accidents, etc.), and provide adequate maintenance services aboard the NOAA vessels.

Aviation Operations

A net increase of $4,000,000 and 0 FTE above the base is requested in the Aviation Operations subactivity, for a total of $30,044,000 and 104 FTE. Of this increase, NOAA requests $616,000 and 0 FTE to increase the base levels of funding for various on-going programs within this subactivity to that recommended in the FY 2008 President's Budget.

- **NOAA requests $4,000,000 and 0 FTE for additional operational and maintenance for NOAA aircraft.** This additional funding is needed to maintain NOAA's current flight hour capacity and also to meet the additional flight requirements emanating from NOAA mission needs, legislative mandates, and Executive Orders. The requested funds will provide an additional 1,295 flight hours for hurricane research, surveillance, and reconnaissance, as well as for winter storms, snow-melt flood forecasting, coastal mapping, and geodic modeling. Additional funding will also enable NOAA to continue to warn the nation about natural environmental forces and to observe, protect, and manage the Earth's resources to promote environmental stewardship.

As aircraft age, routine maintenance costs increase due to the decreasing availability of parts for older aircraft. The breadth of routine inspections increase as more is learned about the aging aircraft, thus increasing costs for inspections and repairs. This request provides additional funds to maintain NOAA's aircraft consistent with the manufacturers' and FAA standards, ensuring that Aircraft Services can sustain a fleet of safe and reliable aircraft. This request also provides additional maintenance funding needed to meet the increased flight hour requirements; as aircraft fly more hours, additional maintenance cycles are required.

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Chapter 4

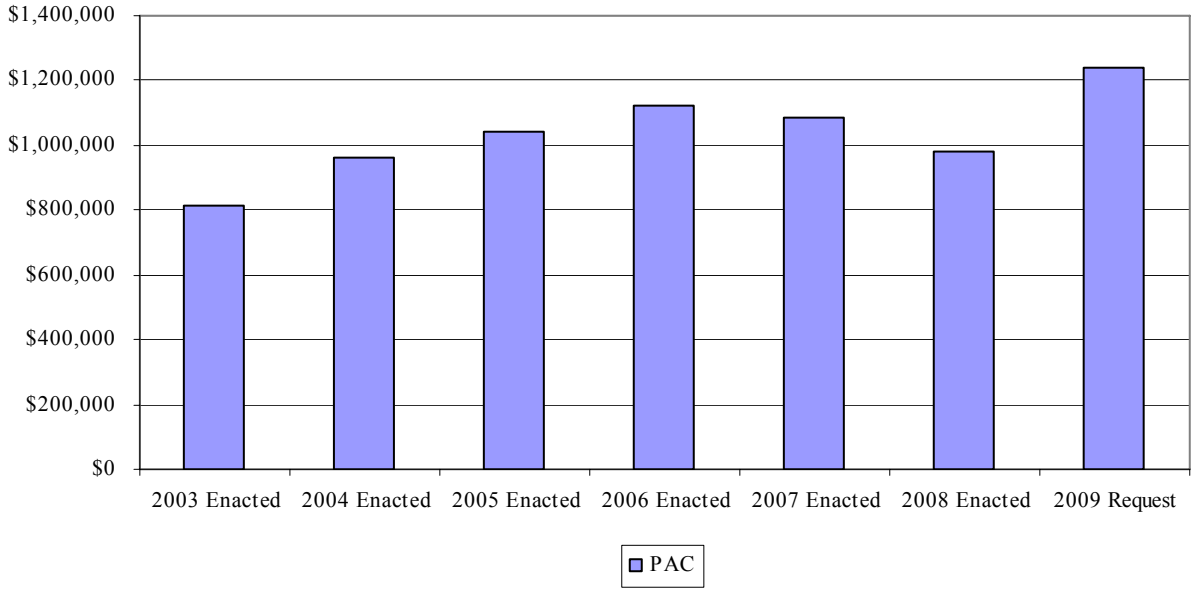
Procurement, Acquisition and Construction

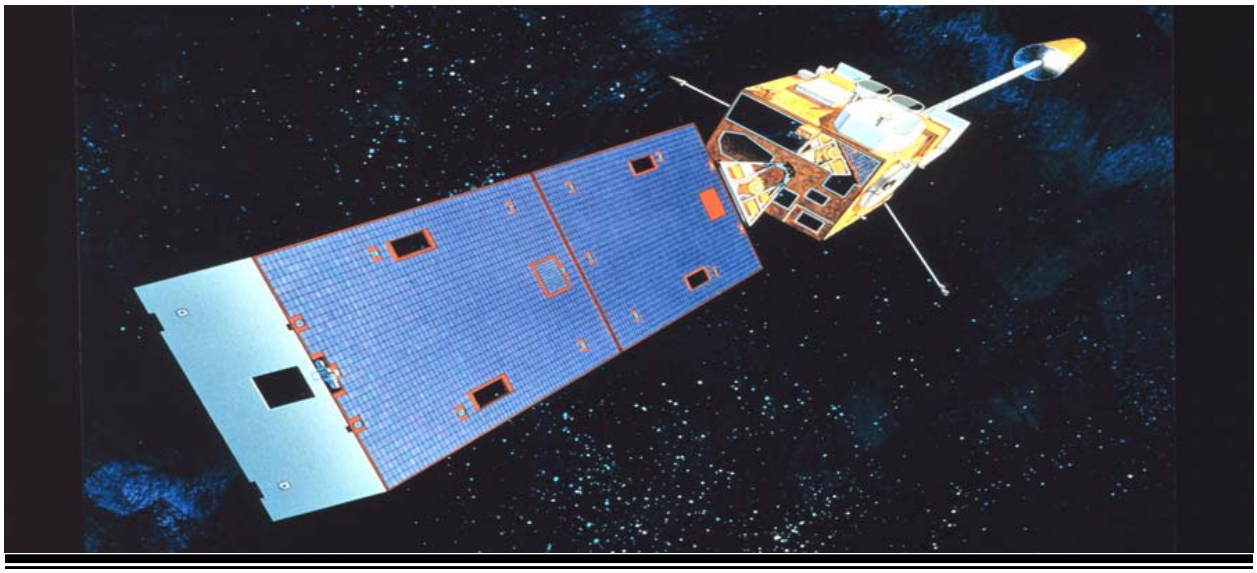
Procurement, Acquisition, and Construction

(Dollars in Thousands)	FY 2007 Enacted	FY 2008 Enacted	FY 2009 Request	Increase (Decrease)
Procurement, Acquisition and Construction (PAC)				
Systems Acquisition				
Ocean and Atmospheric Research	$34,900	$10,131	$10,379	$248
National Weather Service	76,614	67,430	85,254	17,824
National Environmental Satellite, Data and Information Service	803,825	773,747	990,360	216,613
Total Systems Acquisition	915,339	851,308	1,085,993	234,685
Construction				
National Ocean Service	56,945	56,599	27,385	(29,214)
National Marine Fisheries Service	11,190	2,021	0	(2,021)
National Weather Service	32,815	38,682	26,604	(12,078)
National Environmental Satellite, Data and				0
Information Service	2,249	2,175	2,228	53
Program Support	29,211	23,163	86,950	63,787
Total Construction	132,410	122,640	143,167	20,527
Fleet - OMAO	32,588	5,259	11,500	6,241
Aircraft	4,695	0	0	0
GRAND TOTAL PAC	$1,085,032	$979,207	$1,240,660	$261,453

Budget Trends, FY 2003– 2009

(Dollars in thousands)





NOAA's Procurement, Acquisition, and Construction (PAC) account captures the cost of acquiring and improving capital assets, which are mission-critical to all agency programs and contribute significantly to achieving each of NOAA's Strategic Goals. This account is grouped by line office into three common activities: "Systems Acquisition," which includes projects that will have a major impact on NOAA's ability to monitor and to forecast weather and climate change on a global basis; "Construction," which includes projects involving new construction, or major modification of existing facilities; and "Fleet and Aircraft Replacement," which includes funding to support modernization of NOAA's fleet of ships and aircraft either through new construction, major modification to existing assets, or long-term acquisition of capacity from third parties.

ADJUSTMENTS TO BASE:

The NOAA Procurement, Acquisition, and Construction (PAC) requests adjustments to FY 2009 Base of $2,092,000.

PAC PROGRAM CHANGE HIGHLIGHTS FOR FY 2009:

For FY 2009, NOAA requests a net increase of $311,860,000 for a total of $1,240,660,000 for procurement, acquisition, and construction programs. These changes include 21 major system programs, seven construction projects and two fleet projects. Detailed numeric breakouts are located in Chapter 6, *Special Exhibits*. Descriptions of each request by line item are located in the NOAA FY 2009 Technical Budget. Note that outyear figures are estimates, and future requests will be determined through the annual budget process.

SYSTEMS ACQUISITION **$1,085,993,000**

Office of Oceanic and Atmospheric Research **$10,379,000**

Research Supercomputing

Annual Funding Requirements
(BA in Thousands)

	FY2008	FY 2009 Estimate	FY2010 Estimate	FY2011 Estimate	FY2012 Estimate
Research Supercomputing/CCRI	10,121	10,379	10,379	10,379	10,379

NOAA requests an increase of $248,000 to increase the base levels of funding for various ongoing programs within this subactivity to that recommended in the FY 2008 President's Budget. This increase will return NOAA's Geophysical Fluid Dynamics Laboratory in Princeton, NJ, to its traditional base level of $10,379,000 in PAC funding to support a very large, scalable computer system that provides: (1) critical computing, storage, and analysis capabilities; (2) model development; (3) infrastructure support; and (4) data services for meeting the objectives of the Administration's Climate Change Science Program (CCSP). Research into expanding the scientific understanding of the physical, chemical, and biological processes that govern the behavior of the Earth System requires a special focus on the development and utilization of large-scale computer simulations for environmental modeling.

As part of the CCSP, NOAA plays a leading role in developing these computer simulations as well as hosting the High-Performance Computing Systems (HPCS) on which they run. The CCSP establishes NOAA's Geophysical Fluid Dynamics Laboratory (GFDL) as one of two national Climate Modeling Centers that will coordinate and accelerate climate modeling activities and provide relevant decision-support information on a timely basis. To this end, the CCSP Strategic Plan specifically calls for an increase in computational resources to enable systematic generation of model products needed by the impacts and policy communities.

This climate computing is now integrated into NOAA's new R&D HPCS. The R&D HPCS represents a new, holistic, "One-NOAA" approach to planning, acquiring, and managing its HPC resources and will be fully supported with the requested funding. Moreover, this computing supports NOAA's emerging partnerships with other Federal agencies' climate programs and enables NOAA to leverage its leadership-class high-performance computing systems to meet NOAA mission goals.

National Weather Service $85,254,000

A net increase of $15,350,000 and 0 FTE above the base is requested in the NWS System Acquisition sub-activity, for a total of $85,254,000 and 31 FTE. Of this increase, NOAA requests $1,116,000 and 0 FTE to increase the base levels of funding for various on-going programs within this subactivity to that recommended in the FY 2008 President's Budget.

Weather Radio Improvement Project $5,743,000

Annual Funding Requirements
(BA in Thousands)

	FY2009	FY 2010 Estimate	FY2011 Estimate	FY20012 Estimate	FY2013 Estimate
WRIP	5,743	5,890	6,410	3,610	3,610

NOAA requests an increase of $2,877,000 and 0 FTEs to fund the effort to modernize the NOAA Weather Radio network. This funding will be used to upgrade unsupportable broadcast equipment and will allow NWS to better utilize satellite technology for point to multi-point communications and network redundancy and to meet DHS/FEMA needs. NWS will be able to deploy the NOAA Weather Radio Broadcast Management System (NWR BMS), which is a replacement for the Console Replacement System (CRS). Also included is the development of a system that will integrate the NOAA Weather Wire Service (NWWS) into a consolidated satellite-based communications network with the BMS. Currently, the contract to maintain the NWWS expires in FY 2009.

The current CRS is at its end of life and cannot be supported at the current level beyond July of 2007 due to parts obsolescence. The CRS is a main component of NOAA Weather Radio that converts text warning messages into digital voice. This conversion provides the voice warning messages that are broadcast over NOAA Weather Radio to alert the public. It is critical that we address this issue now in order to avert potential outages that might affect our ability to disseminate warnings to the public.

Advanced Weather Interactive Processing System $19,064,000

(BA in Thousands)

	FY 2009	FY2010 Estimate	FY2011 Estimate	FY2012 Estimate	FY2013 Estimate
AWIPS	19,064	12,764	12,764	12,764	12,764

NOAA requests an increase of $6,605,000 and 0 FTEs for the Advanced Weather Interactive Processing System (AWIPS)/NOAAPort. The Advanced Weather Information Processing System (AWIPS) is America's weather and flood warning system. NWS must upgrade AWIPS to transform its service delivery to DHS, FAA, emergency managers, decision makers, the American public and industry. Emergency managers, DHS, and industry are demanding increased lead time and more precision in weather, flood, and hurricane forecasts to improve their decisions for resource planning, evacuation planning, and business operations. These decisions are potentially life saving and have multi-million dollar impacts on the economy and livelihoods. Customers and users of NWS products and services will fully exploit NOAA investments through this transformation.

Originally built in the 1990s, AWIPS is unable to meet the demands for increased accuracy, precision, and timeliness of warnings nor with the demands of 21st century science. Although patched numerous times, AWIPS has reached the point where further patches only deliver small incremental improvements. These improvements are increasingly insufficient to meet the service demands of DHS, FAA, emergency managers, and the American public. NOAA/NWS must undertake this critical investment to ensure overall NWS forecast, warning, and service improvements by providing the capacity to exploit NOAA's planned investments such as advanced weather satellites (GOES-R, NPOESS), Advanced Numerical Weather Prediction, and NEXRAD Super Resolution and Dual Polarization.

AWIPS is also the primary source of weather information to America's Aviation infrastructure. NWS forecasters at critical aviation weather centers and weather forecast offices depend on AWIPS to prepare aviation forecasts that enable FAA decision makers to minimize weather-related delays. Additionally, the Next Generation Air Traffic Control System will require the future AWIPS infrastructure provided by this initiative.

With this investment, NWS will capitalize on the new AWIPS II architecture currently being deployed. This investment will transform NWS service delivery to:

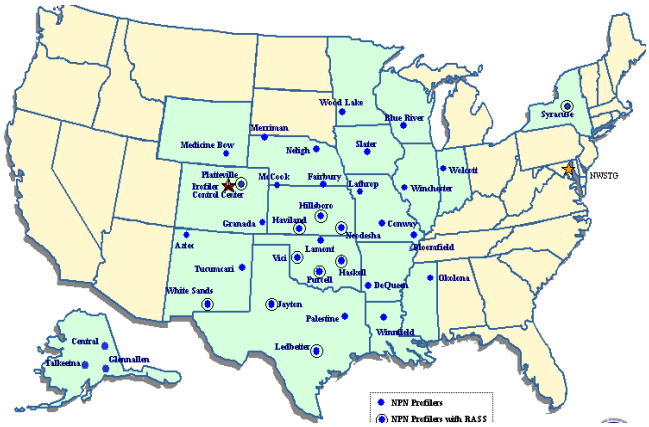
- Ensure capability to deliver all available forecast information to WFOs;
- Update the infrastructure to incorporate modern architecture to meet mission needs;
- Improve data and service delivery with smart push-smart pull methods;
- Develop an integrated remote service delivery capability (thin client) to support Emergency Managers and Fire Weather;
- Tailor delivery to customer-centric formats and standards and create the flexibility to change with their changes;
- Deliver graphical collaboration tools for WFOs, RFCs, NCEP Centers, Emergency Managers, NOAA Components, and partners for improved accuracy and consistency of products and service;
- Integrate 7 AWIPS subsystems into one integrated system increasing effectiveness and efficiency while greatly reducing operating and maintenance costs; and
- Update data visualization (3D) to improve detection of severe weather events.

NOAA Profiler Conversion **$9,730,000**

Annual Funding Requirements
(BA in Thousands)

	FY2009	FY 2010 Estimate	FY2011 Estimate	FY2012 Estimate	FY2013 Estimate
NOAA Profiler Conversion	9,730	4,870	4,870	0	0

NOAA requests an increase of $4,752,000 and 0 FTEs to replace NOAA Profiler transmitters that interfere with Search and Rescue sensors and to conduct a tech refresh of the 20-year-old network. This increase will allow NWS to upgrade/convert twelve of the profilers in FY 2009. The Wind Profilers, vertical looking radars installed in 1988, are used as input for numerical (computer) weather models that predict clouds, precipitation, and temperature. The data also provide important indicators of where severe weather such as tornadoes and winter storms may form and is used for issuing aviation advisories and wildfire predictions at local Weather Forecast Offices (WFOs). Research has shown that



Wind Profiler data improves accuracy and lead times for tornado, severe thunderstorm, flash flood, and winter storm warnings.

Thirty-two of the 37 wind profilers are using an experimental transmitter frequency of 404 megahertz (MHz) issued by the National Telecommunications and Information Administration (NTIA). This frequency is close to the 406 MHz frequency used by search and rescue (SAR) sensors being launched on the European Space Agency's *Galileo* satellite constellation. Because the profiler transmitter frequency interferes with the SAR frequency, thirty operational 404 MHz wind profilers require their transmitters to be converted to 449 MHz before the launch of the new satellites by 2011.

In addition to the 30 operational sites using 404MHz, there are two additional 404 MHz wind profilers at the National Reconditioning Center and the National Weather Service Training Center (used for testing and training). There are also five wind profilers in the NPN that operate at the non-interfering 449 MHz frequency: three in Alaska, one in Syracuse, NY, and one in Platteville, CO.

National Environmental Satellite, Data, and Information Service **$990,360,000**

A net increase of $217,639,000 and 0 FTE is requested in the NESDIS Systems Acquisition subactivity, for a total of $990,360,000 and 153 FTE. Of this increase, NOAA requests $357,000 and 0 FTE to restore funding to increase the base levels of funding for various ongoing programs within this subactivity to that recommended in the FY 2008 President's Budget..

Geostationary Operational Environmental Satellites

Annual Funding Requirements
(BA in Thousands)

	FY2009	FY 2010 Estimate	FY2011 Estimate	FY2012 Estimate	FY2013 Estimate
GOES-N	73,263	57,601	49,500	45,894	39,201
GOES-R	477,000	737,000	848,000	826,000	816,000
GOES Total	550,263	794,601	897,500	871,894	855,201

Geostationary Operational Environmental Satellite (GOES):

NOAA requests a net increase of $235,191,000 and 0 FTE for the Geostationary Operational Environmental Satellites (GOES) to fund GOES-N and GOES-R series satellites which serve as the Nation's continuous severe weather sentinels in space.

- **NOAA requests a decrease of $7,036,000 and 0 FTE for the GOES-N Series.** The GOES-N Series is nearing the end of its production, with two remaining satellites to be launched; GOES-O is being prepared for launch in 2008 and GOES-P is currently in stor-

age. Specific launch dates are currently under review. The NOAA GOES program continues the development, procurement, and launch of the GOES-N series of satellites. The spacecraft contract for the GOES–N series is a firm fixed price contract. The GOES-N series program also includes separate contracts for the instruments, one for the imager and sounder and one for the Solar X-ray Imager. The instrument contractors have completed delivery of all flight model instruments.

- **NOAA requests an increase of $242,227,000 and 0 FTE for the GOES-R Series.** The FY2009 request continues the amount requested for FY 2009 in the FY 2008 President's Budget. Additional resources are requested in FY 2010 and beyond to mitigate program risks. The current expected life-cycle cost of the program is $7.672 billion through 2028

The launch date for GOES-R will be delayed up to four months from December 2014 to April 2015 as a result of the change in FY 2008 funding provided in the FY 2008 Omnibus Bill. This delay to the launch of GOES-R will increase the potential risk to the overall continuity of GOES data coverage in the event of a failure of one either GOES-O or GOES-P. The reduction also impacted the total life cycle cost of the program due to inefficiencies created in the schedule.

NOAA operates a system of environmental satellites in geostationary orbits to provide continuous weather imagery and monitoring of meteorological data for the United States, Latin America, much of Canada and most of the Atlantic and Pacific ocean basins. Geostationary Operational Environmental Satellites (GOES) provide critical atmospheric, oceanic, climatic, and solar products supporting weather forecasting and warnings, climatologic analysis and prediction, ecosystems management, and safe and efficient public and private transportation. The GOES satellites also provide a platform for space environmental observations, and auxiliary communications services that provide for GOES data rebroadcast, data collection platform relay, low resolution imagery, emergency weather communications, and satellite aided search and rescue.

GOES-R is a collaborative development and acquisition effort between NOAA and the National Aeronautics and Space Administration (NASA). Program activities occur at the co-located Program and Project Offices at Goddard Space Flight Center (GSFC), Greenbelt, MD.

The GOES-R program acquisition and management strategy was restructured at the end of the Program Definition and Risk Reduction (PDRR) Phase from a single-system prime NOAA contract acquisition to an inter-agency dual-contract acquisition for the Acquisition and Operations (A&O) Phase of the Program. Under a dual-contract acquisition strategy,

the National Aeronautics and Space Administration (NASA) will procure the Space Segment and NOAA will procure the Ground Segment. The overall System Engineering and Integration will be performed by the GOES-R Program Office. As a result of the change to the acquisition and management strategy, NOAA and NASA have agreed to tailor procedures to apply to the GOES-R program in order to meet the unique demands of this joint inter-agency acquisition. These needs include safeguarding NOAA's oversight of the entire GOES-R program, including the Flight Project (e.g., Space Segment) and the Ground Segment Project (Ground Segment) and also safeguarding NASA's effective exercise of its expertise over the Flight Project.

- GOES observations allow continuous monitoring of the Earth from the same angle during the tracking/detection of severe storms, atmospheric moisture deltas, mesoscale scanning, currents flow dynamics, and atmospheric chemical (particle) that cannot be achieved from a non-stationary orbit without increased error rates and lost data segments. NOAA maintains an on-orbit spare to complement the two operational GOES satellites. This on-orbit spare philosophy allows NOAA to quickly replace a failed satellite by re-positioning an on-orbit satellite. To facilitate this strategy, NOAA plans the launch of the next satellite to coincide with the planned switchover of the on-orbit spare to operational status.

- The GOES-R series satellites will not only provide critical weather observations for severe weather events such as hurricanes, but will also provide key enhancements in observational capabilities for climate, oceans and coasts, and the space environment. Specific improvements include:

- Spatial resolution will improve from 1 km to 0.5 km and provides the ability to issue severe storm warnings and protect life and property at neighborhood vs. regional levels.

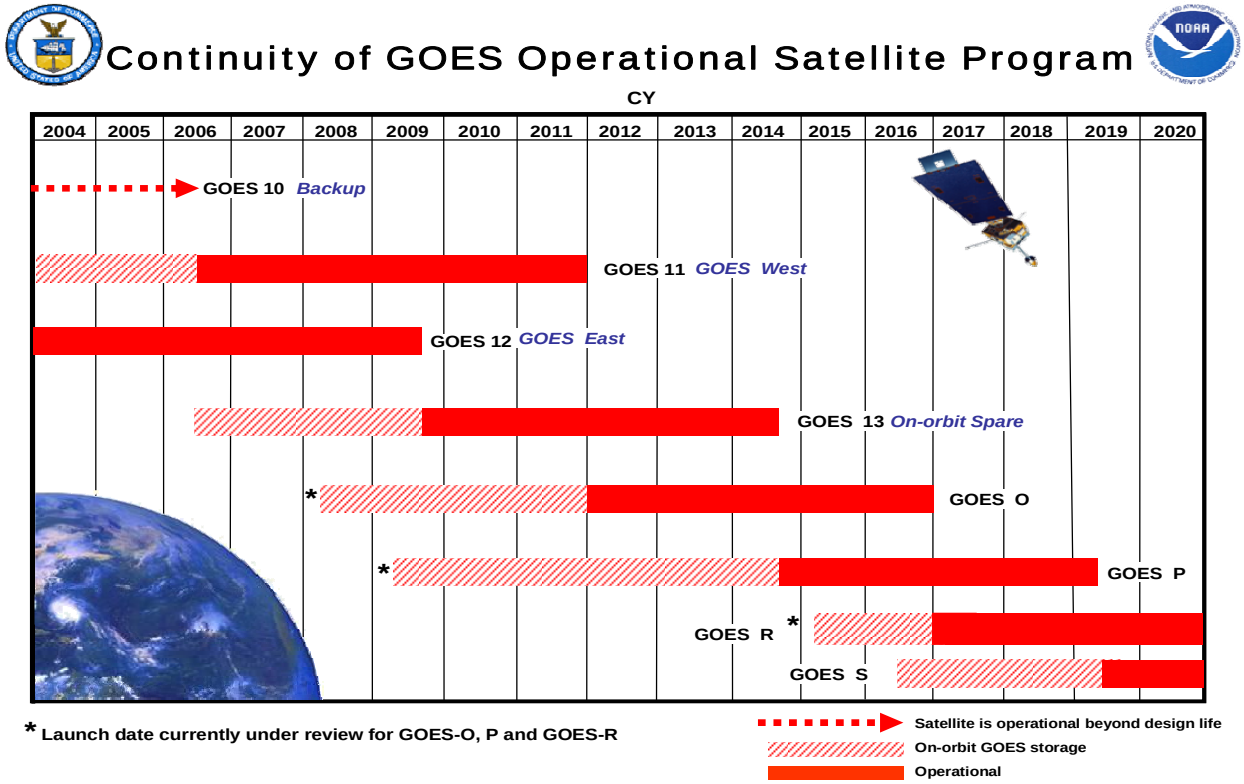
- Infrared imagery will improve from 4 km to 2 km, enhancing NOAA's ability to monitor and track snowfall and ice storms and issue winter storm warnings and spring snow melt advisories.

- Full disk image availability will improve from every 30 minutes to every five minutes, an improvement that is critical to monitoring severe storm activity and will result in earlier warnings to populations at risk.

- Lightning mapper will provide improved warnings of severe thunderstorms, tornados, and potential lightning strikes, resulting in safer and more efficient flight route planning over water and land.

- Funding will be used for systems engineering, continued development of satellite instruments, risk reduction activities, transition to the system-level acquisition and operations (A&O) phase of the program, and the NOAA-NASA government program office in support of an initial GOES-R launch date in 2015. The Acquisition and Operations

(A&O) phase includes end-to-end system development and integration, instrument development and production, and the development and production of the spacecraft and ground system.



Polar-Operational Environmental Satellite Systems $65,419,000

Annual Funding Requirements
(BA in Thousands)

	FY2009	FY 2010 Estimate	FY2011 Estimate	FY2012 Estimate	FY2013 Estimate
POES	65,419	43,135	40,874	40,874	40,874

- **NOAA requests a decrease of $48,872,000 and 0 FTE for the continuation of the Polar-Operational Environmental Satellite Systems (POES) program.** POES is nearing the end of its production, with one remaining satellite to be launched, along with supporting maintenance and testing of U.S. instruments on the MetOp satellites in FY 2009. On September 6, 2003, NOAA-N prime was involved in a serious accident at the contractor's facility. The damage to NOAA-N Prime was assessed, estimated rebuild costs were developed, and agreements negotiated. With NOAA's approval, a contract modification between NASA and Lockheed Martin to rebuild NOAA-N Prime was signed on September 29, 2004. In June 2006, DOD, DOC and NASA certified a restructured NPOESS program under the Nunn-McCurdy process. Direction was given to NASA to launch NOAA-N Prime in Feb-

ruary 2009. This action will minimize the potential gap in polar-orbiting data and services until the first NPOESS satellite is fully operational in 2014.

National Polar-orbiting Operational Environmental Satellite Systems $287,985,000

Annual Funding Requirements
(BA in Thousands)

	FY2009	FY 2010 Estimate	FY2011 Estimate	FY2012 Estimate	FY2013 Estimate
NPOESS	287,985	381,794	420,332	415,829	436,270

- **NOAA requests a decrease of $42,984,000 and 0 FTE for the continuation of the tri-agency NPOESS program** that will replace the NOAA POES program after completion of the current NOAA K-N Prime series of satellites. The program adjustment allows the DOC budget for the NPOESS to come into alignment with the DoD's certified Nunn-McCurdy program estimate. This request represents NOAA's share of the converged NOAA/DoD/ NASA program.

  In FY 2009, funds are required to continue the development and production of the NPOESS spacecraft and instruments. Sensors that will fly on the NPOESS Preparatory Project (NPP) will be integrated onto the NPP spacecraft. Continued development of these instruments is critical for their timely and cost effective delivery.

Climate Sensors (CERES, TSIS, and Climate Data Record Support) $74,000,000

Annual Funding Requirements
(BA in Thousands)

	FY2009	FY 2010 Estimate	FY2011 Estimate	FY2012 Estimate	FY2013 Estimate
Climate Sensors	74,000	74,000	74,000	74,000	74,000

- **NOAA requests an increase of $74,000,000 and 0 FTE for the development of the Clouds and the Earth's Radiant Energy System (CERES) and Total Solar Irradiance Sensor (TSIS) climate sensors,** which were previously de-manifested from National Polar-orbiting Operational Environmental Satellite System (NPOESS). This funding will support initial work on Climate Data Records. The joint assessment conducted with the Office of Science and Technology Policy, NOAA, and NASA has emphasized the importance of sustaining the CERES and TSIS climate data series without gaps. NOAA and NASA will work together to explore the most cost-effective options for launching these climate sensors to fill the near-term data gap.

  CERES measures the Earth radiation budget. Accurate observations of the Earth's radia-

tion are essential to determine the causes of climate variability and change. Overlap between space-based sensors is critical to confidently detect and monitor the small changes in the Earth's radiation balance capable of affecting climate change.

TSIS measures the total energy of the sun incident on Earth. This crucial measurement can be accurately determined only above the atmosphere. Precise, long-term observations of the total energy output of the sun are required to identify and isolate natural solar variations that impact climate in contrast to other factors, such as human influences on climate.

CONSTRUCTION **$143,167,000**

National Ocean Service **$27,385,000**

A net increase of $7,135,000 and 0 FTE above the base is requested in the NOS Construction sub-activity, for a total of $27,385,000 and 1 FTE. Of this increase, NOAA requests $135,000 and 0 FTE to restore funding to increase the base levels of funding for various on-going programs within this subactivity to that recommended in the FY 2008 President's Budget..

Coastal and Estuarine Land Conservation Program

Annual Funding Requirements
(BA in Thousands)

	FY2009	FY 2010 Estimate	FY2011 Estimate	FY2012 Estimate	FY2013 Estimate
CELCP	15,000	15,000	15,000	15,000	15,000

NOAA requests an increase of $7,000,000 for a total of $15,000,000 and 1 FTE, to conserve coastal and estuarine lands which have significant value and support NOAA's stewardship requirements through the Coastal and Estuarine Land Conservation Program (CELCP). With these funds, NOAA will provide funding for land conservation projects identified through a competitive selection process, based on habitat types or geographic areas identified by coastal states as having high ecological, conservation, recreational, historic or aesthetic value that are threatened by development, such as tidal or freshwater wetlands, stream buffers, and floodplains. Federal funding requires matching funds, which leverage additional state, local or private contributions. As part of this voluntary program, coastal states assess their priority needs for land conservation and provide a clear process for identifying and nominating projects to a national selection process. The program's focus on "project areas" encourages public/private partnerships to protect priority areas. State or local governments own the land or interests in land, which may be acquired from willing sellers only, and ensure long-term protection and provide public access for passive recreational opportunities or other public benefit.

NOAA has developed and issued guidelines delineating criteria for grant awards and a process for conducting a national competitive grants program under the CELCP. The program gives priority to lands which can be effectively managed and protected and which have significant ecological value. This request supports efforts to protect important stream corridors and habi-

tats important to anadromous fish, reduce the flow of polluted runoff into coastal waters, lessen the impacts of coastal flooding from severe storm events, and provide opportunities for coastal recreation and nature-based tourism. This request would also enable NOAA to support strategic program planning and management of the CELCP as a competitive program.

National Weather Service Construction **$26,604,000**

A net increase of $232,000 and 0 FTE above the base is requested in the NWS Construction sub-activity, for a total of $26,604,000 and 0 FTE. This increase will restore funding to increase the base levels of funding for various on-going programs within this subactivity to that recommended in the FY 2008 President's Budget.

Program Support Construction **$86,950,000**

Pacific Regional Center **$40,250,000**

Annual Funding Requirements

(BA in Thousands)

	FY 2009	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate
Pacific Regional Center	60,250	77,081	63,046	750	750

NOAA requests an increase of $40,250,000 and 0 FTE for a total of $60,250,000 for continuation of construction of the new Pacific Regional Center (PRC) on Ford Island in Honolulu, HI. This requested increase will enable NOAA to meet the most pressing facilities needs for NOAA programs in Hawaii.

Funding at the requested level in FY 2009 will allow NOAA to continue support for construction of Buildings 176 and 175 of the PRC, enabling NOAA to relocate operations from the current, deteriorating Kewalo Basin and Dole Street Lab Facilities.

Completion of this renovation will allow NOAA to consolidate fisheries research, and management programs, which will also be co-located with docking space for the three NOAA ships currently based in Hawaii. Full consolidation (proposed with out-year funding) at the Ford Island location of NOAA programs and operations on the island of O'ahu (with the exception of the Weather Forecast Office) will provide financial, operational, and programmatic benefits to NOAA over existing, dispersed leased space locations.

Southwest Fisheries Science Center $15,000,000

Annual Funding Requirements
(BA in Thousands)

	FY 2009	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate
Southwest Fisheries Science Center	15,000	0	0	0	0

NOAA requests an increase of $12,072,000 and 0 FTE for a total of $15,000,000 to complete the design and begin initial site work for construction of the replacement laboratory facility for the Southwest Fisheries Science Center.

NOAA's National Marine Fisheries Service (NMFS) Southwest Fisheries Science Center (SWFSC) headquarters in La Jolla, California, is at risk due to continuing cliff erosion. Numerous geotechnical studies of the current site have identified natural cliff erosion as inevitable and have stated that failure of the cliff (and facilities located on the cliff) is inescapable. The cliff erosion has forced NOAA to develop plans to abandon two of the four buildings at this facility and move staff to temporary leased space. This temporary housing arrangement adversely affects ongoing operations and science at the facility and is not a long-term solution. The funding requested will complete the design and initial preparations for the replacement facility after a merit-based analysis to determine the facility's location.

This initiative will enable NOAA to address the ongoing natural bluff erosion threatening the current site, and the NOAA programs supported at this site. NOAA conducts scientific research on critical fisheries management issues at the SWFSC. These scientific research and fisheries management programs have extended social and economic impacts in the Pacific. This project will enable NOAA to continue to conduct these important programs in a safe environment.

Fairbanks, AK Semi-Permanent Operations Facility Replacement $11,700,000

Annual Funding Requirements
(BA in Thousands)

	FY 2009	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate
Fairbanks	11,700	5,266	0	0	0

NOAA requests an increase of $11,700,000 and 0 FTE for a total of $11,700,000 to avoid the catastrophic failure of the NESDIS Operations Building Complex, a component of the NESDIS Command and Data Acquisition Station (CDAS) in Fairbanks, Alaska by replacing the current facility with a semi-permanent Operations Facility. The requested funding would support installation of a semi-permanent replacement structure for the at-risk Operations Complex. The NOAA/NESDIS Fairbanks Satellite Operations Facility (FSOF) building in Fairbanks, AK was built by NASA in the late 1960s. Consistent with a plan for the Bureau of Land Management to turn over the Facilities Command Data and Acquisition Site land to the state of Alaska, it was originally presumed that the government use of the Fairbanks location would expire. Therefore, the structures built were only semi-permanent, with a life expectancy of just 20 years. In 1985, NOAA took over operations of the Fairbanks facility. The Fairbanks facility is located in a seismic zone and operates in severe Sub-Arctic conditions,

with temperatures routinely reaching minus 50 degrees Fahrenheit during the winter months. The Army Corps of Engineers (COE) conducted an assessment of the Operations Building Complex and identified existing structural deficiencies, building code violations, potential hazards, and other weaknesses (including electrical, mechanical, and life safety systems). The Army Corps of Engineers' study of the facility completed in 2006 projected a major structural failure in the next five years. The current Operations Building Complex is no longer capable of safely and reliably supporting operations. Failure to replace the current Operations Building Complex ignores the assessment by the COE that the current structure will fail by 2011, increase the risk to employee safety, and threaten critical polar-orbiting satellite mission opera-

tions dues to increased risk of catastrophic failure of the facility.

The requested funding in FY 2009 will enable NOAA to proceed with replacement of the currently at-risk Fairbanks Operations Building Complex with a new, semi-permanent replacement building. Since NOAA's operational requirements can be supported at other locations after 2026, NOAA is requesting funding to install a semi-permanent facility designed to last approximately 20 years, rather than funding for a more costly permanent facility. Funding to complete construction and occupancy of the new building will be requested in a subsequent fiscal year.

FLEET REPLACEMENT **$11,500,000**

Office of Marine and Aviation Operations **$11,500,000**

A net increase of $7,181,000 and 0 FTE above the base is requested in the Fleet Replacement sub-activity, for a total of $11,500,000 and 0 FTE. Of this amount, $81,000 will

increase the base levels of funding for various on-going programs within this subactivity to that recommended in the FY 2008 President's Budget.

Annual Funding Requirements
(BA in Thousands)

	FY2009	FY 2010 Estimate	FY2011 Estimate	FY2012 Estimate	FY2013 Estimate
RAINIER MRP	6,100	0	0	0	0

NOAA requests $6,100,000 to conduct a major overhaul of the 39-year old NOAA Ship RAINIER. With 6 hydrographic survey launches, RAINIER is the most productive coastal hydrographic survey ship in NOAA, and possibly the most productive coastal survey ship in the world. The hydrographic data collected by the vessel results in the "safe, secure, efficient, and seamless movement of goods and people in the U.S. transportation system" and is a significant percentage of the total Commerce & Transportation data acquisition capability.

RAINIER needs a major capital investment in mechanical and electronic systems via a Major Repair Period (MRP), an effective tool for extending a ship's service life until a replacement is funded, constructed, and becomes operational. Current Fleet Maintenance funding is not sufficient to maintain the vessel at current operational tempo until a replacement vessel can be obtained. Renovating the RAINIER will simplify the maintenance while supporting the mission at current levels, thus reducing long-term costs as well as risk to personnel, property, and mis-

sion capability.

One area of concern is asbestos aboard the RAINIER. The ship was constructed during a period when use of asbestos materials was standard practice in the shipbuilding industry, and the RAINIER has asbestos throughout the vessel. In performing MRPs on other NOAA ships it was found that the operational vibration of the ship causes asbestos material to collect as dust in the overheads over the years. Asbestos lining of pipe hangars, cable transits, gaskets, hot piping insulation and the overhead panels themselves can be hazards to our crews. The RAINIER MRP provides the funding to upgrade the ships vital systems as well as to mitigate the risk from asbestos exposure. The ship is homeported in Seattle, Washington.

BELL M. SHIMADA Calibration

Annual Funding Requirements
(BA in Thousands)

	FY2009	FY 2010 Estimate	FY2011 Estimate	FY2012 Estimate	FY2013 Estimate
SHIMADA Calibration	1,000	0	0	0	0

NOAA requests $1,000,000 for operational and maintenance costs to calibrate the BELL M. SHIMADA (FSV 4) with ground fish, marine mammal, and ecosystem monitoring surveys currently conducted by the DAVID STARR JORDAN. Inter-vessel calibrations will occur over an 18-month period to ensure that decades-long West Coast and Eastern Tropical Pacific (ETP) survey time series are not compromised when SHIMADA becomes the primary NOAA ship in the region. Thus, BELL M. SHIMADA will incur additional operating costs including augmented crew staffing during FY 2009 and FY 2010.

As the replacement vessel, BELL M. SHIMADA will conduct a series of survey calibrations to avoid introducing errors into fisheries stock assessments and marine mammal population estimates, and the 50-year time series of Pacific Coast Ocean Observing System (PaCOOS) observations in the California Current Large Marine Ecosystem.

With its extremely low acoustic, very quiet radiated noise signature, the vessel will perform hydroacoustic, ichthyoplankton, bottom and mid-water trawl surveys of fishery resources and marine mammal sighting surveys, while collecting physical and biological oceanographic data simultaneously during a single deployment. This combined capability is not available in the academic fleet or private sector. BELL M. SHIMADA will significantly improve the precision and accuracy of scientific assessments and will provide data to manage West Coast fish stocks, including Pacific whiting and rockfish, and to monitor marine mammals in the Equatorial Tropical Pacific (ETP). The ship will be homeported on the West Coast.

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Chapter 5

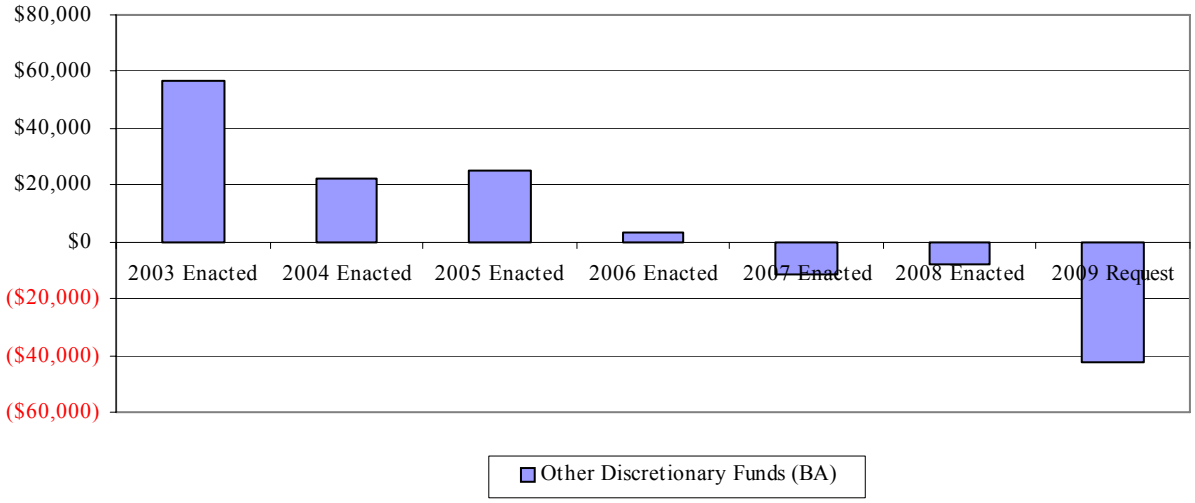
Other Accounts

Other Discretionary Funds

(Dollars in Thousands)	FY 2007 Enacted	FY 2008 Enacted	FY 2009 Request	Increase (Decrease)
Other Discretionary Funds				
Coastal Zone Management Fund	$0	$0	$0	$0
Fisherman's Contingency Fund	0	0	0	0
Foreign Fishing Observer Fund	0	0	0	0
Fisheries Finance Program Account	(717)	235	0	(235)
Promote and Develop American Fisheries	(79,000)	(77,000)	(79,000)	(2,000)
Pacific Coastal Salmon Recovery Fund	66,571	67,000	35,000	(32,000)
Marine Mammal Unusual Mortality Event Fund	0	0	0	0
Medicare Eligible Retiree Health Care Fund	1,820	1,802	1,934	132
Total Other Discretionary Funds (Budget Authority - BA)	($11,326)	($7,963)	($42,066)	($34,103)
Total FTE	1	1	1	0

Budget Trends, FY 2003– 2009

(Dollars in thousands)



NOAA's other discretionary funds are a significant part of NOAA's ecosystem-based management of coastal and ocean resources. These funds address threatened and endangered species, promote biodiversity, contribute to the improvement of ocean science, and promote fisheries research.

Coastal Zone Management Fund

The Coastal Zone Management (CZM) Fund was created in 1990 in order to reimburse NOAA for expenses incident to the administration of the Coastal Zone Management Act. The CZM Fund was intended to issue grants to states for improving coastal zone management. Emphasis was placed on planning for unforeseen or disaster-related circumstances and recognition of excellence in coastal management. NOAA will continue to work with Congress to reauthorize the Coastal Zone Management Act.

Fishermen's Contingency Fund

The Fishermen's Contingency Fund (FCF) program minimizes financial instability of the fishing industry caused by competing uses of the Outer Continental Shelf (OCS) and provides for timely resolution of claims by vessel owners. The Fishermen's Contingency Fund is authorized under Section 402 of Title IV of the Outer Continental Shelf Lands Act Amendments of 1978. NOAA compensates U.S. commercial fishermen for damage or loss of fishing gear, vessels, and resulting economic loss caused by obstructions related to oil and gas exploration, development, and production in any area of the Outer Continental Shelf. The funds used to provide this compensation are derived from fees collected by the Secretary of the Interior from the holders of leases, exploration permits, easements, or rights-of-way in areas of the Outer Continental Shelf.

The FCF account is funded solely through user fees. Disbursements can be made only to the

extent authorized in appropriation acts.

Foreign Fishing Observer Fund

The Foreign Fishing Observer Fund (FFOF) is financed through fees collected from owners and operators of foreign fishing vessels fishing within the Exclusive Economic Zone (EEZ) of the United States (such fishing requires a permit issued under the Magnuson-Stevens Fishery Conservation and Management Act). The FFOF reimburses NOAA for costs incurred in placing observers aboard foreign fishing vessels. The observer program is conducted primarily through contracts with the private sector. NOAA/NMFS places these observers aboard foreign fishing vessels to monitor compliance with U.S. fishery laws and to collect fishery management data.

Amounts available in the Fund can be disbursed only to the extent and in amounts provided in appropriation acts. In FY 1985, Congress approved the establishment of a supplemental observer program. The program provided that foreign vessels without federally-funded observers are required to obtain the services of private contractors certified by the Secretary of Commerce.

Fisheries Finance Program Account

The Fisheries Finance Program (FFP) Account provides direct loans that promote building sustainable fisheries. This account was established in FY 1997 to cover the cost of financing direct loans as authorized by Title XI of the Merchant Marine Act of 1936. The President's Request proposes loan levels of $8 million for individual fishing quotas. The re-authorization of the Magnuson-Stevens Fisheries Conservation and Management Act in October 1996 changed the program to provide direct loans rather than loan guarantees previously made under the Fishing Vessel Obligation Guarantee appropriation.

Promote and Develop Fisheries Products

The Promote and Develop Fisheries Products (PDFP) account makes grants for fisheries research and development projects. Funds are derived from a Department of Agriculture transfer to NOAA from duties on imported fisheries products. An amount equal to 30% of these duties is made available to NOAA, subject to appropriation limitations. The budget proposes that $79.0 million be transferred to the ORF account to offset fisheries research and management activities. ORF expenses related to fisheries management support are reimbursed from the PDFP account. Funds not transferred are used for the Saltonstall-Kennedy competitive research grants program.

Pacific Coastal Salmon Recovery Fund

The Pacific Coastal Salmon Recovery Fund (PCSRF) was established to augment state, tribal, and local programs to conserve and restore sustainable Pacific salmon populations and their habitats. The FY 2009 funds are to be used by the states of California, Oregon, Washington, Alaska, Idaho, and the Pacific Coastal and Columbia River Tribes to supplement state and federal programs and promote the development of federal-state-tribal-local partnerships in salmon conservation efforts. The state and tribes will use these funds for projects necessary for restoration of salmon and steelhead populations that are listed as threatened or endangered, or identified by a State as at-risk to be so listed, for maintaining populations necessary for exercise of tribal treaty fishing rights or native subsistence fishing, or for conservation of Pacific coastal salmon and steelhead habitat. Funds provided to the states will have a matching requirement of at least 33 percent of total costs. Funds provided to Pacific Coastal and Columbia River Tribes do not require matching dollars.

Medicare Eligible Retiree Health Care Fund

This account provides for NOAA's contribution to a healthcare accrual fund for NOAA Corps officers. The accrual fund pays for the future healthcare benefits for current officers once they retire and become Medicare-eligible, as well as for their dependents and annuitants. The FY 2003 Department of Defense Authorization Act requires all uniformed services including NOAA to participate in an accrual fund for Medicare-eligible retirees. The Ronald W. Reagan National Defense Authorization Act for 2005 (P.L. 108-375) provided permanent, indefinite appropriations to finance these costs for all uniformed service members. No additional appropriations are requested as part of the FY 2009 President's Budget for NOAA. However, as these costs are borne in support of NOAA's mission, they will continue to be shown as part of the NOAA discretionary total.

Other Discretionary Funds — ADJUSTMENTS TO BASE:

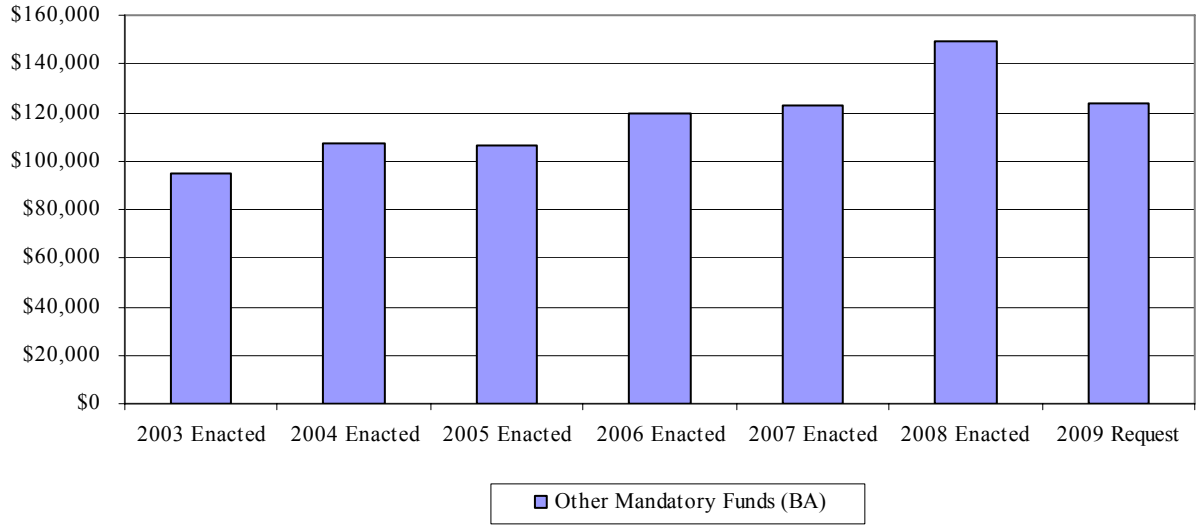
- NOAA requests a net decrease of $32,000,000 for the Pacific Coastal Salmon Recovery fund.

Other Mandatory Funds

(Dollars in Thousands)	FY 2007 Enacted	FY 2008 Enacted	FY 2009 Request	Increase (Decrease)
Other Mandatory Funds				
Coastal Zone Management Fund	($1,500)	($1,500)	($1,500)	$0
Damage Assessment & Restoration Revolving Fund	1,000	1,000	1,000	0
Promote and Develop American Fisheries Products	82,816	84,594	84,594	0
Fisheries Finance Program Account	4,656	27,389	0	(27,389)
Federal Ship Financing Fund	(1,000)	(1,000)	(1,000)	0
Environmental Improvement & Restoration Fund	10,253	8,060	8,656	596
Limited Access System Administration Fund	7,444	7,444	7,444	0
NOAA Corp Commissioned Officers Retirement	19,322	23,119	24,272	1,153
Total Other Mandatory Funds (Budget Authority - BA)	$122,991	$149,106	$123,466	($25,640)
Total FTE	20	20	20	0

Budget Trends, FY 2003– 2009

(Dollars in thousands)



Coastal Zone Management Fund

The Coastal Zone Management (CZM) Fund was established under the Omnibus Budget Reconciliation Act of 1990 (P.L. 101-508) to receive repayments from the coastal energy impact program. These payments are used for CZM programs and administration as authorized by section 308 of the Coastal Zone Management Act, and will offset CZM administration costs in the ORF account. In FY 2009, NOAA proposes to continue the transfer of authorized funding from the CZM Fund to the ORF account for obligation to facilitate operation of the Fund.

Damage Assessment & Restoration Revolving Fund

The Damage Assessment and Restoration Revolving Fund (DARRF) was established in 1990 to facilitate oil and hazardous material spill response, damage assessment, and restoration activities for damages to natural resources for which NOAA serves as trustee. The Fund receives proceeds from claims against responsible parties, as determined through court settlements or agreements. In FY 1999 and prior years, funds were transferred to the Operations, Research, and Facilities account for the purposes of damage assessment and restoration. Beginning in FY 2000, funds were expended in DARRF and treated as mandatory budget authority.

DARRF facilitates and sustains: (1) natural resource damage assessment while the Departments of Commerce and Justice seek full reimbursement from potentially responsible parties, and (2) restoration, replacement, or acquisition of the equivalent of injured or lost natural resources, including resources of National Marine Sanctuaries and National Estuarine Research Reserves, tidal wetlands, and other habitats for which NOAA is trustee. To fulfill its responsibility as a

Federal trustee for living natural resources under the Superfund, Clean Water, and Oil Pollution Acts, NOAA conducts comprehensive assessments of damages to trust resources from discharges of oil or releases of hazardous substances in coastal and marine areas. DARRF uses recovered damages to: restore injured resources, monitor the restoration to assess its effectiveness, conduct basic and applied research on restoration methodologies, apply these techniques to restoration of resource habitats, and provide guidance to habitat managers for selecting among restoration approaches. These program functions are conducted jointly within NOAA by the Office of General Counsel, the National Ocean Service, and the National Marine Fisheries Service.

Promote and Develop American Fishery Products & Research Pertaining to American Fisheries Fund

The American Fisheries Promotion Act of 1980 authorized a grants program for fisheries research and development projects funded by Department of Agriculture duties on fishery-related products. Thirty percent of these duties support the Promote and Develop American Fishery Products & Research Pertaining to American Fisheries Fund. The FY 2009 budget estimate is $84.6 million. Of this amount, $5.6 million will be used for the grants program to promote industry development through competitively awarded external grants (Saltonstall-Kennedy) for innovative research and development of projects in the fishing industry and for NOAA research efforts that complement the external program. NOAA will transfer the remaining $79.0 million to offset marine fishery resource programs in the Operations, Research, and Facilities account in FY 2009.

Fisheries Finance Program Account

All Fisheries Finance Program Account (FFP) Account authority is subject to the Federal Credit Reform Act of 1990 (FCRA) (2 U.S.C. 661). The FCRA requires estimated loan costs (FCRA cost) be appropriated in cash at the time Congress authorizes annual credit ceilings. FFP Account loan activity demonstrates that the FCRA subsidy is negative. Statutory authority is found in 46 U.S.C. 1274 and 16 U.S.C. 1801 et seq. FFP Account lending guidelines are found at Title 50, Code of Federal Regulations (CFR), Part 253, subpart B; and tempered by NOAA's sustainable fisheries policy and by the practical considerations of a program that has been self-sustaining throughout its credit history.

Environmental Improvement & Restoration Fund

The Environmental Improvement and Restoration Fund (EIRF) was established by Title IV of P.L. 105-83, the Department of the Interior and Related Agencies Appropriations Act, 1998, to fund marine research activities in the North Pacific. Twenty percent of the interest earned from this fund is made available to the Department of Commerce. The Fund issues grants to Federal, State, and private or foreign organizations or individuals to conduct research activities on or relating to fisheries or marine ecosystems in the North Pacific Ocean, Bering Sea, and Arctic Ocean. Research priorities and grant requests are reviewed and approved by the North Pacific Research Board, with emphasis placed on cooperative research efforts designed to address pressing fishery management or marine ecosystem information needs. This program supports the NOAA strategic plan goal to sustain healthy coasts.

Limited Access System Administration Fund

The Limited Access System Administration Fund (LASAF) was established by Title III of Public Law 104-297. Fee Collections equaling no more than three percent of the proceeds from the sale or transfer of limited access system permits are deposited into the Fund. These deposits into the Fund are used to administer an exclusive central registry system for the limited access system permits.

Under the authority of the Magnuson-Stevens Act Section 304(d)(2)(A), NMFS must collect a fee to recover the costs of managing and enforcing the Individual Fishing Quota (IFQ) Halibut/Sablefish program. Funds collected under this authority are deposited into the Limited Access System Administration Fund. Of the funds collected, 75 percent of fee payments are to be made available to the Secretary to offset costs of management and enforcement of the halibut and sablefish IFQ program, and 25 percent of fees collected are to be made available for appropriation to support the North Pacific IFQ loan program.

NOAA Corps Commissioned Officers Retirement

The retirement system for the uniformed services provides a measure of financial security after release from active duty for service members and their survivors. It is an important factor in the choice of a career in the uniformed services and is mandated by federal statutes under Title 10, United States Code. NOAA transfers retirement pay funds to the Coast Guard, which handles

the payment function for retirees and annuitants. Health care funds for non-Medicare-eligible retirees, dependents, and annuitants are transferred to the U.S. Public Health Service, which administers the health care program.

Marine Mammal Unusual Mortality Event Fund

Marine Mammal Protection Act Section 405 (16 USC 1421d) establishes the Marine Mammal Unusual Mortality Event Fund. The fund: "shall be available only for use by the Secretary of Commerce, in consultation with the Secretary of the Interior to compensate persons for special costs incurred in acting in accordance with the contingency plan issued under section 1421c(b) of this title or under the direction of an Onsite Coordinator for an unusual mortality event; for reimbursing any stranding network participant for costs incurred in preparing and transporting tissues collected with respect to an unusual mortality event for the Tissue Bank; and for care and maintenance of marine mammal seized under section 1374(c)(2)(D)." According to the MMPA, deposits can be made into Fund by the following: "amounts appropriated to the Fund; other amounts appropriated to the Secretary with respect to unusual mortality events; and amounts received by the United States in the form of gifts, devises, and bequests under subsection (d) of this section."

Other Mandatory Funds — ADJUSTMENTS TO BASE:

NOAA requests a net decrease of $1,749,000 for ATBs, distributed as follows:

- An increase of $596,000 for the Environmental Improvement and Restoration Fund.
- An increase of $1,153,000 for NOAA Corps Commissioned Officers Retirement.

Chapter 6

Special Exhibits

Summary by Appropriation

(Dollars in thousands)

Appropriation	2007 Actual	2008 Estimate	2009 Estimate	Increase (Decrease)
Operations, Research & Facilities (ORF)	$2,907,675	$2,856,277	$2,831,253	($25,024)
Procurement, Acquisition & Construction (PAC)	1,110,118	979,207	1,238,660	259,453
Coastal Zone Management Fund	3,000	3,000	3,000	0
Fisheries Finance Program Account	283	0	0	0
Pacific Coastal Salmon Recovery	66,638	67,000	35,000	(32,000)
Medicare-Eligible Retiree Healthcare Fund	1,820	1,802	1,934	132
TOTAL APPROPRIATION	4,089,534	3,907,286	4,109,847	202,561
Transfers:				
Operations, Research & Facilities				
FROM: Promote & Develop Fishery Products	79,000	77,000	79,000	2,000
Coastal Zone Management Fund	3,000	3,000	3,000	0
Pacific Coastal Salmon Recovery	67	67	0	(67)
Procurement, Acquisition and Construction	1,086	979	0	(979)
TO: Fisheries Finance Program Account	0	(235)	0	235
Subtotal, ORF	83,153	80,811	82,000	1,189
Coastal Zone Management Fund				
TO: ORF	(3,000)	(3,000)	(3,000)	0
Pacific Coastal Salmon Recovery				
TO: Fisheries Finance Program Account	(67)	(67)	0	67
Procurement, Acquisition & Construction (PAC)				
TO: ORF	(1,086)	(979)	0	979
Fisheries Finance Program Account (FFPA)				
FROM: ORF	0	235	0	(235)
Promote & Develop American Fishery Products (P&D)				
TO: ORF	(79,000)	(77,000)	(79,000)	(2,000)

Appropriation	2007 Actual	2008 Estimate	2009 Estimate	Increase (Decrease)
FROM: Department of Agriculture	82,817	84,594	84,594	0
Subtotal, P&D	(16,183)	7,594	5,594	(2,000)
TOTAL TRANSFERS	82,817	84,594	84,594	0
Unobligated balances, rescission				
Operations, Research & Facilities (ORF)	0	(5,108)	0	5,108
Procurement, Acquisition & Construction (PAC)	(24,000)	(6,264)	0	6,264
Fisheries Finance Program Account (FFPA)	(1,000)	0	0	0
TOTAL UNOBLIGATED BALANCES, RESCISSION	(25,000)	(11,372)	0	11,372
Mandatory Accounts				
Damage Assessment & Restoration Revolving Fund	3,788	1,000	1,000	0
Fisheries Finance Program Account	4,656	27,389	0	(27,389)
Environmental Improvement and Restoration Fund	8,650	8,060	8,656	596
CZMF mandatory offsetting collections	(1,659)	(1,500)	(1,500)	0
Federal Ship Financing Fund	(200)	(1,000)	(1,000)	0
NOAA Corps Retirement Pay	20,541	23,119	24,272	1,153
Limited Access System Administration Fund	6,911	7,444	7,444	0
TOTAL BUDGET AUTHORITY	4,190,038	4,045,020	4,233,313	188,293
Mandatory Funds	125,504	149,106	123,466	(25,460)
Discretionary Budget Authority				
Operations, Research & Facilities (ORF)	2,990,828	2,931,980	2,913,253	(18,727)
P&D Transfer	(79,000)	(77,000)	(79,000)	(2,000)
Procurement, Acquisition & Construction (PAC)	1,085,032	971,964	1,238,660	266,696
Medicare-Eligible Retiree Healthcare Fund	1,820	1,802	1,934	132
Fisheries Finance Program Account	(717)	235	0	(235)
Pacific Coastal Salmon Recovery	66,571	66,933	35,000	(31,933)
TOTAL DISCRETIONARY BUDGET AUTHORITY	4,064,534	3,895,914	4,109,847	213,933

Adjustments to Current Programs (Adjustments to Base) – requested $45,005,000:

Adjustments to Base (ATBs) are defined as increases or decreases to *specific object classes* that:

1. Represent the *same level of effort* as the current budget year,

2. Are *outside of the agency management's control*,

3. Are supported by *specific documentation*, and

4. Are a *known cost* (or fixed cost of doing business).

NOAA has requested the following increases for labor-related and non-labor ATBs:

ORF & PAC	(Salary & Benefits)	(Other Object Classes)	Total
NOS	4.6	0.4	5.0
NMFS	9.1	1.6	10.7
OAR	3.1	0.3	3.4
NWS	13.4	1.2	14.6
NESDIS	2.8	0.2	3.0
Program Support	3.3	0.3	3.6
OMAO	1.2	0.5	1.7
Total Discretionary - ATBs (Budget Authority)	37.5	4.5	42.0
Other Accounts - Mandatory Accts NOAA Corp Retirement	1.2		1.2
Total Appropriated - ATBs	38.7	4.5	43.2

These increases for ATBs will help fund the agency's overall anticipated adjustments to the current programs. Program totals will fund the FY 2009 Federal pay raise of 2.9 percent and annualize the FY 2008 pay raise of 3.5 percent. In addition, program totals will also fund inflationary increases for non-labor activities, including service contracts, utilities, field office lease payments, and rent charges from the General Services Administration.

NOAA MARINE AND AVIATION OPERATIONS

Planned Fiscal Year 2009 Operating Days of Ship Support for NOAA Programs

Operating days are days that a ship is away from home port and engaged in a project including days in any port other than home port or days transiting to or from a project. Days at sea are days that a ship is at sea engaged in a project or days transiting to or from a project.

The private sector and University National Oceanographic Laboratory System (UNOLS) ships generally track operating days rather than days at sea, so all days in the table below, including in-house ships days, are operating days. Operating days are typically 10 to 15 percent higher than days at sea.

	Operating Days	Dollars in Millions	
In-house	3,390	$ 113.5	O&M
	---	---	
In-house subtotal	3,390	$ 113.5	
Outsourced			
Private Sector	2,070	$11.5	
UNOLS	300	$ 5.0	
Contracts for hydro-graphic data *	780	$31.2	
	---	---	
	3,150	$47.7	
	====	=====	
Grand Total	**6,540**	**$161.2**	

*All hydrographic charters have been combined under contracts for hydrographic services. These contracts deal with area (square nautical miles), not operating days.

NOAA Research and Development

The National Oceanic and Atmospheric Administration's (NOAA) research **helps meet the evolving economic, social, and environmental needs of the Nation**. NOAA provides research leadership by conducting environmental research and transitioning mature research into products and services. NOAA is committed to maximizing the value of its research and ensuring successful transition of research to application. This commitment is demonstrated by NOAA's adoption of a Transition of Research to Application policy and implementation procedures. Under these procedures, NOAA research is annually reviewed to assess readiness for transition. Within the last few years, NOAA has successfully transitioned mature research, which has resulted in the following products and services for the Nation.

Air Quality Management

In FY 2004, NOAA began operational production of air quality forecasts as a result of NOAA's earlier Air Quality Forecast research. The initial operating capability provides next-day ground-level ozone predictions for the northeastern United States (U.S.). NOAA's Office of Oceanic and Atmospheric (OAR) is working with the National Weather Service (NWS) to extend these forecasts nationwide in the continental U.S.

Improved Quantity and Quality of Climate Information

NOAA has played a leading role in the international ozone assessment throughout the history of the 1987 U.N. Montreal Protocol. NOAA scientists have served as leading authors, coauthors, and reviewers in each of the International Panel on Climate Change Assessments Reports (1988, 1991, 1994, 1998, 2002, and 2006). In the current assessment, NOAA scientists are serving on the Scientific Steering Committee, as Chapter Lead Author, as coauthors and reviewers, and one NOAA scientist is serving as Coordinating Editor. The document is a major contribution to NOAA's portfolio of climate science products that meet the needs of NOAA's information customers in government, the private sector, and the public.

Tsunami Early Detection and Real-Time Reporting

Significant improvements have been made in the detection of tsunamis because of NOAA's Deep Ocean Assessment and Reporting of Tsunami (DART) buoys that sense deep-ocean waves that could generate tsunamis in the Pacific basin. These buoys were developed by OAR/PMEL and were transitioned in FY 2003 to the NWS/NDBC where they have been maintained in an operational status.

Improved Detection, Understanding and Prediction of El Niño and La Niña

In FY 2005, NOAA's Tropical Atmosphere Ocean (TAO) buoys began transitioning from OAR/PMEL to operations at the NWS/NDBC. The TAO array, which consists of approximately 70 moorings in the tropical Pacific Ocean, was designed to transmit ocean and meteorological data in real time via the Argos satellite Monitoring. The TAO array reflects the success-

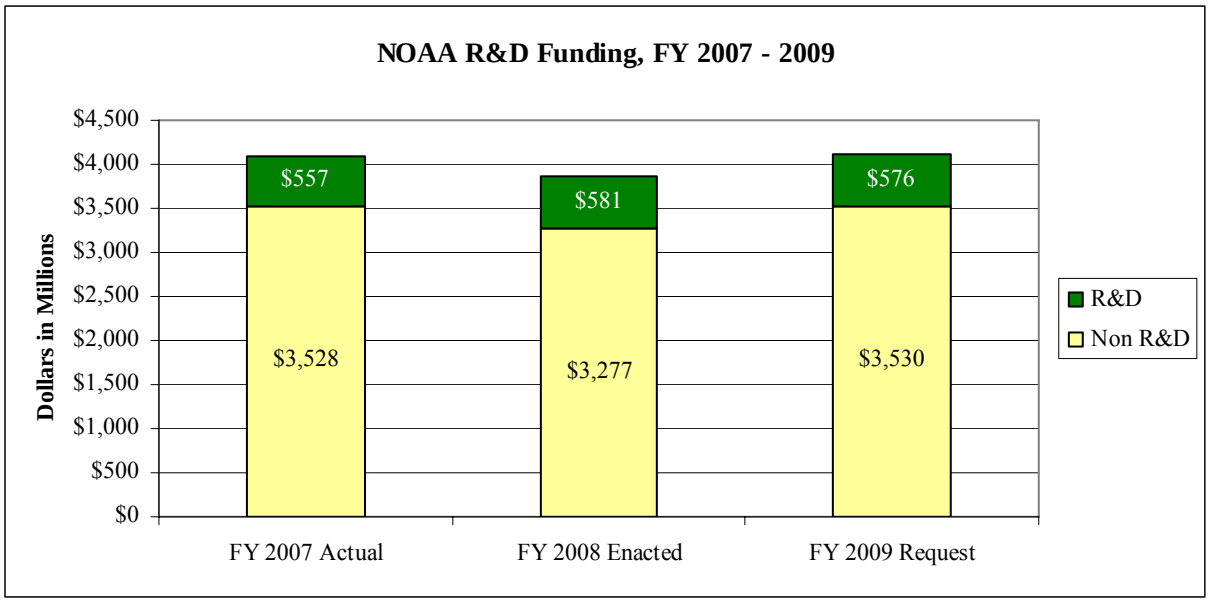
ful development of an ocean observing system that is a major component of the El Niño/ Southern Oscillation Observing System, the Global Climate Observing System, and the Global Ocean Observing System.

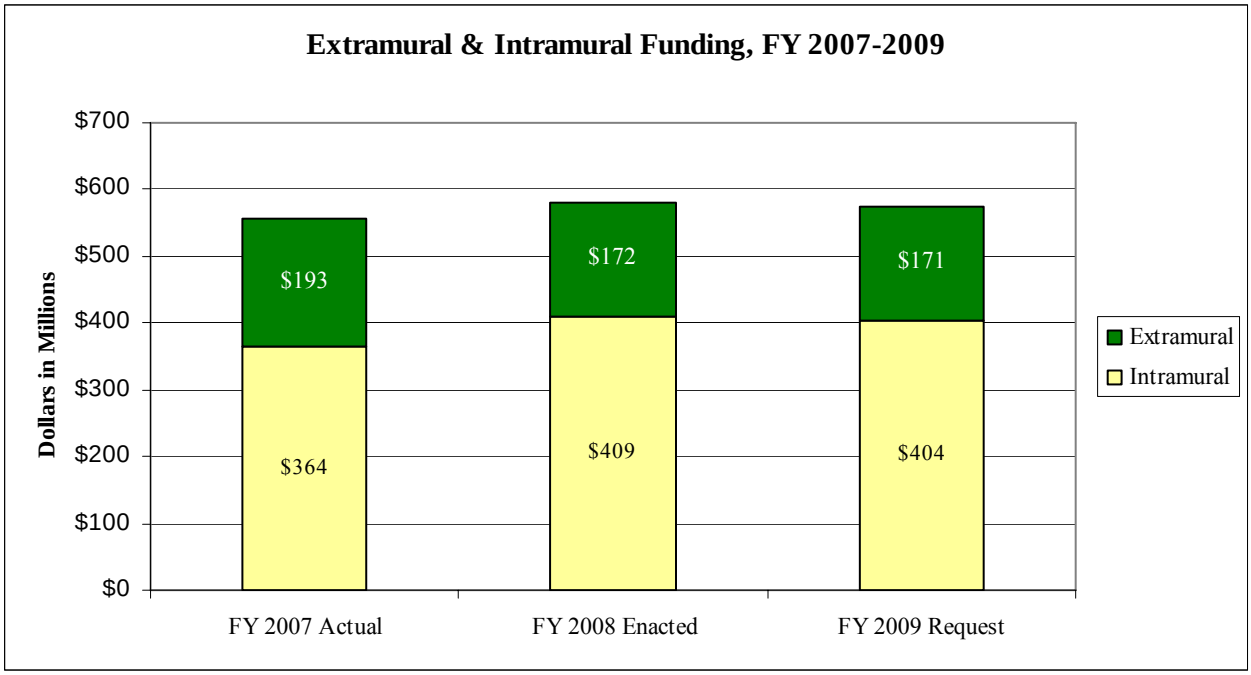
Forecasting Harmful Algal Blooms

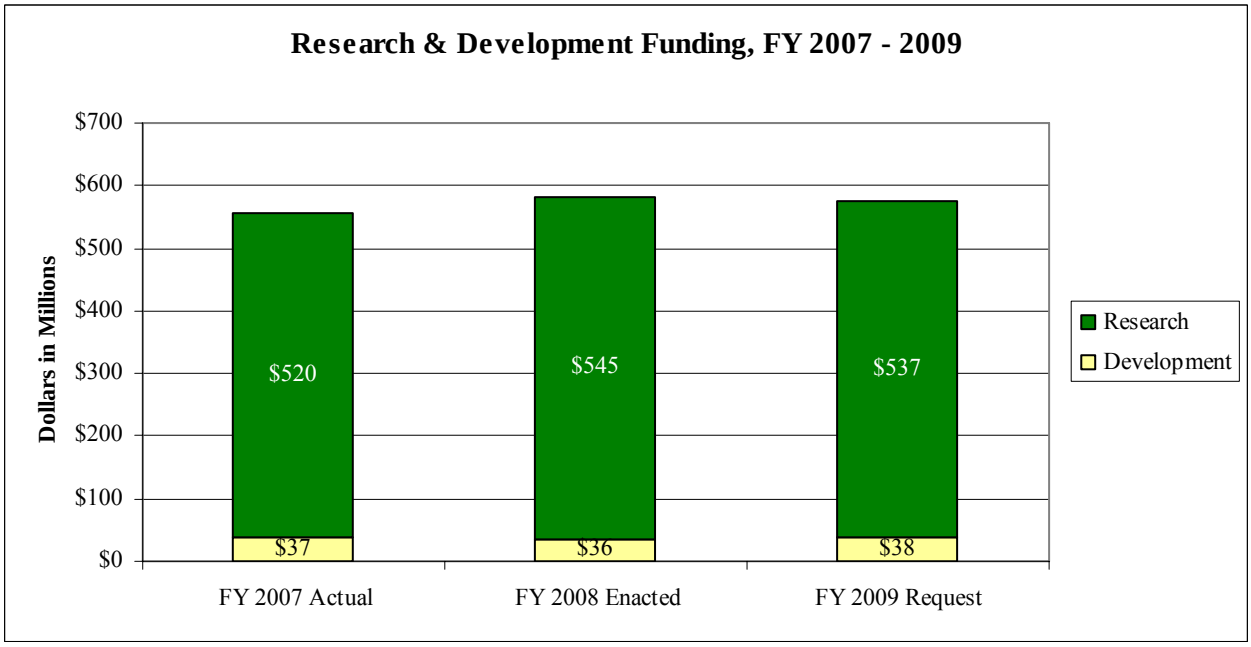
The rapid proliferation of toxic or nuisance algae is called a harmful algal bloom (HAB) which can be devastating to coastal resources and economies. Over the past 10 years, NOAA has invested significant resources on HAB research in order to understand the processes regulating HAB dynamics and to provide products to help managers mitigate bloom events and reduce the impacts of HABs. These research investments have begun to transition to applications. Currently, NOAA's HAB Forecasting System supplies information on the location, extent, and potential for development or movement of harmful algal blooms in the Gulf of Mexico.

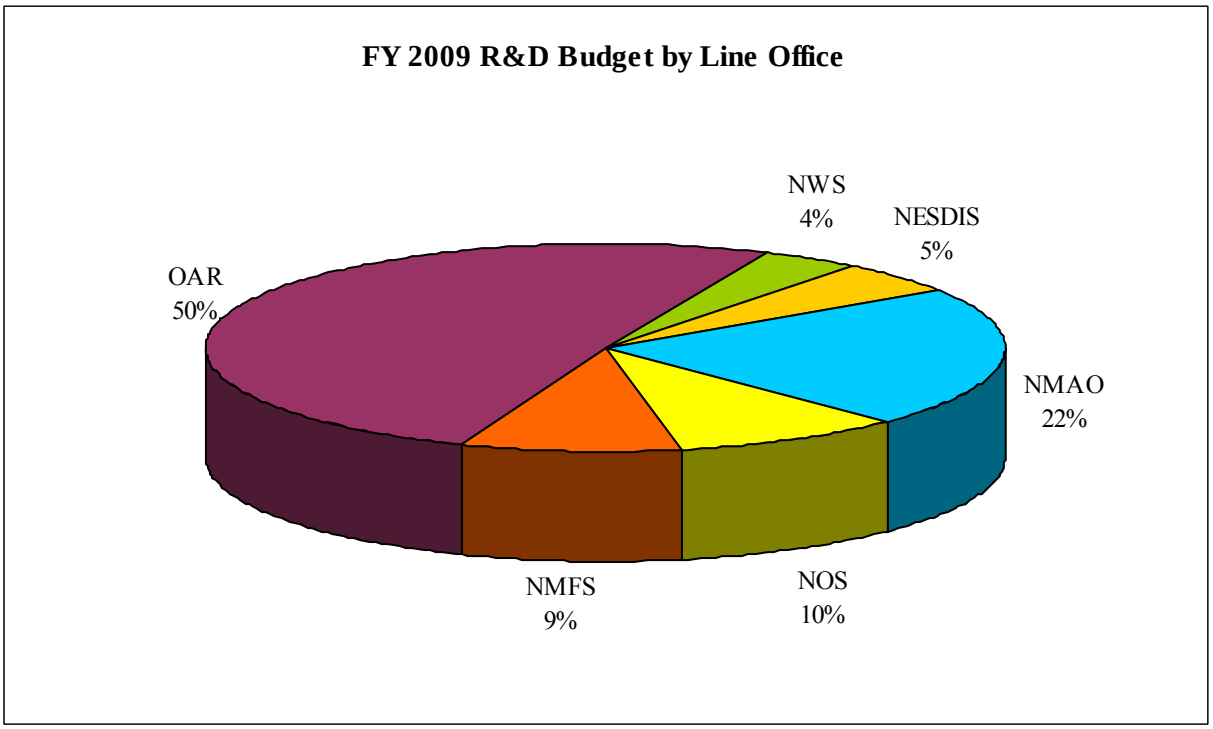
The following charts display the scope and nature of R&D at NOAA. Key elements include the following for FY 2009:

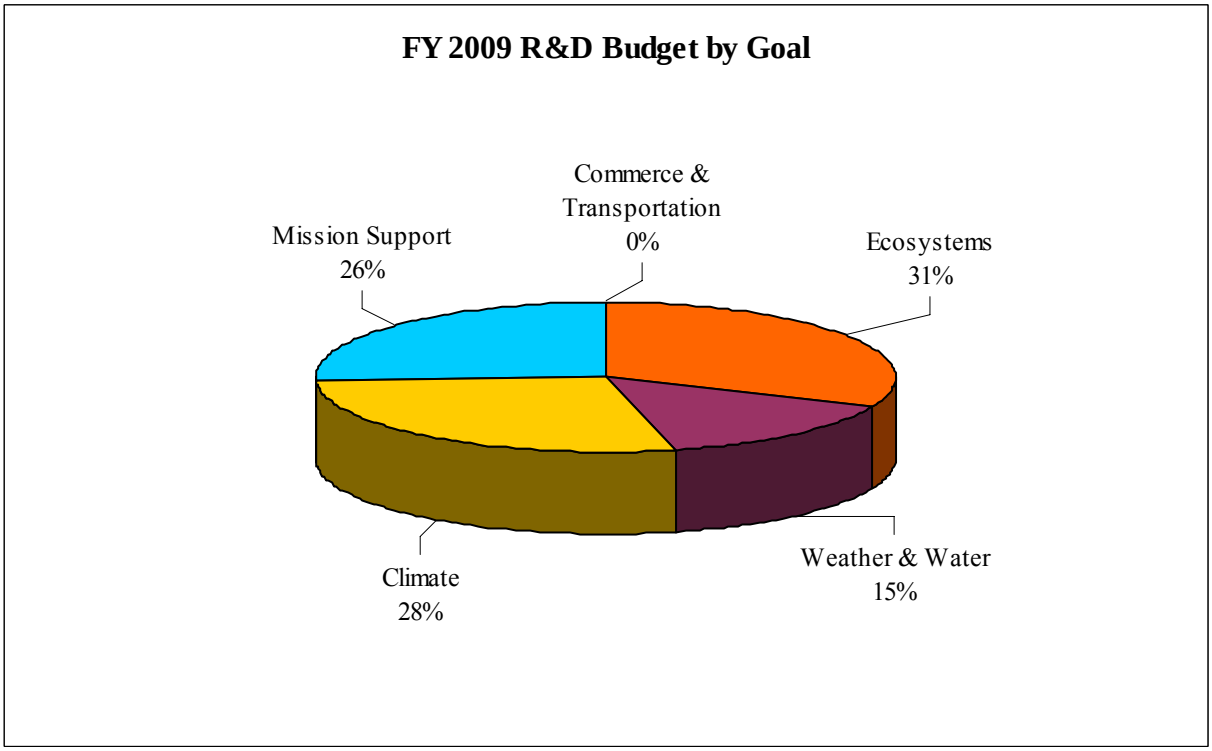
- R&D represents 14 percent of total NOAA funding in FY 2009.
- Seventy percent of NOAA's R&D is intramural and 30 percent is extramural.
- NOAA's R&D budget is 93 percent research and 7 percent development.
- NOAA's Office of Oceanic and Atmospheric Research (OAR, also known as "NOAA Research") manages 51 percent of NOAA's R&D. The remainder is distributed among NOAA's operational units.
- Major R&D efforts are supported by three of NOAA's mission goals: Ecosystems (31 percent), Climate (28 percent), and Weather and Water (15 percent). Zero percent is focused on Commerce and Transportation. The 26 percent conducted for "Mission Support" primarily provides research vessels for research.




Extramural & Intramural Funding, FY 2007-2009
Dollars in Millions
$700
$600
$500
$400
$300
$200
$100
$0
$193
$364
$172
$409
$171
$404
FY 2007 Actual
FY 2008 Enacted
FY 2009 Request
Extramural
Intramural


Research & Development Funding, FY 2007 - 2009
Dollars in Millions
$700
$600
$500
$400
$300
$200
$100
$0
$520
$37
$545
$36
$537
$38
FY 2007 Actual
FY 2008 Enacted
FY 2009 Request
Research
Development


FY 2009 R&D Budget by Line Office
NWS
4%
NESDIS
5%
OAR
50%
NMAO
22%
NMFS
9%
NOS
10%


FY 2009 R&D Budget by Goal
Commerce &
Transportation
0%
Mission Support
26%
Ecosystems
31%
Climate
28%
Weather & Water
15%

A NOTE ON TERMINOLOGY:

The reader should be aware of the specific meaning of several terms as they are used throughout this budget summary:

"FY 2007 Enacted" is:

Fiscal Year (FY) 2007 Appropriations,
less rescissions,
plus Supplemental funds

"FY 2008 Enacted" is:

FY 2008 Omnibus

"FY 2009 Request" is:

FY 2008 Enacted, less Terminations,
plus Adjustments to Base, and Program Changes

"Adjustments to Base" include:

the estimated FY 2009 Federal Pay raise of 2.9% and the annualized FY 2008 pay raise of 3.5%. Program totals will provide inflationary increases for non-labor activities, including service contracts, utilities, field office lease payments, and rent charges from GSA. In addition, ATBs include unique/technical adjustments to base program

NATIONAL OCEAN SERVICE
($ in Thousands)

FY 08 PROPOSED OPERATING PLAN Operations, Research and Facilities	FY 2008 ENACTED Amount	Total ATBs	Program Changes	FY 2009 President's Budget Amount	FY 2009 Request vs FY 2008 Enacted
Navigation Services					
Mapping & Charting					
Mapping & Charting Base	44,371	1,227	2,086	47,639	3,268
Joint Hydrographic Center	7,247	(7,240)	0	0	(7,247)
Hydrographic Research & Technology Development	0	7,247	177	7,424	7,424
Electronic Navigational Charts	4,392	4	1,736	6,128	1,736
Shoreline Mapping	2,366	2	58	2,424	58
Address Survey Backlog/Contracts	26,355	27	4,818	31,173	4,818
Dune System Assessment & Shoreline Change Analysis	869	0	0	0	(869)
Subtotal, Mapping and Charting	**85,600**	**1,267**	**8,875**	**94,788**	**9,188**
Geodesy					
Geodesy Base	21,729	621	532	22,860	1,131
National Height Modernization	5,000	0	0	2,541	(2,459)
Geodetic Survey- KY	376	0	0	0	(376)
Geodesy/Height Modernization - IL	353	0	0	0	(353)
Alabama Statewide GIS Mapping Program	423	0	0	0	(423)
Geospatial Data Analysis Center, AL	423	0	0	0	(423)
Coastal & Ocean Navigation & Hazards Assist - SC	188	0	0	0	(188)
Subtotal, Geodesy	**28,492**	**621**	**532**	**25,401**	**(3,091)**
Tide & Current Data					
Tide & Current Data Base	26,168	500	2,195	28,837	2,669
Alaska Current & Tide Data	1,316	0	0	0	(1,316)
Subtotal, Tide & Current Data	**27,484**	**500**	**2,195**	**28,837**	**1,353**
Total, Navigation Services	**141,576**	**2,388**	**11,602**	**149,026**	**7,450**
Ocean Resources Conservation and Assessment					
Ocean Assessment Program (OAP)					
Ocean Research Priorities Plan Implementation	0	0	10,000	10,000	10,000
IOOS Regional Observations	0	11,555	3,000	14,555	14,555
Integrated Ocean Observing System	26,360	(14,000)	0	0	(26,360)
NOAA IOOS	0	2,500	4,000	6,500	6,500
Regional Geospatial Modeling Grants	8,000	0	0	0	(8,000)
Gulf of Mexico Regional Collaboration	4,880	5	120	5,000	120
Alliance for Coastal Technologies	940	0	0	0	(940)
Coastal Storms	1,464	1	1,410	2,874	1,410
Coastal Services Center	23,426	419	0	20,254	(3,172)
CREST	1,518	0	0	0	(1,518)
NERRS Rsrch (formerly CICEET - Coop Inst for Coastal & Estuarine	6,503	0	(6,496)	0	(6,503)
Coral Reef Program	29,283	100	0	25,897	(3,386)
Ocean Health Initiative	2,928	0	0	1,000	(1,928)
Lake Erie Monitoring	353	0	0	0	(353)
Louisiana Environmental Research Center	353	0	0	0	(353)
Subtotal, Ocean Assessment Program (OAP)	**106,008**	**580**	**12,034**	**86,080**	**(19,928)**
Response and Restoration					
Response and Restoration Base	11,518	515	5,245	17,266	5,748
Estuary Restoration Program	1,160	1	28	1,188	28
Marine Debris	3,172	0	4,000	4,000	828
Marine Debris Removal - Alaska	1,316	0	0	0	(1,316)
Aquatic Resources Environmental Initiative	1,128	0	0	0	(1,128)
Pribilof Islands Cleanup	5,297	(727)	(4,565)	0	(5,297)
Aquidneck Island Westside Plan	188	0	0	0	(188)
Suisin Bay, CA Assessment Study	1,500	0	0	0	(1,500)
Subtotal, Response and Restoration	**25,279**	**(211)**	**4,708**	**22,454**	**(2,825)**
National Centers for Coastal Ocean Science (NCCOS)					
Nat'l Ctrs for Coastal Ocean Science (NCCOS)	0	31,983	775	32,758	32,758
Competitive Research	11,713	12	4,088	15,801	4,088
Ctr for Coastal Environ Health & Bimolecular Rsch	13,665	(8,245)	0	0	(13,665)
Oxford, MD	4,392	(1,240)	0	0	(4,392)
Ctr for Coastal Fisheries Habitat Research	5,605	(5,599)	0	0	(5,605)

NATIONAL OCEAN SERVICE
($ in Thousands)

FY 08 PROPOSED OPERATING PLAN Operations, Research and Facilities	FY 2008 ENACTED Amount	Total ATBs	Program Changes	FY 2009 President's Budget Amount	FY 2009 Request vs FY 2008 Enacted
Center for Coastal Monitoring & Assessment	4,474	(4,470)	0	0	(4,474)
Center for Sponsored Coastal Ocean Research	2,635	(2,632)	0	0	(2,635)
NCCOS Headquarters	4,881	(4,876)	0	0	(4,881)
Marine Env Health Research Lab - MEHRL	4,100	(4,096)	0	0	(4,100)
Subtotal, NCCOS	**51,465**	**837**	**4,863**	**48,559**	**(2,906)**
Total, Ocean Resources Conserv. & Assess.	**182,752**	**1,206**	**21,605**	**157,093**	**(25,659)**
Ocean and Coastal Management					
Coastal Management					
CZM Grants	64,423	65	1,723	66,146	1,723
CZM Program Administration	6,735	308	1,119	8,155	1,420
Nat'l Estuarine Rsrch Reserve Sys - NERRS	16,404	304	5,634	22,326	5,922
Non-point Pollution Implementation Grants	3,904	0	0	0	(3,904)
Marine Protected Areas	1,464	1	664	2,128	664
Subtotal, Coastal Management	**92,930**	**678**	**9,140**	**98,755**	**5,825**
Ocean Management					
Marine Sanctuary Program					
Marine Sanctuary Program Base	46,853	614	0	44,378	(2,475)
Maritime Museum, AL	470	0	0	0	(470)
Point Loma Enhanced Monitoring Program, CA	893	0	0	0	(893)
Northwest Straits Citizens Advisory Commission, WA	1,563	0	0	0	(1,563)
Urban Coast Institute, NJ	893	0	0	0	(893)
Subtotal, Ocean Management	**50,672**	**614**	**0**	**44,378**	**(6,294)**
Total, Ocean and Coastal Management	**143,602**	**1,292**	**9,140**	**143,133**	**(469)**
Total, National Ocean Service - ORF	**467,930**	**4,886**	**42,347**	**449,252**	**(18,678)**
Other National Ocean Service Accounts					
Total, National Ocean Service - PAC	56,599	(273)	7,135	27,385	(29,214)
Total, National Ocean Service - Other	11,600	0	0	11,600	0
GRAND TOTAL NOS	**536,129**	**4,613**	**49,482**	**488,237**	**(47,892)**

NATIONAL MARINE FISHERIES SERVICE
($ in Thousands)

FY 08 PROPOSED OPERATING PLAN Operations, Research and Facilities	FY 2008 ENACTED Amount	Total ATBs	Program Changes	FY 2009 President's Budget Amount	FY 2009 Request vs FY 2008 Enacted
Protected Species Research and Management					
Protected Species Research and Management Programs Base	33,187	546	1,066	34,766	1,579
Marine Mammals	40,455	619	1,500	41,340	885
Marine Turtles	13,665	213	0	10,003	(3,662)
Other Protected Species (Marine Fish, Plants, and Invertebrates)	7,975	95	195	8,257	282
Atlantic Salmon	5,759	76	4,167	9,996	4,237
Pacific Salmon (for Salmon Management Activities, see Fisheries Resea	58,566	1,203	3,169	62,879	4,313
Cook Inlet Beluga Whale Research	353	0	0	0	(353)
Right Whale Disentanglement Program, Center for Coast Studies	94	0	0	0	(94)
Aleut Pacific Marine Resources Observers, AK	117	0	0	0	(117)
Alaska Sea Life Center, AK	3,478	0	0	0	(3,478)
Alaska Sea Otter and Steller Sea Lion Commission, AK	202	0	0	0	(202)
Alaska Native Harbor Seal Commission, AK	141	0	0	0	(141)
Subtotal, Protected Species Research and Management	**163,992**	**2,752**	**10,097**	**167,241**	**3,249**
Fisheries Research and Management					
Fisheries Research and Management Programs	135,533	2,607	21,505	159,585	24,052
Expand Annual Stock Assessments - Improve Data Collection	31,631	421	8,484	40,504	8,873
Economics & Social Sciences Research	5,857	78	4,729	10,658	4,801
Salmon Management Activities	23,426	124	854	24,381	955
Regional Councils and Fisheries Commissions	25,701	985	629	27,289	1,588
Fisheries Statistics	12,868	282	3,015	16,152	3,284
Fish Information Networks	21,675	129	231	22,013	338
Survey and Monitoring Projects	14,642	419	8,224	23,270	8,628
Fisheries Oceanography	968	4	24	995	27
American Fisheries Act	4,881	132	343	5,351	470
Interjurisdictional Fisheries Grants	2,506	4	61	2,569	63
National Standard 8	992	20	24	1,035	43
Reduce Fishing Impacts on Essential Fish Habitat (EFH)	497	8	12	517	20
Reducing Bycatch	2,741	55	567	3,360	619
Anadromous Grants	1,952	0	0	0	(1,952)
Product Quality and Safety	6,810	157	167	7,127	317
Maine and New Hampshire Inshore Trawl Survey	188	0	0	0	(188)
Migratory Shark Research at Mote Marine Laboratory	1,504	0	0	0	(1,504)
Reef Fish Monitoring and Research, FL Fish & Wildlife Conservation C	940	0	0	0	(940)
Chesapeake Bay Multi Species Fisheries Management	352	0	0	0	(352)
Gulf Oyster Industry Program, University of Florida	188	0	0	0	(188)
Narraganset Bay Window Program, University of Rhode Island Coastal	916	0	0	0	(916)
Oyster Hatchery Economic Pilot Program, Morgan State University, MD	470	0	0	0	(470)
Papahanaumokuakea Marine National Monument Fishery Assistance, H	6,698	0	0	0	(6,698)
Massachussetts Groundfish Support, MA	13,395	0	0	0	(13,395)
Monkfish and Migratory Finfish Trawl Surveys, NJ	1,339	0	0	0	(1,339)
Southern New England Cooperative Research Initiative, RI	1,339	0	0	0	(1,339)
Hawaii Seafood Safety and Inspections, HI	670	0	0	0	(670)
Trawl Survey, Chesapeake Bay	447	0	0	0	(447)
Horseshoe Crab Research, Virginia Tech, VA	447	0	0	0	(447)
Oregon Salmon Weak Stock Solutions Research, OR	447	0	0	0	(447)
Fisheries Infrastructure, Investigation, Assessment & Improvement Proj	376	0	0	0	(376)
Scallop Fishery Assessment, MA	1,786	0	0	0	(1,786)
Center for Ecosystem-based Fisheries Management, AL	2,632	0	0	0	(2,632)
Pelagic Tagging, CA	446	0	0	0	(446)
Subtotal, Fisheries Research and Management	**327,260**	**5,425**	**48,869**	**344,806**	**17,546**
Enforcement & Observers/Training					
Enforcement	53,371	680	2,407	56,405	3,034
Observers/Training	31,523	417	772	32,680	1,157
Subtotal, Enforcement & Observers/Training	**84,894**	**1,097**	**3,179**	**89,085**	**4,191**
Habitat Conservation & Restoration					
Sustainable Habitat Management	18,685	328	1,958	20,952	2,267
Fisheries Habitat Restoration (CBRP & Open Rivers)	25,379	206	(3,107)	22,453	(2,926)
Mill River Habitat Restoration, MA	376	0	0	0	(376)
Bronx River Restoration, NY	940	0	0	0	(940)
NAIB Conservation and Education Programs, MD	893	0	0	0	(893)

NATIONAL MARINE FISHERIES SERVICE
($ in Thousands)

FY 08 PROPOSED OPERATING PLAN Operations, Research and Facilities	FY 2008 ENACTED Amount	Total ATBs	Program Changes	FY 2009 President's Budget Amount	FY 2009 Request vs FY 2008 Enacted
Port Aransas Nature Preserve, TX	329	0	0	0	(329)
Chesapeake Bay Oyster Restoration, MD	1,786	0	0	0	(1,786)
Oyster Bed Reseeding and Fishery Habitat Enhancement, AL	940	0	0	0	(940)
Rehabilitation of Alaska Crab, AK	282	0	0	0	(282)
Lower Elwha River Habitat Restoration, WA	447	0	0	0	(447)
Merrimack River Fish Habitat, NH	188	0	0	0	(188)
Subtotal, Habitat Conservation & Restoration	**50,245**	**534**	**(1,149)**	**43,405**	**(6,840)**
Other Activities Supporting Fisheries					
Antarctic Research	3,032	36	497	2,639	(393)
Aquaculture	3,416	3	636	4,052	636
Chesapeake Bay Studies	1,920	(1,918)	0	0	(1,920)
Climate Regimes & Ecosystem Productivity	1,464	34	558	2,055	591
Computer Hardware and Software - FY 2004 Omnibus Funded in PAC	3,299	40	81	3,417	118
Cooperative Research	10,068	150	1,247	11,455	1,387
Information Analyses & Dissemination	18,481	412	453	19,328	847
Magnuson-Stevens (MSA) Implementation off Alaska	7,321	(7,314)	0	0	(7,321)
Marine Resources Monitoring, Assessment & Prediction Prgm (MarMap	822	1	20	842	20
National Environmental Policy Act (NEPA)	7,882	144	193	8,211	329
NMFS Facilities Maintenance	5,902	437	144	6,477	575
Southeast Area Monitoring & Assessment Program (SEAMAP)	4,392	(4,388)	0	0	(4,392)
Other Projects	4,881	8	119	5,003	122
Southwest Fisheries Science Center	976	1	24	1,000	24
Regional Studies		6,371	753	7,124	7,124
Regional Science and Operations		7,474	597	8,071	8,071
Aquatic Genomics and Biosecurity Research	940	0	0	0	(940)
Groundline Exchange Program	376	0	0	0	(376)
Bering Sea Fishermen's Association	188	0	0	0	(188)
Yukon River Drainage Association	376	0	0	0	(376)
Gulf of Alaska Coastal Communities Coalition	188	0	0	0	(188)
Louisiana Fisheries Recovery Resource Center	491	0	0	0	(491)
New England Multi-Species Survey	2,679	0	0	0	(2,679)
Western Pacific Pelagic Fisheries Research	1,116	0	0	0	(1,116)
Fishing Mortality Education Program	94	0	0	0	(94)
Science Consortium for Ocean Replenishment at Mote marine Lab	846	0	0	0	(846)
East Coast Shellfish Aquaculture Industry	423	0	0	0	(423)
Lobster Institute CORE Initiative - Univ of Maine	188	0	0	0	(188)
NOAA Save the Bay Edu Prog & Shellfish Restoration	188	0	0	0	(188)
Subtotal, Other Activities Supporting Fisheries	**81,949**	**1,491**	**5,322**	**79,674**	**(2,275)**
Total, National Marine Fisheries Service - ORF	**708,340**	**11,299**	**66,318**	**724,211**	**15,871**
Other National Marine Fisheries Service Accounts					
Total, National Marine Fisheries Service - PAC	2,021	0	0	0	(2,021)
Total, National Marine Fisheries Service - Other	118,722	(1,154)	(32,000)	58,112	(60,610)
GRAND TOTAL NMFS	**829,083**	**10,145**	**34,318**	**782,323**	**(46,760)**

OFFICE of ATMOSPHERIC RESEARCH

($ in Thousands)

FY 08 PROPOSED OPERATING PLAN Operations, Research and Facilities	FY 2008 ENACTED Amount	Total ATBs	Program Changes	FY 2009 President's Budget Amount	FY 2009 Request vs FY 2008 Enacted
Climate Research					
Laboratories & Cooperative Institutes					
Laboratories & Cooperative Institutes	53,500	1,239	0	51,576	(1,924)
Subtotal, Laboratories & Cooperative Institutions	**53,500**	**1,239**	**0**	**51,576**	**(1,924)**
Climate Data & Information					
Climate Data & Information	0	7,601	698	8,299	8,299
Subtotal, Climate Data & Information	**0**	**7,601**	**698**	**8,299**	**8,299**
Competitive Research Program					
Competitive Research Program (incl. NIDIS)	130,116	530	4,186	134,702	4,586
Subtotal, Competitive Research Program	**130,116**	**530**	**4,186**	**134,702**	**4,586**
Climate Operations					
Climate Operations	0	514	386	900	900
Subtotal, Climate Operations	**0**	**514**	**386**	**900**	**900**
Climate Observations & Services					
Climate Observations & Services	8,068	(8,060)	0	0	(8,068)
Subtotal, Climate Observations & Services	**8,068**	**(8,060)**	**0**	**0**	**(8,068)**
Other Partnership Programs					
Abrupt Climate Change Research	376	0	0	0	(376)
Drought Research Study	752	0	0	0	(752)
Subtotal, Other Partnership Programs	**1,128**	**0**	**0**	**0**	**(1,128)**
Total, Climate Research	**192,812**	**1,824**	**5,270**	**195,477**	**2,665**
Weather & Air Quality Research					
Laboratories & Cooperative Institutes					
Laboratories & Cooperative Institutes	46,000	891	4,000	49,089	3,089
Subtotal, Laboratories & Cooperative Institutes	**46,000**	**891**	**4,000**	**49,089**	**3,089**
Weather & Air Quality Research Programs					
U.S. Weather Research Program (USWRP) (THORPEX)		5,357	143	5,500	5,500
Tornado Severe Storm Research / Phased Arrary Radar	2,901	3	71	2,972	71
Subtotal, Weather & Air Quality Research Programs	**2,901**	**5,360**	**214**	**8,472**	**5,571**
Other Partnership Programs					
STORM (U. of N. Iowa)	613	0	0	0	(613)
Wind Hazards Reduction Program, IA	613	0	0	0	(613)
San Joaquin Valley Ozone Study, CA	134	0	0	0	(134)
Advanced Radar Technologies, WY	94	0	0	0	(94)
Coastal & Inland Hurricane Monitoring & Protection Program, AL	611	0	0	0	(611)
Tornado & Hurricane Operations & Research, AL	846	0	0	0	(846)
Coastal Weather for Catastrophic Events, AL	258	0	0	0	(258)
Subtotal, Other Partnership Programs	**3,169**	**0**	**0**	**0**	**(3,169)**
Total, Weather & Air Quality Research	**52,070**	**6,251**	**4,214**	**57,561**	**5,491**
Ocean, Coastal, and Great Lakes Research					
Laboratories & Cooperative Institutes					
Laboratories & Cooperative Institutes	23,000	621	0	20,806	(2,194)
Subtotal, Laboratories & Cooperative Institutes	**23,000**	**621**	**0**	**20,806**	**(2,194)**
National Sea Grant College Program					
National Sea Grant College Program Base	57,100	97	0	54,997	(2,103)
Subtotal, National Sea Grant College Program	**57,100**	**97**	**0**	**54,997**	**(2,103)**
Nat'l Undersea Rsrch Program (NURP)					
Nat'l Undersea Research Program (NURP)	10,000	(9,402)	(0)	0	(10,000)
Nat'l Inst for Undersea Science & Tech (NIUST)	4,700	0	0	0	(4,700)
Subtotal, National Undersea Research Program (NURP)	**14,700**	**(9,402)**	**(0)**	**0**	**(14,700)**

OFFICE of ATMOSPHERIC RESEARCH

($ in Thousands)

FY 08 PROPOSED OPERATING PLAN Operations, Research and Facilities	FY 2008 ENACTED Amount	Total ATBs	Program Changes	FY 2009 President's Budget Amount	FY 2009 Request vs FY 2008 Enacted
Ocean Exploration and Research					
Ocean Exp & Rsrch (NURP moved in FY08)	19,522	9,430	0	27,791	8,269
Subtotal, Ocean Exploration and Research	**19,522**	**9,430**	**0**	**27,791**	**8,269**
Other Ecosystems Programs					
Aquatic Invasive Species Program	4,600	3	0	988	(3,612)
Marine Aquaculture Program	4,881	8	0	1,622	(3,259)
Subtotal, Other Ecosystems Programs	**9,481**	**11**	**0**	**2,610**	**(6,871)**
Invasive Species & Partnership Programs					
Lake Champlain Research Consortium	250	0	0	0	(250)
Lake Champlain Emerging Threats	400	0	0	0	(400)
Shedd Aquarium Invasive Species Prog - Illinois	940	0	0	0	(940)
Advanced Undersea Vehicle, CT	402	0	0	0	(402)
International Arctic Research Center, AK	2,397	0	0	0	(2,397)
Coastal Vulnerability to Climate Change Study, AK	940	0	0	0	(940)
New Hampshire Lake Host Program, NH	188	0	0	0	(188)
New Hampshire Volunteer Lake Assessment Prog, NH	94	0	0	0	(94)
Collaborate R&D Initiative for the Gulf of Mexico, AL	752	0	0	0	(752)
West Alabama Marine Shrimp & Fish Aquaculture, AL	235	0	0	0	(235)
Subtotal, Other Partnership Programs	**6,598**	**0**	**0**	**0**	**(6,598)**
Total, Ocean, Coastal, & Great Lakes Rsrch	**130,401**	**757**	**0**	**106,204**	**(24,197)**
Info Tech, R&D, & Science Education					
High Performance Computing Initiatives	12,659	72	310	13,028	369
Total, Info Tech, R&D, & Science Education	**12,659**	**72**	**310**	**13,028**	**369**
Total, Office of Atmospheric Research - ORF	**387,942**	**8,904**	**9,794**	**372,270**	**(15,672)**
Other Office of Atmospheric Research Accounts					
Total, Office of Atmospheric Research - PAC	10,131	10	248	10,379	248
Total, Office of Atmospheric Research - Other	0	0	0	0	0
GRAND TOTAL OAR	**398,073**	**8,914**	**10,042**	**382,649**	**(15,424)**

NATIONAL WEATHER SERVICE
($ in Thousands)

FY 08 PROPOSED OPERATING PLAN Operations, Research and Facilities	FY 2008 ENACTED Amount	Total ATBs	Program Changes	FY 2009 President's Budget Amount	FY 2009 Request vs FY 2008 Enacted
Operations and Research					
Local Warnings and Forecasts Base	579,000	10,390	13,065	601,876	22,876
Air Quality Forecasting	5,315	5	130	5,445	130
Alaska Data Buoys	1,643	2	40	1,683	40
HI Data Bouys	1,250	0	(0)	0	(1,250)
Sustain Cooperative Observer Network	1,826	2	45	1,871	45
Susquehanna River Basin Flood System	1,786	0	0	0	(1,786)
Urbanet III, MD	5,358	0	0	0	(5,358)
New England Weather Technology Initiative	188	0	0	0	(188)
NOAA Profiler Network	4,623	5	113	4,736	113
Pacific Island Compact	3,431	4	84	3,515	84
USWRP - US Weather Rsrch Program - THORPEX	5,857	(5,851)	0	0	(5,857)
Vermont NE Weather & Wind Data Integration	200	0	0	0	(200)
Strengthen U.S. Tsunami Warning Network	23,196	23	0	23,196	0
Western Kentucky Environmental Monitoring Network	705	0	0	0	(705)
Hawaii Rain Gages for NWS Pacific Region HQ, HI	322	0	0	0	(322)
Hurricane Mitigation Alliance, FL	447	0	0	0	(447)
Perdido Pass Navigation Assistance, AL	282	0	0	0	(282)
Eye-on-The-Sky, VT	229	0	0	0	(229)
Subtotal, Local Warnings and Forecasts	**635,658**	**4,580**	**13,477**	**642,322**	**6,664**
Advanced Hydrological Prediction Services	5,893	6	144	6,037	144
Aviation Weather	4,542	5	711	5,253	711
WFO Maintenance	7,141	7	175	7,316	175
Improved Hydro Modeling of Water Resources, ID	94	0	0	0	(94)
Remote Infrasonic Monitoring of Natural Hazards, MS	1,645	0	0	0	(1,645)
Regional Ensembling Sys for Atmosph Dispersion, MS	1,410	0	0	0	(1,410)
Weather Radio Transmitters					
Weather Radio Transmitters Base	2,297	2	0	2,297	0
Vanderburgh County Outdoor Warning Siren System	127	0	0	0	(127)
Weather Bouy for Nantucket Sound	235	0	0	0	(235)
Delaware River Enhanced Flood Warning System	235	0	0	0	(235)
Subtotal, Weather Radio Transmitters	**2,894**	**2**	**0**	**2,297**	**(597)**
Subtotal, Local Warnings and Forecasts	**659,277**	**4,600**	**14,507**	**663,225**	**3,948**
Central Forecast Guidance					
Central Forecast Guidance	51,975	1,057	4,273	57,253	5,278
Subtotal, Central Forecast Guidance	**51,975**	**1,057**	**4,273**	**57,253**	**5,278**
Total, Operations and Research	**711,252**	**5,657**	**18,780**	**720,478**	**9,226**
Systems Operation & Maintenance (O&M)					
NEXRAD	43,120	988	1,056	45,121	2,001
ASOS	8,679	275	712	9,657	978
AWIPS	36,863	336	903	38,065	1,202
NWSTG Backup - CIP	5,380	5	132	5,512	132
Total, Systems Operation & Maintenance	**94,042**	**1,604**	**2,803**	**98,355**	**4,313**
Total, National Weather Service - ORF	**805,294**	**7,261**	**21,583**	**818,833**	**13,539**
Other National Weather Service Accounts					
Total, National Weather Service - PAC	106,112	2,579	15,582	111,858	5,746
Total, National Weather Service - Other	0	0	0	0	0
GRAND TOTAL NWS	**911,406**	**9,840**	**37,165**	**930,691**	**19,285**

NATIONAL ENVIRONMENTAL SATELLITE, DATA and INFORMATION SERVICE
($ in Thousands)

FY 08 PROPOSED OPERATING PLAN Operations, Research and Facilities	FY 2008 ENACTED Amount	Total ATBs	Program Changes	FY 2009 President's Budget Amount	FY 2009 Request vs FY 2008 Enacted
Environmental Satellite Observing Systems					
Satellite Command and Control	36,084	1,297	1,384	38,729	2,645
NSOF Operations	7,351	128	180	7,652	301
Subtotal, Satellite Command and Control	**43,435**	**1,425**	**1,564**	**46,381**	**2,946**
Product Processing and Distribution					
Product Processing and Distribution	29,681	579	1,227	31,457	1,776
Subtotal, Product Processing and Distribution	**29,681**	**579**	**1,227**	**31,457**	**1,776**
Product Development, Readiness & Application					
Product Development, Readiness & Application	19,537	420	478	20,415	878
Prod Devel, Read & App (Ocean Remote Sensing)	3,769	73	92	3,930	161
Coral Reef Monitoring	0	0	737	737	737
Joint Center/Accelerate Use of Satellites	3,180	39	78	3,294	114
Subtotal, Product Development, Readiness & Application	**26,486**	**532**	**1,385**	**28,376**	**1,890**
Interagency Global Positioning System Executive Board Secretarial (I	0				
Commercial Remote Sensing Licensing & Enforcement	1,232	24	30	1,285	53
Office of Space Commercialization	597	23	15	634	37
Group on Earth Observations (GEO)	488	0	12	500	12
Ocean Surface Vector Winds Studies	0	0	3,000	3,000	3,000
Total, Environmental Satellite Observing Sys	**101,919**	**2,583**	**7,233**	**111,633**	**9,714**
Data Centers & Information Services					
Archive, Access & Assessment	33,848	883	829	35,526	1,678
KY	6,917	0	0	1,361	(5,556)
MD	5,241	0	0	993	(4,248)
NC - Quality Assurance/Quality Control	1,467	0	0	275	(1,192)
WV	7,337	0	0	1,434	(5,903)
Subtotal, Archive, Access & Assessment	**54,810**	**883**	**829**	**39,589**	**(15,221)**
Coastal Data Development	4,398	57	108	4,559	161
Regional Climate Centers	3,572	0	0	0	(3,572)
International Pacific Research Ctr (U of H)	1,786	0	0	0	(1,786)
Environmental Data Systems Modernization	9,179	116	225	9,511	332
Integrated Environ Applications & Info Ctr	2,456	0	0	0	(2,456)
Coop Institue for Remote Sensing Applications, AL	1,034	0	0	0	(1,034)
Total, Data Centers & Information Services	**77,235**	**1,056**	**1,162**	**53,659**	**(23,576)**
Total, NESDIS - ORF	**179,154**	**3,639**	**8,395**	**165,292**	**(13,862)**
Other NESDIS Accounts					
Total, NESDIS - PAC	775,922	(251)	217,692	992,588	216,666
Total, NESDIS - Other	0	0	0	0	0
GRAND TOTAL NESDIS	**955,076**	**3,388**	**226,087**	**1,157,880**	**202,804**

PROGRAM SUPPORT
($ in Thousands)

FY 08 PROPOSED OPERATING PLAN Operations, Research and Facilities	FY 2008 ENACTED Amount	Total ATBs	Program Changes	FY 2009 President's Budget Amount	FY 2009 Request vs FY 2008 Enacted
Corporate Services					
Under Secretary and Associate Offices					
Under Secretary and Associate Offices Base	28,843	(171)	33	28,676	(167)
Subtotal, Under Secretary and Assoc. Offices	**28,843**	**(171)**	**33**	**28,676**	**(167)**
NOAA Wide Coporate Services & Agency Management					
NOAA Wide Coporate Services & Agency Management Base	113,902	(4,462)	6,235	115,561	1,659
DOC Accounting System	10,098	83	0	10,171	73
Payment to the DOC Working Capital Fund	34,164	650	1,803	36,583	2,419
Subtotal, NOAA Wide Corporate Srvcs & Agency Mgmt	**158,164**	**(3,729)**	**8,038**	**162,315**	**4,151**
Office of Chief Information Officer					
IT Security	976	1	1,074	2,050	1,074
Subtotal, Office of Chief Information Officer	**976**	**1**	**1,074**	**2,050**	**1,074**
Total, Corporate Services	**187,983**	**(3,899)**	**9,145**	**193,041**	**5,058**
NOAA Education Program					
Education Program / Initiative	0	1,267	0	1,267	1,267
Hollings Scholarship	0	(3,909)	0	0	0
JASON Education and Outreach	2,209	0	(1,000)	0	(2,209)
BWET California	2,350	0	0	0	(2,350)
BWET Regional Programs	7,323	0	0	0	(7,323)
Educ Partnership Prog/Minority Serving Institutions (EPPMSI)	13,920	14	341	14,261	341
Narragansett Bay Marine Education (Save the Bay)	893	0	0	0	(893)
Mt. Washington Observatory Edu Outreach Exp Initiative	423	0	0	0	(423)
Training Next Generation Weather Forecasters - San Jose State Unv.	212	0	0	0	(212)
Meteorological Equip - Valperaiso Unv. Indiana	818	0	0	0	(818)
Edu Simulations Extreme Weather Events - Wheeling Jesuit Unv. WVA	188	0	0	0	(188)
Competitive Educational Grants	4,881	5	995	1,000	(3,881)
John Smith Water Trail, Chesapeake Bay	446	0	0	0	(446)
Center for the Great Lakes, IL	260	0	0	0	(260)
Anacostia Watershed Education, MD	134	0	0	0	(134)
Total, NOAA Education Program	**34,057**	**(2,623)**	**336**	**16,528**	**(17,529)**
Facilities					
NOAA Facilities Management & Construction and Safety	18,501	7,443	(1,156)	24,297	5,796
Subtotal, NOAA Fac Mgmt, Const& Maint	**18,501**	**7,443**	**(1,156)**	**24,297**	**5,796**
Total, Facilities	**18,501**	**7,443**	**(1,156)**	**24,297**	**5,796**
Marine Operations & Maintenance					
Marine Services					
Data Acquisition	109,891	1,553	2,117	113,451	3,560
Subtotal, Marine Services	**109,891**	**1,553**	**2,117**	**113,451**	**3,560**
Fleet Planning and Maintenance					
Fleet Planning and Maintenance	16,773	17	261	17,034	261
Subtotal, Fleet Planning and Maintenance	**16,773**	**17**	**261**	**17,034**	**261**
Total, Marine Operations & Maintenance	**126,664**	**1,570**	**2,378**	**130,485**	**3,821**
Aviation Operations					
Aircraft Services	25,177	276	4,616	30,044	4,867
Total, Aviation Operations	**25,177**	**276**	**4,616**	**30,044**	**4,867**
Total, Program Support - ORF	**392,382**	**2,767**	**15,319**	**394,395**	**2,013**
Other Program Support Accounts					
Total, Program Support - PAC	28,422	27	71,203	98,450	70,028
Total, Program Support - Other	24,921	1,285	0	26,206	1,285
GRAND TOTAL PS	**445,725**	**4,079**	**86,522**	**519,051**	**73,326**

ORF SUMMARY
LINE OFFICE DIRECT OBLIGATIONS
($ in Thousands)

FY 08 PROPOSED OPERATING PLAN Operations, Research and Facilities	FY 2008 ENACTED Amount	Total ATBs	Program Changes	FY 2009 President's Budget Amount	FY 2009 Request vs FY 2008 Enacted
National Ocean Service	467,930	4,886	42,347	449,252	(18,210)
National Marine Fisheries Service	708,340	11,299	66,318	724,211	16,503
Office of Atmospheric Research	387,942	8,904	9,794	372,270	(15,284)
National Weather Service	805,294	7,261	21,583	818,833	14,344
National Environmental Satellite Data & Information Srv.	179,154	3,639	8,395	165,292	(13,683)
Program Support	392,382	2,767	15,319	394,395	(1,505)
SUBTOTAL, LINE OFFICE DIRECT OBLIGATIONS	**2,941,042**	**38,756**	**163,756**	**2,924,253**	**(17,835)**

ORF ADJUSTMENTS
($ in Thousands)

FY 08 PROPOSED OPERATING PLAN Operations, Research and Facilities	FY 2008 ENACTED Amount	Total ATBs	Program Changes	FY 2009 President's Budget Amount	FY 2009 Request vs FY 2008 Enacted
SUBTOTAL, LINE OFFICE DIRECT OBLIGATIONS	**2,941,042**	**38,756**	**163,756**	**2,924,253**	**(17,835)**
FINANCING					
De-Obligations	(5,000)	(6,000)	0	(11,000)	(6,000)
Unobligated Balance Rescission Adj BA	(5,108)	5,108			5,108
Total, ORF Financing	**(10,108)**	**(892)**	**0**	**(11,000)**	**(892)**
SUBTOTAL, BUDGET AUTHORITY	**2,930,934**	**37,864**	**163,756**	**2,913,253**	**(18,727)**
TRANSFERS					
Unobligated Balance Rescission / Approp Adj	5,108	(5,108)		0	(5,108)
Transfer to ORF from PAC - Hollings Scholarship		979	0	0	979
Transfer to FFPA	235	(235)	0	0	(235)
Transfer from P&D to ORF	(77,000)	(2,000)	0	(79,000)	(2,000)
Transfer from CZMF to ORF	(3,000)	0	0	(3,000)	0
Transfer to ORF from Pacific Salmon	0	67	0	0	67
Total, ORF Transfers	**(74,657)**	**(6,297)**	**0**	**(82,000)**	**(6,297)**
SUBTOTAL, APPROPRIATION	**2,856,277**	**31,567**	**163,756**	**2,831,253**	**(25,024)**

PROCUREMENT, ACQUISITION, and CONSTRUCTION
($ in Thousands)

FY 08 PROPOSED OPERATING PLAN Procurement, Acquisition and Construction	FY 2008 ENACTED Amount	Total ATBs	Program Changes	FY 2009 President's Budget Amount	FY 2009 Request vs FY 2008 Enacted
NOS					
CELCP Acquisition					
Coastal and Estuarine Land Conservation Program	8,000	8	7,000	15,000	7,000
Subtotal, CELCP Acquisition	**8,000**	**8**	**7,000**	**15,000**	**7,000**
NERRS Construction:					
National Estuarine Rsrch Reserve Construction & Land Acq (NERRS)	7,043	(281)	135	6,890	(153)
Lake Superior Nat'l Estuarine Rsch Reserve	94			0	(94)
Great Bay Partnership, NH	3,525	0	0	0	(3,525)
Mill Creek / Wickford Cove Conservaton, RI	893	0	0		(893)
Subtotal, NERRS Construction	**11,555**	**(281)**	**135**	**6,890**	**(4,665)**
Marine Sanctuaries Construction:					
Marine Sanctuaries Base	9,522	0	0	5,495	(4,027)
Thunder Bay NMS Exhibit	1,786	0	0	0	(1,786)
Gulf of Farralones	670	0	0	0	(670)
Nat'l Marine Sanctuary Learning Center, HI	1,786	0	0	0	(1,786)
Subtotal, Marine Sanctuary Construction	**13,764**	**0**	**0**	**5,495**	**(8,269)**
Other NOS Construction/Acquisition					
Gulf Coast Marine Aquaculture Laboratory	7,520	0	0	0	(7,520)
Gulf of Mexico Disaster Response Center	11,060	0	0	0	(11,060)
NGI Science Center Bldg - Stennis, MS	4,700	0	0	0	(4,700)
Subtotal, Other NOS Construction	**23,280**	**0**	**0**	**0**	**(23,280)**
Total NOS - PAC	**56,599**	**(273)**	**7,135**	**27,385**	**(29,214)**
NMFS					
Construction					
Aquatic Resources	470	0	0	0	(470)
Center for Aquatic Resources Management - AL	1,551	0	0	0	(1,551)
Subtotal, NMFS Construction	**2,021**	**0**	**0**	**0**	**(2,021)**
Total, NMFS - PAC	**2,021**	**0**	**0**	**0**	**(2,021)**
OAR					
Systems Acquisition					
Research Supercomputing/ CCRI	10,131	10	248	10,379	248
Subtotal, OAR Systems Acquisition	**10,131**	**10**	**248**	**10,379**	**248**
Total, OAR - PAC	**10,131**	**10**	**248**	**10,379**	**248**
NWS					
Systems Acquisition					
ASOS	1,596	2	39	1,635	39
AWIPS	12,459	12	6,605	19,064	6,605
NEXRAD	8,176	8	200	8,376	200
NWSTG Legacy Replacement	1,166	1	29	1,195	29
Radiosonde Network Replacement	3,918	4	96	4,014	96
Weather and Climate Supercomputing	25,544	0	(6,426)	19,092	(6,452)
Weather and Climate Supercomputing Back-up		0	7,077	7,077	7,077
Cooperative Observer Network Modernization (NERON)	4,133	(496)	101	3,734	(399)
Complete and Sustain NOAA Weather Radio	5,460	3,005	2,877	11,337	5,877
NOAA Profiler Conversion	4,978	5	4,752	9,730	4,752
Subtotal, NWS Systems Acquisition	**67,430**	**2,541**	**15,350**	**85,254**	**17,824**
Construction					
WFO Construction	12,272	12	232	12,504	232
NOAA Center for Weather & Climate Prediction	26,410	26	0	14,100	(12,310)
Subtotal, NWS Construction	**38,682**	**38**	**232**	**26,604**	**(12,078)**
Total, NWS - PAC	**106,112**	**2,579**	**15,582**	**111,858**	**5,746**
NESDIS					
Systems Acquisition					
Geostationary Systems - N	80,379	0	(7,036)	73,263	(7,116)
Geostationary Systems - R	234,773	235	242,227	477,000	242,227
Subtotal, NESDIS - GOES	**315,152**	**235**	**235,191**	**550,263**	**235,111**
Polar Orbiting Systems - POES	**114,906**	**(500)**	**(48,872)**	**65,419**	**(49,487)**
Polar Orbiting Systems - NPOESS	**331,300**	**0**	**(42,984)**	**287,985**	**(43,315)**

PROCUREMENT, ACQUISITION, and CONSTRUCTION
($ in Thousands)

FY 08 PROPOSED OPERATING PLAN Procurement, Acquisition and Construction	FY 2008 ENACTED Amount	Total ATBs	Program Changes	FY 2009 President's Budget Amount	FY 2009 Request vs FY 2008 Enacted
EOS & Advanced Polar Data Processing, Distribution& A Archiving Sy	966	1	24	990	24
Subtotal, NESDIS - EOS	**966**	**1**	**24**	**990**	**24**
CIP - single point of failure	2,706	3	66	2,772	66
Subtotal, NESDIS - CIP	**2,706**	**3**	**66**	**2,772**	**66**
Comprehensive Large Array Data Stewardship Sys (CLASS)	6,321	6	155	6,476	155
NPOESS Preparatory Data Exploitation	2,396	2	59	2,455	59
Restoration of Climate Sensors - Data Records		0	74,000	74,000	74,000
Subtotal, NESDIS Systems Acquisition	**773,747**	**(253)**	**217,639**	**990,360**	**216,613**
Construction					
Satellite CDA Facility	2,175	2	53	2,228	53
Subtotal, NESDIS Construction	**2,175**	**2**	**53**	**2,228**	**53**
Total, NESDIS - PAC	**775,922**	**(251)**	**217,692**	**992,588**	**216,666**
Program Support / Construction					
Pacific Region Center	20,000	20	40,250	60,250	40,250
Southwest Fisheries Science Center	2,928	3	12,072	15,000	12,072
Fairbanks, AK CDA	0	0	11,700	11,700	11,700
Construction Proj. (Woods Hole Berthing Area - Bigelow)	235	0	0	0	(235)
Subtotal, Construction	**23,163**	**23**	**64,022**	**86,950**	**63,787**
Program Support / OMAO					
OMAO - Fleet Replacement					
Fisheries Survey Vessels	940	0	0	0	(940)
FSV Calibration		0	1,000	1,000	1,000
Hydro Survey Launch Construction	2,343	2	57	2,400	57
Temporary Berthing for HENRY B. BIGELOW	976	1	24	1,000	24
Vessel Equipment & Technology Refreshment	1,000	1	0	1,000	0
Ship Acquisition, Conversion & Maintenance		0	6,100	6,100	6,100
Subtotal, OMAO Fleet Replacement	**5,259**	**4**	**7,181**	**11,500**	**6,241**
Total, Program Support - PAC	**28,422**	**27**	**71,203**	**98,450**	**70,028**
GRAND TOTAL PAC	**979,207**	**2,092**	**311,860**	**1,240,660**	**261,453**

PAC ADJUSTMENTS
($ in Thousands)

FY 08 PROPOSED OPERATING PLAN Procurement, Acquisition and Construction	FY 2008 ENACTED Amount	Total ATBs	Program Changes	FY 2009 President's Budget Amount	FY 2009 Request vs FY 2008 Enacted
SUBTOTAL, DIRECT OBLIGATIONS	**979,207**	**2,092**	**311,860**	**1,240,660**	**261,453**
FINANCING					
De-Obligations		(2,000)	0	(2,000)	(2,000)
Unobligated Balance Rescission Adj BA	(6,264)	6,264			6,264
Total PAC Financing	**(6,264)**	**4,264**	**0**	**(2,000)**	**4,264**
SUBTOTAL, BUDGET AUTHORITY	**972,943**	**6,356**	**311,860**	**1,238,660**	**265,717**
TRANSFERS/RESCISSIONS					
Unobligated Balance Rescission Adj Approp	6,264	(6,264)		0	(6,264)
Transfer to ORF - Hollings Scholarship		(979)		0	0
Total PAC Transfers/Rescissions	**6,264**	**(7,243)**	**0**	**0**	**(6,264)**
SUBTOTAL, APPROPRIATION	**979,207**	**(887)**	**311,860**	**1,238,660**	**259,453**

GRAND TOTAL SUMMARY
Discretionary Appropriations
($ in Thousands)

FY 08 PROPOSED OPERATING PLAN ORF, PAC, and Other Discretionary Appropriations	FY 2008 ENACTED Amount	Total ATBs	Program Changes	FY 2009 President's Budget Amount	FY 2009 Request vs FY 2008 Enacted
Operations, Research and Facilities	2,856,277	31,567	163,756	2,831,253	(25,024)
Procurement, Acquisition and Constructior	979,207	(887)	311,860	1,238,660	259,453
Coastal Zone Management Fund	3,000	0	0	3,000	0
Pacific Coastal Salmon Fund	67,000	0	(32,000)	35,000	(32,000)
Marine Mammal Unusual Mortality Event Func					
Medicare Eligible Retiree Health Care Fund	1,802	132	0	1,934	132
GRAND TOTAL, DISCRETIONARY APPROPRIATION	**3,907,286**	**30,812**	**443,616**	**4,109,847**	**202,561**

OTHER ACCOUNTS (DISCRETIONARY)
($ in Thousands)

FY 08 PROPOSED OPERATING PLAN OTHER ACCOUNTS (DISCRETIONARY)	FY 2008 ENACTED Amount	Total ATBs	Program Changes	FY 2009 President's Budget Amount	FY 2009 Request vs FY 2008 Enacted
NOS					
Coastal Zone Management Fund Obligations	0	0	0	0	0
Coastal Zone Management Fund Budget Authority	0	0	0	0	0
Coastal Zone Management Fund Appropriation	3,000	0	0	3,000	0
Subtotal, NOS Other Discretionary Direct Obligation	**0**	**0**	**0**	**0**	**0**
Subtotal, NOS Other Discretionary Budget Authority	**0**	**0**	**0**	**0**	**0**
Subtotal, NOS Other Discretionary Appropriation	**3,000**	**0**	**0**	**3,000**	**0**
NMFS					
Fishermen's Contingency Fund Obligations	0	157	0	157	157
Fishermen's Contingency Fund Budget Authority	0	0	0	0	0
Fishermen's Contingency Fund Appropriations	0	0	0	0	0
Foreign Fishing Observer Fund Obligations	0	261	0	261	261
Foreign Fishing Observer Fund Budget Authority	0	0	0	0	0
Foreign Fishing Observer Fund Appropriation	0	0	0	0	0
Fisheries Finance Program Account Obligations	235	(235)	0	0	(235)
Fisheries Finance Prog ram Account Budget Authority	235	(235)	0	0	(235)
Fisheries Finance Program Account Appropriation	0	0	0	0	0
Promote and Develop Fisheries Obligations	0	0	0	0	0
Promote and Develop Fisheries Budget Authority	(77,000)	(2,000)	0	(79,000)	(2,000)
Promote and Develop Fisheries Appropriation	0	0	0	0	0
Pacific Coastal Salmon Fund Obligations	67,000	67	(32,000)	35,000	(32,000)
Pacific Coastal Salmon Fund Budget Authority	67,000	67	(32,000)	35,000	(32,000)
Pacific Coastal Salmon Fund Appropriation	67,000	0	(32,000)	35,000	(32,000)
Subtotal, NMFS Other Discretionary Direct Obligation	**67,235**	**250**	**(32,000)**	**35,418**	**(31,817)**
Subtotal, NMFS Other Discretionary Budget Authority	**(9,765)**	**(2,168)**	**(32,000)**	**(44,000)**	**(34,235)**
Subtotal, NMFS Other Discretioanry Appropriation	**67,000**	**0**	**(32,000)**	**35,000**	**(32,000)**
OMAO					
Medicare Eligible Retiree Healthcare Fund Acct Obligations	1,802	132	0	1,934	132
Medicare Eligible Retiree Healthcare Fund Acct Budget Authority	1,802	132	0	1,934	132
Medicare Eligible Retiree Healthcare Fund Acct Appropriations	1,802	132	0	1,934	132
Subtotal, OMAO Other Discretionary Direct Obligations	**1,802**	**132**	**0**	**1,934**	**132**
Subtotal, OMAO Other Discretionary Budget Authority	**1,802**	**132**	**0**	**1,934**	**132**
Subtotal, OMAO Other Discretionary Appropriation	**1,802**	**132**	**0**	**1,934**	**132**
TOTAL, OTHER DISCRETIONARY DIRECT OBLIGATIONS	**69,037**	**382**	**(32,000)**	**37,352**	**(31,685)**
TOTAL, OTHER DISCRETIONARY BUDGET AUTHORITY	**(7,963)**	**(2,036)**	**(32,000)**	**(42,066)**	**(34,103)**
TOTAL, OTHER DISCRETIONARY APPROPRIATION	**71,802**	**132**	**(32,000)**	**39,934**	**(31,868)**

SUMMARY OF DISCRETIONARY RESOURCES
($ in Thousands)

FY 08 PROPOSED OPERATING PLAN DISCRETIONARY TOTALS	FY 2008 ENACTED Amount	Total ATBs	Program Changes	FY 2009 President's Budget Amount	FY 2009 Request vs FY 2008 Enacted
Discretionary Direct Obligations					
ORF Direct Obligations	2,941,042	38,756	163,756	2,924,253	(17,835)
PAC Direct Obligations	979,207	2,092	311,860	1,240,660	261,453
OTHER Direct Obligations	69,037	382	(32,000)	37,352	(31,685)
TOTAL, Discretionary Direct Obligations	**3,989,286**	**41,230**	**443,616**	**4,202,265**	**211,933**
Discretionary Budget Authority					
ORF Budget Authority	2,930,934	37,864	163,756	2,913,253	(18,727)
PAC Budget Authority	972,943	6,356	311,860	1,238,660	265,717
OTHER Budget Authority	(7,963)	(2,036)	(32,000)	(42,066)	(34,103)
TOTAL, Discretionary Budget Authority	**3,895,914**	**42,184**	**443,616**	**4,109,847**	**212,887**
Discretionary Appropriations					
ORF Appropriations	2,856,277	31,567	163,756	2,831,253	(25,024)
PAC Appropriations	979,207	(887)	311,860	1,238,660	259,453
OTHER Appropriations	71,802	132	(32,000)	39,934	(31,868)
TOTAL, Discretionary Appropriation	**3,907,286**	**30,812**	**443,616**	**4,109,847**	**202,561**

NOAA SUMMARY
($ in Thousands)

FY 08 PROPOSED OPERATING PLAN NOAA SUMMARY	FY 2008 ENACTED Amount	Total ATBs	Program Changes	FY 2009 President's Budget Amount	FY 2009 Request vs FY 2008 Enacted
TOTAL, Direct Obligations (Discretionary & Mandatory)	4,075,492	40,979	443,616	4,260,831	185,339
TOTAL, Budget Authority (Discretionary & Mandatory)	4,045,020	43,933	443,616	4,233,313	188,293
TOTAL, Appropriation (Discretionary & Mandatory)	3,969,298	32,561	443,616	4,146,219	176,921
TOTAL, REIMBURSABLE FINANCING	**242,444**	**0**	**0**	**242,000**	**(117,913)**
TOTAL, OBLIGATIONS (Direct & Reimbursable)	**4,317,936**	**40,979**	**443,616**	**4,502,831**	**67,426**

OTHER ACCOUNTS (MANDATORY)

($ in Thousands)

FY 08 PROPOSED OPERATING PLAN OTHER ACCOUNTS (MANDATORY)	FY 2008 ENACTED Amount	Total ATBs	Program Changes	FY 2009 President's Budget Amount	FY 2009 Request vs FY 2008 Enacted
NOS					
Coastal Zone Management Fund Obligations	0	0	0	0	0
Coastal Zone Management Fund Budget Authority	(1,500)	0	0	(1,500)	0
Coastal Zone Management Fund Appropriation	(3,000)	0	0	(3,000)	0
Damage Assessment & Restoration Revolving Fund Obligations	11,600	0	0	11,600	0
Damage Assessment & Restoration Revolving Fund Budget Authority	1,000	0	0	1,000	0
Damage Assessment & Restoration Revolving Fund Appropriation	0	0	0	0	0
Subtotal, NOS Other Mandatory Direct Obligations	**11,600**	**0**	**0**	**11,600**	**0**
Subtotal, NOS Other Mandatory Budget Authority	**(500)**	**0**	**0**	**(500)**	**0**
Subtotal, NOS Other Mandatory Appropriation	**(3,000)**	**0**	**0**	**(3,000)**	**0**
NMFS					
Promote and Develop Fisheries Obligations	7,594	(2,000)	0	5,594	(2,000)
Promote and Develop Fisheries Budget Authority	84,594	0	0	84,594	0
Promote and Develop Fisheries Appropriation	0	0	0	0	0
Fisheries Finance Program Account Obligations	27,389	0		0	(27,389)
Fisheries Finance Program Account Budget Authority	27,389	0		0	(27,389)
Fisheries Finance Program Account Appropriation	27,389	0		0	(27,389)
Federal Ship Financing Obligations	1,000	0	0	1,000	0
Federal Ship Financing Budget Authority	(1,000)	0	0	(1,000)	0
Federal Ship Financing Appropriation	(1,000)	0	0	(1,000)	0
Environmental Improve & Restoration Fund Obligations	8,060	596	0	8,656	596
Environmental Improve & Restoration Fund Budget Authority	8,060	596	0	8,656	596
Environmental Improve & Restoration Fund Appropriation	8,060	596	0	8,656	596
Limited Access System Administration Fund Obligation	7,444	0	0	7,444	0
Limited Access System Administration Fund Budget Authority	7,444	0	0	7,444	0
Limited Access System Administration Fund Appropriation	7,444	0	0	7,444	0
Subtotal, NMFS Other Mandatory Direct Obligations	**51,487**	**(1,404)**	**0**	**22,694**	**(28,793)**
Subtotal, NMFS Other Mandatory Budget Authority	**126,487**	**596**	**0**	**99,694**	**(26,793)**
Subtotal, NMFS Other Mandatory Appropriation	**41,893**	**596**	**0**	**15,100**	**(26,793)**
OMAO					
NOAA Corp Commissioned Officers Retirement Obligations	23,119	1,153	0	24,272	1,153
NOAA Corp Commissioned Officers Retirement Budget Authority	23,119	1,153	0	24,272	1,153
NOAA Corp Commissioned Officers Retirement Budget Appropriation	23,119	1,153	0	24,272	1,153
Subtotal, OMAO Other Mandatory Direct Obligations	**23,119**	**1,153**	**0**	**24,272**	**1,153**
Subtotal, OMAO Other Mandatory Budget Authority	**23,119**	**1,153**	**0**	**24,272**	**1,153**
Subtotal, OMAO Other Mandatory Appropriation	**23,119**	**1,153**	**0**	**24,272**	**1,153**
TOTAL, OTHER MANDATORY DIRECT OBLIGATIONS	**86,206**	**(251)**	**0**	**58,566**	**(27,640)**
TOTAL, OTHER MANDATORY BUDGET AUTHORITY	**149,106**	**1,749**	**0**	**123,466**	**(25,640)**
TOTAL, OTHER MANDATORY APPROPRIATION	**62,012**	**1,749**	**0**	**36,372**	**(25,640)**

LINE OFFICE SUMMARY
($ in Thousands)

FY 08 PROPOSED OPERATING PLAN LINE OFFICE SUMMARY	FY 2008 ENACTED Amount	Total ATBs	Program Changes	FY 2009 President's Budget Amount	FY 2009 Request vs FY 2008 Enacted
National Ocean Service					
ORF	467,930	4,886	42,347	449,252	(18,678)
PAC	56,599	(273)	7,135	27,385	(29,214)
OTHER	11,600	0	0	11,600	0
TOTAL, NOS	536,129	4,613	49,482	488,237	(47,892)
National Marine Fisheries Service					
ORF	708,340	11,299	66,318	724,211	15,871
PAC	2,021	0	0	0	(2,021)
OTHER	118,722	(1,154)	(32,000)	58,112	(60,610)
TOTAL, NMFS	829,083	10,145	34,318	782,323	(46,760)
Oceanic and Atmospheric Research					
ORF	387,942	8,904	9,794	372,270	(15,672)
PAC	10,131	10	248	10,379	248
OTHER	0	0	0	0	0
TOTAL, OAR	398,073	8,914	10,042	382,649	(15,424)
National Weather Service					
ORF	805,294	7,261	21,583	818,833	13,539
PAC	106,112	2,579	15,582	111,858	5,746
OTHER	0	0	0	0	0
TOTAL, NWS	911,406	9,840	37,165	930,691	19,285
NESDIS					
ORF	179,154	3,639	8,395	165,292	(13,862)
PAC	775,922	(251)	217,692	992,588	216,666
OTHER	0	0	0	0	0
TOTAL, NESDIS	955,076	3,388	226,087	1,157,880	202,804
Program Support/Corp Srv, Edu, Fac					
ORF	240,541	921	8,325	233,866	(6,675)
PAC	23,163	23	64,022	86,950	63,787
OTHER	0	0	0	0	0
TOTAL, PS/Corp Srv, Edu, Fac	263,704	944	72,347	320,816	57,112
Program Support/OMAO					
ORF	151,841	1,846	6,994	160,529	8,688
PAC	5,259	4	7,181	11,500	6,241
OTHER	24,921	1,285	0	26,206	1,285
TOTAL, PS/OMAO	182,021	3,135	14,175	198,235	16,214
Total PS ORF	392,382	2,767	15,319	394,395	2,013
Total PS PAC	28,422	27	71,203	98,450	70,028
Total PS Other	24,921	1,285	0	26,206	1,285
TOTAL, PS	445,725	4,079	86,522	519,051	73,326
DIRECT OBLIGATIONS					
ORF	2,941,042	38,756	163,756	2,924,253	(16,789)
PAC	979,207	2,092	311,860	1,240,660	261,453
OTHER	155,243	131	(32,000)	95,918	(59,325)
TOTAL, DIRECT OBLIGATIONS	**4,075,492**	**40,979**	**443,616**	**4,260,831**	**185,339**
ORF Adjustments (Deobligations / Rescissions)	(10,108)	(892)	0	(11,000)	(892)
ORF Transfers	(74,657)	(6,297)	0	(82,000)	(6,297)
PAC Adjustments (Deobligations / Rescissions)	(6,264)	4,264	0	(2,000)	4,264
PAC Transfers	6,264	(7,243)	0	0	(6,264)
OTHER Discretionary Adjustments	2,765	(250)	0	2,582	(183)
Mandatory Accounts Excluded	(86,206)	251	0	(58,566)	27,640
TOTAL, DISCRETIONARY APPROPRIATIONS	**3,907,286**	**30,812**	**443,616**	**4,109,847**	**203,607**

Back Cover: Big Sur Coastline. Photographer: Kip Evans

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