



CHARTING THE COURSE

Securing the Future of America's Oceans

OCEAN PRIORITIES FOR
THE OBAMA ADMINISTRATION AND CONGRESS

June 2013

ABOUT THE JOINT OCEAN COMMISSION INITIATIVE

Established in 2005, the Joint Ocean Commission Initiative promotes and maintains the important work of the U.S. Commission on Ocean Policy and the Pew Oceans Commission. The Joint Ocean Commission Initiative Leadership Council is composed of former members of the two commissions and other experienced individuals from a variety of sectors, including industry, government, academia, and national security at the national, state, local, and regional levels.

The Joint Initiative's primary goal is to catalyze ocean policy reform and action at the national, regional, state, and local levels. The Joint Initiative provides high-level, credible, and bipartisan leadership and engagement on ocean and coastal policy issues and distills a clear sense of priorities, communicates them to key decision makers, and educates and cultivates current and new ocean champions. The Joint Initiative was originally co-chaired by the late Admiral James D. Watkins (chair of the U.S. Commission on Ocean Policy) and Leon E. Panetta (chair of the Pew Oceans Commission) and is currently co-chaired by William Ruckelshaus and Norman Mineta. The Joint Initiative's 16-member Leadership Council brings expertise, credibility, perspective, and diversity of interests to the ocean policy dialogue. Meridian Institute serves as the secretariat for the Joint Initiative.

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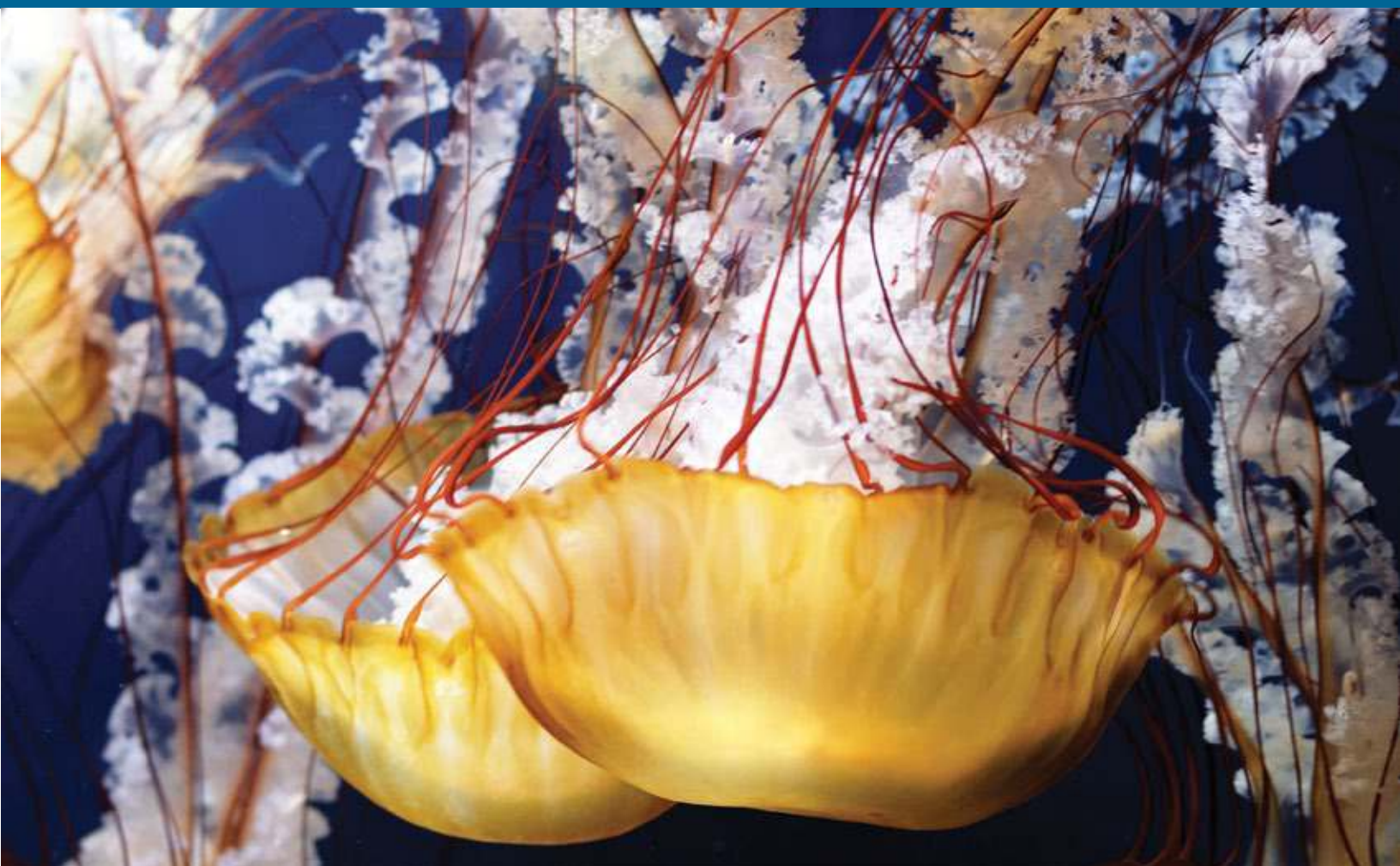
June 2013

EXECUTIVE SUMMARY

This report was developed by the Joint Ocean Commission Initiative, a bipartisan collaboration of senior leaders representing diverse interests in our oceans. It presents recommended actions that the Obama Administration and Congress should implement to effectively manage our ocean resources so that we can ensure they are healthy and vibrant to support our future.

We are an ocean nation, bounded by the vast Atlantic and Pacific Oceans, the Gulf of Mexico, and the Great Lakes. We are also an Arctic nation with responsibility for the management of this sensitive and strategically important region. Our oceans and coasts are vital to our nation's economy and security, as well as to the health and quality of life of its citizens. Oceans are the engines of our planet's weather and climate systems, and they provide important sources of protein. Natural coastal features, such as dunes and wetlands, offer cost-effective protection for our communities against powerful storms, and they provide important habitat for coastal and marine life. Our national economy also relies greatly on our oceans, including for tourism, fisheries, oil and gas, minerals, shipping, and transportation. Our oceans offer excellent potential for development of renewable energy, offshore aquaculture, and other economic opportunities of the future. Coastal counties are some of our nation's most populous, and they generate more than one-third of our Gross Domestic Product.

Unfortunately, the continued ability of our oceans to provide these many benefits into the future is at risk. While ocean management is improving through new processes for coordination across jurisdictions, additional attention must be paid to enhancing the resiliency of coastal communities and ocean ecosystems to dramatic changes underway in our oceans. Our nation must also promote renewable energy development and return more of the revenues generated by activities on the Outer Continental Shelf to ocean science and management activities. Our federal government should more strongly support state and regional efforts to address their ocean and coastal priorities. And finally, we must urgently improve our scientific understanding and management of the sensitive and important Arctic region. Addressing each of these priorities requires enhanced coordination of the agencies and states managing our oceans in order to maximize benefits and efficiencies, as well as sufficient federal investment.



The various elements of ocean and coastal ecosystems are closely interconnected, as are the management authorities governing those elements. For this reason, implementing any of the recommendations presented in this report would provide benefits to all ocean and coastal ecosystems and to the many Americans who rely on them for health, wealth, and well-being. These recommendations present a powerful opportunity to shape the future of our oceans and secure the future of our ocean nation. The Joint Ocean Commission Initiative urges our leaders in the Administration and Congress to seize this opportunity.

The challenges we face in managing our oceans effectively also present opportunities for innovation, collaboration, and action. Our oceans are held in the public trust, and we must act together to secure the future of our oceans and the health and wealth of our ocean nation. This report describes the following recommendations, which are focused on four action areas the Obama Administration and Congress should implement in the next two to four years:

Action 1: Enhance the resiliency of coastal communities and ocean ecosystems to dramatic changes underway in our oceans and on our coasts

RECOMMENDATION 1.1: The Administration and Congress should boost funding and support for programs that protect and restore critical coastal features, such as wetlands, dune systems, mangroves, salt marshes, seagrass beds, and coral reefs, all of which provide valuable services, including buffering against storm surges, purifying water, providing habitat for important species, and offering recreational opportunities.

RECOMMENDATION 1.2: The Administration and Congress should provide the support necessary for states and communities to upgrade critical coastal infrastructure, including wastewater and transportation systems, so they are more resilient and able to withstand and adapt to the impacts of coastal hazards, including extreme weather events, sea-level rise, and other changes along our coasts.

RECOMMENDATION 1.3: The Administration and Congress should provide increased funding and support for ocean science infrastructure and research programs needed to understand the complex and dynamic relationship between the oceans and climate and improve our forecasting capabilities.

RECOMMENDATION 1.4: The Administration and Congress should take actions to measure and assess the emerging threat of ocean acidification, better understand the complex dynamics causing and exacerbating it, work to determine its impact, and develop mechanisms to address the problem.

Action 2: Promote ocean renewable energy development and reinvest in our oceans

RECOMMENDATION 2.1: The Administration and Congress should accelerate ocean renewable energy development by providing adequate and stable financial and tax incentives and a fair and efficient regulatory structure. As part of providing this structure, they should support state- and region-led efforts to coordinate data and decision making, engage stakeholders, and bring competing interests together. This can facilitate efficient siting of projects that meet our energy objectives while protecting existing uses of the ocean and important ecosystem features.

RECOMMENDATION 2.2: Congress should establish a dedicated ocean investment fund to invest a modest portion of the revenues from offshore commercial energy activities to provide the financial support for national, regional, state, and local programs working to

understand and manage our ocean and coastal resources. If Congress pursues legislation to share revenue from offshore energy leasing and development, a reasonable portion of these funds should be dedicated to improving ocean and coastal science, management, and ecosystem restoration at the federal, regional, state, and local levels.

Action 3: Support state and regional ocean and coastal priorities

RECOMMENDATION 3.1: The Administration and Congress should strongly support multi-state regional ocean partnerships that coordinate data and decision making across jurisdictions, make progress on shared priorities, and more effectively engage ocean and coastal stakeholders. This will allow states to build on current progress toward improved decision-making about coastal and ocean resources and priority economic drivers.

Action 4: Improve Arctic research and management

RECOMMENDATION 4.1: Congress and the Administration should fully implement the National Strategy for the Arctic Region and ensure opportunities for public input and engagement. They should also diligently prepare for U.S. leadership of the Arctic Council and lay the groundwork now for establishing a sound international management framework that meets multiple interests while protecting a sensitive and rapidly changing ecosystem.

RECOMMENDATION 4.2: Congress and the Administration should implement a coordinated scientific research program in the U.S. Arctic that is supported by a strong ocean observing system and adequate infrastructure—including vessels, polar class icebreakers, and fundamental platforms for research. The program should prioritize gaps in current research and connect research and management needs, such as oil spill response and recovery.

RECOMMENDATION 4.3: The Administration and Congress should increase funding for federal agencies operating in the region, particularly the U.S. Coast Guard and NOAA. They should also urge federal agencies—including the U.S. Department of Defense and the National Science Foundation—to better collaborate with state and local governments, Alaskan Native governments, and industry to improve the ability of commercial entities to operate safely in the region and ensure effective response and recovery in the event of a natural or human-caused disaster. This includes improving coordination and data-sharing on oil spill planning, preparedness, and response, vessel tracking and search-and-rescue, as well as investment in new icebreakers, aircraft, and shore-based infrastructure.

RECOMMENDATION 4.4: The U.S. Senate should act expeditiously to provide its advice and consent to accede to the Law of the Sea Convention.

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ABOUT THIS REPORT

This report was developed by the Joint Ocean Commission Initiative, which is guided by a bipartisan 16-member Leadership Council that is co-chaired by the Honorable William Ruckelshaus, former Administrator of the U.S. Environmental Protection Agency, and the Honorable Norman Mineta, former Secretary of Transportation and former Secretary of Commerce. The Leadership Council includes former members of the U.S. Commission on Ocean Policy and the Pew Oceans Commission, as well as other leaders from a variety of sectors, including industry, government, academia, and national security, with experience at the national, regional, state, and local levels.

The report presents recommended actions that the Obama Administration and Congress should implement to effectively manage our ocean resources so that we, as an ocean nation, can ensure they are healthy and vibrant to support our future. It describes specific recommendations for immediate implementation, focused on four action areas the Obama Administration and Congress should tackle in the next two to four years:

- Enhance the resiliency of coastal communities and ocean ecosystems to dramatic changes underway in our oceans and on our coasts
- Promote ocean renewable energy development and reinvest in our oceans
- Support state and regional ocean and coastal priorities
- Improve Arctic research and management

The recommendations in this report were informed by input from more than 100 leaders representing ocean- and coastal-related industries, environmental advocacy groups, science and education organizations, and local, state, and federal governments, all of whom participated in a Joint Initiative-convened meeting in February 2013. During the meeting, these leaders provided input on this discrete set of priority actions, which the Joint Initiative and meeting attendees believe are achievable in the short term and will offer significant benefits for coastal communities, ocean-related businesses, and ocean ecosystem health.

There are a multitude of challenges facing our oceans and coasts and many important issues on which these recommendations could focus. The Joint Initiative has focused on these four action areas because they resonate as critical and achievable in the short term and they require ocean leaders from the industry, policy, and scientific arenas, as well as leaders in the Administration and Congress, to carry them out. It will be important for the ocean community to come together and provide strong and consistent support to champions in the Administration and Congress who will address these challenges.

While the focus of these recommendations is selected short-term actions, it is important to remember some longer-term issues that also need to be addressed. These include, for example, the development of a comprehensive national energy policy, the upcoming reauthorization of federal fisheries management legislation, the vexing international problem of illegal, unreported, and unregulated fishing, and the need to significantly improve our coastal management system. Addressing these issues will be critical to the health of our oceans and coasts, and the people who depend on them, and the Joint Initiative strongly supports taking action on these issues.

Finally, it is important to note that several themes recur throughout the recommendations. They include the need for better coordination at all levels of government, stronger support of scientific research to better understand ocean ecosystems and economies, and the need for more funding to meet urgent science and management needs. The Joint Initiative is acutely aware of the budget crisis facing this nation and understands that funding levels for many agencies and programs will decrease in FY 2014. However, the Joint Initiative also believes strongly that we, as a nation, must make a commitment to protect our most valuable assets—including our oceans. Such a commitment is an investment in the future of our country and cannot easily be dismissed for want of funding. Therefore, we propose incremental but significant funding increases over FY 2013 levels to the programs and accounts needed to carry out the recommendations in this report.



OCEANS: OUR NATIONAL LIFELINE

We are an ocean nation, bounded by the vast Atlantic and Pacific Oceans, the Gulf of Mexico, and the Great Lakes. We are also an Arctic nation with responsibility, along with the seven other Arctic nations, for the management of this sensitive and strategically important region. Oceans have played a central role in our nation's history, culture, economy, and military. Today, our oceans and coasts continue to be vital to our economy and security, as well as to the health and quality of life of our citizens. The United States has jurisdiction over the largest exclusive economic zone in the world, spanning 3.4 million square nautical miles. This area includes several large ecosystems, which provide innumerable, vital services to us that, if squandered, cannot be replicated by human technologies. Oceans are the engines of our planet's weather and climate systems, and they provide important sources of protein. Natural coastal features, such as dunes and wetlands, offer cost-effective protection for our communities against powerful storms, and they provide important habitat for coastal and marine life.

Our national economy relies greatly on our oceans, including for tourism, fisheries, oil and gas, minerals, shipping, and transportation. Our oceans offer excellent potential for development of renewable energy, offshore aquaculture, and other economic opportunities of the future. Coastal counties are some of our nation's most populous, and they generate more than one-third of our Gross Domestic Product. Millions of people flock to the coasts each year, contributing to a booming coastal tourism and recreation industry that supports 1.7 million jobs. About 95 percent of the nation's international trade travels through American ports. The U.S. commercial fishing industry lands approximately \$5 billion in fish and shellfish annually. These and other ocean-related economic activities are essential for our coastal states. They also fuel economic activity into the heartland.

Unfortunately, the continued ability of our oceans to provide these many benefits into the future is at risk. Pollutants from land are draining into our oceans, befouling beaches, and creating massive "dead zones." Destruction of ocean and coastal habitats that are essential nurseries and feeding grounds for fish and shellfish is damaging our valuable fisheries. Coastal wetlands and other natural features that offer cost-effective buffers against storms and filters for fresh water are being destroyed. Carbon dioxide pollution is raising the

THE NATIONAL OCEAN POLICY

In July 2010, President Obama signed Executive Order #13547 establishing the *National Policy for the Stewardship of the Ocean, Our Coasts, and the Great Lakes*. This is the first National Ocean Policy in U.S. history, and it aims to significantly improve the way our nation manages these valuable resources. The National Ocean Policy recognizes that ocean ecosystem health is interconnected with the productivity of ocean-related sectors of the economy and society and establishes a national commitment with a goal to:

ensure the protection, maintenance, and restoration of the health of ocean, coastal, and Great Lakes ecosystems and resources, enhance the sustainability of ocean and coastal economies, preserve our maritime heritage, support sustainable uses and access, provide for adaptive management to enhance our understanding of and capacity to respond to climate change and ocean acidification, and coordinate with our national security and foreign policy interests.

To carry out the policy, the President created a federal interagency coordinating structure led by a cabinet-level National Ocean Council. Supporting the National Ocean Council are entities that provide interagency coordination on key technical and policy matters at the federal level. In addition, the Executive Order created a non-federal Governance Coordinating Committee consisting of state, tribal, and local representatives who coordinate with and advise the National Ocean Council. Finally, the Executive Order calls for the creation of regional entities, composed of state, federal, tribal, and Regional Fishery Management Council representatives, that will be responsible for working with stakeholders to design regional ocean planning approaches. The purpose of these regional entities is to improve data-sharing and coordination among governmental entities managing our oceans, find ways to increase the efficiency of their decision making, take into account future trends and regional goals in those decisions, and engage stakeholders, states, and tribes in a more meaningful way in determining how our oceans are used and managed.

To translate the National Ocean Policy into on-the-ground actions, the National Ocean Council released the *National Ocean Policy Implementation Plan* in April 2013. The Implementation Plan, which incorporates input from a range of stakeholders, including industry, conservation, and science perspectives, describes specific actions federal agencies will take to address our ocean-related challenges, gives states and regions greater input into federal decisions, streamlines federal operations, and promotes economic growth.

The Joint Initiative applauds the National Ocean Council for the Implementation Plan and recognizes that many of the actions it outlines are echoed in the Joint Initiative's recommendations in this report. The Joint Initiative urges the Administration to prioritize implementation of the plan and urges Congress to engage constructively to improve and support National Ocean Policy implementation.



oceans' temperatures and acidifying their waters, hindering the ability of fish, shellfish, and other creatures to thrive and destroying our last remaining coral reefs. Warming ocean temperatures are also causing Arctic sea ice to retreat and accelerating the rate of sea-level rise and associated coastal flooding and habitat loss. There is increasing scientific evidence that the intensity of coastal storms is amplified due to this warming, threatening lives and public and private infrastructure along our coasts. Finally, expanding ocean uses are competing for space both in the oceans and along our coasts. This expansion offers great opportunities, but it also creates challenges for ocean users trying to do business in a crowded ocean under an insufficiently coordinated decision-making structure, as well as for managers striving to carry out their responsibilities and make coordinated and informed decisions in difficult budgetary times.

Our oceans are essential to the health, safety, and quality of life of all Americans. The challenges we face in managing them effectively also present opportunities for innovation, collaboration, and action. Our oceans are held in the public trust, and we must act together to secure the future of our oceans and the health and wealth of our ocean nation. Toward this end, the Joint Ocean Commission Initiative offers the following recommendations.



Lack of natural defenses leaves houses in peril on the coast.

Action 1: Enhance the resiliency of coastal communities and ocean ecosystems to dramatic changes underway in our oceans and on our coasts

Although coastal counties account for only a fraction of the land mass of the United States, they are some of the most densely populated, economically productive, and ecologically valuable areas of the country. It is estimated that by 2025, 75 percent of all Americans will live in coastal counties. Yet, perhaps at no time in our history have our coasts been more vulnerable. The pressures caused by increasing demands for space on the coasts and expanding ocean uses are compounded by the impacts of climate change. The challenges facing our oceans and coasts are widespread and dynamic, and they require efficient and creative use of limited resources and funding to address.

The pressures and hazards facing our coastal communities and ecosystems demand concerted efforts to increase their resilience to dramatic change. This means boosting their ability to anticipate risk, limit impact, rapidly recover, and appropriately adapt to changing conditions. Resilient coastal communities are not only able to minimize loss and negative impacts to life, property, and the coastal ecosystem, they are also able to quickly return residents to productive activities and restore essential services. This is imperative for facilitating full and timely economic, social, and environmental recovery of affected areas.

Protect and restore natural features

In the United States today, more than 8 million people live in areas that are at risk for coastal flooding, and the problem will become worse if not addressed. Climate change is raising ocean temperatures, which in turn is accelerating the rate of sea-level rise and increasing coastal flooding and loss of land. In addition, there is increasing scientific evidence that warmer waters will lead to more-intense coastal storms, which threaten the lives and safety of coastal residents and the integrity of public and private infrastructure.

A cost-effective way to reduce the impacts of coastal hazards—such as powerful winds and flooding from coastal storms, tsunamis, and coastal inundation exacerbated by sea-level

PROACTIVELY ADDRESSING RISK

The United States has well-documented and tragic examples of a failure to proactively prepare coastal communities for severe weather events, which have resulted in loss of life and devastation to our coastlines. Although we know what actions need to be taken to enhance the resiliency of our coastal communities, we have been slow to act as a nation. For example, in 2004, the final report of the U.S. Commission on Ocean Policy highlighted the severe risks New Orleans faced in the event of a high-intensity hurricane, due in large part to the destruction of natural defenses such as barrier islands and wetlands, as well as dense coastal development in flood-prone areas guarded only by inadequate levees. As predicted, in 2005, Hurricane Katrina overwhelmed the city's defenses, causing a disaster that still affects New Orleans, the region, and the nation to this day.

The after-effects of Superstorm Sandy in late 2012 again offered numerous examples of stark contrast between those coastal communities that had strong natural storm barriers and updated infrastructure in place and those that were exposed and vulnerable to the most devastating impacts of the storm. As time passes, each multi-billion-dollar disaster, each devastated community, and each loss of life from these storms offers a powerful reminder of the consequences of continued inaction. With increasingly powerful storms predicted for the future, our nation should be rushing to boost our coastal resilience.

rise—is to protect and restore important natural features along our coasts. These features include wetlands, dunes, mangroves, salt marshes, seagrass beds, and coral reefs. In addition to buffering against storm surges, many of these features purify water, provide habitat for important species, and offer recreational and tourism opportunities that generate income for local communities. Finally, the hands-on work required during restoration projects creates jobs and provides a significant return on investment for coastal economies. In fact, studies demonstrate that habitat restoration can produce economic benefits that are significantly greater than the initial dollars invested. In the United States, under the American Recovery and Reinvestment Act of 2009 (the Recovery Act), NOAA awarded \$167 million in funding for 50 coastal restoration projects. On average, every \$1 of Recovery Act funds spent on these projects resulted in \$1.60 of economic benefit. NOAA's restoration work under the Recovery Act created an average of 17 jobs, and as many as 33 jobs, for every \$1 million invested—a rate of job creation that is much higher than in other sectors such as transportation, coal, gas, and nuclear energy production. These restoration projects are already bringing durable economic and environmental benefits.

There are many existing programs at various levels of government that support critical protection and restoration of important natural features. Federal programs with proven track records of success that need ongoing support include NOAA's Coastal and Estuarine Land Conservation Program, the NOAA Restoration Center's Community-based Restoration

Program, the Land and Water Conservation Fund Program, and the U.S. Coral Reef Task Force. Unfortunately, funding for the coastal habitat protection and restoration that these programs and others provide is in critically short supply.

RECOMMENDATION 1.1

The Administration and Congress should boost funding and support for programs that protect and restore critical coastal features, such as wetlands, dune systems, mangroves, salt marshes, seagrass beds, and coral reefs, all of which provide valuable services, including buffering against storm surges, purifying water, providing habitat for important species, and offering recreational opportunities.

Improve built infrastructure

The population of coastal counties continues to grow, even in areas often impacted by coastal hazards, posing challenges for coastal managers who must protect growing populations in conditions that are rapidly changing due to climate change. Critical built infrastructure in our coastal areas—including harbors and ports; roads, bridges, and tunnels; and wastewater treatment systems, among others—is outdated and overtaxed in many places, posing significant risks to human health and safety and the economic vitality of our coastal communities. The deteriorated state of wastewater infrastructure stands out as particularly pressing. Recent extreme weather events, such as Superstorm Sandy and Hurricane Katrina, have exposed serious flaws in our wastewater infrastructure that could take many years and billions of dollars to address. In New York State alone, Governor Andrew Cuomo estimated that \$1.1 billion is needed to repair wastewater treatment plants after Superstorm Sandy. At least six sewage plants in the New York region shut down completely during that storm. In several affected areas, the U.S. Environmental Protection Agency has detected dangerous levels of fecal coliform and urged residents to avoid contact with the water; bans on harvesting of shellfish have also been imposed. Improvements are critically needed to ensure safe drinking water, repair and upgrade wastewater treatment facilities, and promote smart development that takes into account changing coastal conditions.

In addition, as communities recover from severe weather events, federal agencies should support the development and implementation of state and local plans that increase the resilience of coastal communities. They should help communities assess the efficacy of rebuilding both natural features and built structures; account for rising sea levels and changing coastal landscapes; and update the design, placement, and standards of structures to help protect communities and infrastructure in the future. Our nation is strongly committed to supporting our states and local communities in disaster response and recovery. Therefore, it is in our national interest to ensure our communities have the support they need to effectively adapt to changing conditions along our coasts and become more resilient.

RECOMMENDATION 1.2

The Administration and Congress should provide the support necessary for states and communities to upgrade critical coastal infrastructure, including wastewater and transportation systems, so they are more resilient and able to withstand and adapt to the impacts of coastal hazards, including extreme weather events, sea-level rise, and other changes along our coasts.

Specific actions include:

- Fully fund safe drinking water and wastewater treatment programs under the Safe Drinking Water Act and the Clean Water Act.
- Reauthorize the Water Resources Development Act to promote storm damage risk reduction and ecosystem restoration.
- Promote the resilience of coastal communities and the recovery of coastal areas after disasters in a manner that accounts for changing coastal conditions.

Support scientific research

The oceans and climate are closely linked, interacting in dynamic ways that we do not fully understand, but that have significant impacts on our lives. To improve our understanding, we need better and more coordinated ocean observation, monitoring, modeling, and forecasting capabilities. Existing ocean and coastal science infrastructure in the United States is inadequate to understand and predict natural variability and human impacts on physical, ecological, and biogeochemical processes, and to provide the data and forecasts required to guide public and private investment. Systems for observing global, national, and regional ocean processes are rudimentary and incomplete, and efforts to modernize critical U.S. satellite systems have endured repeated setbacks. Determination of observing system priorities—including for regional coastal systems—should build on *Science for an Ocean Nation: An Update of the Ocean Research Priorities Plan* and the pending report from the 2012 Integrated Ocean Observing System Summit.

The continued shortage of fiscal support for these activities is a major challenge. Adequate funding and support for ocean science and research programs—as well as for the construction and operation of ships, buoys, cabled observatories, planes, underwater observing and monitoring hardware, and other research infrastructure—are necessary for science-based decision making. The good news is that technologies to conduct the necessary observations and research are ever-improving and becoming more cost-effective. Federal investment is needed to take advantage of these technologies for the benefit of our ocean ecosystems and economies.

RECOMMENDATION 1.3

The Administration and Congress should provide increased funding and support for ocean science infrastructure and research programs needed to

understand the complex and dynamic relationship between the oceans and climate and improve our forecasting capabilities.

This includes actions that would:

- Incorporate a variety of data, including socioeconomic information, to inform better management decisions.
- Support the development of a comprehensive ocean and coastal observing system as a key component of the larger Earth observing system.

Address ocean acidification

The issue of ocean acidification exemplifies the pressing need for information about the relationship between our climate and our oceans. Scientific studies show that higher levels of carbon dioxide in the atmosphere are resulting in increased absorption of that carbon dioxide by the oceans. This is leading ocean waters to become more acidic. Many categories of marine life struggle to survive in these more acidic waters, including many species that are fundamental to the ecosystems that support all life in the oceans.

This phenomenon seriously impacts coastal communities and economies and has the potential to cause ever-more serious problems in the future. In the Pacific Northwest, ocean acidification is already killing young oysters by the billions, threatening the shellfish industry. In December 2011, in response to this problem, the state of Washington convened a Blue Ribbon Panel on Ocean Acidification. The panel identified gaps in scientific knowledge and recommended coastal ecosystem management strategies intended to mitigate immediate threats and improve industry resilience. While ocean acidification is a global problem needing global solutions, this state-led effort identified local factors that are exacerbating the problem and directly affecting both marine health and local industries. In 2012, Washington Governor Christine Gregoire issued an executive order to implement actions recommended by the panel and, in early 2013, the state passed legislation to further implement the recommendations of the panel. Several other states on the West and East Coasts are following Washington's lead to address ocean acidification. Finally, discussions are underway among several states to consider formal agreements to work together on a regional basis to address this problem. Coastal states may be leading on this serious issue, but it demands a strong federal response as well.

RECOMMENDATION 1.4

The Administration and Congress should take actions to measure and assess the emerging threat of ocean acidification, better understand the complex dynamics causing and exacerbating it, work to determine its impact, and develop mechanisms to address the problem.



**The United States lags behind other nations
in offshore wind development.**

Action 2: Promote ocean renewable energy development and reinvest in our oceans

The Obama Administration supports an “all of the above” approach to energy independence that includes many forms of energy exploration and production, both on land and offshore. Our oceans and coasts—with their vast reserves of oil and gas and promising opportunities for wind, wave, tidal, and thermal energy production—are a significant current and potential source of domestic energy, both traditional and renewable. In the long run, the United States needs a comprehensive national energy policy that includes ocean-based energy resources. In the meantime, the development, exploration, and siting of ocean energy sources will continue to be important for meeting U.S. energy needs and should be carried out in a safe, environmentally responsible, and economically balanced manner.

Accelerate ocean renewable energy development

The Administration's principles guiding domestic energy development include creating clean energy jobs and technologies, making America more energy independent, and reducing carbon emissions. Renewable energy—particularly offshore wind energy—has great potential for pursuing expansion. Such expansion would create jobs, increase U.S. energy security, and strengthen our nation's competitiveness. Renewable energy also presents exciting opportunities for pursuing innovative partnerships, streamlining the regulatory process, and using integrated ecosystem management tools to effectively, safely, and efficiently develop these new technologies. Unfortunately, the small size of many current renewable energy projects means they do not benefit from economies of scale, making it difficult for them to compete with more-established energy sources. A national investment in these technologies through adequate and stable financial and tax incentives would help realize their potential and position us as leaders in an emerging global industry. In addition, to make renewable energy accessible to consumers, upgrades to supporting infrastructure (e.g., power lines, grid networks, and transmission stations) are needed.

As renewable ocean energy matures, becomes more prevalent, and demands more offshore space, managers must remain cognizant of existing ocean uses. While numerous states have expressed an interest in offshore renewable energy development, only a few have legislatively adopted policies for conducting holistic, statewide planning in order to manage that development while protecting existing uses and the jobs associated with them. Opportunities for renewable energy should serve as a catalyst for states and regions to pursue integrated management approaches that incorporate multiple objectives and integrate multiple users. Massachusetts, Rhode Island, and Oregon, for instance, have undergone comprehensive planning efforts to help them make informed decisions about offshore energy development in state and federal waters. Such planning and policy efforts are valuable tools for helping states identify potential conflicts and tradeoffs with existing uses and determine their ocean use priorities. In addition to state efforts, management at a regional level is also ideally suited for these types of issues, which often revolve around competing demands on space.

RECOMMENDATION 2.1

The Administration and Congress should accelerate ocean renewable energy development by providing adequate and stable financial and tax incentives, and a fair and efficient regulatory structure. As part of providing this structure, they should support state- and region-led efforts to coordinate data and decision making, engage stakeholders, and bring competing interests together. This can facilitate efficient siting of projects that meet our energy objectives while protecting existing uses of the ocean and important ecosystem features.

Establish an ocean investment fund

Addressing the critical shortage of funds for ocean and coastal science and management activities through a dedicated, off-budget stream of revenue is essential. A promising way to do this is through an ocean investment fund, such as the National Endowment for the Oceans. The Endowment was proposed in the 112th Congress, reintroduced in the 113th, and recently added in modified form to the Water Resources Development Act during floor consideration in the Senate. It calls for a division of the endowment's funds between coastal states and a national grant program that would make funds available to a variety of public and private institutions on a competitive basis. The basic mission of the endowment is to support restoration and protection of marine habitats, acquisition of baseline data for scientific research, ocean observing systems, critical coastal public infrastructures, planning and resource management, and a broad range of other uses to better understand and protect our oceans, Great Lakes, and coasts.



At issue are the possible sources of revenues for a dedicated ocean investment fund. Currently, energy leases on the Outer Continental Shelf (OCS) provide vast ocean-related revenues. A reasonable portion of these funds could be used to capitalize an ocean investment fund. The nation's offshore energy program is currently fully engaged in a leasing schedule through the middle of 2017, mostly in the Gulf of Mexico, and is regulating and monitoring thousands of leases in various stages of exploration, development, and production activities across the OCS. Oil and gas leases are an important source of revenue for the government. Total 2012 OCS federal revenues were slightly more than \$6.8 billion, consistent with annual trends in recent years. Of that amount, about \$1.1 billion is allocated to specific funds, and the remaining revenues, well over \$5.5 billion, are deposited in the U.S. Treasury. Yet funding for most federal ocean agencies and many state and local programs that manage coastal and ocean resources has been level or reduced in recent years. It is critical that the United States maintains programs that support fundamental research, routine observations, and ongoing management of ocean and coastal resources. A dedicated ocean investment fund would enable ocean priorities, such as bolstering a comprehensive ocean observing system, to move forward.

RECOMMENDATION 2.2

Congress should establish a dedicated ocean investment fund to invest a modest portion of the revenues from offshore commercial energy activities to provide the financial support for national, regional, state, and local programs working to understand and manage our ocean and coastal resources. If Congress pursues legislation to share revenue from offshore energy leasing and development, a reasonable portion of these funds should be dedicated to improving ocean and coastal science, management, and ecosystem restoration at the federal, regional, state, and local levels.

AN INVESTMENT FUND FOR THE OCEANS

Every time fish products are imported to the United States, companies pay a small tax that funds a big program: the Saltonstall-Kennedy Grant Program, which funds research and development projects that help keep America's fisheries sustainable and our fishing communities strong. A similar small tax on motorboat fuel and certain types of fishing equipment helps the Sport Fish Restoration and Boating Trust Fund to support state boating safety programs.

These programs and others like them work. That's why the United States should create an investment fund for the oceans that would increase funding for ocean management, science, and research.

New taxes wouldn't be necessary. Billions of dollars a year are paid by companies with leases for offshore energy projects, and just a modest portion of these revenues could seed the fund. If investments in ocean energy projects are increased over the next few years, this funding stream would also increase.

Part of the investment fund could be devoted to conserving, sustaining, and managing the oceans, coasts, and shores of the Great Lakes. This could support development of new methods for adapting to climate change and keeping our coastal communities strong and resilient to hazards. It also could support regional ocean partnerships that work together on shared state and regional priorities. For example, the states of Washington, Oregon, and California could partner to address ocean acidification and protect the sea creatures that play a critical role in the food chain that supports our fisheries and coastal communities.

The fund's remaining dollars could be allocated annually by the National Ocean Council to federal ocean agencies for critical needs that their current budgets won't meet. The Office of Management and Budget could analyze the Council's allocations and integrate them into the President's Budget. These dollars would help agencies carry out key activities from the National Ocean Policy Implementation Plan when they face shortfalls. These funds could also reverse the serious gap in scientific research and integrated planning and management, by supporting projects like an enhanced national Arctic research program.

Congress should move forward in creating an ocean investment fund. As these trust funds have shown, a smart investment in our oceans can have a very positive impact on our nation.



Bustling coastal areas must balance multiple demands on resources and space to support thriving economies.

Action 3: Support state and regional ocean and coastal priorities

Coastal states and regions play an essential role in fostering durable ocean policy solutions that lead to both healthier ocean ecosystems and stronger coastal economies. In fact, states and regions often play a leadership role, developing and implementing innovative approaches that can serve as models for national efforts. It is widely understood that decision-making approaches led by states and regions, with strong federal support in the form of technical resources and engaged commitment, are more effective and durable than those driven exclusively from the federal level.

The fact is that decades of insufficiently coordinated, sector-based management of ocean and coastal resources at the federal level have taken their toll on the health of our ocean and coastal ecosystems. Fortunately, federal agencies are now working to create a more efficient, integrated approach to management by setting up mechanisms to increase coordination and reduce duplication of federal agency policies and activities. This should lead to increased transparency, support predictable and efficient decision making, and be undertaken in close collaboration with regional, state, and tribal entities. Such a coordinated approach will help to reduce conflicts, redundancies, and inefficiencies that waste time and money, and will also result in better resource management. Federal agencies must also make efforts to think beyond their specific missions and collaborate across jurisdictional boundaries to address the priorities of each region in which they operate in ways that are appropriate for states in the region.

Support multi-state regional ocean partnerships

For many years, multi-state regional ocean partnerships in the Great Lakes, Gulf of Mexico, Mid-Atlantic, Northeast, South Atlantic, West Coast, Caribbean, and Pacific Island regions have worked to address ocean issues across state boundaries, with some focusing on planning for the expansion and development of new and traditional ocean activities. These regional partnerships often work closely with federal agencies and tribal governments to improve communication and coordination, leading to enhanced scientific understanding and improved resource management.

In short, multi-state, regional efforts are essential to successful ocean management, because ocean ecosystems—including the marine species and ocean currents that help define their boundaries—span jurisdictional lines. At the same time, these state and regional efforts are under-resourced. For them to continue to succeed, additional federal funding and technical assistance are necessary. In addition, federal support of state and regional efforts should include high-level participation by all relevant agencies, a willingness to think creatively to leverage resources, and a dedication to improving the way decisions are made.

INCREASED COLLABORATION THROUGH REGIONAL OCEAN PARTNERSHIPS IS HELPING TO:

- Facilitate increased stakeholder engagement in setting ocean-related goals that meet multiple interests and identifying mechanisms to achieve those goals. This is being done in recognition of the fact that people who live and work near and on our oceans have the greatest stake in sound ocean management, best understand the unique challenges and opportunities in those places, and know the right stakeholders to engage in crafting durable and effective solutions to problems.
- Make ocean information more accessible to stakeholders and seek their input in generating and vetting data. This includes collecting socioeconomic data from ocean users, taking into account traditional knowledge, and using that information to inform decision making.
- Fill key data gaps in cost-effective ways and foster coordinated ocean science and research across multiple states, federal agencies, tribes, and stakeholders.
- Reduce duplication of effort by government entities and find efficiencies. This can lead to leveraging limited resources across states, federal agencies, and tribes, and with private partners.
- Harness public and private funding and technical support for state and regional priorities. Priorities that have benefited from increased collaboration have included:
 - Identifying and protecting marine habitat and removing marine debris.
 - Better forecasting and preparing for sea-level rise.
 - Planning for the development of ocean renewable energy while protecting existing uses, such as commercial and recreational fishing, shipping, and military uses, among others.
 - Addressing regional-scale water-quality concerns.
 - Tackling the vexing issue of ocean acidification.



RECOMMENDATION 3.1

The Administration and Congress should strongly support multi-state regional ocean partnerships that coordinate data and decision making across jurisdictions, make progress on shared priorities, and more effectively engage ocean and coastal stakeholders. This will allow states to build on current progress toward improved decision making about coastal and ocean resources and priority economic drivers.

Federal support should include:

- Increased funding for multi-state regional ocean partnerships.
- Engaged participation from federal agencies to assist states, regions, and tribes in advancing their ocean and coastal priorities.
- Commitment of technical resources from federal agencies to support state- and region-led planning for the development and expansion of new and traditional ocean activities in a way that protects existing ocean uses and ocean ecosystem health.



Changing conditions in the Arctic offer new commercial opportunities and a multitude of management challenges.

Action 4: Improve Arctic research and management

The United States is a maritime nation, and we are also an Arctic nation. The Arctic region—the Bering, Beaufort, and Chukchi seas and the Arctic Ocean—is an emerging frontier, vital to our national interests, economy, and security. Conditions in the Arctic are changing faster than anywhere else on Earth. One important change underway is the retreat of Arctic sea ice as a result of climate change. As a result, companies are beginning to explore for oil and gas and will probably develop the OCS off of Alaska and the remote, icy waters of other Arctic nations in the coming years. This likelihood, along with the expansion of commercial fishing, shipping, naval activity, tourism, and other activities, raises numerous questions about how to best manage the Arctic's ocean and its coasts. Better emergency preparedness procedures and improved infrastructure will be required, including better spill response and recovery strategies and equipment tailored to extreme Arctic conditions.

As activities increase and environmental conditions continue to change, the impacts on Arctic species will be unpredictable; they will likely include shifts in migration patterns, fluctuations in abundance, and changing habitats. Environmental changes will affect—and in many places are already affecting—human communities in the Arctic in the form of reduced food security, more severe storm damage, coastal erosion, greater local environmental threats from commercial activities, and, in some cases, displacement of entire communities. The challenges facing Arctic communities and Arctic marine ecosystems require immediate and urgent action.

Show leadership and implement the National Strategy for the Arctic Region

The United States must work domestically and through multilateral efforts to address the challenges facing the Arctic, especially with regard to changing ecosystems, national security, commerce, fisheries, and energy. The Administration is starting to devote necessary attention to this region and the critical challenges it faces. In May 2013, the White House released the [National Strategy for the Arctic Region](#), which must now be fully implemented with robust stakeholder input.

In 2015, the United States will assume chairmanship of the Arctic Council, an important international responsibility and an opportunity to take a leadership role on Arctic issues that affect our national interest. In the meantime, the Administration should engage with other Arctic nations to develop and implement international rules, standards, and systems for marine environmental protection in the face of potential industrial and shipping activities in the Arctic Ocean. International standards should be based on shared information and best practices with coordinated strategies on monitoring and enforcement.

RECOMMENDATION 4.1

Congress and the Administration should fully implement the National Strategy for the Arctic Region and ensure opportunities for public input and engagement. They should also diligently prepare for U.S. leadership of the Arctic Council and lay the groundwork now for establishing a sound international management framework that meets multiple interests while protecting a sensitive and rapidly changing ecosystem.

Invest in ocean observing systems and infrastructure

In order to effectively manage the rapidly changing Arctic, we must enhance our scientific understanding of Arctic marine ecosystems, including how fish stocks are migrating and trends in weather and climate patterns that could have significant economic, environmental, and human health impacts. We must also gather the critical baseline information needed to evaluate and guide economic development in the region and allow us to prepare for contingencies. This will require significant investment in research infrastructure and monitoring programs.

At present, many public, private, and nonprofit entities are funding and conducting Arctic oil spill research. Given declining federal budgets, more needs to be done to avoid duplication, coordinate research, and pursue public/private partnerships and joint funding opportunities. For instance, the Administration should further partner with the oil and gas industry, other commercial interests, nongovernmental organizations, state governments, local and tribal communities, and other interested stakeholders to assess challenges, identify research priorities, and develop coordinated solutions. The engagement of local communities and Alaska Natives is especially critical to ensure that traditional knowledge is integrated into research programs and decision making. The Administration should also engage in international agreements with other Arctic nations to share data, information, and research platforms. The recently released [Interagency Arctic Research Plan: FY2013-2017](#) provides a strong foundation to guide public and private investment in Arctic science. However, greater support must be provided to implement the Arctic observation network so that we can take advantage of the opportunity to properly manage human activities in this sensitive ecosystem before it is too late.

RECOMMENDATION 4.2

Congress and the Administration should implement a coordinated scientific research program in the U.S. Arctic that is supported by a strong ocean observing system and adequate infrastructure—including vessels, polar class icebreakers, and fundamental platforms for research. The program should prioritize gaps in current research and connect research and management needs, such as oil spill response and recovery.

A research program should include:

- Baseline assessments of environmental conditions.
- Risk assessments for various activities.
- Socioeconomic and traditional knowledge sources.

Improve federal agency capacity and collaboration

The Administration and Congress need to increase funding for federal agency activities in the region, particularly U.S. Coast Guard and NOAA operations. The Coast Guard is responsible for monitoring activities and responding to emergencies—including search-and-rescue missions and oil spill disasters—and is not adequately equipped to do so at this time. Funds are needed to maintain the aging fleet of Coast Guard aircraft and vessels, including existing icebreakers, as well as to acquire new ones, and to develop the infrastructure along the northern Alaskan coastline that is needed to sustain even basic shore-based operations. NOAA also provides a range of important services in the Arctic, including weather and sea ice prediction, mapping and charting, stewardship and management of living marine resources, and scientific research essential to increasing our understanding of this dynamic and ecologically sensitive region.

The Administration should also support and encourage federal agencies in the region—including the U.S. Department of Defense and the National Science Foundation—to improve collaboration with state and local governments, Alaskan Native governments, and industry to foster better coordination and data-sharing on oil spill planning, preparedness, and response.

RECOMMENDATION 4.3

The Administration and Congress should increase funding for federal agencies operating in the region, particularly the U.S. Coast Guard and NOAA. They should also urge federal agencies—including the U.S. Department of Defense and the National Science Foundation—to better collaborate with state and local governments, Alaskan Native governments, and industry to improve the ability of commercial entities to operate safely in the region and ensure effective response and recovery in the event of a natural or human-caused disaster. This includes improving coordination

and data-sharing on oil spill planning, preparedness, and response, vessel tracking, and search-and-rescue, as well as investment in new icebreakers, aircraft, and shore-based infrastructure.

Accede to the Law of the Sea Convention

Finally, the United States must accede to the Law of the Sea Convention. This Convention is a comprehensive international accord to which 155 nations and the European Union belong. It establishes overarching rules governing all uses of the world's oceans and their resources, including the Arctic. As the sole industrialized nation not party to the Convention, due simply to inaction in the U.S. Senate on the matter, the United States remains sidelined in current dialogues about access to and management of Arctic resources. Recent data on the melting of the Arctic ice cap has both businesses and governments involved in a multi-billion-dollar rush to secure rights to access natural resources and energy sources in areas immediately adjacent to their respective exclusive economic zones. For the United States, this new frontier could support a variety of economic activities and new jobs in the coming decades, including traditional and alternative energy exploration and development, shipping through the Arctic, and sustainable development of new fisheries.

Accession to the Convention would secure sovereign rights over extensive marine areas, promote international commerce, protect our national security interests, and further the conservation of ocean resources. It would also give the United States a seat at the table and a leadership role in international negotiations regarding the implementation, interpretation, and enforcement of the Convention. As Canada, Denmark, Russia, and other nations assert territorial claims to Arctic resources, the United States must be in a position to protect its sovereign rights and prevent unsubstantiated claims by other nations by acceding to the Convention. Because the provisions of the Convention help protect vital U.S. economic interests and provide the stability crucial for investment in global maritime enterprises, there is overwhelming bipartisan support for accession from a broad and diverse range of interests. All major U.S. ocean industries, including offshore energy, maritime transportation and commerce, fishing, and shipbuilding, support accession to the Convention, as does the U.S. Chamber of Commerce. Environmental and scientific research organizations also strongly support the Convention.

RECOMMENDATION 4.4

The U.S. Senate should act expeditiously to provide its advice and consent to accede to the Law of the Sea Convention.

ASSESSMENT OF PROGRESS IN 2014

Over the course of the coming year, the Joint Ocean Commission Initiative will track progress in advancing the recommendations presented in this report. In 2014, the Joint Initiative will publicly assess progress on these recommendations, similar to U.S. Ocean Policy Report Cards issued by the Joint Initiative in previous years, and identify specific areas of achievement and deficiency. Implementation of the recommendations will secure the future of our nation's ocean ecosystems, and the critical resources they provide, and ensure that they will be abundant and able to support America's ocean, coastal, and Great Lakes economies and the jobs and communities on which our nation depends.





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