

## EXECUTIVE SUMMARY

The oceans affect and sustain all life on Earth. They drive and moderate weather and climate, provide us with food, transportation corridors, recreational opportunities, pharmaceuticals and other natural products, and serve as a national security buffer. But human beings also influence the oceans. Pollution, depletion of fish and other living marine resources, habitat destruction and degradation, and the introduction of invasive non-native species are just some of the ways people harm the oceans, with serious consequences for the entire planet.

The oceans provide tremendous value to our national economy. Annually, the nation's ports handle more than \$700 billion in goods, and the cruise industry and its passengers account for \$11 billion in spending. The commercial fishing industry's total value exceeds \$28 billion a year, the recreational saltwater fishing industry is valued at around \$20 billion, and the annual U.S. retail trade of ornamental fish is worth another \$3 billion. The offshore oil and gas industry's annual production is valued at \$25–\$40 billion, and its yearly bonus bid and royalty payments contribute approximately \$5 billion to the U.S. Treasury.

Every year, hundreds of millions of Americans and international visitors flock to the coasts to enjoy the oceans, spending billions of dollars and directly supporting more than a million and a half jobs. In fact, tourism and recreation constitute some of the fastest-growing business sectors—enriching economies and supporting jobs in communities virtually everywhere along the coasts of the continental United States, southeast Alaska, Hawaii, and our island territories and commonwealths.

These concrete, quantifiable contributions to the national economy are just one measure of the oceans' value. We also love the oceans for their beauty and majesty, and for their intrinsic power to relax, rejuvenate, and inspire. Unfortunately, we are starting to love our oceans to death.

The last comprehensive review of U.S. ocean policy took place more than 30 years ago when a governmental panel, the Stratton Commission, issued its report, *Our Nation and the Sea*. Since then, considerable progress has been made in many areas, but much work remains. In the last 30 years more than 37 million people, 19 million homes, and countless businesses have been added to coastal areas. Offshore oil and gas operations have expanded into deeper waters and improved their technologies, the country is ever more dependent on marine transportation, and coastal recreation and tourism have become two of the top drivers of the national economy. These developments, however, come with costs, and we are only now discovering the extent of those costs in terms of depleted resources, lost habitat, and polluted waters.

When Congress passed the Oceans Act of 2000, it acknowledged the importance of the oceans to this country. Pursuant to that Act, the President appointed 16 members, drawn from diverse backgrounds, to the U.S. Commission on Ocean Policy. The Commission's charge was to establish findings and develop recommendations for a new comprehensive national ocean policy. As part of its process, the Commission received testimony—oral and written—from hundreds of people from across the nation.

The message was clear: major changes are urgently needed. Ocean management responsibilities are dispersed among a confusing array of agencies at the federal, state, and local levels. While new scientific understanding has taught us that natural systems are complex and interconnected, our decision-making and management systems have not been updated to address that complexity and interconnectedness. Better approaches and

tools are also needed to gather data to understand the complex marine environment. Perhaps most important, people must understand the role the oceans have on their lives and livelihoods and the impacts they themselves have on the oceans.

As the result of significant thought and deliberation and the consideration of a wide range of potential solutions, the Commission presents this preliminary report containing bold and broad-reaching recommendations for reform—reform that needs to start now, while it is still possible to reverse distressing declines, seize exciting opportunities, and sustain the oceans and their valuable assets for future generations.

## A VISION FOR THE FUTURE

To be effective, U.S. ocean policy should be grounded in an understanding of ecosystems, and our management approach should be able to account for and address the complex interrelationships among the ocean, land, air, and all living creatures, including humans, and consider the interactions among multiple activities that affect entire systems. An ecosystem-based management approach should overcome the challenges inherent in addressing complex issues that cross traditional jurisdictional boundaries, and it must be able to continually adapt to new scientific information and improved management tools.

### **Ecosystem-based Management**

U.S. ocean and coastal resources should be managed to reflect the relationships among all ecosystem components, including human and nonhuman species and the environments in which they live. Applying this principle will require defining relevant geographic management areas based on ecosystem, rather than political, boundaries.

The existing fragmented system for managing our oceans and coasts is unable to meet these goals. The Commission has identified a number of needed changes based upon three fundamental and crosscutting themes: (1) creating a new national ocean policy framework to improve decision-making; (2) strengthening science and generating high-quality, accessible information to inform decision makers; and (3) enhancing ocean education to instill future leaders and informed citizens with a stewardship ethic.

### **Create a New National Ocean Policy Framework**

- Improve federal leadership and coordination.
- Strengthen federal agency structure to enable effective implementation of national ocean policy and enhance the ability of agencies to address links among ocean, land, and air.
- Enhance opportunities for state, territorial, tribal, and local entities to develop regional goals and priorities, improve responses to regional issues, and improve coordination.

### **A New National Ocean Policy Framework to Improve Decision-Making**

To improve decision-making and move toward an ecosystem-based management approach, the Commission recommends a new National Ocean Policy Framework. This framework consists of several components and is designed to produce strong, high-level leadership, more effective coordination of the many federal agencies with ocean management responsibilities, and strengthened involvement in decision-making at the state, territorial, tribal, and local levels.

#### ***National Ocean Council and Related Elements***

A central component of the proposed National Ocean Policy Framework is the establishment, within the Executive Office of the President, of a National Ocean Council, chaired by an Assistant to the President and composed of all the cabinet secretaries and independent agency directors with ocean-related responsibilities. A Presidential Council of Advisors on Ocean Policy, consisting of nonfederal representatives from state, territorial, tribal, and local governments and nongovernmental, academic,

and private sector entities with ocean interests, would also be created to ensure a formal structure for nonfederal input on ocean and coastal policy matters. A small Office of Ocean Policy would provide staff support. The Commission recommends that this structure be established immediately by Congress. Pending congressional action, the President should put this structure in place through an Executive Order.

***Strengthened Federal Agency Structure***

Improved federal coordination is necessary, but not sufficient to bring about the depth of change needed to modernize our ocean governance system. As part of the new National Ocean Policy Framework, the existing federal agency structure should be made less redundant, more effective, and better suited to an ecosystem-based management approach. As an initial step, the National Oceanic and Atmospheric Administration (NOAA) should be reconfigured and strengthened to better enable it to execute its many ocean- and coastal-related responsibilities. The second step will be consolidation of overlapping ocean and coastal programs where appropriate. Over the long-term, more fundamental changes to the federal agency structure will be needed that recognize the links among the ocean, land, and air and that support a unified approach to resource use and conservation.

***Enhanced Opportunities for Regional Coordination***

Improving the ability of state, territorial, tribal, and local entities to participate in ocean policy-making and implementation is another critical component of the National Ocean Policy Framework. Many of the nation’s most pressing ocean and coastal issues are regional in nature and require input on planning and management by state and local policy makers and other relevant stakeholders. Therefore, one of the priority tasks for the National Ocean Council will be to establish and facilitate a flexible process for creating nonregulatory regional ocean councils, to start immediately as pilot projects in regions where interest and capacity are strong. These councils would improve the ability of regional interests to work with federal entities, respond to issues and opportunities that cross jurisdictional boundaries in a timely fashion, and address the connections and conflicts among watershed, coastal, and offshore resources and their uses.

**Strong Science for Wise Decisions**

Effective policies should be based on unbiased, credible, and up-to-date scientific information. This requires a significant investment, an adequate infrastructure for data collection and management, and the ability to effectively translate scientific findings into useful and timely information products for policy makers, managers, educators, and the public. High quality, accessible information is critical to making wise decisions about ocean and coastal resources and their uses to guarantee sustainable social, economic, and environmental benefits from the sea.

***Strengthen Science***

Over the past two decades, the declining health of our oceans and coasts has become evident. In those same two decades, however, federal investment in ocean research has stagnated, while funding for other scientific program areas has increased. Ocean research efforts have fallen from 7 percent of the total federal research budget 25 years ago to just 3.5 percent today. Insufficient ocean science funding in the United States, combined with increased capacity in other nations, has lessened U.S. pre-eminence in ocean research, exploration, and technology development. Chronic under-investment has left much of our ocean-related scientific infrastructure in woefully poor condition. Current funding is well below the level needed to take advantage of our

**Strengthen Science and Meet Information Needs**

- Improve scientific understanding of the ocean and coastal environment and ensure effective science-based measures to use, safeguard, and restore ocean and coastal resources.
- Enhance the nation’s ability to observe, monitor, and forecast ocean and coastal conditions to better understand and respond to the interactions among oceanic, atmospheric, and terrestrial processes.

academic capacity, remain a world leader in ocean science and marine technology, and meet today’s ocean and coastal information needs. Furthermore, as we move toward an ecosystem-based management approach, managers’ requirements for additional scientific information will only grow.

The federal investment in ocean and coastal research must be significantly increased to at least double today’s \$650 million annual investment, over the next five years. Additional investments in technology development and ocean exploration are also needed.

***Meet Information Needs***

A strong commitment is needed to support and conduct high priority research and exploration, develop and enhance the needed technology, create ocean science infrastructure, and integrate data management facilities. One of the most important ways to fulfill this commitment is by implementing a national Integrated Ocean Observing System (IOOS), based on a backbone of coordinated, interconnected U.S. regional ocean observing systems and linked to the international Global Ocean Observing System. The IOOS will substantially advance our ability to observe, monitor, and forecast ocean conditions and will contribute significantly to global Earth observing capabilities. The information generated by the IOOS will have invaluable economic, societal, and environmental benefits, including improved warnings of coastal and health hazards, more efficient use of living and nonliving resources, safer marine operations, and a better understanding of climate change. Implementation of the IOOS will require a funding commitment by Congress, with a ramp-up from \$138 million in start-up costs in fiscal year 2006 to \$650 million annually to maintain the fully operational system in fiscal year 2010 and beyond. While these numbers may seem daunting, it has been estimated that implementing the IOOS will actually save the United States close to \$1 billion a year through enhanced weather forecasts, improved resource management, and safer and more efficient marine transportation.

Data collection and scientific discovery are not enough. These findings must be translated into useful, timely, and relevant information products so that policy makers, managers, and others can make informed decisions. This will require planning and collaboration among federal, academic, and private sector data providers and various user communities.

**Education – A Foundation for the Future**

A strong and effective national ocean policy needs to be supported by a foundation of high-quality ocean education that promotes lifelong learning, an adequate and diverse workforce, informed decision-making, science literacy, and a sense of stewardship. At the federal level, strengthened national leadership, better coordination, and sustained investments are critical. In addition, all ocean-related federal agencies must take responsibility for promoting education and outreach as part of their mission.

<p><b>Enhance Ocean Education</b></p> <ul style="list-style-type: none"> <li>○ Improve decision makers’ understanding of the ocean.</li> <li>○ Cultivate a broad public stewardship ethic.</li> <li>○ Prepare a new generation of leaders on ocean issues.</li> </ul>
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In the nation’s schools, students should be taught about the oceans and their connections to the entire Earth and to people and society. Ocean exploration and discovery should be used to engage students of all ages in learning and to promote math and science achievement. Undergraduate and graduate programs will need to be enhanced to produce the scientists, technicians, educators, and informed decision makers of the future. Beyond the classroom, informal education efforts must help cultivate a sense of stewardship by helping all individuals to recognize the value of the ocean to their own lives and how their actions affect the marine environment. At all levels and across all disciplines, ocean education should be enhanced so that we can protect and sustain our marine resources for today as well as tomorrow.

## TAKING ACTION FOR CHANGE

Building on a foundation of recommendations for improved governance, stronger scientific information, and enhanced education, the Commission examined the breadth of issues included in its charge from Congress. As a result, this report contains recommendations that span the gamut of ocean and coastal issues, ranging from upstream areas to the depths of the ocean floor, from practical problem-solving for specific issues, to philosophical approaches that will guide us into the next century.

A few of the other significant challenges the Commission identified are described below, accompanied by a brief summary of the actions recommended to address them. Further details about these issues, as well as many others, can be found in the full report.

### **Enable managers to address the pressures of coastal development... ...to achieve both economic growth and healthy coasts and watersheds.**

*Challenge:* The continuing popularity of coastal areas brings benefits and opportunities to coastal communities, but it also creates pressures that are felt most acutely along the coast. Increased development puts more people and property at risk from coastal hazards, reduces, fragments, or degrades coastal habitats that are essential for fish and wildlife, alters natural sediment flows, and contributes to coastal water pollution. While many of these impacts are attributable to activities taking place at the coast, others originate hundreds of miles away in inland watersheds.

*Action:* To effectively address these problems, the Commission recommends that coastal decision makers be given more capacity to plan for and guide growth away from sensitive and hazard prone areas. This can be facilitated by improving, coordinating, and consolidating the federal programs that have a role in managing coastal areas. In addition, coastal resources should be managed in the context of the watersheds that affect them; thus, greater links between coastal and watershed management will be needed.

### **Address the proliferation of activities in federal waters... ...to balance existing and new opportunities, safeguard marine and human health, minimize conflicts, and improve management of public resources for the benefit of the entire nation.**

*Challenge:* Marine commerce, fishing, and offshore oil and gas development are all examples of well established activities that take place in federal waters, with equally well established institutional frameworks for managing them. However, these waters are becoming increasingly attractive for a host of new enterprises, ranging from offshore aquaculture to wind energy development, for which there are considerable management uncertainties. These uncertainties lead to confusion, conflict, lost opportunities, and environmental threats.

*Action:* The Commission calls for the creation of a coordinated offshore management regime that can encompass existing and emerging uses and address the impacts of multiple activities on a particular location, or on each other. This regime should be able to encourage opportunities, yet avoid and minimize conflicts among users, safeguard human and marine health, and fulfill the federal government's obligation to manage public resources for the maximum long-term benefit of the entire nation.

### **Reduce water pollution, particularly from nonpoint sources... ...to improve ocean and coastal water quality and ecosystem health.**

*Challenge:* Ocean and coastal waters are subject to cumulative impacts from a variety of pollutants. Toxic chemicals, nutrients, excess sediment, airborne pollution, and waterborne diseases all threaten water quality.

Trash and litter, whether washed into the water from the shore or released at sea, is a significant problem. Aquatic invasive species, often introduced through the release of ships' ballast water, are a serious threat, often displacing or eliminating native species and altering the biology of ecosystems. Polluted runoff from urban, suburban, and agricultural activities is a particularly difficult problem that will require innovative and collaborative solutions, money, and time.

*Action:* Water contamination problems are diverse and pervasive and solutions will need to consider the links among oceans, coasts, and watersheds. The Commission recommends the establishment of measurable water pollution reduction goals, as well as coordination and cooperation of a broad range of agencies, programs, and individuals to achieve the right mix of management tools to address pollution of ocean and coastal waters.

### **Refine the existing fishery management system...**

**...to strengthen the use of science and move toward a more ecosystem-based management approach.**

*Challenge:* The current fishery management regime has many positive features, including an emphasis on local participation, the pairing of science and management, and regional flexibility; nevertheless, the last 30 years have witnessed overexploitation of many fish stocks, degradation of habitats, and negative consequences for too many ecosystems and fishing communities. To make improvements and move toward an ecosystem-based management approach, stronger links between scientific information and management are needed, as are incorporation of more diverse viewpoints in the management process, and greater incentives to promote stewardship of marine resources.

*Action:* While fishery management should ultimately move toward a more ecosystem-based approach, near-term reforms can produce important improvements. Among them, the Commission recommends increasing the role of science by separating fishery assessment and allocation decisions, fine-tuning the Regional Fishery Management Council system, and exploring the use of dedicated access privileges.

### **Ratify the United Nations Convention on the Law of the Sea...**

**...to strengthen the nation's participation within the international community.**

*Challenge:* In conjunction with improved ocean governance at home, the nation must also maintain its leadership role and participation within the international community. The best way to protect and advance our maritime interests is by continuing to actively engage in international policy-making, global scientific and observation initiatives, and programs to build ocean management capacity in developing countries.

*Action:* The Commission recommends that the United States accede to the United Nations Convention on the Law of the Sea, which is the primary legal framework for addressing international ocean issues. Critical national interests are at stake, and the United States can only be a full participant in upcoming Convention activities if we proceed with accession expeditiously.

## **IMPLEMENTING A NEW NATIONAL OCEAN POLICY**

To date, there has been a significant under-investment in our marine assets. Implementation of the recommendations found throughout this report will contribute significantly to a future in which our oceans and coasts are rich with promise. Meaningful improvement will require meaningful investment, but the payoff will be sizable for the U.S. economy, human health, the environment, our quality of life, and security. The total preliminary estimated cost of the recommendations in this report is approximately \$1.3 billion in the first year of implementation, \$2.4 billion the second year, building to a sustained level of \$3.2 billion in ongoing costs thereafter. These figures will be refined as the Commission's recommendations are finalized.

This report includes a proposal for funding additional federal and state activities required to implement the Commission's recommendations. It is important to support new federal responsibilities and avoid creating unfunded mandates for states; consequently, the Commission recommends the establishment of an Ocean Policy Trust Fund in the Treasury. The Fund would be composed of outer Continental Shelf (OCS) oil and gas bonuses and royalties not otherwise allocated, and other revenues from new and emerging uses in offshore waters. Devoting a greater proportion of these revenue sources to benefit federal and coastal state efforts at managing our oceans and coasts will provide a stable revenue stream to implement the nation's new comprehensive national ocean policy.

At this moment we have an exciting opportunity to make positive and lasting changes in how we manage valuable ocean and coastal resources. We can create an improved national policy that better balances use with sustainability, is based on sound science and educational excellence, and moves toward an ecosystem-based management approach with a coordinated system of governance and active regional participation. These changes will require significant political will and investment and the support of an engaged and concerned public, but the benefits will far exceed the costs.

#### **CRITICAL ACTIONS RECOMMENDED BY THE U.S. COMMISSION ON OCEAN POLICY**

- **Establish a National Ocean Council, chaired by an Assistant to the President, and create a Presidential Council of Advisors on Ocean Policy in the Executive Office of the President.**
- **Strengthen NOAA and improve the federal agency structure.**
- **Develop a flexible and voluntary process for creating regional ocean councils, facilitated and supported by the National Ocean Council.**
- **Double the nation's investment in ocean research.**
- **Implement the national Integrated Ocean Observing System.**
- **Increase attention to ocean education through coordinated and effective formal and informal programs.**
- **Strengthen the link between coastal and watershed management.**
- **Create a coordinated management regime for federal waters.**
- **Create measurable water pollution reduction goals, particularly for nonpoint sources, and strengthen incentives, technical assistance, and other management tools to reach those goals.**
- **Reform fisheries management by separating assessment and allocation, improving the Regional Fishery Management Council system, and exploring the use of dedicated access privileges.**
- **Accede to the United Nations Convention on the Law of the Sea.**
- **Establish an Ocean Policy Trust Fund based on revenue from offshore oil and gas development and other new and emerging offshore uses to pay for implementing the recommendations.**

