

**Testimony of
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Subcommittee on Water Resources and the Environment
Committee on Transportation and Infrastructure
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Mr. Chairman and Members of the Subcommittee, thank you for inviting me to appear today to discuss fiscal year (FY) 2005 actions and FY 2006 plans and priorities for the National Oceanic and Atmospheric Administration (NOAA) programs that fall under this Subcommittee's jurisdiction. My name is Richard W. Spinrad and I am the Assistant Administrator for NOAA's National Ocean Service. My testimony today will focus on programs that help fulfill NOAA's responsibilities for understanding, protecting and restoring coastal and marine resources. These programs help maintain environmental and economic prosperity along the Nation's coast.

OFFICE OF RESPONSE AND RESTORATION

Under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA or Superfund) and the Oil Pollution Act of 1990 (OPA), NOAA has the responsibility to protect and restore coastal resources when threatened or injured by releases of oil or hazardous substances. Specifically, NOAA's Office of Response and Restoration (OR&R) implements CERCLA and OPA mandates by:

- Providing an interdisciplinary scientific response to releases of oil, chemicals, and other contaminants;
- Protecting and restoring NOAA trust resources; and
- Extending core expertise to address critical local and regional coastal challenges as they arise, including terrorist activities and major coastal storms.

NOAA Emergency Response Program

Our interdisciplinary scientific response team is a key part of the NOAA Emergency Response Program. This team provides unbiased scientific advice in support of federal response efforts to oil and hazardous chemical spills such as the November oil spill in the Delaware River and the January chlorine release from a train collision near Graniteville, South Carolina. NOAA is on notice 24/7 and is able to provide scientific support within 15 minutes of notification and to respond on scene within 4 hours of notification.

The NOAA Emergency Response Program works to:

- Forecast the movement and behavior of spilled oil and chemicals;
- Evaluate the risk to natural resources;
- Recommend protection priorities and cleanup actions;
- Strengthen the Nation's response capabilities by conducting research and monitoring in areas impacted by spills;
- Work with federal, state, and industry partners to ensure close cooperation and coordination for planning and responding to pollution incidents and other emergencies;
- Assist local communities in developing and evaluating their oil and hazardous materials response plans; and
- Pursue compensation and restoration for injuries to NOAA's trust resources caused by oil or chemical.

NOAA research is focused on developing new response technologies and monitoring techniques. Our research includes the development of new techniques for restoration that will help speed habitat recovery. NOAA's goal is to remain at the forefront of any new scientific developments in order to ensure our ability to execute our mission efficiently and effectively. NOAA's research efforts are critical to improving our ability to respond to hazardous spills. Research partnerships, such as that with the University of New Hampshire through the Coastal Response Research Center, are the primary means by which we conduct research into various aspects of response and restoration.

Habitat Program

NOAA's Habitat Program addresses harm to coastal trust resources in an integrated way, from initial response through completion of restoration monitoring. NOAA regional coordinators, scientists, and economists work in partnership with government agencies, the public, and industry to:

- Provide technical advice on ecological risk, contaminated sediments, brownfields, and remedial issues to accelerate natural resource recovery as well as community and waterfront revitalization;
- Assess impacts to NOAA trust resources by collecting data and conducting studies to quantify injuries to coastal resources, including impacts on recreation and other lost service uses from a spill or chronic contaminant release;
- Determine the type(s) and amount(s) of restoration necessary to compensate the public for the losses;
- Develop cooperative settlements to resolve liability for impacts, where possible; and
- Work with co-trustees, responsible parties, and communities to implement resource restoration.

NOAA has applied an integrated remediation and restoration planning approach successfully at many sites around the country. Beginning this spring (2005), construction will begin on nearly 400 acres of wetland and oyster reefs and nearly 2,500 acres of coastal habitat will be preserved and improved in Texas alone.

NOAA's Habitat Program also participates in implementation of the Estuary Restoration Act. Our participation includes:

- Developing a national database of restoration projects,
- Establishing monitoring protocols to measure the success of restoration activities, and
- Promoting regional restoration planning to maximize the benefits of restoration in coastal ecosystems.

Future Activities and Focus Areas

In the FY 2005 appropriation, OR&R activities were funded at \$2.1 million below the President's request. This cut is restored in the FY 2006 request, with the President requesting \$17.594 million for Response and Restoration activities. The level of funding in the FY 2006 request ensures that NOAA will continue to meet its responsibilities under CERCLA and OPA, to protect and restore injured coastal and marine resources.

In FY 2006, the Emergency Response program will continue to focus on increasing the Nation's capability to respond to oil and hazardous material spills through the most effective methods. Funding in FY 2006 will continue to support damage assessment and restoration efforts for sites such as the Hudson River in New York, Commencement Bay in Washington, and the LCP Chemicals hazardous waste site in Georgia.

NOAA will continue to provide technical assistance, training, and support to states and communities to strengthen local and regional capabilities to restore or redevelop contaminated sites and port areas. For example, we will continue to build and improve products in several watersheds, including the Hudson River in New York, Passaic River in New Jersey, Kalamazoo River in Michigan, the Elizabeth River in Virginia, Charleston Harbor in South Carolina, and Puget Sound in Washington.

The FY 2006 request also provides funding for the Great Lakes Region under NOAA's Fisheries Habitat Restoration line item. This funding will expand NOAA's capabilities in the Great Lakes region, providing a focused effort on habitat protection and restoration through an ecosystem-based approach. NOAA will continue to participate in the Great Lakes Interagency Task Force, established by Executive Order 13340, to identify the restoration needs and priorities in the Great Lakes.

COASTAL NONPOINT POLLUTION CONTROL PROGRAM

Polluted runoff from growing urban areas, septic systems, farms, forestry operations, and other land uses remains a major threat to our coastal waters. The Final Report of the United States Commission on Ocean Policy (USCOP) characterized the nonpoint source pollution problem as "complex and pervasive." NOAA anticipates playing an important role in the implementation of the President's U.S. Ocean Action Plan, which identifies several initiatives to reduce nonpoint source pollution in coastal watersheds. For example, in FY 2005, NOAA and the Environmental Protection Agency (EPA), in

partnership with other federal agencies, will initiate a series of community workshops to improve integration and coordination of Coastal Zone Management Act, Clean Water Act, and other federal programs. This workshop is designed to better assist states, tribes, and local governments in addressing priority nonpoint source pollution and land use issues.

NOAA, in coordination with EPA, works to ensure that coastal states have the tools necessary to effectively manage nonpoint sources of pollution. Thirty-three of the thirty-four states and territories that participate in the Coastal Zone Management Program have either conditionally or fully approved coastal nonpoint pollution control programs. In FY 2005, our program will focus on states and territories with only one or a few conditions remaining, so that their programs may reach fully approved status.

Congress has supported the implementation of state coastal nonpoint pollution control programs through appropriations to NOAA of approximately \$10 million per year in FY 2001-04 and \$3 million in FY 2005. NOAA's priorities for wisely using the \$3 million in FY 2005 funds include a continued emphasis on nonpoint pollution sources not addressed by other federal programs, such as septic systems and marinas. NOAA also intends to focus on enhancing its coastal program policies by explicitly recognizing the inextricable link between coastal development and polluted runoff. It will be critical to clarify and strengthen the role of state coastal programs in addressing land-based sources of pollution. We must improve the ability of coastal states to effectively plan for and manage coastal development and to conserve coastal areas that have significant ecological, recreational or other values. NOAA will maintain a leading role in nonpoint source pollution research, science and education.

The Administration recognizes the important role that state coastal management programs can play in addressing coastal nonpoint pollution problems. NOAA's FY 2006 request does not include additional funding for state implementation of nonpoint coastal programs, however, other federal agencies, especially EPA and the U.S. Department of Agriculture (USDA) invest heavily in this area. NOAA will continue to leverage its resources by working closely with EPA and other federal partners to apply NOAA's expertise in coastal management to nonpoint pollution issues and programs.

HARMFUL ALGAL BLOOMS AND HYPOXIA

Harmful Algal Blooms (HABs) and hypoxia are often interrelated issues affecting an increasing number of Great Lakes and coastal ecosystems. Virtually every coastal state has reported recurring major blooms, and a recent national assessment revealed that more than half of our Nation's estuaries experience hypoxic conditions at some time each year. Hypoxia can stress and kill marine organisms, which affects both commercial harvests and the health of ecosystems. HABs can produce toxins that bioaccumulate in marine organisms. These toxins can also become airborne, leading to the closure of commercially important fisheries, the death of coastal marine wildlife, and illness or death in humans. A single HAB event can cost local coastal economies tens of millions

of dollars, and the total cost associated with HABs during the past few decades has been conservatively estimated at more than \$1 billion.

NOAA's mandate to address national issues related to HABs and hypoxia in the Nation's coastal waters is primarily provided by the recently reauthorized Harmful Algal Bloom and Hypoxia Research and Control Act of 1998 (HABHRCA). In addition to HABHRCA, NOAA conducts HAB and hypoxia related research through the NOAA Authorization Act of 1992, which established the NOAA Coastal Ocean Program, and the Sea Grant Act of 2002, which contains authorization for competitive grants for university research on the biology, prevention, and forecasting of HABs.

NOAA, working closely with our federal, state, and academic partners, has made considerable progress in the ability to detect, monitor, assess, and predict HABs and hypoxia in coastal ecosystems. These advances are helping coastal managers undertake short- and long-term efforts to reduce and ultimately to prevent the detrimental effects of these phenomena on human health and valuable coastal resources.

NOAA research on HABs and hypoxia involves a mix of extramural and intramural research, long-term regional ecosystem-scale studies supported by short-term targeted studies, collaborations between academic and federal scientists, and multiple partnerships with federal, state and tribal managers. Projects are currently located in marine coastal areas and the Great Lakes. These interdisciplinary studies are helping to advance the state of the science and also lead to direct application for coastal managers.

Ecology and Oceanography of Harmful Algal Blooms (ECO HAB)

This competitive research program, led by NOAA, is run cooperatively with the National Science Foundation, EPA, National Aeronautics and Space Administration, and the Office of Naval Research. Through a combination of long-term regional studies and short-term targeted studies, ECO HAB seeks to produce new, state-of-the-art detection methodologies for HABs and their toxins; to understand the causes and dynamics of HABs; to develop forecasts of HAB growth, transport, and toxicity; and to predict impacts on higher trophic levels and humans, including socioeconomic impacts. Research results will be used to guide management of coastal resources to reduce HAB development, impacts, and future threats.

Monitoring and Event Response for Harmful Algal Blooms (MERHAB)

NOAA's MERHAB competitive research program assists states and tribes in their response to current threats from HABs by forging working partnerships between leading government, public, and private entities in an affected region. Through MERHAB, researchers and managers are transferring technology for proactive detection of algal cells and toxins to improve the efficiency and effectiveness of coastal monitoring programs.

Event Response

NOAA has two mechanisms that provide immediate assistance to state and federal coastal managers to reduce the impact of HAB events – the HAB Event Response

Program and the Analytical Response Team. Through these programs, coastal managers and public health officials can request immediate, coordinated assistance during toxic algal blooms, related health incidents, and marine animal mortality events.

Research on HAB Prevention, Control, and Mitigation

Advancements in this area of HAB research have been made through other NOAA HAB programs (e.g. ECOHAB, MERHAB) and by using existing mechanisms (e.g. NOAA Sea Grant research and extension network). Efforts are also underway in outreach and public education to help coastal communities and managers control the impacts of HABs.

HAB Research and Assessment Activities in NOAA Laboratories

NOAA's laboratories have focused on the following key areas critical to HAB management:

- Identification of new toxins,
- Development of sensitive, toxin-specific assays and toxin standards for research and field application,
- Effect of environmental conditions and organism physiology on toxin movement through food webs, and
- Remote sensing and prediction of HABs.

NOAA labs have also participated with academic investigators and state managers in investigating regional HAB problems. Investments in these laboratories have led to developments that are now aiding coastal scientists and managers with critical, timely information on the occurrence of HABs and the production of toxins.

Hypoxia Research and Monitoring

In the 1990s, through support from NOAA, the scientific community documented the distribution and dynamics of the hypoxic "dead zone" over the Louisiana continental shelf. These efforts led to the development of six technical reports, an integrated assessment of the causes and consequences of Gulf hypoxia, and an *Action Plan for Reducing, Mitigating, and Controlling Hypoxia in the Northern Gulf of Mexico* as mandated through HABHRCA, 1998. The uncertainties highlighted in the integrated assessment were used to identify research needs and to form the basis of a competitive, peer-reviewed research program in the northern Gulf of Mexico. This research program is designed to evaluate hypoxic events in the Gulf of Mexico; efforts include assessing the impacts on commercially important species and providing forecasts of the "dead zone" that may be used by coastal managers.

NOAA is in the process of expanding the current program to address hypoxia in other coastal, estuarine, and Great Lake regions around the Nation. Our goal is to provide tools that will be used by resource managers to assess alternative management strategies for preventing or mitigating the impacts of hypoxia on coastal ecosystems. The scope and impact of hypoxia in U.S. waters is evidenced by the reauthorization of HABHRCA and two national reports that describe the need and identify priorities for research related to

nutrient inputs, eutrophication and hypoxia in U.S. coastal waters (“Priority Topics for Nutrient Pollution in Coastal Waters: An Integrated National Research Program for the United States” and “An Assessment of Coastal Hypoxia and Eutrophication in U.S. Waters”).

Future Activities and Research Areas

In FY 2006, NOAA requests \$8.9 million for HAB and HABHRCA-related research. NOAA will take the lead in working with other federal agencies to implement the requirements of the reauthorized HABHRCA through the Interagency Task Force on Harmful Algal Blooms and Hypoxia. Over the next two years, the plans mandated by HABHRCA will be prepared. These plans will provide guidance for existing research programs, for addressing the research needs in the Great Lakes, and the development of new programs in the areas of prediction, response, and research as well as development, demonstration and technology transfer. NOAA will also ensure coordination within NOAA and through the Interagency Task Force.

NOAA is assisting the Mississippi River Basin/Gulf of Mexico Watershed Nutrient Task Force in its efforts to reassess the 2001 *Action Plan for Reducing, Mitigating, and Controlling Hypoxia in the Northern Gulf of Mexico*. This Action Plan had been prepared in accordance with HABHRCA 1998. Addressing the dead zone in the Gulf of Mexico is a commitment made in the President’s U.S. Ocean Action Plan. NOAA will take a leading role in the scientific reassessment of the Action Plan; the new Action Plan is targeted for release in mid-2006.

A national plan for research on algal toxins and harmful algal blooms (HARRNESS; Harmful Algal Research and Response through a National Environmental Science Strategy 2004-2015) will be released in FY 2005. It will replace the national plan written more than ten years ago and guide HAB research for the next ten years. NOAA intends to build upon past successes by focusing research efforts on priorities developed in response to HABHRCA 1998. Consequently:

- NOAA will increase regional predictive capabilities through improved understanding of the ecology and oceanography of HAB organisms. The focus will be on modeling physical oceanography and bloom dynamics and identifying environmental factors that regulate HAB toxicity and toxin transfer to humans and animals.
- NOAA will continue developing state-of-the-art technologies to detect algal cells and toxins; to allow remote satellite and in-water detection of HAB species and toxins in real time; and develop micro-array technologies to monitor toxin exposure during natural events. The long-term goal is to develop quick and accurate tests for all HAB cells or toxins that can be used in the field by non-experts or deployed remotely as part of observing systems.
- NOAA will transfer successful tools and techniques to coastal resource managers for integration into existing monitoring networks and/or regional observing

systems. NOAA will provide managers with scientific and analytical support during HAB events to promote effective management of marine resources, protected species, and public health.

- NOAA will expand upon research efforts focused on the areas of prevention, control, and mitigation of HABs and their impacts on ecosystems, coastal communities, and human health. NOAA will expand efforts in outreach and public education to help disseminate this information to the public.
- NOAA will continue funding hypoxia research efforts in the Gulf of Mexico and will expand research in other regions of the United States with persistent hypoxia problems. These efforts will provide information, tools and models that will contribute to the understanding of causes and consequences of hypoxia in ecosystems. Our goal is to conduct research that will lead to the eventual mitigation of hypoxia events through forecasts and the identification of susceptible ecosystems.
- NOAA will continue to operate the first operational HAB forecasting system along the west coast of Florida, implemented in 2004. Satellite imagery and field sampling data are integrated into a HAB bulletin that provides advanced warning of potentially toxic algal blooms to coastal resource managers. These bulletins allow managers the time to modify coastal monitoring, improve their ability to detect HABs and mitigate impacts of blooms on tourism and fisheries. NOAA is developing similar programs that integrate satellite remote sensing with our partners' monitoring and modeling in other U.S. coastal regions.

AQUATIC NUISANCE SPECIES PROGRAM

The FY 2006 President's budget requests a total of \$7.9 million to continue NOAA's work to prevent the spread of invasive species through efforts of the Aquatic Invasive Species Program, Sea Grant, the Great Lakes Environmental Research Lab, and the National Centers for Coastal Ocean Science. The FY 2006 base funding request for NOAA's National Sea Grant College Program assumes continued support for the invasive species research and outreach projects selected through a national competition in FY 2005. Similarly, approximately \$2.0 million of base funding for the Great Lakes Environmental Research Laboratory will continue to support invasive species research activities.

A vital part of the FY 2006 request is \$2.5 million for the Aquatic Invasive Species Program, which focuses on early detection, monitoring and control of aquatic invasive species. One million dollars of this request will improve early detection and monitoring capabilities and will contribute to an interagency crosscut initiative led by NOAA, the United States Geological Survey, and Smithsonian Environmental Research Center. The initiative's overarching goal is to develop an effective, proactive strategy for addressing aquatic invasive species by minimizing their establishment through early detection.

NOAA is leading the development of an early warning system for coastal and marine invasive species through its National Centers for Coastal Ocean Science. This effort is currently being implemented as a pilot project in Hawaii. The system aims to provide coastal resource managers and scientists with alerts of new introductions and information on control measures. Once the early warning system is tested in Hawaii, it will be expanded to include other regions of the United States.

NOAA has made great progress to address our mandates and fulfill our missions in FY 2004. Our efforts will continue in FY 2005, and we ask the committee to support the President's FY 2006 budget request for NOAA's programs. These programs help maintain environmental and economic prosperity along our Nation's coast.

Mr. Chairman and Members of the Subcommittee, I thank you for the opportunity to testify before you.