



Office of Oceanic and Atmospheric Research

A world leader in observing, understanding, and predicting the Earth system.

As NOAA's central research line office, the Office of Oceanic and Atmospheric Research (OAR) provides the Nation with critical environmental information through climate, weather, oceanic, and Great Lakes research and technology development that underpins NOAA's science. OAR research supports informed decision-making and promotes healthy, productive, and resilient ecosystems, communities, and economies.

OAR benefits the average citizen by providing the research foundation necessary to achieve earlier warnings of severe weather, healthier coastal communities and fisheries, and a broader understanding of environmental processes. The private sector uses NOAA data to make business decisions and also employs NOAA technological developments for product improvements. Federal, state, and local governments rely on NOAA's research expertise as a sound scientific basis for crucial policy decisions related to environmental protection and restoration strategies. NOAA researchers are recognized as international leaders on environmental issues. With their international counterparts, NOAA scientists contribute to the understanding and assessment of global issues, such as ozone depletion and climate variability.

NOAA's research focuses on enhancing our understanding of environmental phenomena, such as severe weather events, climate variability and change, ocean currents, and marine ecosystem health and productivity. NOAA's research is furthered through development of innovative technologies and continuous, long-term observation systems.

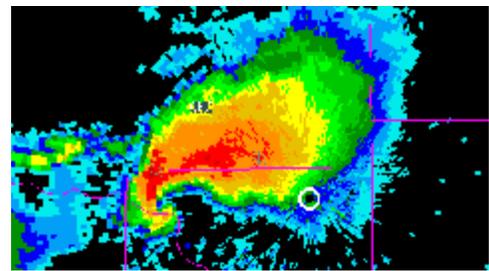
The NOAA OAR network consists of seven NOAA research laboratories, strong research partnerships with academia through Cooperative Institutes, and grant programs through the Climate Program Office, National Sea Grant College Program, Office of Ocean Exploration and Research, and Office of Weather and Air Quality. Research conducted at NOAA and through its academic partners furthers our knowledge of environmental phenomena that affect our lives.



OAR's budget request is separated into three research categories:

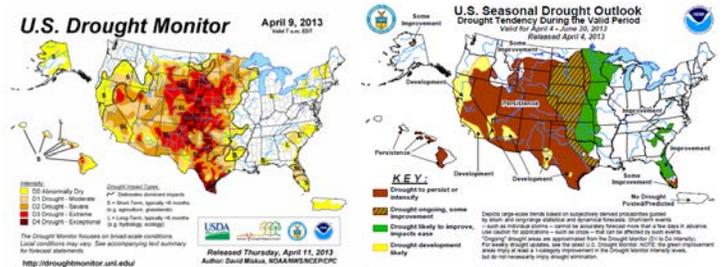
Weather and Air Chemistry Research

OAR not only works to improve current weather forecasting, but also works to anticipate and address the needs of the future. For example, OAR is researching innovative techniques for earlier detection of tornadoes and other severe weather to provide more advanced forecasts to the public.



Climate Research

The word "climate" simply picks up where "weather" leaves off: while weather forecasts are two weeks or less, climate forecasts are anything beyond two weeks. Examples of "climate" forecasts are the seasonal precipitation and drought outlooks that are used by farmers and ranchers, as well as local responders such as firefighters preparing for and responding to wildfires.



Ocean, Coastal, and Great Lakes Research

Many of our ocean activities are conducted to provide a foundation for information products. OAR in collaboration with its research partners, explores and investigates ocean, coastal, and Great Lakes habitats and resources. We provide scientific results to help manage and understand fisheries, conserve and protect our coasts, and build a stronger economy.



For more information, please visit: www.noaa.gov





FY 2014 Budget Request Highlights

The FY 2014 President's Budget Request for OAR is \$472.4 Million. This investment will allow NOAA to leverage external university partnerships to foster long-term collaboration and promote scientific exchange and technology transfer. These partnerships all supplement existing NOAA research by diversifying capabilities, expertise, and cutting edge technological innovations. The increases noted below are program changes from the FY 2014 budget request.

- **Cooperative Institutes (+\$11M)** Within the Laboratories and Cooperative Institutes budget line, this increase is for Cooperative Institutes across the three OAR sub-programs of climate, weather, and oceans. This investment will enhance our ability to work with academic partners and infuse innovation through the Cooperative Institutes by expanding NOAA expertise and allowing NOAA to explore new avenues of research that will bring the necessary breakthroughs for the future.
- **Regional Climate Data and Information (+\$8.3M)** This increase helps NOAA address increasing user demands through efforts such as the National Integrated Drought Information System (NIDIS) Program, Regional Integrated Sciences and Assessments (RISA) Program, and websites such as NOAA's Climate Portal. NIDIS, for example, provides focused drought information through Drought Early Warning Information Systems. This information has a range of uses, from fighting wildfires in Texas, to understanding the record dry season in South Dakota, to managing water supply in Utah and providing water supply information to power plants in Georgia.
- **Ocean Acidification R&D (+\$2.1M)** This increase will enable NOAA to better inform regional stakeholders and state agencies about the consequences of enhanced coastal ocean acidification. In 2008, when massive oyster larval mortality was seen in hatcheries in OR and WA, NOAA scientists were involved in identifying ocean acidification as the cause of the mortalities, and thus enabling the hatcheries to adapt their systems. The restoration of commercial hatcheries is estimated to have regained \$35 million annually for coastal economies in the two states. NOAA ocean acidification observing systems and models also provide important information to shellfish growers about the changing chemistry of coastal waters.
- **Climate Impacts on Fish Stocks & Prey Availability (+\$10.0M)** This funding is for extramural grants to improve our understanding of the impacts of climate on fish stocks and prey availability, with a focus on the Northeast groundfish region. The results of this research will be relevant to other mid and higher latitude marine ecosystems, such as the Gulf of Alaska, Bering Sea, and Arctic regions, which potentially face similar climate impacts on their fish stocks.
- **Next Generation Weather Observing Platforms (+\$4.9M)** This increase will improve weather forecasts through: Multi-function Phased Array Radar (MPAR) (\$2.9M) and Unmanned Aircraft Systems (UAS) (\$2.0M). MPAR has the potential to significantly extend lead-times for detecting tornadoes and other forms of severe and hazardous weather, and would be used by both the National Weather Service and the Federal Aviation Administration. The UAS increase will support 10 Global Hawk missions through a partnership with NASA to improve operational forecasts of high impact weather, such as hurricane tracks and intensity.
- **Wind Boundary Layer Research (+\$2.9M)** This increase will advance weather forecast quality and accuracy, and allow for more accurate predictions of wind power production since turbines operate at these latitudes. Specific applications include aviation forecasts, fire weather, air quality, severe weather, and dispersion predictions for the release of hazardous materials into the atmosphere.
- **Ocean Exploration & Research (+\$5.2M)** This program will be restructured to concentrate our efforts on the unique mission of ocean exploration and mapping, centralize funding for partnerships through the national, competitive granting mechanism of the Ocean Exploration Program, and increase our emphasis on cutting-edge technology, such as unmanned vehicles.
- **Emerging observational technologies/Grand Challenge (+\$10.0M)** NOAA requests this funding for an Ocean "Grand Challenge," as part of President Obama's Strategy for American Innovation. NOAA is launching this challenge as a way to focus innovative thinkers on exploration, mapping, and observing needs that would further NOAA's mission. The challenge model allows us to leverage our funds to spur even greater investments from the academic community and industry. New technologies in these fields that modernize our at sea research, monitoring, and application methods will save us money in the future.

OAR conducts research to understand and predict the Earth system; develops technology to improve NOAA science, service, and stewardship; and translates the results so they are useful to society.

NATIONAL OCEANIC & ATMOSPHERIC ADMINISTRATION

For more information, please visit: <http://www.noaa.gov/budget>