



NOAA RESEARCH & DEVELOPMENT (R & D) FY 2011 BUDGET HIGHLIGHTS

The Department of Commerce's National Oceanic and Atmospheric Administration (NOAA) is a leading sponsor of oceanic and atmospheric research and is one of the key sponsors of climate science capabilities in the Federal government. NOAA's R&D request for FY 2011 is \$949.1M, 17 percent of the \$5.55 billion total NOAA request.

FY 2011 Climate Highlights

In support of the Administration's expanded commitment to global change research, NOAA is requesting \$435M in support of the U.S. Global Change Research Program.

Assessment Services +\$10.0M: Informed environmental policy decisions depend upon a solid understanding of and ability to characterize our vulnerability to climate change as well as mechanisms to adapt to and reduce that vulnerability. NOAA will develop a dedicated program to produce climate assessments at national and regional scales. This program will synthesize, evaluate, and report on climate change research findings, effects of climate variability in different regions, and climate vulnerabilities and uncertainties for the U.S.

Carbon Observing and Analysis System +\$8.0M: An accurate, reliable, and independent system for tracking sources and sinks of carbon dioxide and other greenhouse gases is needed to evaluate mitigation strategies and understand and predict future climate change and its impacts, including ocean acidification. NOAA will complete and sustain an observation and analysis system to determine regional uptake and emissions of greenhouse gases across the U.S.

Arctic Watch +\$3.0M: The Arctic region is undergoing profound air, land, and sea changes related to climate change. NOAA will enhance Arctic observations, improve and increase representation of Arctic climate processes in global and regional models, and provide Arctic assessments and forecasts tailored to stakeholder needs.

Climate Sensors +\$49.4M: Precise global measurement of changes in the earth's climate is only possible from space-based remote sensing systems. This increase will insure the continuity of global measurements from NASA's Earth Observing System and provide critical data for our understanding of long-term climate change.

FY 2011 Weather & Air Quality Highlights

Water Resources Research to Operations +\$7.7M: OAR and NWS will together develop and transition to operations water forecasting services via improved quantitative monitoring and predicting of extreme precipitation events, river and stream flow, flash flooding, and storm surges.

Multi-function Phased Array Radar +\$6.0M: NOAA seeks to demonstrate that Multi-function Phased Array Radar technology can cost-effectively replace aging operational weather and aircraft-tracking radars while offering significant service improvements such as longer lead times for tornado warnings.

FY 2011 Ocean & Coastal Resources Highlights

Integrated Ocean Acidification +\$6.1M: NOAA will enhance its long-term monitoring and physiological assessments of ocean acidification effects on fisheries by developing forecasting capabilities and technologies, and adaptive strategies for improved management of impacted ecosystems.

Sea Grant Marine Aquaculture Initiative +\$5.0M: NOAA will lead internal and external research on enabling expanded alternative aquaculture feeds production in the United States. Funding will support aquaculture extension enhancement with an emphasis on regional outreach needs, and a competitive research initiative that will include smart design approaches to sustainable aquaculture.

Coastal Hazards +\$4.0M: NOAA will continue its efforts to reduce the vulnerability of coastal communities to the hardship and costs associated with climate-related natural hazards, such as hurricanes and sea level rise. This increase supports the development of science-based tools, needs assessments, trainings and other critical social science applications.

Fisheries Oceanography - Integrated Ecosystem Assessments (IEAs) +\$5.4M: IEAs provide a vital tool for the implementation of ecosystem-based management by creating a more comprehensive science-based decision-making framework for NOAA's management of the Nation's marine ecosystem resources and services. This request will support the creation of future IEAs for the California Current Ecosystem, Gulf of Mexico, and North-east Shelf with plans to expand nationwide.



NATIONAL OCEANIC & ATMOSPHERIC ADMINISTRATION