

**Testimony of
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On behalf of
The National Association of Marine Laboratories
Before the
Commerce-Justice-Science Appropriations Subcommittee
Committee on Appropriations
House of Representatives
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Mr. Chairman, Ranking Member Fatah and Members of the Subcommittee, my name is Shirley Pomponi and I direct the NOAA Cooperative Institute for Ocean Exploration, Research and Technology at Florida Atlantic University. Today I appear on behalf of more than 100 marine labs that make up the National Association of Marine Laboratories – or NAML. On behalf of all of my fellow marine lab directors, I thank this subcommittee for the support it has provided for ocean, coastal, and Great Lakes research and education through the National Oceanic and Atmospheric Administration (NOAA), the National Science Foundation (NSF), and the National Aeronautics and Space Administration (NASA).

NAML is a nonprofit organization of member institutions representing coastal, marine, and Great Lakes laboratories in every coastal state, from Guam to Bermuda and Alaska to Puerto Rico. Member laboratories serve as unique “windows on the sea,” connecting scientists and citizens with the rich environmental mosaic of coastal habitats and offshore oceanic and Great Lakes regions. NAML laboratories conduct research and provide academic, education and public service programs to enable local and regional communities to better understand and manage their ocean, coastal and Great Lakes cultural and natural resources.

NAML has two key priorities relevant to this subcommittee as part of its FY 2013 public policy agenda: (1) to maintain strong support for extramural marine research and education programs at NOAA and the NSF; and (2) a recommendation for a cost-saving national partnership program aimed at co-locating NOAA and other federal agency marine science personnel and facilities at the over 100 NAML laboratories located all over the country.

I am here today to present the case for the restoration of funding within the NOAA appropriation that this Subcommittee will draft in the near future. These funds provide vital and irreplaceable support for extramural research, education, and conservation programs, and are among the most well-spent and highly-leveraged federal dollars.

The coastal population of the U.S. increased by nearly 51 million people from 1970 to 2010, with 52% of the Nation’s total population living in coastal watersheds. By 2020, the coastal population is expected to grow by another 10% or 15.6 million. In 2009, the coastal economy contributed \$8.3 trillion to the nation’s Gross Domestic Product resulting in 66 million jobs and

wages worth an estimated \$3.4 trillion. Recreational coastal fishing contributed about \$73 billion in total economic impact supporting over 320,000 jobs. For commercial fishing, the average annual value of all U.S. marine fisheries from 2008 to 2010 is estimated at \$4 billion, providing about 1 million jobs and generating over \$32 billion in income. Our Nation's ports, often located in the heart of sensitive coastal ecosystems, are an essential driver of the U.S. economy. About \$1.9 trillion worth of imports came through U.S. ports in 2010, supporting an estimated 13 million jobs. Over 50% of the total energy produced domestically occurred in coastal states, including natural gas production, electricity generation, and oil and gas production. Coastal areas are providing opportunities for renewable energy development with projects that seek to extract energy from the movement of ocean water due to tides, currents, or waves; from the temperature differential between hot and cold ocean water; and from strong winds in offshore ocean environments.

Meeting stewardship responsibilities for the oceans, coasts, and Great Lakes requires a robust science and education enterprise. Coastal areas face challenges that threaten fisheries resources, impact recreational and commercial resources and affect the health of ecosystems. The Deepwater Horizon oil spill in the Gulf of Mexico and its continuing impact on the natural resources of the region illustrate the need for a robust and responsive ocean and coastal sciences enterprise. We must continue to invest in the Nation's research enterprise that has been responsible for our long-term prosperity and technological preeminence through interdisciplinary research spanning a landscape of disciplines, from physics to geology, chemistry to biology, engineering to economics, and modeling to observation.

National Science Foundation

NAML is highly supportive of the National Science Foundation and its FY 2013 budget request. NSF funds vital basic and translational research that enhances the understanding and governance of the nation's oceans, coasts, and Great Lakes. Over 90 percent of NSF's budget directly supports research at universities and laboratories in all 50 states. A robust NSF fuels the economy, boosts national competitiveness, supports a scientific and technologically literate workforce and provides new knowledge -- all of which are essential for national and economic security. Science and engineering research, education, and related infrastructure support, such as the core research programs in the geosciences, the Ocean Observatories Initiative, and the Field Stations and Marine Lab (FSML) infrastructure program, are especially important in enabling our national network of non-government marine laboratories to serve their vital, cost-effective role as community-based research enterprises.

NAML strongly supports the Science, Engineering, and Education for Sustainability (SEES) initiative. SEES focuses on targeted programs that promote innovative interdisciplinary research to address pressing societal issues of clean energy and sustainability. In FY 2013, SEES includes five programs that contain translational themes: Coastal SEES; Arctic SEES; Sustainable Chemistry, Engineering, and Materials (SusChEM); Creating a More Disaster-Resilient America (CaMRA); and a program on the Role of Information Sciences and Engineering in SEES (RISES). NSF's support for ocean science education should continue to build on past successes, such as the Centers for Ocean Science Excellence in Education, and

should also continue to integrate new approaches and themes, for example, through the new Expeditions in Education initiative.

National Oceanic and Atmospheric Administration

NOAA's FY 2013 budget plan will eliminate funding for the National Undersea Research Program (NURP), the National Estuarine Research Reserve Construction program, the Marine Sanctuaries Construction, the John H. Prescott Marine Mammal Rescue Assistance Grant Program, Ocean Education Partnerships, and Competitive Education Grants.

Additionally, NOAA's 2013 budget plan will drastically reduce funding for other extramural programs, including the Integrated Ocean Observing System, the Coastal Services Center, the Center for Sponsored Coastal Ocean Research, and the National Estuarine Research Reserve program. All of these programs directly connect the NOAA mission to coastal communities, to jobs, schools, recreation and other important values. They also connect communities back to NOAA, helping to ensure that NOAA is responding to real needs.

In the past, NOAA has benefited enormously from its extramural partnerships, engaging hundreds of scientists and other agencies (e.g., NSF) in issues of direct and critical relevance to the nation, at remarkably low cost. The extramural programs have been dollars well spent. In 2004 the NOAA Science Advisory Board's Research Review Team report concluded:

“...Extramural research is critical to accomplishing NOAA's mission. NOAA benefits from extramural research in many ways, including: access to world class expertise not found in NOAA laboratories; connectivity with planning and conduct of global science; means to leverage external funding sources; facilitate multi-institution cooperation; access to vast and unique research facilities; and access to graduate and undergraduate students. Academic scientists also benefit from working with NOAA, in part by learning to make their research more directly relevant to management and policy. It is an important two-way street...***NOAA cannot accomplish its goals without the extramural community, specifically the universities and institutions that represent the broad range of expertise and resources across the physical, biological, and social sciences (emphasis added)***. Moreover, there is the important issue of maintaining a scientific and technologically competent workforce in NOAA and the workforce is another “product” of the extramural research community...Also it is important that during difficult budget periods that NOAA not disproportionately target the extramural research for budget cuts.”

NAML fully recognizes the constraints facing the Federal Government and the Congress and the necessary limitations on Federal discretionary spending. For that very reason, NAML believes that extramural programs should be supported to the maximum extent. External programs are flexible, responsive to local and regional needs, and can leverage local and regional investments, as well as funds from other agency investments. They are often at the cutting edge, supporting innovation and nurturing the scientists of the future. These advantages are enhanced in programs for which peer-reviewed competition and overall merit determine the funding decisions.

Through engagement with the extramural research community and the agencies that support it, NOAA can enhance its research priorities and address the Nation's critical scientific problems. The place-based extramural programs also contribute to local and regional economic development and engage citizens in wise use of their coastal and ocean resources. Finally, extramural research helps educate and train the next generation of marine scientists and engineers, expanding the impact of the federal dollars towards building a globally competitive STEM workforce.

As the federal agency responsible for managing living marine and coastal resources, NOAA must have a presence beneath the sea to better understand the systems under its management. With Public Law 111-11, Congress authorized the National Undersea Research Program (NURP) to provide NOAA with enhanced scientific access to the undersea environment. NURP has cost-effectively provided human access with submersibles and technical diving, and virtual access using robots, seafloor observatories, and innovative new technologies. NURP has provided scientists with the tools and expertise they need to investigate the seafloor and water column, allowing for unique new insights and data to address NOAA's diverse mission. NURP is comprised of a network of regional centers and institutes of undersea science and technology excellence located at major universities. This extramural network facilitates collaborations with programs outside NOAA, leverages external funds and infrastructure, and provides access to world-class expertise and students. NURP projects are selected by a rigorous peer-review process based on scientific merit and relevance to NOAA and national research priorities.

The John H. Prescott Marine Mammal Rescue Assistance Grant Program has also been eliminated from NOAA's FY 2013 federal budget request. Marine mammals are sentinel species that inform our knowledge of the health of marine food webs. Marine mammal stranding response networks nationwide are run primarily through non-profits and other non-government entities including, in many cases, marine labs affiliated with educational institutions. They coordinate their work with NOAA's National Marine Fisheries Service (NMFS) and often engage large numbers of volunteers and students, making the program very cost-effective. Consistent funding is necessary to maintain basic operational needs, volunteer engagement, and the continued success of these essential stranding networks. In addition to support for the stranding networks, NMFS reserves a portion of Prescott funds for emergency responses to catastrophic events, including oil spills, mass strandings, and hurricanes.

Stranding networks are the Nation's first responders to both live and dead marine mammals that come ashore, often in developed coastal communities. They perform important outreach functions for NOAA and collect data and samples that enable important population and ocean health assessment. This includes basic information on marine mammal diseases that are anthropogenic in nature, as well as those that can be spread to humans via contact with stranded animals. If NOAA is permitted to eliminate this program, it is unlikely that NMFS will be able to meet congressional mandates stipulated in the Marine Mammal Protection Act.

To demonstrate the economic and environmental value of extramural programs to the nation, consider the National Sea Grant College Program, a stellar example of NOAA's ability to support extramural research that is locally and nationally prominent. In the last two years, Sea Grant has delivered the following benefits to the Nation:

- Nearly \$243 million in direct economic benefits, which represents nearly a 4 to 1 return on the Federal investment;
- An estimated additional \$146 million in other Federal, state, and non-governmental resources leveraged for research, extension, and other services that support the ocean and coastal enterprise;
- 144 new businesses created, 1271 businesses retained, and more than 8100 jobs created or retained;
- 768 communities across the Nation adopted more sustainable economic or environmental development practices and policies;
- 340 communities adopted hazard resiliency practices to make them better prepared to cope with or respond to hazardous coastal events;
- 5000 individuals or businesses received new certifications in HACCP (hazard analysis and critical control point) handling of seafood products, improving the safety of seafood consumption by Americans across the country;
- 40,000 acres of degraded ecosystems were restored; and
- 1700 undergraduate students, 1400 graduate students, and 800,000 K-12 students were reached with information about marine and Great Lakes science and resources.

Besides the programs singled out in this presentation, a great deal of extramural research that supports NOAA's overall mission is in specific programs such as the Integrated Ocean Observing System (IOOS), the Coastal Services Center, the Center for Sponsored Coastal Ocean Research (CSCOR), and the National Estuarine Research Reserve (NERRS) program. For instance, CSCOR is a multi-topic competitive research program that supports longer-term research on important coastal issues of harmful algal blooms, hypoxia in the northern Gulf of Mexico and other U.S. waters, and multiple stressors. The NERRS programs are effectively aligned with academic institutions and especially marine labs, and they support significant research activities funded by other agencies. The IOOS has observing instrumentation in the water around the U.S. (and including the Gulf of Mexico) that currently provides real-time oceanographic data to users, including the U.S. Coast Guard, maritime transportation, oil spill response agencies (state and federal), and fisheries managers, as well as local fishing and other businesses. Much of the data comes from academic scientists at no cost to the Federal budget. In all, these extramural programs provide NOAA with capabilities that far exceed what is possible in-house, enabling the agency to carry out its mission more effectively and more efficiently.

The examples above demonstrate the unique value, cost effectiveness, and contribution that extramural programs make to the agency's missions of science, service and stewardship. And last, but by no means least, NOAA extramural funding for colleges and universities fosters the integration of education and training into research, helping to create the next generation of scientific and technical talent that the Nation must have to remain competitive into the future.

We urge the Subcommittee to restore funding to these extramural programs when the Subcommittee marks up the FY 2013 Commerce-Justice-Science Appropriations Bill.

On behalf of my colleagues at NAML, thank you very much for the opportunity to express our concerns. We would be happy to provide additional information if it would be helpful to the Subcommittee.