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OVERSIGHT HEARING ON THE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION'S
FY 2009 BUDGET REQUEST

BEFORE THE
COMMITTEE ON COMMERCE, SCIENCE AND TRANSPORTATION
SUBCOMMITTEE ON OCEANS, ATMOSPHERE, FISHERIES
AND COAST GUARD

U.S. SENATE

May 6, 2008

Madam Chairwoman and Members of the Committee, before I begin my testimony I would like to thank you for your leadership and the generous support you have shown the National Oceanic and Atmospheric Administration (NOAA). Your continued support for our programs is appreciated as we work to improve our products and services for the American people. Thank you for the opportunity to testify on the President's Fiscal Year (FY) 2009 Budget Request for NOAA.

The FY 2009 President's Budget supports NOAA's priority to advance mission-critical services. The FY 2009 request is $4.1 billion, which represents a $202 million or 5.2% increase over the FY 2008 enacted level. This request includes the level of resources necessary to carry out NOAA's mission, which is to understand and predict changes in the Earth's environment, and conserve and manage coastal and marine resources to meet our nation's economic, social and environmental needs. At NOAA we work to protect the lives and livelihoods of Americans, and provide products and services that benefit the economy, environment, and public safety of the nation. Before I discuss the details of our FY 2009 budget request, I would like to briefly highlight some of NOAA's notable successes from the past fiscal year (2007).

FY 2007 ACCOMPLISHMENTS

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

Scientists from NOAA's Earth System Research Laboratory were among those sharing in the 2007 Nobel Peace Prize. The scientists were recognized for their contributions to the Intergovernmental Panel on Climate Change (IPCC). The IPCC was created in 1988 by the World Meteorological Organization and the United Nations Environment Program to provide regular assessments for policymakers of the scientific, technical and socio-economic aspects of climate change. IPCC has produced its major assessments every five to six years since 1990.

NOAA scientists served as contributors to and government reviewers of the Fourth IPCC Assessment Report. NOAA's Geophysical Fluid Dynamics Laboratory provided model runs that enhanced the projections used in the IPCC report.

Magnuson-Stevens Act Implementation

The Magnuson-Stevens Fishery Conservation and Management Reauthorization Act of 2007 was signed into law 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.

Progress 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, 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.

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.

Fleet Modernization Moves Ahead

In June 2007, NOAA celebrated the keel laying of NOAA ships BELL M. SHIMADA and FERDINAND R. HASSLER 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. In September, Phase I of conversion of NOAA Ship OKEANOS EXPLORER (formerly USNS CAPABLE) to an ocean exploration ship was completed. NOAA ship PISCES was christened in December and subsequently launched in Moss Point, Mississippi.

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 supports more than $50 million of high technology equipment, including 16 antennas monitoring the operations of 16 on-orbit satellites.

National Water Level Observation Network Upgraded to Real-time Status

The National Ocean Service (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 more quickly.

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. 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 required 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.

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's established 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 United States, 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 December 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 directly monitor ocean acidification was launched in the Gulf of Alaska. Ocean acidification is a result of carbon dioxide absorbed by the ocean. The 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.

NOAA Ships Arrive at New Home Port in Hawaii

NOAA ships OSCAR ELTON SETTE, HI'IALAKAI, and KA'IMIMOANA relocated to their new home port at 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 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 now 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. Water quality data can be viewed on a Web site jointly sponsored by NOS and the Northwest Association of Networked Ocean Observing Systems (*http://www.nanoos-shellfish.org/*). 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).

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 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.

FY 2009 BUDGET REQUEST HIGHLIGHTS

Supporting the President's Ocean Initiative

Building on last year's investment in Ocean Initiative related activities, the FY 2009 President's Request includes new increases of $49.1 million for NOAA over the FY 2008 President's Request to support the President's Ocean Initiative. This ocean initiative includes more funding to advance ocean science and research; protect and restore marine and coastal areas; and ensure sustainable use of ocean resources.

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.

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.

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 over the FY 2008 enacted level. Of this amount, $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; $8.5 million will initiate and expand existing sampling programs and management procedures in order to end overfishing by 2011, as mandated by the MSRA; and $3.0 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.

Sustaining Critical Operations

As always, I support NOAA's employees by requesting adequate funding for our people, infrastructure, and facilities. 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 on satellite continuity and 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 sustain on-going programs and projects at the levels recommended in the FY 2008 President's Budget.

Improving Weather Warnings & 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 United States, 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 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, 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 radar system. Finally, NOAA is requesting $2.9 million in increased funding for modernization of the NOAA Weather Radio network.

Climate Monitoring & Research

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 United States throughout 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 United States in 2007 resulted in numerous wildfires, with 3,000 homes and over 8.9 million acres burned, and at least 12 deaths. The FY 2009 Budget Request contains investments in several programs aimed at increasing our predictive capability, enabling NOAA to provide our customers (farmers, utilities, land managers, weather risk industry, fisheries resource managers and decision makers) with assessments of current and future impacts of climate events such as droughts, floods, and trends in extreme climate 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 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.

Critical Facilities Investments

The FY 2009 President's Budget Request also includes important increases for critical facilities, necessary to provide a safe and effective working environment for NOAA's employees.

For FY 2009, NOAA will concentrate their modernization efforts on three main projects. NOAA requests an increase of $40.2 million for the continued construction of the new Pacific Region Center on Ford Island in Honolulu, Hawaii. This increase in funding will support the continued construction and renovation of two buildings, enabling NOAA to reduce expenditures for rent and 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, Alaska. 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.

CONCLUSION

NOAA's FY 2009 Budget Request provides essential new investments in our priority areas while maintaining critical services, reflecting NOAA's vision, mission, and core values. The work NOAA accomplished in 2007 impacted every U.S. citizen. We will build on our successes from last year, and stand ready to meet the challenges that will surface in FY 2009 and beyond. NOAA is dedicated to enhancing economic security and national safety through research and accurate prediction of weather and climate-related events, and to providing environmental stewardship of our nation's coastal and marine resources. That concludes my statement, Madam Chairwoman. Thank you for the opportunity to present NOAA's FY 2009 Budget Request. I am happy to respond to any questions the Committee may have.