



**PART IX**

**MOVING AHEAD:  
IMPLEMENTING A NEW  
NATIONAL OCEAN POLICY**


**CHAPTER 30**

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# FUNDING NEEDS AND POSSIBLE SOURCES



**B**etter coordination at all levels of government...decisions based on excellent science and accurate information...an informed and engaged citizenry... these are important components of the U.S. Commission on Ocean Policy's vision of our ocean future. To implement that vision, the Commission proposes many specific recommendations aimed at ensuring that the nation's ocean and coastal resources are healthy and sustainable. Significant change, however, cannot be achieved without commensurate investment. This chapter outlines the costs associated with making improvements to our ocean policy. It also presents a proposal for meeting those costs through the establishment of a new Ocean Policy Trust Fund. Monies for the Trust Fund would be generated through resource rents from certain approved uses in federal waters, including outer Continental Shelf oil and gas revenues that are not currently committed to other purposes. The Trust Fund would help support the new responsibilities placed on federal, state, territorial, tribal, and local governments, and, thus, avoid the imposition of unfunded mandates.

## Investing in Change

**T**his report outlines a series of ambitious proposals for improving the use and protection of the nation's oceans and coasts. But meaningful change requires meaningful investments. In the case of the ocean, such investments are easy to justify. As explained in Chapter 1, more than one trillion dollars, or one-tenth of the nation's annual gross domestic product is generated each year within communities immediately adjacent to the coast. By including the economic contributions from all coastal watershed counties, that number jumps to around five trillion dollars, or fully one-half of our nation's economy. Equally important, the oceans and coasts contribute in immeasurable ways to the health and well-being of the nation and the world. Both the direct economic benefits of the sea and its less quantifiable contributions are threatened by continued degradation of ocean and coastal environments and resources.

Government agencies will not be able to take on additional responsibilities in implementing a comprehensive national ocean policy without improved tools and resources. Again and again, recommendations in this report call for actions to improve ocean and

coastal management: “NOAA should strengthen the Coastal Zone Management Program,” “EPA should tighten pollution controls,” “The U.S. Army Corps of Engineers should integrate individual dredging projects into regional ecosystem plans,” and “State and local governments should achieve better regional coordination.” Implicit in each of these recommendations is a requirement for Congress and the Administration to offer the support and resources needed to achieve the stated goals.

Recognizing this reality, the U.S. Commission on Ocean Policy pledged from its inception to be clear about any new costs associated with its recommendations. This chapter fulfills that promise by estimating the additional federal expenses that would arise if all the recommendations in this report were adopted. Mindful of intense budgetary pressures at all levels of government, and sensitive to the hardship associated with unfunded federal mandates, the Commission also set out to identify appropriate sources of revenue to cover the costs of its recommendations through a logical, responsible funding strategy. The sections below summarize the nature and magnitude of the costs associated with the Commission’s recommendations. This summary is followed by a discussion of the Commission’s proposal for an Ocean Policy Trust Fund to assist governments at all levels in carrying out the recommendations contained in this report.

## Acknowledging the Cost of Taking Action

Although there is a considerable level of uncertainty in these estimates, the total additional cost to the federal government of implementing the recommendations found throughout this report is approximately \$1.5 billion in the first year, rising to roughly \$3.9 billion per year after full implementation. A chapter-by-chapter summary of costs is shown in Table 30.1, with a more detailed itemization of the cost of each recommendation presented in Appendix G.

The cost estimates discussed in this chapter were derived from a number of sources. For some recommendations, such as implementation of the Integrated Ocean Observing System (IOOS, Chapter 26), outside groups have already put considerable effort into planning and budgeting and their estimates have been used, with appropriate adjustments. In other cases, such as creation of the Office of Ocean Policy (Chapter 4) or the Ocean.ED office (Chapter 8), standard formulas were applied to compute approximate staff salaries and related costs. Where the expansion of an existing activity is recommended, such as the Coastal Zone Management Program (Chapter 9), actual appropriations from recent years were adjusted upward in proportion to the level of additional effort needed. For entirely new activities, such as the regional ecosystem assessments recommended in Chapter 5, costs were extrapolated based on comparable activities in other agencies. Finally, there were many cases where some combination of the methods described above was used, in addition to consultation with knowledgeable budget and technical experts, and employment of the Commission’s best professional judgment. The numbers presented in this chapter are by no means definitive or authoritative, but the Commission believes they will be helpful in setting the stage for ongoing discussions.

It is critical to note that all the cost estimates in this chapter are for *new* or *additional* funding needs. In most cases, these amounts should be added to existing appropriations. For example, the cost of doubling ocean research funding, as recommended in Chapter 25, is shown as \$650 million in Table 30.1. This amount must be added to the \$650 million currently being spent in this area, for a total of \$1.3 billion.

The cost estimates in Table 30.1 also include many different types of expenses, such as: funding for new or expanded federal programs (to cover personnel, travel, and administrative costs); grant and fellowship funds to be distributed through reviewed proposal-driven processes; and direct grants to coastal states to carry out their ocean and coastal

**Table 30.1 Summary of Costs Associated with Recommendations of the U.S. Commission on Ocean Policy**

Listed below are the estimated new costs, in millions of dollars, for implementing the recommendations in each chapter of this report. Subcategories highlight costs in certain thematic areas which may include more than one recommendation. A square in the last column indicates that some relevant costs are not included. Further explanation can be found in the text of this chapter or in Appendix G.

	First Year Cost (millions of dollars)	Ongoing Annual Cost (millions of dollars)	Some costs in other chapters	Some costs not shown
<b>Chapter 1: Recognizing Ocean Assets and Challenges</b>				
no recommendations	N/A	N/A		
<b>Chapter 2: Understanding the Past to Shape a New National Ocean Policy</b>				
no recommendations	N/A	N/A		
<b>Chapter 3: Setting the Nation's Sights</b>				
no recommendations	N/A	N/A		
<b>Chapter 4: Enhancing Ocean Leadership and Coordination</b>				
<b>Chapter Total</b>	<b>\$ 1.062</b>	<b>\$ 2.124</b>		
<b>Chapter 5: Advancing a Regional Approach</b>				
<b>Chapter Total</b>	<b>\$ 12.750</b>	<b>\$ 48.750</b>		■
Regional ocean councils	\$ 3.000	\$ 12.000		
Regional ocean information programs	\$ 9.000	\$ 36.000		
Regional ecosystem assessments	\$ 0.750	\$ 0.750		
<b>Chapter 6: Coordinating Management in Federal Waters</b>				
<b>Chapter Total</b>	<b>\$ 6.900</b>	<b>\$ 21.800</b>		
Development of an offshore management regime	\$ 0.900	\$ 1.800		
Design and implementation of marine protected areas	\$ 6.000	\$ 20.000		
<b>Chapter 7: Strengthening the Federal Agency Structure</b>				
<b>Chapter Total</b>	<b>\$ -</b>	<b>\$ -</b>		
<b>Chapter 8: Promoting Lifelong Ocean Education</b>				
<b>Chapter Total</b>	<b>\$ 25.150</b>	<b>\$ 136.370</b>	Ch. 25	
Support for K–12 efforts	\$ 11.500	\$ 16.040		
Expansion of the COSEE program	\$ -	\$ 29.100		
Support for undergraduate, graduate, and post-doctoral students	\$ -	\$ 46.000		
Increasing diversity in ocean fields	\$ 1.000	\$ 3.930		
Community education and outreach	\$ 1.250	\$ 12.500		
Other measures	\$ 11.400	\$ 28.800		
<b>Chapter 9: Managing Coasts and Their Watersheds</b>				
<b>Chapter Total</b>	<b>\$ 55.000</b>	<b>\$ 155.000</b>		
Strengthening the CZMA program	\$ 35.000	\$ 95.000		
Support for watershed initiatives	\$ 20.000	\$ 60.000		
<b>Chapter 10: Guarding People and Property Against Natural Hazards</b>				
<b>Chapter Total</b>	<b>\$ 2.500</b>	<b>\$ 10.000</b>		■
<b>Chapter 11: Conserving and Restoring Coastal Habitat</b>				
<b>Chapter Total</b>	<b>\$ 40.000</b>	<b>\$ 75.000</b>		■
<b>Chapter 12: Managing Sediment and Shorelines</b>				
<b>Chapter Total</b>	<b>\$ 12.500</b>	<b>\$ 72.500</b>	Ch. 15, 25	■
<b>Chapter 13: Supporting Marine Commerce and Transportation</b>				
<b>Chapter Total</b>	<b>\$ 1.500</b>	<b>-</b>		■

**Table 30.1 (continued) Summary of Costs Associated with Recommendations of the U.S. Commission on Ocean Policy**

	First Year Cost (millions of dollars)	Ongoing Annual Cost (millions of dollars)	Some costs in other chapters	Some costs not shown
<b>Chapter 14: Addressing Coastal Water Pollution</b>				
<b>Chapter Total</b>	<b>\$ 11.000</b>	<b>\$ 53.900</b>	Ch. 25	■
Addressing point sources	\$ 2.000	\$ 8.500	Ch. 25	■
Addressing nonpoint sources	\$ 5.000	\$ 29.800	Ch. 25	■
Addressing atmospheric deposition	\$ 4.000	\$ 15.600		
<b>Chapter 15: Creating a National Monitoring Network</b>				
<b>Chapter Total</b>	<b>\$ 10.000</b>	<b>\$ 60.000</b>	Ch. 27	■
<b>Chapter 16: Limiting Vessel Pollution and Improving Vessel Safety</b>				
<b>Chapter Total</b>	<b>\$ 40.000</b>	<b>\$ 88.000</b>	Ch. 25	■
<b>Chapter 17: Preventing the Spread of Invasive Species</b>				
<b>Chapter Total</b>	<b>\$ 31.500</b>	<b>\$ 50.000</b>	Ch. 8, 15, 25	■
<b>Chapter 18: Reducing Marine Debris</b>				
<b>Chapter Total</b>	<b>\$ 2.000</b>	<b>\$ 5.000</b>		
<b>Chapter 19: Achieving Sustainable Fisheries</b>				
<b>Chapter Total</b>	<b>\$ 28.950</b>	<b>\$ 87.850</b>	Ch. 25	■
Improvements to Fishery Councils, Commissions, and SSCs	\$ 7.650	\$ 16.550		
Enhanced cooperative research	\$ 3.000	\$ 10.000		
Improved fisheries enforcement	\$ 6.300	\$ 12.300		
Designation of essential fish habitat	\$ 5.000	\$ 15.000	Ch. 25	
Bycatch reduction	\$ 5.000	\$ 30.000		
Other measures	\$ 2.000	\$ 4.000		
<b>Chapter 20: Protecting Marine Mammals and Endangered Marine Species</b>				
<b>Chapter Total</b>	<b>\$ 7.000</b>	<b>\$ 16.000</b>	Ch. 25	
<b>Chapter 21: Preserving Coral Reefs and Other Coral Communities</b>				
<b>Chapter Total</b>	<b>\$ 7.200</b>	<b>\$ 25.200</b>	Ch. 25	
<b>Chapter 22: Setting a Course for Sustainable Marine Aquaculture</b>				
<b>Chapter Total</b>	<b>\$ 3.000</b>	<b>\$ 7.000</b>	Ch. 25	
<b>Chapter 23: Connecting the Oceans and Human Health</b>				
<b>Chapter Total</b>	<b>\$ 2.000</b>	<b>\$ 10.000</b>	Ch. 14, 15, 25	
Expand O&HH research initiative	\$ –	\$ –	Ch. 25	
Improve seafood safety and coastal water quality	\$ 2.000	\$ 10.000	Ch. 14, 15	
<b>Chapter 24: Managing Offshore Energy and Other Mineral Resources</b>				
<b>Chapter Total</b>	<b>\$ 1.900</b>	<b>\$ 8.800</b>	Ch. 25	■
Offshore renewable energy	\$ 0.900	\$ 1.800		
Offshore non-energy mineral resources	\$ 1.000	\$ 7.000		
<b>Chapter 25: Creating a National Strategy for Increasing Scientific Knowledge</b>				
<b>Chapter Total</b>	<b>\$ 280.000</b>	<b>\$ 960.000</b>	Ch. 27	■
Doubling of basic and applied ocean research investments	\$ 200.000	\$ 650.000		
Ocean exploration initiative	\$ 30.000	\$ 110.000	Ch. 27	
Comprehensive national coastal and ocean maps and charts	\$ 50.000	\$ 200.000		
<b>Chapter 26: Achieving a Sustained, Integrated Ocean Observing System</b>				
<b>Chapter Total</b>	<b>\$ 231.000</b>	<b>\$ 753.000</b>		

**Table 30.1 (continued) Summary of Costs Associated with Recommendations of the U.S. Commission on Ocean Policy**

	First Year Cost (millions of dollars)	Ongoing Annual Cost (millions of dollars)	Some costs in other chapters	Some costs not shown
<b>Chapter 27: Enhancing Ocean Infrastructure and Technology Development</b>				
<b>Chapter Total</b>	<b>\$ 205.900</b>	<b>\$ 191.800</b>		■
Science infrastructure	\$ 200.000	\$ 150.000		
Other ocean-related infrastructure	–	–		■
Technology development and implementation	\$ 5.900	\$ 41.800		
<b>Chapter 28: Modernizing Ocean Data and Information Systems</b>				
<b>Chapter Total</b>	<b>\$ 14.000</b>	<b>\$ 24.000</b>		■
<b>Chapter 29: Advancing International Ocean Science and Policy</b>				
<b>Chapter Total</b>	<b>\$ 3.260</b>	<b>\$ 7.850</b>	Ch. 25	
State Department science capacity and support	\$ 1.260	\$ 2.850		
International capacity building	\$ 2.000	\$ 5.000	Ch. 25	
<b>Chapter 30: Funding Needs and Possible Sources</b>				
<b>Chapter Total</b>	<b>\$ 500.000</b>	<b>\$ 1,000.000</b>		
Support for additional state, territorial, and tribal responsibilities	\$ 500.000	\$ 1,000.000		
<b>GRAND TOTAL</b>	<b>\$ 1,536.072</b>	<b>\$ 3,869.944</b>		

responsibilities. (Throughout this chapter we use the term *coastal states* to include states bordering any ocean or the Great Lakes, all U.S. territories, and federally-recognized tribes with coastal resource treaty rights.) The different types of costs are not distinguished in the table. Moreover, costs borne directly by nonfederal entities, including state and local governments, private companies, and individuals, are not included, although in some cases they may be substantial. The importance of state-level action is discussed further below, with a recommendation for additional federal assistance in carrying out these responsibilities.

Some costs in Table 30.1 are associated with recommendations for distinct, high-visibility projects, such as the IOOS, the national monitoring network, or new ships and other infrastructure. Others costs are linked to recommendations for large, exciting new programs, like the Oceans and Human Health Initiative, or a new program of global ocean exploration. It can be tempting for policy makers to focus on these big-ticket items, but doing so exclusively would not serve the cause of improving ocean and coastal vitality. Most of the problems identified throughout this report are linked to human activities and the cumulative impacts of those activities on ocean and coastal resources. As a result, the solutions generally involve improvements to the management of human activities. Overall, the majority of the costs presented in this chapter are not connected with large, visible new projects, but with less tangible—but equally important—everyday improvements in existing programs to manage ocean and coastal resources.

### Deferred Costs

The costs for a number of recommendations could not be assessed at this time and they are noted as “TBD” in Appendix G. Often, this is because the Commission’s recommendation calls for the National Ocean Council or certain federal agencies to study an issue and develop more detailed plans and strategies for addressing it. Until such plans are in place, the scope of needed action is not known, although implementation of the proposed plans is likely to have significant costs. For example, the cost of achieving better regional coor-

dination among federal agencies (Recommendation 5–2) will depend on the mechanisms adopted and can only be determined after the National Ocean Council and its member agencies develop a plan for such coordination.

## Costs Beyond the Scope of the Commission’s Report

There are many other important activities, with significant implications for oceans and coasts, whose costs, even if known, are not included in the totals provided. Examples include:

- Nationwide upgrading of wastewater and drinking water infrastructure.
- Ongoing flagship projects such as restoration of the Florida Everglades, the Chesapeake Bay, coastal Louisiana, or San Francisco Bay.
- Nationwide water monitoring (Table 30.1 includes only monitoring costs within coastal watersheds and coastal waters).
- Planning and implementation of a national system of intermodal freight transportation.
- The National Science Foundation’s Ocean Observatories Initiative.
- Reestablishment of a Congressional Office of Technology Assessment.
- Maintenance and improvements to federal offices, laboratories, and other facilities.
- The costs of renewing the U.S. Coast Guard fleet, implementing Maritime Domain Awareness, and other broad ocean safety and enforcement needs.

These are all major projects with national implications and large price tags whose importance extends far beyond the scope of this Commission and whose costs have not been included in our totals and are not expected to be covered by the Ocean Policy Trust Fund. In many cases, plans are already in place to implement, and often to fund, such projects.

## Itemizing Major Funding Areas

With over 200 recommendations spanning dozens of issue areas, it is impossible to single out “the most important.” What’s more, it is not meaningful or productive to attempt to compare the importance of protecting coral reefs to the value of better education, or the benefits of improved land-use decisions to those of more thorough stream monitoring. Instead, the following sections highlight a few major themes from the report—governance, education, and science—and discuss some of the costs involved in implementing the Commission’s vision in these areas and others.

## The National Ocean Policy Framework

The centerpiece of the Commission’s recommendations is the National Ocean Policy Framework, described in Chapters 4–7. Chapter 4 calls for the immediate establishment of a National Ocean Council (NOC) in the Executive Office of the President to provide visible leadership, improve coordination of ocean and coastal management, and help move toward an ecosystem-based management approach. The NOC would be chaired by an Assistant to the President, advised by a nonfederal President’s Council of Advisors on Ocean Policy, and supported by a small Office of Ocean Policy. Because they are not operational in nature and will not be responsible for implementing new programs, the cost of establishing these entities will be modest, approximately \$1 million in the first year, and \$2 million per year thereafter.

The recommendations in Chapter 5 concerning the need for regional ocean councils, improved regional coordination of federal agencies, better regional information, and periodic regional ecosystem assessments call for substantial state-level involvement, but will



also require federal support to become a reality. The costs to the federal government are estimated at nearly \$13 million in the first year, with eventual ongoing annual costs of approximately \$49 million. As the concept of regional ocean councils takes hold across the country, and regional information needs become better articulated, these costs may well increase. The additional funds needed by coastal states to participate in regional activities will be provided in part by the proposed Ocean Policy Trust Fund, as discussed later in this chapter.

The offshore management regime called for in Chapter 6 requires only a modest level of staff support to coordinate the management of existing offshore activities and plan for new uses, totaling under \$2 million per year. (Additional costs associated with offshore renewable energy and non-mineral resources, both discussed in Chapter 24, total around \$9 million per year.) In addition, once the National Ocean Council, in consultation with state partners and stakeholders, has established a suitable process for the design of marine protected areas, their orderly implementation and ongoing evaluation will require additional federal support of some \$20 million per year.

The broad improvements to the federal agency structure called for in Chapter 7 carry no direct costs because it is expected that the savings realized through improved coordination and efficiency will offset any expenses associated with restructuring.

## Ocean Education

High quality, lifelong education about the oceans is essential for improving science literacy and instilling a widespread sense of stewardship for the marine environment. A number of concrete steps to achieve these goals are recommended in Chapter 8. Total first year startup costs in the area of ocean education are estimated at approximately \$25 million, with investments of around \$136 million per year in later years. This includes support for efforts in kindergarten through 12<sup>th</sup> grade, expansion of the Centers for Ocean Sciences Education Excellence, creation of a national ocean education coordinating office, grants and fellowships for undergraduate and graduate students in ocean-related fields, informal community outreach, and much more. It also includes \$4 million per year in new spending to increase diversity in the ocean community, an important investment priority.

Again it is important to note that the costs in Table 30.1 are for additional *federal* efforts to promote lifelong ocean education. However, state and local decision makers play central roles in providing and improving education and will require funds to support their own efforts in K–12, post-secondary, graduate and post-graduate education, as well as informal education and outreach efforts, to improve society's understanding and appreciation of the nation's oceans and coasts. Support for coastal states to improve their ocean education efforts will be covered by funds provided under the proposed Ocean Policy Trust Fund.

## Ocean Science and Exploration

Science and exploration are closely related endeavors. Explorers discover the new places, species, and phenomena that other scientists then study and explain. Many experts have pointed out that we now know more about the surface of the moon—and increasingly the surface of Mars—than we do about the bottom of the ocean, despite the huge potential for answering fundamental questions about our planet and discovering new forms of life right here at home. The gradual shrinking of ocean science funding, from 7 percent of the federal research budget in the 1970s to less than 3.5 percent today, must be reversed to address the nation's need for better coastal and ocean information and to help managers make well-informed decisions. The Commission recommends a doubling of the federal ocean and coastal research budget, from its current level of \$650 million per year to \$1.3 billion annu-

ally over the next five years. Chapter 25 summarizes the many high-priority research areas that will benefit from this new investment. A healthy balance is needed between funding for basic and applied sciences, and between research in coastal areas and the open ocean.

To keep reaching out further into the ocean's unknown areas, scientific investments should be complemented with significant new investments in well-planned, technologically sophisticated ocean exploration expeditions. The cost for sparking a new era of ocean discovery—and reaping the tangible human benefits that will come from it—will be about \$30 million over current expenditures in the first year, rising to a sustained, but still modest level of \$110 million a year.

Science and exploration both depend on improved infrastructure and technology (facilities, sensors, hardware, and technical support) as discussed in Chapter 27, as well as better analysis, distribution, and archiving of the ever-increasing flow of new data, as discussed in Chapter 28. The total costs of improving ocean science-related infrastructure are estimated at \$192 million per year, while better data management will require ongoing annual investments of \$24 million. Some of the specific items to be included in the renewal of ocean-science related infrastructure are the University-National Oceanographic Laboratory System (UNOLS) fleet, a new ship for the Integrated Ocean Drilling Program, two refurbished Coast Guard icebreakers, two new fisheries research vessels, new deep submergence vehicles, and dedicated ocean exploration platforms.

## Monitoring, Observing, and Mapping

The monitoring network called for in Chapter 15 covers much more than traditional water quality measurements. Many chapters recommend better monitoring, for example those addressing sediments (Chapter 12) and invasive species (Chapter 17). A wide range of variables should be measured as part of the national network to improve assessments, and provide accountability for management measures. First year monitoring efforts for coastal watersheds and waters will cost about \$10 million, with ongoing annual costs of approximately \$60 million.

Another important tool to achieve well-informed, science-based ocean and coastal management with an ecosystem focus is the national IOOS. A fully operating IOOS will provide critical information for: protecting human lives and property from marine hazards; improving ocean health; predicting global climate change; enhancing the nation's security; and providing for the protection, sustainable use, and enjoyment of ocean resources. Just as the nation and its citizens have come to rely on an extensive system of weather observations, routine ocean and coastal observations and forecasts will soon be viewed as a necessity as their value becomes evident. The direct benefits to industry, property, and human life alone easily justify the initial investment. The first year cost of implementing the IOOS is estimated at \$231 million, rising over a period of five years to an ongoing annual cost of \$753 million including satellite operations, data systems, and technology development.

Chapter 25 highlights the importance of accurate maps and charts as vital tools for coastal and ocean research, management, and economic activities. There is an immediate need to create a national base map that is seamless across the shoreline and can incorporate new geospatial data of all kinds as they are collected. The cost estimate of \$3 billion over the next fifteen years includes mapping the entire U.S. exclusive economic zone (bathymetry and backscatter), completing the backlog of National Oceanic and Atmospheric Administration hydrographic surveys to support navigational safety, and making all mapping and charting activities accessible through a Geographic Information System-based Web site.

## Other Ocean and Coastal Management Challenges

In addition to the broad themes described above, the Commission has recommended a variety of specific actions to meet identified challenges. Recommendations include improving management of the nation's coasts and coastal watersheds through strengthening the Coastal Zone Management Act and enhancing our ability to manage on a watershed scale. Related recommendations are directed at other critical coastal issues, such as protecting people and property from natural hazards, managing the ebb and flow of sediments, and conserving and restoring valuable coastal habitats. To make meaningful improvements to coastal and watershed management, the additional costs are estimated at \$112 million in the first year, rising to \$313 million in later years.

Another topic addressed at length is the need to improve the quality of ocean and coastal waters. The Commission recommends a number of actions to address the variety of contaminants and foreign substances that are degrading ocean and coastal waters, whether physical, chemical, or biological, and whether from point, nonpoint, or airborne sources. The combined new costs for all recommendations related to improving the quality of ocean and coastal waters is estimated at \$85 million in year one and \$197 million in ongoing annual costs. This is one area where certain major costs are *not* included in our totals. An estimated \$600 billion in public and private investments will be needed over the next twenty years to maintain and renew the nation's entire water and sewer infrastructure—a prerequisite for improving water quality, but an activity that goes beyond the scope of this Commission.

The report also devotes considerable attention to improved management of living marine resources, including actions related to fishery management and marine aquaculture, protecting marine mammals and endangered species, and sustaining valuable coral communities. Many improvements can be made at minimal or no cost as they primarily involve better decision making and governance. A number of recommendations call for additional research to understand these intricate ecosystems; such needs are included under the overall doubling of ocean research funding called for in Recommendation 25–1. Remaining recommendations for living marine resource management require new investments of approximately \$146 million per year.

In the international arena, most recommendations and associated costs are addressed in the corresponding subject area chapters (for example, international fisheries, aquaculture, or coral reef protection). However, the recommendations for overarching improvements in this nation's approach to international ocean issues, outlined in Chapter 29, will cost approximately \$8 million per year.

## Recognizing the Important Roles of Nonfederal Authorities

Due to the nature, composition, and mandate of this Commission, the report's recommendations focus primarily on changes needed at the federal level. But the role of states, territories, tribes, and local governments is central to every topic in this report. In particular, they have a critically important role to play in the new National Ocean Policy Framework. Governments at these levels exercise authority over land and water use within their borders, including state waters and submerged lands. In addition, Congress has assigned additional responsibilities to many of these entities through a variety of programs that have been created over the years. Because of their critical roles, it is imperative that the federal government work with states, territories, tribes, and local governments as partners in successfully executing a comprehensive national ocean policy.

Under the new ocean policy framework, states and other nonfederal authorities will have particularly important functions to carry out in areas such as the following:

- Coordination through regional ocean councils and regional ocean information programs.
- Ocean-related education.
- Coastal and watershed management, including clean beaches, sustainable growth, recreation and tourism, and economic development.
- Natural hazards planning and mitigation.
- Habitat conservation and restoration.
- Port and waterway management.
- Water quality and wastewater treatment.
- Reductions in invasive species and marine debris.
- Fishery management and aquaculture.
- Protection of endangered species.
- Science, observing, and mapping.

Although the specific costs to states and other nonfederal actors of carrying out their responsibilities in these areas have not been calculated, the Commission recognizes that they are real, large, and growing. The Commission is also well aware that some existing ocean and coastal programs have not been adequately funded and that additional responsibilities will require additional revenues. The states simply cannot take on further unfunded mandates as a result of the implementation of a comprehensive ocean policy. To achieve the best results for the nation, the federal government will need to provide additional financial assistance. The Commission recommends that \$1 billion per year in federal funds—in addition to any existing federal financial assistance—be distributed to coastal states for these purposes. These funds will flow from a new Ocean Policy Trust Fund.

## Dedicating Revenue from Ocean Uses for Improved Ocean Management

### Existing and Emerging Uses

Various parts of this report discuss federal revenues that are, or may be, generated from offshore activities. Chapter 6 introduces the concept of resource rents, the economic value derived from the use or development of a natural resource. It recommends that the use of a publicly-owned resource by the private sector be contingent on providing a reasonable return of some portion of the revenues to taxpayers. For example, the proposal in Chapter 22 for a new marine aquaculture management framework includes a recommendation for a revenue collection process that recognizes the public interest in the ocean areas and resources used for aquaculture operations in federal waters. Chapter 23 recommends a similar process for bioprospecting.

Chapter 24, on nonliving resources in federal waters, discusses the substantial revenues already flowing into land conservation and historic preservation funds and the U.S. Treasury from outer Continental Shelf (OCS) oil and gas development. It then points out the economic inequities between the treatment of onshore and offshore federal land leasing and development. Recommendation 24–1 suggests that a greater share of the revenues received from the extraction of OCS oil and gas resources should be granted to coastal states for the conservation and sustainable development of renewable ocean and coastal resources. OCS oil and gas producing states would receive a larger portion of such revenues to address the impacts in their states from the activity in adjacent federal offshore areas.

Chapter 24 also addresses the potential emergence of offshore renewable energy resources, including the growing interest in offshore wind farms, and wave and ocean thermal gradient energy conversion. As recommended in Chapter 6, these emerging activities will require a comprehensive management regime that ensures a fair return to the public for the use of marine resources.

## Revenues for Ocean and Coastal Management: The Ocean Policy Trust Fund

The nexus between activities in federal waters and the programmatic, regulatory, and management responsibilities they engender is clear. The actions recommended in this report are all linked in some way to our use of the ocean. The critical nature of ocean assets, and the challenges faced in managing them, justify the establishment of an Ocean Policy Trust Fund in the U.S. Treasury to assist federal agencies and coastal states in carrying out the comprehensive ocean policy recommended by this Commission.

The Trust Fund would be composed of returns from commercial uses of offshore resources, including OCS oil and gas revenues not currently committed to other programs, and any future revenues from allowed uses of federal waters. The Land and Water Conservation Fund, the National Historic Preservation Fund, and the OCS oil and gas revenues currently allocated to coastal states from the ocean areas that lie 3 nautical miles seaward of state waters would not be affected. Only after the revenues for those programs were provided in accordance with law, would any remaining OCS monies be deposited in the Trust Fund.

As a practical matter, now and for the foreseeable future, all the revenues flowing into the Trust Fund would come from OCS oil and gas revenues, virtually all of which are derived from activities in the central and western Gulf of Mexico. The drilling in the Gulf is an ongoing activity and an important contributor to our domestic supply of energy. The revenues coming from the Gulf that are not allocated to other purposes are currently credited to miscellaneous receipts of the Treasury. They are either used for other governmental activities or are counted against the deficit. The Commission has determined that funds generated from activities in offshore waters are an appropriate and important source of revenues to dedicate to a new and comprehensive national ocean policy.

As discussed in Chapter 24, approximately \$5 billion is generated annually from the various forms of OCS oil and gas revenues. Protecting the three programs noted above would remove about \$1 billion. Thus, some \$4 billion a year of oil and gas money remains available for the Ocean Policy Trust Fund under current projections, enough to fund the full cost of implementing the Commission's recommendations. While it would be purely speculative to estimate the amount and timing of revenues that might be produced by newer uses in federal waters, such resource revenues should also be deposited in the Trust Fund as they begin to flow.

### Recommendation 30-1

Congress should establish an Ocean Policy Trust Fund in the U.S. Treasury, composed of unallocated federal revenues from outer Continental Shelf (OCS) oil and gas activities, plus revenues from any new activities approved in federal waters, to support the nation's new coordinated and comprehensive national ocean policy. Trust Fund monies should be disbursed to coastal states, other appropriate coastal authorities, and federal agencies to support improved ocean and coastal management, based on an allocation determined by Congress with input from the National Ocean Council. The Trust Fund should be used to supplement—not replace—existing appropriations for ocean and coastal programs.

The Ocean Policy Trust Fund should be distributed as follows:

- \$500 million in the first year, increasing to \$1.0 billion in the third and subsequent years, among all coastal and Great Lakes states, territories, and federally-recognized tribes with

coastal resource treaty rights. A larger share should go to OCS producing states to address offshore energy impacts. The funds should be used for the conservation and sustainable development of renewable ocean and coastal resources, including any new responsibilities that arise as a result of Commission recommendations and the expansion of programs and activities that are currently underfunded.

- the remainder of the funds to federal agencies to address the new or expanded activities assigned to them as a result of Commission recommendations.

The sole intent of the Trust Fund is to ensure a dedicated source of funding for improved ocean and coastal management, including the sustainability of renewable resources. It is not intended to either promote or discourage offshore uses authorized under existing laws, and the Fund itself would not drive activities in offshore waters. Rather, all proposed actions would be evaluated under established statutes and governance structures, including the NEPA process. Chapter 6 recommends an offshore management regime in which all activities in federal waters are better coordinated and are guided by principles including sustainability, stewardship, good science, ecosystem-based management, and preservation of marine biodiversity. Once an activity is deemed acceptable, the resulting resource rents due to the American taxpayer for the use of a public resource would be deposited into the Trust Fund to be devoted exclusively to ocean and coastal issues, as noted above.

The design and establishment of the Trust Fund are within the jurisdiction of Congress. Thus, Congress will need to determine how the Fund will be set up, the process and criteria for the distribution of the monies, the formula or method for allocating the funds among coastal states, the eligible uses of the funds, and appropriate connections to existing laws and authorities. The National Ocean Council and the nonfederal President's Council of Advisors on Ocean Policy will be in an excellent position to provide input on these questions.

## Understanding the Changing Ocean and Coastal Budget

The proliferation of ocean and coastal programs throughout the federal government over the last thirty years reflects a growing awareness of the importance of marine resources and processes to our economy and our lives. However, this growth has not been well-planned or coordinated. In a world of limited resources and increasing demands, it is imperative that ocean programs be coordinated fiscally as well as operationally.

Congress recognized this need in the Oceans Act of 2000, directing the President to “transmit to the Congress biennially a report that includes a detailed listing of all existing Federal programs related to ocean and coastal activities, including a description of each program, the current funding for the program, linkages to other federal programs, and a projection of the funding level for the program for each of the next five fiscal years beginning after the report is submitted.” The first Federal Ocean and Coastal Activities report was released by the Office of Management and Budget (OMB) in March 2003.

The usefulness of OMB's report was limited because of inconsistent interpretations of the request for data by the various federal agencies, errors in some of the budget information, variations in the level of detail provided, and a questionable classification system for ocean and coastal functional categories. For example, the report did not summarize agency investments in coastal water quality or ocean-related education, making it impossible to track spending in these areas over time. Subsequent reviews of the OMB report by Congress's General Accounting Office and the Congressional Research Service corroborated these problems and highlighted the inherent difficulties in determining federal spending levels on ocean and coastal issues.<sup>1,2</sup>

Nevertheless, the need remains for the National Ocean Council, the President, Congress, OMB, and the public to understand what the federal government is spending on ocean and coastal programs and activities. The integration of the budgets of such programs at the highest level of government would greatly facilitate the coordination of on-the-ground research, monitoring, and management activities. Implementation of Recommendation 7–2, which calls for NOAA’s budget to be reviewed as part of the OMB Natural Resources Programs directorate, rather than the General Government Programs directorate, is one important step. But improving the format and content of the biennial report called for in the Oceans Act of 2000 will also be crucial to establish the financial baselines necessary to evaluate growth and changes in ocean and coastal programs and activities and to provide crucial information to Congress, the President, and the public.

### Recommendation 30–2

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The National Ocean Council, in cooperation with the Office of Management and Budget, should coordinate the compilation of a biennial report from the President on ocean funding, as required by the Oceans Act of 2000, including establishment of a consistent reporting format and a more useful classification scheme.

## References

- <sup>1</sup> U.S. General Accounting Office. “Ocean and Coastal Activities: Information on Federal Funding.” Memorandum to Senators John McCain and Ernest F. Hollings. GAO–03–1070R. Washington, DC, August 11, 2003.
- <sup>2</sup> Buck, E.H., and J.A. Zinn. “Agency Data on Funding of Federal Ocean and Coastal Activities.” Memorandum. Washington, DC: Congressional Research Service, September 30, 2003.

