National Association of Marine Laboratories

OPEN LETTER TO THE NEXT ADMINISTRATION
An Ocean, Coastal and Great Lakes Agenda to Benefit the Nation
July 2008

This *Open Letter* from the National Association of Marine Laboratories (NAML) recommends a number of public policy initiatives for the next Administration that will strengthen the Nation's ocean, coastal and Great Lakes research and education enterprise. Such an investment will aid in the protection and growth of the Nation's national, economic, environmental, and educational health well into the future.

The following summarize NAML's recommendations:

- **Embrace an innovation agenda that includes doubling federal support for science and engineering research and education.**
- **Provide priority support to all federal agencies with an ocean, coastal, and Great Lakes agenda or mission.**
- **Develop and execute a new, stronger, and more scientifically diverse national coastal agenda.**
- **Support the development of marine renewable energy technologies.**
- **Adopt the recommendations of the U.S. Commission on Ocean Policy to work with Congress to enact comprehensive legislation to manage offshore renewable energy development.**
- **Establish an Ocean Trust Fund from unallocated offshore drilling federal revenues to fund new research and education activities.**
- **Embrace the America COMPETES Act (P.L. 110-69) and place a high priority on formal and informal science education and training programs.**
- **Enhance federal efforts through NSF, NOAA, NASA, DOE, EPA and other mission agencies to attract and retain individuals currently under-represented in the science and engineering enterprise.**
- **Choose individuals with sound scientific credentials, extensive experience, and demonstrated leadership in ocean, coastal, and Great Lakes research, education, and policy as senior science appointees.**
- **Elevate NOAA to the status of an independent agency and work with the Congress to enact a NOAA organic act.**
- **Direct the Office of Management and Budget (OMB) to co-locate NOAA within OMB's natural resources program alongside NASA, NSF, EPA, DOE, and the Department of Agriculture.**

Additional details regarding these recommendations are outlined in the following pages.

National Association of Marine Laboratories

The National Association of Marine Laboratories (NAML) is a nonprofit organization of over 100 members employing more than 10,000 scientists, engineers, educators and other professionals and representing ocean, coastal and Great Lakes laboratories stretching from Maine to the Gulf of Mexico to the west coast, from Guam to Bermuda and from Alaska to Puerto Rico. NAML labs conduct diverse, high quality research and education programs in all facets of the natural and social sciences related to our oceans, coasts, and Great Lakes. Marine laboratories are on the forefront in ocean, coastal, and Great Lakes communities in connecting research and education to the needs of state, local, regional, and national public policymakers.

THE OCEANS AND PUBLIC POLICY – A NATIONAL CONTEXT

To sustain this Nation's international competitiveness in the 21st century, we must continue to strengthen and invest in an innovative and broadly-based research and education enterprise. This has been reiterated in recent documents, including the National Academy of Sciences report, *Rising Above the Gathering Storm* (2007), and the Council on Competitiveness report, *Innovate America* (2005). The Bush Administration proposed a strong research component as part of its competitiveness initiative. However, it was narrowly drawn to emphasize the engineering and physical sciences leaving out the natural (earth, ocean and biological) sciences that are critical to our economic and social well-being.

The new knowledge and the technical workforce that our nation needs must grow from a broader, more vibrant and multidisciplinary science and engineering community. The marine sciences in particular have led the way in innovation and multi-disciplinary collaboration because they encompass multiple disciplines – from physics to geology, from chemistry to biology, from mathematical modeling to hands-on observation. It is also essential that the next Administration develop and execute a strategy that recognizes the critical importance of the oceans, coasts, and Great Lakes to the Nation's economic and environmental health and security – an importance emphasized by two landmark ocean commissions, the U.S. Commission on Ocean Policy (2004) and the Pew Oceans Commission (2003).

THE VALUE OF THE NATION'S OCEAN AND COASTAL ENTERPRISE

The oceans, coasts, and Great Lakes provide tremendous economic value to our Nation. The U.S. Commission on Ocean Policy estimated that ocean-related activities directly contribute more than $117 billion to American prosperity and support well over two million jobs. Activities within the narrow, on-land near-shore zone raises this value substantially, to more than $1 trillion, or one-tenth of the Nation's annual gross domestic product. The economies of the coastal watershed counties further swell this contribution to more than $4.5 trillion, fully half of the nation's gross domestic product, accounting for some 60 million jobs.

The U.S. uses the sea as a highway for transporting goods and people, as a source of energy, and as a result of ocean exploration, a burgeoning multi-billion dollar industry in marine-based bio-products and pharmaceuticals. Annually, the Nation's ports handle more than $700 billion in merchandise, while the cruise industry accounts for another $12 billion. More than thirteen million jobs are connected to maritime trade. With offshore oil and gas operations expanding into ever deeper waters, annual production is valued in excess of $25 to $40 billion, and yearly royalty payments contribute approximately $5 billion to the U.S. Treasury.

Fisheries are an important source of economic revenue and jobs, providing a critical supply of healthy protein to human diets. They also constitute an important cultural heritage. The commercial fishing industry's total annual value exceeds $28 billion, with the recreational saltwater fishing industry valued at around $20 billion, and the annual U.S. retail trade in ornamental fish worth another $3 billion.

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Every year, hundreds of millions of people visit America's coasts, spending billions of dollars and directly supporting millions of jobs. Nationwide, retail expenditures on recreational boating exceed $30 billion. In fact, tourism is one of the nation's fastest-growing business sectors, enriching economies and supporting jobs in communities virtually everywhere along the shores of the U.S. and its territories.

Beyond their obvious economic value, the oceans control many facets of our climate and weather through their immense capacity to absorb, store and transport heat, and their ability to release that heat into the atmosphere. The oceans strongly influence the cycling of water to and from the atmosphere, and directly or indirectly control the onset of hurricanes, droughts, and other severe weather events. Global climate change, sea-level rise and ocean acidification are closely linked to ocean-atmosphere coupling. These global threats will be felt at regional and local levels, impacting our coastal communities and their economies, first and with greatest frequency.

Within this context, NAML offers the following recommendations within five areas related to the ocean, coast and Great Lakes: the economy; the environment; energy; education and diversity; and ocean policy.

THE ECONOMY

Our economic future lies in our nation's ability to adapt to change – in our population, in our industrial capacity, in our production of food and energy, and in our global environment. All of these changes are dependent in one way or another on our oceans, coasts and Great Lakes. Our nation must increase its investment in science and technology to harness and expand the vast economic potential of the oceans.

To do so the next Administration should:

- **Embrace an innovation agenda that includes doubling federal support for science and engineering research and education. This must include the full range of science and engineering disciplines – ocean sciences, atmospheric sciences, biological sciences, earth and environmental sciences, and the social sciences. It should emphasize competitive, merit-based, extramural research as a way to attract necessary expertise as well as build meaningful partnerships among universities, national laboratories, and other non-federal entities.**

- **Recognize the importance of and provide priority support to the National Science Foundation (NSF) and the National Oceanic and Atmospheric Administration (NOAA), and other relevant agencies with an ocean, coastal and Great Lakes agenda or mission, to cover the full range of acquisition and operating costs associated with ocean and coastal research infrastructure and instrumentation. This includes the infrastructure and instrumentation needs of marine laboratories, ships, and integrated ocean and coastal observing systems (including environmental satellites), as well as the next generation of infrastructure such as genomics, proteomics and environmental genomics, robotics, nanotechnology, and advanced computational approaches. Infrastructure investments will enable the conduct of cutting edge research in all disciplines related to our oceans, coasts and Great Lakes.**

THE ENVIRONMENT

The oceans, coasts, and Great Lakes are impacted by climate change as sea-level rise threatens coastal infrastructure and natural habitats; by excessive terrestrial-based nutrient and chemical input; by harmful algal blooms that poison shellfish beds; by the invasion of non-native aquatic species that alter entire ecosystems; by overexploitation of living marine resources; and by changes in ocean currents that shift weather patterns with economic and social impacts throughout the nation. Addressing these complex and important issues will require an ever increasing understanding of the linkages between oceanic, atmospheric, and coastal processes, and the reciprocal impacts of these processes on humans and of human activities on these processes. This requires a greater commitment to basic and applied research; environmental monitoring and modeling; the development of infrastructure supporting ocean and coastal related science; and the translation of scientific information into timely products that can be used by policy makers and managers.

The next Administration should:

- **Give priority status to funding the earth, environmental, biological, ocean and atmospheric sciences programs at NSF, NOAA, the National Aeronautics and Space Administration (NASA), the Environmental Protection Agency (EPA), and the U.S. Geological Survey (USGS). In light of the challenges presented by climate change, the Nation will require these agencies to actively support extramural, competitive, merit-based research, infrastructure, and related observing systems to deliver policy-relevant research to decision makers. It will be more important than ever that these disciplines and the associated infrastructure – such as the full range of observing systems – receive priority support since policymakers will need the knowledge generated by the science to make far reaching policy decisions in the coming years.**

- **Develop and execute a new, stronger, and more scientifically diverse national coastal agenda, emphasizing the vital economic, environmental, and the complex linkages between upland coastal and marine environments. A new coastal agenda would support coordinated research, while building scientific and technical capacity at the national, regional, state and local levels. A new agenda would provide the governance tools necessary to address the emerging challenges by authorizing or reauthorizing a new Coastal Zone Management Act, National Sea Grant College Program, the integrated coastal and regional observing system and the National Undersea Research Program.**

OCEAN AND COASTAL ENERGY

U.S. energy policy should address major challenges such as global warming, investigating alternate energy sources to provide clean, affordable energy to sustain a robust economy, and increasing the Nation's energy security. The oceans, coasts and Great Lakes could prove to be valuable resources in helping to meet this Nation's growing demand for energy. Marine renewable energy technologies harness the power contained in ocean waves, flowing tides, ocean currents, offshore wind, and ocean thermal gradients. The potential for these assets to contribute significantly towards meeting our energy needs remains the subject of much debate and analysis. In 2005, the Electric Power Research Institute completed a series of preliminary studies to quantify the wave and tidal resources in U.S. coastal waters. They found wave resources sufficient to provide as much electric power as all of the hydroelectric dams currently operating in the United States – almost 7% of our nation's electricity. When other marine energy resources are added to the mix, such as existing Outer Continental Shelf (OCS) oil and gas that

contributes 30% of domestic oil and 25% of domestic gas production, the potential becomes truly significant. At the same time, there is a great deal of research and development that must be done to develop the broad suite of alternative sources of energy from the ocean, and to understand the implications and impacts that all energy sources could have on our ocean, coast, and Great Lakes environment.

In order to capitalize on the potential of the oceans, coasts, and Great Lakes to address our nation's energy needs and to develop sound offshore energy policy the next Administration should:

- **Support the development of marine renewable energy technologies. Such actions however should be accompanied with a similar priority investment in research and development to identify and assess the environmental risks and potential for cumulative impacts on our ocean, coast, and Great Lakes ecosystems.**

- **Adopt the recommendations of the U.S. Commission on Ocean Policy to work with Congress to enact comprehensive legislation to manage offshore renewable energy development.**

- **Work with Congress to enact the U.S. Commission on Ocean Policy's recommendation to establish an Ocean Trust Fund from unallocated OCS revenues to fund new activities in federal waters related to the ocean research, technology, policy and education challenges facing our nation.**

EDUCATION AND DIVERSITY

U.S. students are being eclipsed by their peers in other industrialized countries. This stark reality was driven home by a recent report of the Program for International Student Assessment in a study of 15-year olds from 30 industrialized countries. U.S. students ranked 17th in science and 24th in math. "Our students' performance today is the best indicator of America's global competitiveness tomorrow," said Raymond Scheppach, the executive director of the National Governors Association. The necessity to improve science education and link advances in science with education has emerged as a critically important issue over the past two decades.

Our oceans, coasts and Great Lakes are magnets for students of all ages. The nation's marine labs are uniquely situated to capitalize on this attraction to improve scientific literacy. Marine labs are typically embedded in smaller communities, offering personalized connections and the ability to focus on those not well represented in science and engineering.

To ensure that our nation develops a globally competitive and diverse workforce, the next Administration should:

- **Embrace the America COMPETES Act (P.L. 110-69) and place a high priority on both formal and informal science education and training programs at NSF, NOAA, NASA, the Department of Energy (DOE), EPA, and other mission agencies that are dependent on a technically trained workforce to accomplish their missions.**

- **Enhance federal efforts through NSF, NOAA, NASA, DOE, EPA and other mission agencies to attract and retain under-represented individuals into the science and engineering disciplines. Because of their direct connection to our daily lives, the ocean and coastal sciences, and the earth and environmental sciences are especially well-suited to attract, educate, train, and retain such individuals.**

OCEAN POLICYMAKING

The start of a new Administration offers unique opportunities to improve the way public policy is made and carried out, sometimes through major reorganization or less visible realignments, but always through the experience, passion and expertise of the individuals appointed to execute public policy. Numerous proposals, such as those by the U.S. Commission on Ocean Policy and the Pew Oceans Commission, have been offered over the years to strengthen the policymaking process associated with our oceans, coasts, and Great Lakes. In recent years, a number of very positive steps have been taken to improve coordination among those federal agencies with ocean and coastal responsibilities. The establishment of the Joint Subcommittee on Ocean Science and Technology (JSOST) and the release of its subsequent report, *Charting the Course for Ocean Science in the U.S. for the Next Decade: An Ocean Research Priorities Plan and Implementation Strategy* (2007), are two specific examples and they should be endorsed and strengthened by the next Administration.

Additional steps should be taken at the federal level and the next Administration should use this window of opportunity effectively to:

- **Choose individuals with sound scientific credentials, extensive experience, and demonstrated leadership in ocean, coastal and Great Lakes research and policy for the vital positions of Science Advisor to the President, NOAA Administrator, and Director of the National Science Foundation, in addition to senior appointees in the Departments of Commerce and Energy. This would clearly demonstrate the Administration's recognition of the importance of a forward-looking ocean, coastal and Great Lakes agenda.**

- **Elevate NOAA to the status of an independent agency as well as work with the Congress to enact a NOAA organic act. This would put NOAA on par with its sister agencies, NASA and NSF. Coupling independence with a NOAA organic act would emphasize NOAA's vital role in understanding, protecting, and administering our ocean, coastal, and Great Lakes areas. An independent NOAA would also have a much closer, more productive relationship with policymakers in the Executive Office of the President and would reinforce the importance the President places on a meaningful ocean, coastal, and Great Lakes public policy agenda.**

- **Direct the Office of Management and Budget (OMB) to review and examine the possibility of relocating NOAA to OMB's natural resources program so that it may be more suitably co-located it with its sister agencies – including NASA, NSF, EPA, DOE, and the Department of Agriculture.**

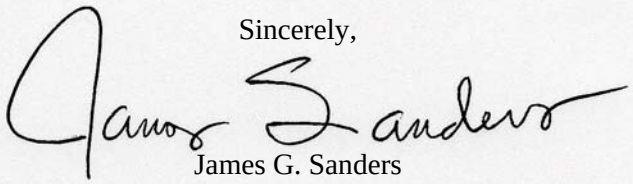
CONCLUSION

The U.S. Commission on Ocean Policy and the Pew Oceans Commission through different mandates, origins, and corporal constitutions, delivered essentially an identical message to the citizens of the United States – the oceans and coasts are in serious trouble. A renewed focus by the next Administration on the health and well-being of our ocean, coastal, and Great Lakes enterprise should be of national importance. At the same time the oceans represent enormous opportunities to discover new resources, foster economic growth, develop new sources of energy, promote education and technology innovation, and enhance our quality of life.

The next Administration, particularly in the context of addressing climate change, human health, and other related environmental issues, has the opportunity to embrace and act favorably on a number of long standing issues of concern related to the Nation's ocean, coastal, and Great Lakes research and education enterprise. The recommendations in this *Open Letter* are designed to provide constructive input toward the development of the next Administration's public policies and priorities for the Nation. We welcome the opportunity to meet with the relevant members of the next Administration's transition team at the appropriate time to discuss these issues in more detail.

On behalf of NAML I would like to thank you for the opportunity to express these views. I can be reached at the information below.

Sincerely,



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The National Association of Marine Laboratories (NAML) is a nonprofit organization of over 120 member institutions representing coastal, marine, and Great Lakes laboratories in every coastal state, stretching from Guam to Bermuda and Alaska to Puerto Rico. Members serve as unique "windows on the sea," providing information on the rich environmental mosaic of coastal habitats as well as offshore oceanic regions and the Great Lakes. NAML member laboratories conduct research and provide a variety of academic, education and public service programs to enable local and regional communities to better understand and manage the ocean, coastal and Great Lake environments. NAML is comprised of three regional associations: the Northeastern Association of Marine and Great Lakes Laboratories (NEAMGLL); the Southern Association of Marine Laboratories (SAML); and the Western Association of Marine Laboratories (WAML).