

**FY 2013 PUBLIC POLICY AGENDA**

The National Association of Marine Laboratories (NAML) is a nonprofit organization representing the ocean, coastal and Great Lakes interests of member laboratories that employ thousands of scientists, engineers, and professionals nationwide. NAML labs conduct high quality research and education in the natural and social sciences and translate that science to improve decision-making on important issues facing our country.

**Priorities for a Robust Ocean Research & Education Enterprise**

- **Maintain strong support for extramural marine research and education programs at federal agencies, especially NOAA and NSF. NAML seeks restoration of support for extramural programs in lieu of reductions proposed in the Administration’s FY 2013 budget request.**
- **Implement an innovative and cost-saving national partnership program aimed at co-locating NOAA, EPA and DOI scientists and federal research infrastructure initiatives at non-government NAML facilities.**
- **NAML supports legislation that would strengthen the ocean, coastal, and Great Lakes research and education enterprise such as the National Endowment for the Oceans proposed by Senator Whitehouse and Senator Snowe and S. 1400, the RESTORE Act of 2011.**

**The Role of Marine Laboratories in the Nation’s Research and Education Enterprise**

Marine and Coastal laboratories are vital, cost-effective, community-based "windows on the sea." They connect communities with cutting edge marine, coastal and social sciences, providing many thousands of students and citizens with meaningful, science-based learning experiences. The member institutions of the National Association of Marine Labs (NAML) work together to improve the quality, effectiveness and relevance of ocean, coastal and Great Lakes research, education and outreach. NAML labs provide reliable and relevant information to support wise local coastal management and the understanding and protection of natural resources on a national basis. In particular, NAML seeks to:

- Promote and support basic and applied research of the highest quality from the unique perspective of coastal laboratories.
- Encourage wise utilization and conservation of marine and coastal habitats and resources using ecosystem-based management approaches.
- Recognize, encourage and support the unique role that coastal laboratories play in conducting education, outreach, and public service.
- Promote efficient exchange of information, develop collaborations, and support productive coordination among NAML member institutions.
- Facilitate and coordinate exchange of information and utilization of expertise among NAML member institutions and government agencies.

**Oceans, Coasts, and Great Lakes Are Important for the Nation**

The nation’s coastal population increased by nearly 51 million people from 1970 to 2010, with 52% of the nation’s total population lives in coastal watershed counties. 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 the Great Lakes requires a robust ocean and coastal science and education enterprise. Coastal areas face challenges that threaten our fisheries resources, impact recreational and commercial resources and impact ecosystems. The Deepwater Horizon oil spill in the Gulf of Mexico and its continuing impact on the natural resources of the region illustrates the need for a robust and responsive ocean and coastal sciences enterprise. We must reinvest 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 social sciences, and modeling to observation.

**Ocean, Coastal, and Great Lakes Research**

NAML believes that research and education programs at the major federal science agencies with marine portfolios — including the National Oceanic and Atmospheric Administration (NOAA), the National Science Foundation (NSF), the National Aeronautics and Space Administration (NASA), the Department of Energy (DOE), the Environmental Protection Agency (EPA), the Department of Interior (DOI) and U.S. Army Corps of Engineers (USACE) — should be viewed as priority investments in the future health and well being of the Nation. While much attention has been justifiably focused on the need for our Nation to continue its support of premier basic research programs, it is equally important to maintain strong support for vital natural resources mission-oriented ocean and coastal research, monitoring agencies as well. Programs that combine the enhancement of agency internal research capabilities and support the extramural community in competitive, merit-based research provide highly cost-effective returns on investment and distribute economic and societal benefits over a broad array of communities

*National Oceanic and Atmospheric Administration* -- NOAA is a critical leader in ocean, coastal and Great Lakes research and many NAML labs are co-located with, or linked to, NOAA laboratories. NOAA's extramural support for research at marine labs and universities greatly expands its access to world-class expertise and unique facilities, complementing and expanding the work carried out within NOAA labs. NOAA's extramural partnerships contribute invaluable information to our coastal resource managers. NOAA's internal and partnership education activities are also

vitaly important to the communities that NAML serves. NAML strongly recommends that the Congress reverse the Administration's proposed reductions in NOAA's extramural programs and emphasize programs such as: National Sea Grant College Program; the National Undersea Research Program; the Ecology and Oceanography of Harmful Algal Blooms; Monitoring and Event Response for Harmful Algal Blooms; and Prevention, Control, and Mitigation of Harmful Algal Blooms; the Coastal Services Center; Competitive Research; Aquaculture; the Prescott Marine Mammal Program; the Highly Migratory Shark Fishery Research Program; the cooperative and joint institutes within OAR; the Integrated Ocean Observing Systems initiative; NOAA's Center for Sponsored Coastal Research hypoxia initiatives; the National Estuarine Research Reserve System and the Marine Sanctuary Program; and NOAA's Office of Education. All are highly cost effective programs that greatly expand NOAA's capabilities. A robust NOAA budget coupled with solid support for extramural partnerships will greatly strengthen NOAA's ability to serve national needs.

National Science Foundation -- NSF funds vital basic research that enhances the public understanding 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. NAML labs believe that science and engineering research, education, and related infrastructure support, such as the Ocean Observatories Initiative (OOI) should be viewed as a wise, priority investment for the long-term health of the Nation. The NSF Field Stations and Marine Lab (FSML) infrastructure program is particularly important in enabling our national network of non-government marine laboratories to serve their vital, cost effective role as community based research enterprises. NSF's Major Research Instrumentation (MRI) program provides essential support for basic laboratory facilities, instrumentation, support systems, computing and related cyber-infrastructure, and ship access. NSF's support for ocean science education should also be strengthened, particularly by reversing the proposed reduction in the Centers for Ocean Sciences Education Excellence (COSEE) and informal science education.

National Aeronautics and Space Administration - A balanced investment in NASA that will maintain a strong and vibrant earth and space science enterprise is critical, especially as priorities shift and research foci adapt to emerging issues like climate mitigation and adaptation. NASA's support for earth observations and research is vital in helping us better understand our planet and its processes.

Department of Energy -- DOE, through its Energy Efficiency and Renewable Energy division, has initiated significant efforts to understand and develop sources of renewable marine energy from tidal, wave, and current sources. Environmental effects and conflicts with existing ocean uses must be evaluated as these energy sources develop in U. S. coastal areas. The Nation's marine laboratories are uniquely distributed and serve as ideal locations for much of the research needed to rationally develop this energy source and opportunities to partner with the Department in these areas should be strongly encouraged.

Environmental Protection Agency -- EPA is an important source of support for marine laboratories and EPA's own laboratories are a critical part of the marine science community. EPA's Office of Research and Development and Office of Water provide essential resources to marine labs nationwide, funding research grants in various environmental science and engineering disciplines and engaging the Nation's best scientists and engineers in targeted research complementary to EPA and other federal research activities. Unfortunately, support for research has declined dramatically over the past several years within EPA, and the EPA's Science Advisory Board has called for renewed investments. Given the emerging importance of issues related to climate change, enhanced support for research programs at EPA will be essential in helping us to mitigate and adapt to environmental change.

Department of Interior -- DOI is an important federal player with respect to the ocean and coastal community. Through the research supported and conducted by the U.S. Geological Survey (USGS) via the Coastal and Marine Geology program, the National Biological Service, and the support provided by the Bureau of Ocean Energy Management (BOEM). USGS and BOEM need access to sound marine science information to support their role in the management of ocean and coastal resources. NAML laboratories can assist in these efforts.

#### **Education, Diversity and an Ocean Literate America**

American students are being eclipsed by peers in other industrialized countries with regard to science, technology, engineering and math skills and creativity. As a result, ocean literacy and workforce diversity have become a critical focus at the federal level. Engaging the sector of individuals from groups that have been historically under-represented in ocean science research, education and outreach within a wider variety of universities in programs at marine laboratories will be particularly important in filling a diversified STEM pipeline for future ocean workforce needs. Marine laboratories play an important role in formal and informal education and workforce development by providing students with a place to learn, using a hands-on approach. Marine labs serve as primary training grounds for experiential ocean education and are committed to enhancing diversity within the field of ocean, coastal and Great Lakes research and education. By fostering relationships with community colleges and minority-serving institutions (MSIs), marine labs provide distinctive learning opportunities for underrepresented groups, allowing students to achieve a greater understanding of oceans and coastal ecosystems and providing them with a sense of stewardship

NAML laboratories continue to strongly support partnerships with the Federal agencies to address the ocean education needs of the Nation. Examples include the Centers for Ocean Science Education Excellence (COSEE), the Louis Stokes Alliance for Minority Participation, and the Research Experiences for Undergraduates programs at NSF, the Expanding Partnerships Program (EPP) in the NOAA Education Office, the Ocean Exploration and National Undersea Research programs, and National Sea Grant College Program within NOAA, and the Science to Achieve Results (STAR) Fellowship program at EPA. Environmental literacy ensures that the American public is equipped with a fundamental understanding of natural systems and an appreciation for the relationship between human activities and the environment. The importance of marine labs in support of coastal states' Environmental Literacy Plans is essential in developing a literature public. Investment is needed today in coastal, ocean, and Great Lakes education programs that support learning—both formal and informal—at all age levels, by all disciplines, and for all Americans.