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**ON THE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION'S
FY 2015 BUDGET REQUEST**

**BEFORE THE
SUBCOMMITTEE ON ENVIRONMENT
COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY
U.S. HOUSE OF REPRESENTATIVES**

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Chairman Schweikert, Ranking Member Bonamici, and members of the Committee, thank you for your leadership and the continued support you have shown for the Department of Commerce's National Oceanic and Atmospheric Administration (NOAA). As the Under Secretary of Commerce for Oceans and Atmosphere and the Administrator for NOAA, I am honored to be here to discuss the FY 2015 President's Budget. The FY 2015 budget proposal represents a focused and balanced commitment to our core mission of science, service, and stewardship. The proposal better positions NOAA to help communities across the country safeguard lives and property, prepare for extreme weather events, adapt to a changing world, ensure environmental sustainability, and enhance economic prosperity.

Let me begin with the bottom line: NOAA is one of the most valuable service agencies in the U.S. government. Through our network of observations, forecasts, and assessments, we strive to provide the foresight and information people need to live well and safely on this dynamic planet. At NOAA, we call this information "environmental intelligence," and producing it is at the core of our mission. NOAA was very effective last year providing such information to help American citizens, businesses, and governments make smart decisions on a range of issues on local to global scales. The real testament to NOAA's value is not found in a spreadsheet; it is seen in the services rendered to the American people.

The environmental intelligence and the services NOAA provides are in higher demand today than ever before. Increases in the frequency and severity of extreme weather events mean that NOAA must forecast and respond to these events with skill and accuracy. But the increased demand for our services goes beyond just extreme weather. Our marine transportation system must be more efficient to accommodate growing volume of commerce at our ports. NOAA provides the positioning data, tide and currents information, and nautical charts that ensure safe navigation and keeps commerce flowing. Our marine ecosystems are changing due to climate and other stressors, thereby increasing the need for a greater number of more advanced scientific assessments to sustain and promote economically viable commercial and recreational fisheries, and to ensure that threatened and endangered species are protected.

NOAA's integrated response to extreme events such as droughts, hurricanes, tornadoes, and heat waves demonstrates how our agency leverages its diverse capabilities to support the nation from preparedness to response to recovery: data collected from a spectrum of platforms enables the development of environmental intelligence from science-based models to support a suite of products to provide decision support to individuals, communities, and governments. I thank you for recognizing NOAA as a key agency supporting the preparedness, response, and recovery efforts surrounding extreme events.

The NOAA FY 2015 budget request aims not only to enhance public safety and community resilience, but also to make smart investments via innovative science and research to better position NOAA for the future. This budget request continues efforts to strike the right balance between our oceanic and atmospheric missions, our internal and extramural programs, and our long-range and short-term research investments, while maintaining strong fiscal discipline. Overall this is a strong budget for NOAA, however, you will see decreases in some activities that we have to scale back in order to position the agency for the future and afford the proposed investments.

We appreciate Congress' support in FY 2014. Below we highlight some of our top accomplishments from 2013, many of which we could not have achieved without our partners in the research, industry, and conservation communities.

FY 2013 ACCOMPLISHMENTS

Rebuilt four fish stocks while increasing fishing opportunity. NOAA, in cooperation with commercial and recreational fishermen and fishery management councils, rebuilt the following fisheries in 2013: Southern tanner crab fishery in the Bering Sea, pink shrimp in the South Atlantic, Sacramento River fall Chinook salmon, and South Atlantic black sea bass. In 2013, NOAA reported that 2012 U.S. commercial and recreational landings were the second-highest on record, totaling 9.6 billion pounds and valued at \$5.1 billion.¹

Completed dual-polarization upgrade to weather radar network. In April 2013, NOAA completed deployment of the Dual Polarization (Dual Pol) capability across the nation's Next Generation Weather Radar (NEXRAD) network of 158 Tri-Agency sites. Dual Pol enables more accurate precipitation estimates, improved hail detection, improved rain and snow discrimination, and better detection of tornado debris. This innovation helped increase National Average Flash Flood Warning lead-time from 58 to 64 minutes, allowing people in affected areas more time to take life- and property-saving actions.

Advanced harmful algal bloom detection. NOAA scientists and partners improved field detection of algal species and toxins related to Harmful Algal Blooms (HABs). In Alaska, scientists and partners helped remote communities mitigate the dangers of paralytic shellfish poisoning, a HAB-related illness. In southern California and Maine, scientists researched and enhanced technology to detect harmful HAB-related toxins.

¹ *Fisheries of the United States, 2012.* NMFS Office of Science and Technology. See here: http://www.st.nmfs.noaa.gov/Assets/commercial/fus/fus12/FUS_2012_factsheet.pdf

Continued on pace to improve weather forecasts via new satellite systems. Since its October 2011 launch, Suomi NPP instruments have provided invaluable data for weather forecasting and environmental observations. In addition, the Joint Polar Satellite System (JPSS)-1 and JPSS-2 missions continue to make steady progress. JPSS instruments and ground system represent a new generation of observations and processed data products that will dramatically increase the accuracy, timeliness, stability, and volume of data needed for substantial improvement in weather forecast skill.

Supported Hurricane Sandy recovery. Crews flying in NOAA's King Air turboprop and Twin Otter aircraft surveyed over 1,649 miles of coastline to document coastal damage and impacts to navigation. The data contained in these photos provided emergency and coastal managers with the information they need to develop recovery strategies, facilitate search-and-rescue efforts, identify hazards to navigation and HAZMAT spills, locate errant vessels, and provide documentation necessary for damage assessment through the comparison of before-and-after imagery. NOAA ships *Thomas Jefferson* and *Ferdinand R. Hassler* surveyed harbor and shipping channels to ensure safe navigation.

Advanced understanding of ocean acidification impacts along West Coast. NOAA scientists completed their third biennial cruise along the continental west coast to study the extent of acidification in coastal waters and the resulting impacts on marine life. Preliminary results indicate that the upper 100 meters of the water column in this region have become more corrosive to the shells of marine organisms – as much as a six-fold increase relative to pre-industrial conditions – causing a decline in pteropods, an important food source for juvenile salmon, whales, and numerous other marine organisms. This also poses a risk to the west coast shellfish industry.

FY 2015 BUDGET REQUEST

The NOAA FY 2015 discretionary budget request totals approximately \$5.5 billion. The topline number is an increase of \$174.1 million, or 3.2 percent, over the FY 2014 enacted levels. This budget request continues efforts to strengthen the agency's oceanic and coastal programs, and its internal and extramural programs, all while maintaining fiscal discipline. In the FY 2015 budget, we focus our investments in three areas: 1) critical investments in infrastructure, 2) services that enhance public safety and community resiliency, and 3) innovations that will position NOAA for the future and promote operational excellence. In order to afford investments in these critical areas, difficult decisions had to be made, but I believe that this budget provides clearer portfolio logic, which is a trend I look to continue in the future.

Investing in Mission-Critical Infrastructure

This budget makes investments in infrastructure improvements that are critical to effectively execute NOAA's diverse mission portfolio. NOAA is the only federal agency with the operational responsibility to provide critical and accurate weather, water, ocean, climate, and ecosystem forecasts. Our global observing systems are the foundation of the information and data we provide – without them we are essentially "flying blind" and the level of uncertainty in our forecasts increases at a time when people are demanding more precision. Investments are necessary today to ensure NOAA's fleet of research vessels and observational platforms can continue to provide the environmental intelligence needed to meet our mission and are capable of

gathering data in extreme environments, such as the Arctic.

This budget requests an increase of \$2 million to improve the condition of the NOAA ship fleet by stabilizing capital investment in regular upgrades and repairs. We are also investing in advancements for the Weather-Ready Nation mission by supporting next-generation polar and geostationary satellites. The requested increase for the Geostationary Operational Environmental Satellite R-Series (GOES-R; + \$38.9 million) and the Joint Polar Satellite System (JPSS; + \$95.4 million) supports on-time launch and thus decreases risk to sustained execution of our weather mission. Additional requested increases to support the Weather-Ready Nation initiative include essential IT and physical infrastructure, such as the Ground Readiness Project (+ \$6 million) and NEXRAD Service Line Extension Program (+ \$9.3 million).

The FY 2015 President's Budget request also includes proposals to sustain critical observations, which will help improve the resilience of the nation to immediate hazards and long-term risks. An increase is requested (+ \$4 million) to build upon the coastal LIDAR survey efforts, which will allow for progress towards a national dataset to inform navigation safety, coastal storm preparedness, and stewardship of ecological resources. NOAA requests an increase (+ \$8.0 million) to complete and sustain an observation and analysis system to determine uptake and emissions of greenhouse gases across North America. NOAA will build upon its Atmospheric Baseline Observatories, (+3.0 million) Global Reference Networks for atmospheric composition, and North American Carbon Observation and Analysis System to deliver information on the full suite of greenhouse gas emissions. In addition, NOAA requests an increase to support 3,170 days at sea (+ \$2.9 million) for fishery, hydrographic, and marine ecosystem surveys, and 2,795 flight hours (+ \$1 million) to conduct hurricane reconnaissance and research missions aimed at improving hurricane intensity forecasts. Flights also support water resource surveys that allow water managers and forecasters to more accurately forecast spring melts, droughts, and flooding to meet industrial and agricultural needs.

NOAA's FY 2015 request seeks an increase of \$12 million to strengthen agency support functions and mitigate the risk of non-compliance with the regulatory areas for which the Corporate Services units have agency oversight. Currently, Corporate Services is at a critical staffing breaking point; employment is low compared to historic levels and turnover is high – we need to reverse this trend if the agency is to function at the level that Congress and our partners demand. For example as of FY 2012, NOAA has one Human Resource (HR) representative for every 150 employees. NIST has one HR representative for every 79 employees. This increase is critical to attract and retain the best talent; proficiently execute our mission; and operate with both high efficiency and optimal effectiveness.

Strengthening Scientific and Programmatic Innovation

NOAA is a service agency – but one that is supported by some of the best science in the world. This budget continues to invest in the research and development needed today for the innovation of tomorrow. Developing the latest technological advancements and promoting a fundamental understanding of our planet will keep our products and services viable, improve cost efficiency and management effectiveness, maximize economic opportunity, and leverage our partnerships with external stakeholders. From making advancements in sustainable fisheries management to evolving NOAA's National Weather Service (NWS), this budget includes key investments to strengthen, support, and foster innovation within the organization.

NOAA is proposing investments to advance sustainable fisheries management. An increase of \$4 million is requested for electronic monitoring and reporting, which will support development and implementation of this technology across the country. These electronic solutions will improve the timeliness, quality, integration, and accessibility of data for fishery managers, stock assessment scientists, the fishing industry, and other key stakeholders. The goal is to deliver cost-effective solutions that enhance monitoring of catch and bycatch in U.S. fisheries. In addition, an increase of \$2.5 million is requested to improve timeliness and accuracy of stock assessments, by incorporating ecosystem information (e.g., climate, predator-prey dynamics) and using advanced technologies (e.g., remote sensing, digital imaging) where possible. More timely and accurate assessments will better inform fishery management, allowing for maximum fishing opportunities. The Budget also includes \$15 million, an \$8.9 million increase, for ocean acidification research to improve our understanding of the impacts to ocean and coastal marine resources, and to develop tools and adaptive strategies for affected industries and stakeholders.

The NWS provides weather, water, and climate forecasts and warnings for the protection of life and property and enhancement of the national economy, and it must evolve to meet growing and changing demands for its products and services. To that end, an increase is requested (+ \$3 million) to support response and implementation of recommendations from two independent studies of the NWS – *Weather Services for the Nation: Becoming Second to None* by the National Academy of Sciences in 2012, and *Forecast for the Future: Assuring the Capacity of the National Weather Service* by the National Academy of Public Administration in 2013. Both studies urge the NWS to become a better, more agile organization, and this increase will support analyses of workforce and infrastructure, enhance capacity for testing and demonstration, improve integration of stakeholder advice, and promote better evaluation of progress.

Imperative to supporting the evolution of the NWS is the transition of weather-related research projects to operational use. An increase of \$3 million is requested for the U.S. Weather Research Program for Enhancing Readiness Levels for Short- and Long-term Research, which supports improving NOAA's weather products and services. This increase aims to improve the readiness of those weather and related research projects associated with critical technologies, model improvements, and service applications to a stage of development that will enable a successful future transition to operations for deployment by NOAA's operational entities. The acceleration of weather research to operations will support improvements in the forecasting of events such as tornadoes and hurricanes, storm surge, inundation, volcanic ash, and ice cover for a Weather-Ready Nation.

Providing Services to Enhance Community Resilience

In 2013, the United States experienced seven weather- and climate-related disaster events with losses exceeding \$1 billion apiece.² Each of these events caused widespread damage and devastated families, businesses, and communities. The question of our time isn't "if" the next big event is going to hit, but "when" it will hit, and how hard a blow it will deliver to our society and our economy. Recognizing this, this budget invests in the services and information that promote community and economic resilience in advance and in the aftermath of these kinds of severe

² <http://www.ncdc.noaa.gov/billions/events.pdf>

events.

The FY 2015 budget makes critical investments in: expanding coastal inundation tools to enable better flood warnings, supporting other activities that improve communities' ability to respond to extreme events, improving ecological forecasting, and understanding the potential environmental impacts of growing commerce in the Arctic.

NOAA strives to ensure that the public is kept safe. To that end, I am proposing increases for building capacity for response and resilience. An increase of \$5 million is requested to provide products and services that help coastal communities prepare for, respond to, and recover more quickly from extreme events, such as floods, hurricanes, and other inundation events. As a means to help keep the public safe and maximize economic benefit of beaches, an increase is requested (+ \$4 million) to support ecological forecasting, which will allow NOAA to continue to develop and operationalize forecasts of harmful algal blooms, hypoxia, pathogens, and species distributions. This intelligence is critical to coastal communities and the businesses that depend on healthy oceans, working waterfronts, and tourism.

The Arctic is an emerging area of environmental and economic issues, many of which have significant impacts for human lives, livelihoods, and coastal communities. NOAA is proposing investments in the Arctic (+ \$2.2 million) to enable sustainable economic activity. Increases are requested to improve oil spill response capacity and to increase observations. The former will enable the improvement of models to predict oil movement and weathering in ice-covered waters, identification of sensitive ecological resources, better coordination with and preparedness of local communities, and increased research to fill science gaps. In order to increase observations, NOAA will implement a distributed biological observatory to improve our understanding of how climate and human-induced change are affecting subsistence cultures and the environment. These investments will, in turn, lead to improved management of Arctic coastal and ocean resources, including fishery resources with potentially high value.

Strengthening coastal communities and ecosystems, and providing tools to communities to be more resilient in the face of extreme events, is a key theme at NOAA, and I am requesting an increase of \$15 million for Regional Climate Data and Information. This request will support:

- The National Integrated Drought Information System (+ \$1,900,000) – the requested increase is in support of competitive research grants and contracts to develop the Regional Drought Early Warning System and research projects that address coping with drought across a range of sectors.
- Climate assessments (+ \$3,970,000) – to support assessments at the regional and national scale in compliance with the Global Change Research Act of 1990.
- Regional Integrated Sciences and Assessments (+ \$4,640,000) – the increase will support an expansion of the regional research and information services, such as external research and development of new information about the impacts of climate on communities, human health, infrastructure, resources, and transportation.
- Arctic Research Program (+ \$2,190,000) – for further development of NOAA's Arctic Observing Network and informational products related to Arctic Ocean changes.
- Climate Resilience Toolkit (+ \$2,300,000) – to continue supporting development of the Toolkit, the Climate.gov Portal, and to facilitate public online access to NOAA's climate

data, information, and services in support of the President's Climate Action Plan.

The requested increase for NOAA's regional climate information tools acknowledges and aims to improve upon these products and services.

Opportunity, Growth, and Security Initiative

This Initiative recognizes that, through the Bipartisan Budget Act of 2013 (BBA), Congress came together to replace the damaging cuts caused by sequestration with longer-term reforms. While the President's Budget adheres to the BBA's discretionary funding levels for 2015, these levels are not sufficient to expand opportunity to all Americans or to drive the growth our economy needs. For that reason, the Administration's FY 2015 Budget also includes a separate, fully paid for \$56 billion Opportunity, Growth, and Security Initiative.

NOAA infrastructure and research and development (R&D) initiatives make up \$180 million of this fund and are investments that will help spur economic progress, promote opportunity, and strengthen national security. Moreover, the Opportunity, Growth, and Security Initiative is fully paid for with a balanced package of spending cuts and tax loophole closers, showing that additional pro-growth investments are easily affordable without increasing the deficit. At NOAA, the Initiative will support progress in the areas of fortifying infrastructure and will improve its research and products related to preparing local communities and industries for climate-related impacts on their safety and economic well-being, specifically:

- Sustained observations and data gathering capabilities by constructing a NOAA ocean survey vessel;
- Improved understanding of drought impacts on industries, ecosystems, and human communities through the National Integrated Drought Information System (NIDIS) "Coping with Drought" initiative;
- Expanded products and services related to sea level rise and coastal inundation events;
- Studies on the impacts of changing ocean conditions on living marine resources; and
- Improved heat advisories and more confident projections for heat stress probabilities.

NOAA also proposes to further support the R&D that is the foundation of our activities related to understanding and preparing for sea level rise, mitigating drought impacts, understanding climate impacts on living marine resources, and preparing local communities for extreme events.

Climate Resilience Fund

Individuals, businesses, and communities are turning to NOAA as a trusted source for science and information to help them understand how and why climate conditions are changing and how they can prepare for those changes. NOAA's regional climate information tools are supported by our strong foundation in science, including global climate observation and monitoring networks, world-renowned scientists, and state-of-the-art climate models. The President's Budget also includes, as part of the Opportunity, Growth, and Security Initiative, a \$1 billion Climate Resilience Fund. Of that \$1 billion, there is \$75 million for NOAA broken up into two specific activities:

- Climate Resilience Research – \$25 million – these are research grants to further the understanding of climate change impacts on various sectors (e.g., fisheries) and improve severe weather prediction models.

- **Climate Resilience Grants to Communities – \$50 million – these are competitive grants to state, local, and tribal governments and nonprofit organizations for projects that improve coastal resilience to severe weather events, climate hazards, and changing ocean conditions.**

CONCLUSION

Overall, NOAA's FY 2015 Budget request reflects the commitment Secretary of Commerce Pritzker and I have made to the President to growing a strong economy that is built to last, while being fiscally responsible and focusing on priority initiatives. NOAA is a vital component of the U.S. Government, helping to maximize U.S. competitiveness, enable economic growth, foster science and technological leadership, and promote environmental stewardship. Americans – civilians, the military, and businesses – rely upon the services NOAA provides on a daily basis.

Demand for NOAA's environmental intelligence and services is rising at the same time that the mix of services needed is evolving and budget pressures are increasing. These competing tensions place a premium on achieving organizational excellence: attracting and retaining the best talent; managing the basics of execution; operating with both high efficiency and optimal effectiveness. The FY 2015 budget proposes targeted investments that are needed to drive improved results in sustaining and developing our workforce's skills and provides much-needed capacity in our grants, finance, and workforce management departments.

NOAA is fortunate to have a highly skilled and passionate workforce. Our people come to work each day committed to serving the public and advancing our mission. Our work touches every community across the United States, and we aim to perform at the highest level and with discipline and consistency. Every one of our investments in the FY 2015 budget – from improving products and services to positioning ourselves for the future – will help the organization as a whole strive for excellence and deliver the environmental intelligence our country has come to rely upon.

I look forward to working with the members of this Committee and our partners and constituents to achieve the goals I articulated through the implementation of the FY 2015 budget. Thank you for the opportunity to present NOAA's FY 2015 Budget request. I am happy to respond to any questions from the Committee.