



# INTRODUCTION

At Vandenberg Air Force Base's Space Launch Complex-2 in California, a United Launch Alliance Delta II arcs across the sky carrying NASA's National Polar-orbiting Operational Environmental Satellite System Preparatory Project (NPP) spacecraft toward Earth orbit.





# NOAA: A HEALTHY ENVIRONMENT FOR A HEALTHY ECONOMY

NOAA generates tremendous value for the Nation—and the world—by advancing our ability to understand and anticipate changes in the Earth’s environment, improving society’s ability to make scientifically informed decisions, delivering services vital to the economy and public safety, and by conserving and managing ocean and coastal ecosystems and resources. NOAA’s mission has three core areas, each individually and separately important, but vital and more effective as a cohesive triad, with each providing the foundation for the others. These missions – Science, Stewardship, Service – are integral to the very design of NOAA as an agency.



*A Next Generation Weather Radar (NEXRAD). All NEXRAD systems are undergoing an upgrade to Dual Polarization capability to improve measurements, which are vital to increased accuracy and timeliness of warnings that protect life and property.*

NOAA provides weather, water, and climate forecasts and warnings for the private and public sectors. Annually, NOAA provides 76 billion environmental observations, 1.5 million forecasts, and 50,000 severe weather warnings. Routine weather events in the United States, such as rain and cooler-than-average days, can add up to an annual economic impact of as much as \$485 billion (in 2008 dollars), or about 3.4 percent of the 2008 Gross Domestic Product (GDP).<sup>1</sup> Spring 2011 was one of the deadliest and costliest tornado seasons on record. According to preliminary estimates, from early April through June 1, tornadic storm systems – that also produced dangerous hail, straight-line winds and flooding –led to at least 2 million structure insurance claims, at least \$21 billion in economic damages, and at least \$15 billion in insured losses.<sup>2</sup> While the tornado resulted in fatalities, injuries, and losses, NOAA’s NWS Storm Prediction Center and area Weather Forecast Offices provided early forecasts and warnings saving countless more. NOAA will improve severe weather warnings by fielding new technologies and enhancing public responsiveness to warnings through our Weather-Ready Nation initiative, a joint effort with the private weather industry, emergency managers, and academia.

NOAA protects and preserves the nation’s living marine resources through scientific research, fisheries management, enforcement and habitat con-

- 1 Lazo, J.K., Lawson, M., Larsen, P.H., and D.M. Waldman. (2011, June). U.S. Economic Sensitivity to Weather Variability. *Bulletin of the American Meteorological Society*, 92(6). <http://journals.ametsoc.org/doi/pdf/10.1175/2011BAMS2928>.
- 2 AON Benfield. (2011, June 26). United States April and May 2011 Severe Weather Outbreaks. Chicago, IL. [http://www.aon.com/attachments/reinsurance/201106\\_us\\_april\\_may\\_severe\\_weather\\_outbreaks\\_recap.pdf](http://www.aon.com/attachments/reinsurance/201106_us_april_may_severe_weather_outbreaks_recap.pdf)



servation. In 2009, the U.S. seafood industry supported approximately 1 million full- and part-time jobs and generated \$116 billion in sales impacts, \$32 billion in income impacts, and \$48 billion in value added impacts.<sup>3</sup> NOAA will sustain efforts to rebuild American fisheries and maintain them at sustainable levels to optimize fishing opportunities, jobs and environmental benefits. NOAA will also continue to invest in the future of fisheries management by improving our understanding of the complex ecosystem interactions that impact the resources that are most economically valuable.

NOAA provides products, services and information that promote safe navigation, support coastal communities, sustain marine ecosystems, and mitigate coastal hazards. NOAA delivers nautical charts, real time tides and currents, accurate positioning infrastructure, and emergency response support to benefit safe, efficient, and secure transportation on U.S. waterways. America's seaports support the employment of 13.3 million U.S. workers.<sup>4</sup> An economic impact analysis conducted in 2007 concluded that U.S. seaport activities generated \$3.15 trillion in annual economic output, with \$3.8 billion worth of goods moving in and out of seaports every day.<sup>4</sup>

Coastal watershed counties contributed \$8.3 trillion to the Gross Domestic Product (GDP) in 2010, over half of the U.S. GDP<sup>5</sup> and a total of 66 million jobs.<sup>6</sup> NOAA partners with states to implement a range of programs that help keep America's coasts healthy and resilient.

NOAA's world-class science underpins NOAA's ability to provide accurate weather forecasts, to protect and manage the nation's coastal and ocean resources, and to enable society to plan and respond to climate change. Research at NOAA is conducted in federal laboratories and through partnerships with universities and science institutes. NOAA's research provides solid science and policy-relevant findings to leaders in government and industry worldwide on topics such as ocean exploration, climate, and ecosystem protection.

An overview of NOAA's Next Generation Strategic Plan is presented on the following page. This plan represents NOAA's assessment of the highest priority opportunities in order to contribute substantially to the advancement of society. Through the concerted efforts of NOAA and many other organizations, we can navigate our way toward a future where people, communities, and ecosystems prosper and are resilient in the face of change.

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3 Fisheries Economics of the United States, 2009.

4 John Martin, Ph.D., "The Local and Regional Economic Impacts of the U.S. Deepwater Port System, 2007", prepared for the American Association of Port Authorities, June 2008, p. 5.

5 Bureau of Economic Analysis. 2011. Gross Domestic Product (GDP) for the U.S. Territories. [http://www.bea.gov/national/gdp\\_territory.htm](http://www.bea.gov/national/gdp_territory.htm).

6 Bureau of Labor Statistics. 2011. 2010 Census of Employment and Wages. Available from: <http://www.bls.gov/cew/>



**NOAA'S MISSION:  
SCIENCE, SERVICE & STEWARDSHIP**

To understand and predict changes in climate, weather, oceans, and coasts,  
To share that knowledge and information with others, and  
To conserve and manage coastal and marine ecosystems and resources





## FY 2013 BUDGET HIGHLIGHTS

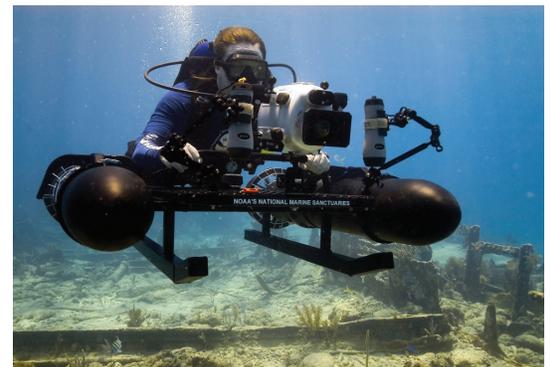
For Fiscal Year (FY) 2013, the National Oceanic and Atmospheric Administration (NOAA) proposes a budget of \$5,060.5 million, an increase of \$153.9 million, or 3.1 percent above FY 2012. This request reflects NOAA's continuing effort to better serve the American people through advancing critical missions, while also being cognizant of the current fiscal environment. The NOAA staff of dedicated professionals, working with a range of external partners, is expanding meteorological prediction capabilities; maintaining coastal resource management; charting our seas and coasts; continuing environmental stewardship; and extending our knowledge of climate change. It is these NOAA professionals who put NOAA research, programs, and products to work for American people every single day. This year's budget will (1) provide life-saving and job-supporting services needed to prepare and protect American citizens, communities, businesses and infrastructure; (2) support the highest priority stewardship programs, and (3) invest in science and research that will improve our understanding of the Earth and its system which translates into better decision tools for the public.

The Administration is continuing its pursuit of an aggressive government-wide effort to curb non-essential administrative spending. As a result, the Department of Commerce continues to seek ways to improve the efficiency of programs without reducing effectiveness. The Department's total savings target for FY 2013 is \$176 million, which includes \$142.8 million in savings initiated in FY 2012 and an additional \$33.2 million planned for FY 2013. Building on NOAA's administrative savings planned for FY 2012 (\$67.8 million), an additional \$15.8 million in savings is targeted for FY 2013 for a total savings in FY 2013 of \$83.5 million.

Total requested inflationary Adjustments to Base (ATBs) are \$39.6 million. 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 2013 base level will fund the estimated FY 2013 Federal civilian pay raise of 0.5 percent, and will also provide inflationary increases for non-labor activities, including service contracts, utilities, lease payments, fuel, and rent charges from the General Services Administration.

### NATIONAL OCEAN SERVICE

One of NOAA's key goals is to organize our resources and capabilities to promote the environmental and economic sustainability of vibrant coastal communities. The emergence of new industries, such as in renewable energy, and vulnerability to environmental hazards and stresses will change these communities in profound ways. In FY 2013, NOAA will continue to support the economic sustainability of coastal communities. We have maintained our commitment to Navigation Services and the stewardship role of



*A NOAA diver conducts shipwreck research at the Florida Keys National Marine Sanctuary. The remains of these ships and their artifacts hold clues to the Keys colorful maritime history, and are protected by NOAA and the State of Florida.*



*Oyster aquaculture in Tomales Bay, CA. On June 9, 2011, the Department of Commerce and NOAA released national sustainable marine aquaculture policies to meet the growing demand for healthy seafood, to create jobs in coastal communities, and restore vital ecosystems.*



*Daniel Jones preparing to launch the Fetch autonomous underwater vehicle (AUV). He is attaching Fetch's "nose," which contains the side scan sonar, some of the water quality sensors, and the color video camera. Image courtesy of Bonaire 2008: Exploring Coral Reef Sustainability with New Technologies.*

the Marine Sanctuary and Coastal Zone Management programs. In addition, NOAA has made a few targeted new investments including: an increase of \$6.6 million to begin developing and improving marine sensors that will detect and sample ocean biological and physical parameters at multiple spatial and temporal scales; a \$2 million investment to improve NOAA's capacity to conduct natural resource damage assessment (NRDA) activities and expedite the restoration process, and: \$1.9 million to strengthen our continued focus on Harmful Algal Bloom (HAB), hypoxia, and ecosystem research.

### **NATIONAL MARINE FISHERIES SERVICE**

By continuing efforts to rebuild American fisheries, NMFS will increase the economic output of our fisheries, improve the economic conditions for our fishermen, and create better, more stable and sustainable jobs and opportunities in our coastal communities. In FY 2013, NMFS will continue the trend of putting America's fishing industry on a sustainable and profitable path through targeted investments in fisheries science, observer, and enforcement programs. A small amount of targeted new funding will improve our focus in the following areas: an additional \$4.3 million to improve fisheries stock assessments, \$5 million to develop integrated ecosystem assessment, used to better understand and manage the complex web that is ocean ecosystems, and \$2.3 million to expand our ability to complete fishery-independent survey and monitoring projects, critical to setting appropriate catch limits in valuable fisheries. Observer programs provide accurate and timely information and analyses on the biological, ecological, economic, and social aspects of the Nation's fisheries resources. This request includes an increase of \$2.9 million for a total of \$43.2M for the National Observer Program.

### **OFFICE OF OCEANIC & ATMOSPHERIC RESEARCH**

NOAA's fundamental responsibility is to ensure that complex policy choices are informed by the best available science. As such, data generation and use is the core function of the agency as a whole. Our researchers are examining cutting-edge issues that will guide our approach to resource management for years to come. NOAA's weather data informs millions of people each day, and our resource assessments guide legislative and policy decisions that affect peoples' lives and livelihoods. In addition, NOAA's FY 2013 request continues the necessary investments to improve our climate activities, with a specific focus on the research, which underpins our understanding of climate processes. Continued development and use of state-of-the-art Earth System Models to address urgent climate issues, including sea level rise and Arctic climate change, will be supported by an investment of an additional \$8 million, and an investment in Arctic monitoring and full ocean depth profiling floats through the ARGO system (\$4.6 million) will continue to improve our ability to chart ocean and sea ice levels. An increase of \$2.6 million will support a permanent capability to produce climate assessments at national and regional scales, including support for the Global Change Information System to increase access and usability of the National Climate Assessment, while



an additional \$542 thousand will continue development of the NOAA Climate Portal, facilitating public online access to NOAA's climate data, information, and services. Finally, an investment of \$855 thousand will support research into wind boundary layers, a fertile area of for clean energy generation.

**NATIONAL WEATHER SERVICE**

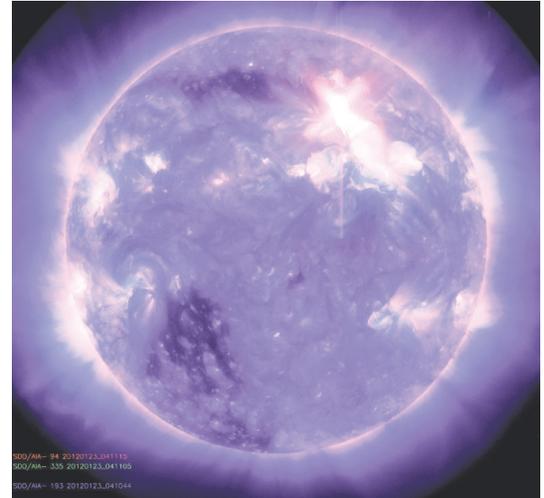
Concern for public safety drives NOAA to continue to improve the timeliness and accuracy of warnings for all weather-related hazards. In addition, more and more sectors of the Nation's economy recognize the impacts of weather and water on their activities, and are becoming more sophisticated at using weather and water information to improve commerce. NOAA is committed to enhancing timely and accurate weather and climate forecasts through better observations, improved data assimilation, and collaboration with the research community. The FY 2013 budget requests an additional \$7 million to support the critical upgrading and updating of the NWS Telecom Gateway, the backbone of the Weather Service's information delivery system. The request also includes \$12.4 million for ground system readiness, ensuring that the NWS will be prepared to ingest data coming from NOAA's investment in new weather satellites. The request also includes an increase of \$2.4 million in resources for fundamental climate observations and data management capabilities to maintain and upgrade the TAO array.

**NATIONAL ENVIRONMENTAL SATELLITE, DATA, & INFORMATION SERVICE**

One of the greatest challenges facing NOAA today is ensuring continuity of satellite operations to provide unbroken coverage of weather forecasts and climate measurements into the future. The GOES-R satellite acquisition program has been a successful partnership effort between NOAA and NASA to replace and update the existing GOES series of satellites. The first satellite in this program, GOES-R, is expected to launch in 2015. The new satellites in this series will carry improved environmental instrument suites providing more timely and accurate weather forecasts and improved observation of meteorological events that directly affect public safety, protection of property, and ultimately, economic health and development. Thanks to the support of Congress, NOAA's satellite programs received \$1,678 million in FY 2012, a substantial increase over FY 2011, which will allow NOAA to make significant progress in the satellite development program. In order to have new satellites ready when needed, the request includes \$802 million for the GOES-R program, as well as an investment (\$9.4M) for the processing and distribution of NPP data. \$916.4 million is requested for the Joint Polar Satellite System. \$30 million is also requested to continue progress on Jason-3.

**PROGRAM SUPPORT/OFFICE OF MARINE AND AVIATION OPERATIONS**

The FY 2013 budget continues the recapitalization of the NOAA's fleet, data acquisition platforms critical to meeting fisheries management mandates. NOAA's fleets, both air and sea, are crucial to providing the scientific platforms for key observations and maintenance of our observing



*Composite image of a solar flare on January 22, 2012, from the NASA-Solar Dynamics Observatory. NOAA's Space Weather Prediction Center provides real-time monitoring and forecasting of solar and geophysical events which impact satellites, power grids, communications, navigation, and many other technological systems.*



*On October 28, 2011, the successful launch of a new polar-orbiting environmental satellite, NPP, will enable NOAA to continue issuing accurate forecasts and provide advance warning for severe weather .*



systems. This budget requests a modest increase of \$1.9 million to provide an increase in flight hours. An investment of \$11.7 million will allow NOAA to perform a Major Repair Period on the Thomas Jefferson, NOAA's primary hydrographic survey vessel. Major Repair Periods are critical to ensuring the ongoing health and well-being of NOAA's fleet; without these periodic refurbishments, ships would be taken out of service. Finally, an additional \$1.5 million is requested to complete the construction of FSV 6.



Photo courtesy of Andersen Construction Co.

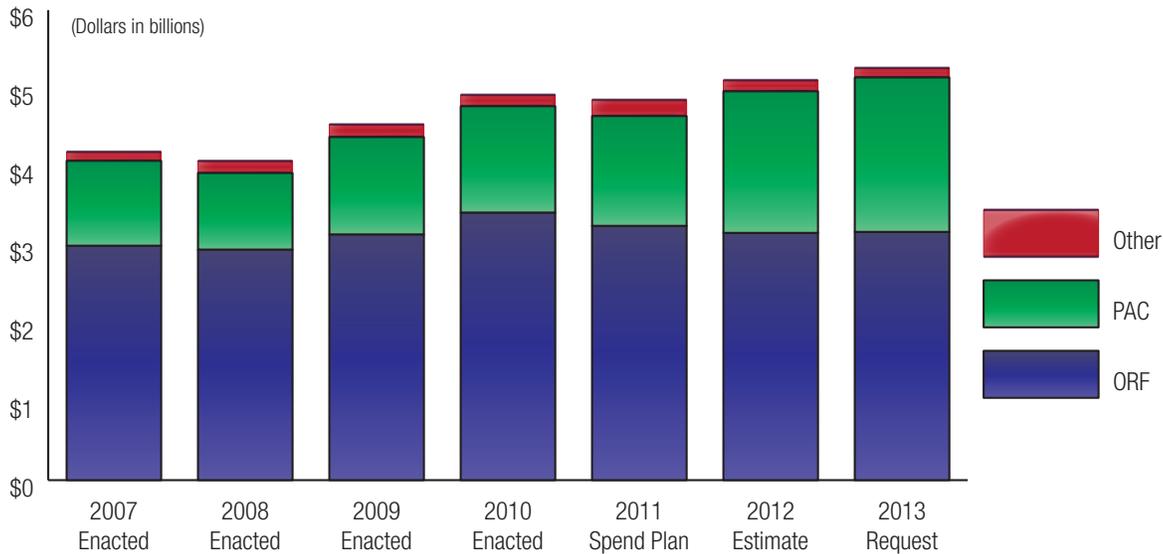
*NOAA and the Port of Newport held a ceremony on August 20, 2011 to dedicate the new NOAA Marine Operations Center-Pacific (MOC-P) facility in Newport, Oregon. MOC-P serves as a homeport for four NOAA research and survey ships and provides administrative, engineering, maintenance and logistical support to NOAA's Pacific fleet.*



## INTRODUCTION

(DOLLARS IN THOUSANDS)	FY 2011 SPEND PLAN	FY 2012 ESTIMATE	FY 2013 REQUEST	INCREASE (DECREASE)
ORF	\$3,244,294	\$3,154,980	\$3,167,524	\$12,544
PAC	1,403,412	1,808,443	1,972,736	164,293
Other Funds	207,673	143,091	122,283	(20,808)
Financing	(218,766)	(201,253)	(202,061)	(8,765)
<b>Total Discretionary Budget Authority</b>	<b>\$4,636,613</b>	<b>\$4,905,261</b>	<b>\$5,060,482</b>	<b>\$806,105</b>
<b>FTE</b>	<b>12,321</b>	<b>12,372</b>	<b>12,206</b>	<b>166</b>

**Budget Trends FY 2007-2013**



ORF: Operations, Research, and Facilities

PAC: Procurement, Acquisition, & Construction

Other: Other Accounts