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Testimony of
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Making a Case for a New Approach to Gulf of Mexico Restoration

Senator Graham, Administrator Reilly and distinguished members of the Commission, thank you for inviting the Nature Conservancy to share our views on environmental restoration across the Gulf of Mexico ecosystem.

The Nature Conservancy is an international, non-profit conservation organization working around the world to protect ecologically important lands and waters for nature and people. Our mission is to preserve the plants, animals and natural communities that represent the diversity of life on Earth by protecting the lands and waters they need to survive. We are best known for our science-based, collaborative approach to developing creative solutions to conservation challenges. Our on-the-ground conservation work is carried out in all 50 states and more than 30 foreign countries and is supported by approximately one million individual members. We have helped conserve nearly 15 million acres of land in the United States and Canada and more than 102 million acres with local partner organizations globally.

The Gulf of Mexico is one of the few places on Earth where the health of the environment is so obviously linked to the health of the economy and community on such a vast scale. And its citizens know this. In a new soon-to-be-released poll conducted by a coalition of Gulf-wide environmental, business, and social justice groups, it is clear that coastal restoration is a high priority for the region – nearly three-fourths of Gulf Coast voters say they would be more likely to vote for federal legislators if they support funding for Gulf Coast restoration. In the Gulf, clean and healthy marshes, beaches, and bays mean abundant fisheries, protection from storm surge and hurricanes for towns and businesses, and a vibrant tourism economy. Indeed, the economy of the United States *as a whole* is tightly linked to the energy, shipping and other industries that operate in the region.

However, decades of damage affect the Gulf's ability to support these needs and the needs of wildlife. The effects of the Gulf oil spill have now added urgency to a problem that was already ingrained, and directly impacts the lives and livelihoods of 24 million Americans from Florida to Texas who rely on a healthy and resilient Gulf of Mexico.

Over the last 90 years, the Gulf and the natural systems that support it have changed dramatically. Coastal prairies and forests have been developed and fragmented, dredging and overharvesting are harming shellfish beds, and coral reefs and sea grass beds have been severely damaged. Rivers have been altered by levees and dams that diminish the flow of fresh water and sediments needed for healthy coastal wetlands. This is especially evident in coastal Louisiana where 40 percent of the nation's coastal wetlands are found—wetlands that are disappearing at rates higher than anywhere else in North America. As a result, across the Gulf millions of acres of marshland and other habitats have been lost, fisheries and shellfish stocks have lost productivity, dozens of species have become threatened or endangered, and the resilience of these systems in the face of natural or man-made disturbances has been compromised.

The *Deepwater Horizon* spill presented another significant threat to the Gulf of Mexico region. The full effects of the spill on the environment and economy of the Gulf Coast remain unclear. What is clear is that this accident will have continued and potentially long-term impacts in the region. Thousands of acres of state and federal waters were closed to commercial and recreational fishing, and once pristine beaches were empty for much of the summer. These events sent a rippling effect through the Gulf Coast economy – shucking houses have shut down, coastal tourism industries have suffered, and even charitable giving has declined.

The oil spill provided an acute demonstration of how much money and how many jobs depend on a healthy, functioning Gulf of Mexico. While we aren't certain what the interruption to fishing and tourism income will total, we can look at past years to estimate this impact. In 2008, 3.2 million anglers spent $12.5 billion on recreational fishing, total sales impacts from the commercial fishing sector were at $10.5 billion, and 7.5 million birdwatchers spent almost $7 billion on their hobby. A study by Oxford Economics estimated that the oil spill could affect tourism for three years at a cost of $22.7 billion in lost revenues.

Regardless of the economic impacts caused by the spill, the region remains economically vulnerable to the slower, but longer lasting disappearance of the Gulf Coast ecosystems. Restoration can help to preserve the economic base and make it more resilient to future disasters like hurricanes and sea level rise. The spill, coupled with decades of degradation, make it increasingly vital to continue, expand and accelerate Gulf-wide conservation and restoration work as quickly and at as broad a scale as possible.

As an organization committed to protection and restoration of our Earth's greatest natural places and dedicated to science and partnerships, The Nature Conservancy believes that we must embrace a bold vision for conservation and set ambitious goals for long-term restoration.

The Nature Conservancy recommends that by 2020, restoration agencies and private partners from across the Gulf restore one million acres of a variety of habitats indigenous

to the Gulf of Mexico. These restored habitats will enhance fisheries production, estuarine water quality, coastal protection, recreational and natural resource values, as well as the Gulf's unique biodiversity. This will significantly improve the resilience of the Gulf Coast in the face of manmade and natural disasters and could also contribute to local economies as Gulf Coast residents are employed in restoration industries.

Past Efforts towards Finding a Solution

Historically, a number of federal, state, and local programs and authorities have addressed the decades-long impacts of coastal degradation while striving for the sustainability of the natural, cultural and economic resources of the Gulf region. Some of the larger efforts include the Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA or "Breaux Act") created to restore and protect coastal wetlands primarily in Louisiana; the Gulf of Mexico Program, an EPA-administered, non-regulatory program that seeks to facilitate collaboration among federal and state agencies in order to conserve and protect the health of the Gulf; Task Force Hope, a federally-led organization charged with building the hurricane protection system in New Orleans and Southeast Louisiana and planning for long-term coastal restoration and hurricane damage reduction; the Gulf of Mexico Hypoxia Task Force, the federally-led organization established to reduce and control hypoxia in the Gulf; and the Gulf of Mexico Alliance, the state-led partnership intent on significantly increasing regional collaboration to enhance the ecological and economic health of the Gulf of Mexico. In addition, there are seven EPA-administered National Estuary Programs throughout the Gulf Coast. These programs are designed to improve the water quality and habitats of estuaries of national importance.

Recently, President Obama issued Executive Order 13457 establishing a national policy for the stewardship of the ocean, our coasts, and the Great Lakes, and a National Ocean Council to respond to fragmented ocean management. The E.O. initiates a framework for effective Coastal Marine Spatial Planning (CMSP), a regional planning process that recognizes the interconnectedness of our coastal and marine resources to the continuing prosperity of our economy and communities, and the necessity and benefits attached to coordinated management.

In response to the *Deepwater Horizon* spill, the President charged the Secretary of the Navy to address the decades-long impacts to the Gulf of Mexico through the development of a long-term recovery plan for the people and habitats of the Gulf. Additionally, restoration activities determined by the Natural Resource Damage Assessment process will be most effective at mitigating damages if they are targeted at restoring processes necessary for sustaining and building coastal habitats (e.g., diversions of freshwater and sediment from the Mississippi River into its historic floodplain).

Despite myriad past efforts focused on specific Gulf issues (hypoxia, wetlands conservation, hurricane protection), no one entity is charged with ultimate accountability for Gulf-wide restoration. To change the future and avoid the obstacles of the past, we all

– state and federal governments, NGOs, oil and gas companies, navigation, tourism, local communities, and others who value the Gulf – must come together around a truly comprehensive plan to revitalize and restore it. The nation must commit to an ambitious agenda for restoring the Gulf of Mexico and its adjacent habitats. We must set bold, achievable goals for restoration of these critical habitats which are the source of economic health for so many of its people and this nation.

A New and Bold Approach

A new approach does not mean starting over. Rather, a new approach should build on efforts that are working at the local, state and regional level; however, a new, more accountable system of prioritization, coordination and leadership is needed to truly advance Gulf restoration. A new approach for the Gulf requires four key elements: 1) leadership anchored in collaboration; 2) a comprehensive restoration strategy with clear goals; 3) conflict resolution; and 4) dedicated funding.

Leadership: A Framework for Collaboration

No single entity or agency at any level of government can successfully resolve the complex and pressing issues facing the Gulf of Mexico. A collaborative partnership is required that incorporates, where possible, existing organizations and clear, high-level accountability.

TNC recommends that a "Gulf of Mexico Restoration Task Force" be established. The primary roles of the Restoration Task Force would be to create the agenda and coordinate the implementation of the many environmental restoration and protection programs being carried out by federal agencies, state and local governments, and organizations in the private sector in the Gulf of Mexico. The Restoration Task Force should also serve as the regional planning body under E.O. 13457 "Stewardship of the Ocean, Our Coasts, and the Great Lakes."

Membership should consist of the Secretaries of Interior, Army, Commerce, Agriculture, Homeland Security, Housing and Urban Development; the Administrator of the Environmental Protection Agency; the Chair of the Council on Environmental Quality; the Director of the Gulf of Mexico Program, the Governors of Texas, Louisiana, Mississippi, Alabama, and Florida; and two elected officials of local government from Gulf Coast states to be appointed by the President on a rotating basis. The Restoration Task Force should meet at least twice a year.

The chair of the Restoration Task Force should be a person appointed by the President and confirmed by the Senate who will give full attention to Gulf of Mexico restoration. Ideally, the chair would be a nationally recognized leader from the Gulf of Mexico region. The chair would serve in the Executive Office of the President and coordinate habitat and environmental protection and restoration programs implemented in the Gulf

of Mexico by federal agencies, state and local governments, and entities from the private sector to maximize the combined contribution of programs to the biological productivity and ecosystem functions in the Gulf of Mexico.

The chair would prepare an annual budget proposal, to be included in the President's budget submission to Congress, of the projects and programs to be implemented by each federal agency under the Restoration Plan (detailed in next section). The Restoration Task Force should be supported by two other bodies: 1) a Science Advisory Committee; and 2) a Working Group. To enhance the integration of science and management, the Science Advisory Committee should include both senior managers and scientists appointed by the Task Force. It will be primarily tasked with continually documenting and supporting the programmatic-level science and other research needed to update and implement the Gulf Restoration Plan. One of the first tasks assigned to the Science Advisory Committee should be the development of a science coordination plan and recommendations for priority research areas.

The Working Group should be led by and include, but not be limited to, the members of the Gulf of Mexico Alliance, and be charged to assist the Restoration Task Force in its efforts to coordinate the development of consistent policies, strategies, plans, programs, projects, activities, and priorities addressing the restoration, preservation, and protection of the Gulf of Mexico ecosystem, as well as respond to specific priority activities assigned by the Restoration Task Force. The EPA Gulf of Mexico Program should support the activities of the Working Group and coordinate with the Task Force in carrying out the responsibilities of the Working Group. The ecological data used in a restoration planning effort needs to be complemented by data on environmental, economic, and demographic trends in order to provide a context for strategic planning.

A Comprehensive Gulf of Mexico Restoration Strategy

It is time to look beyond slowing the damage to the Gulf. We must reverse it and restore the Gulf's resilience by restoring the sources of its strength, health and productivity. It will not be easy or quick, but it can and must be done. To reverse the tide of degradation and restore the Gulf, a comprehensive Gulf of Mexico restoration plan must consist of key actions including restoration of key bays and estuaries and an investment in scientific research and long-term monitoring.

Restore Key Bays and Estuaries

The bounty of the Gulf of Mexico begins in its bays and estuaries. These are the natural foundations of the entire ecosystem and contain the marshes, seagrasses, fish, mangroves, coral reefs, and other plants and animals that make the Gulf one of the most important and productive places on Earth.

A comprehensive restoration strategy should include protection and restoration of:

- Freshwater inflows to estuaries and coastal waters providing freshwater and sediments to rebuild marshes and wetlands;
- Estuarine and coastal habitats including but not limited to oyster reefs, coral reefs, sea grass beds, tidal marshes, tidal flats, and other wetlands, and barrier beaches that provide habitat for migratory birds, nurseries for fisheries, and protection from coastal hazards like storm surge;
- Coastal and marine biodiversity including populations of fish, shellfish, mammals, reptiles and birds that provide ecological and economic values; and
- Water quality and natural salinity regimes in estuarine and coastal areas of the Gulf of Mexico that help maintain healthy and productive commercial and recreational fisheries.

Science shows us where it is possible to start right now. Experts can point to key bays, estuaries and rivers that contribute to the Gulf's health. Investments in even a fraction of these places can contribute to immediate recovery and demonstrate effective largescale restoration that focuses on restoring habitat and reestablishing natural systems. A number of organizations from nonprofit, public and private sectors have been working across the Gulf for many years in these places and others around the Gulf to restore marshes, seagrasses, mangroves, coral reefs and oysters[1].

Investment in Science and Long-term Monitoring
The comprehensive restoration strategy must also include a long-term environmental monitoring and research program to ensure that all of the restoration planned and completed adds up to meaningful improvements in ecological functioning at a Gulf-wide scale. Long-term monitoring should be conducted to improve understanding of the overall physical, chemical and biological conditions of the Gulf of Mexico ecosystem and how restoration is having an impact on these conditions.

The Nature Conservancy recommends that the chair of the Restoration Task Force publish a comprehensive plan, utilizing existing plans where possible, for long-term restoration of the Gulf of Mexico after receiving public comment on a draft plan. The plan should be updated every five years in the same manner.

The Restoration Task Force should consider all information from the long-term environmental monitoring and research program in updating the plan and assure that the plan adapts to new information. Elements of the plan should indicate how funds projected to be available to the Restoration Task Force for the succeeding ten years will be allocated across restoration, monitoring, and research strategies. The plan should include a list of specific projects to be funded and carried out during the subsequent three years. Each project listed should be consistent with the strategies identified in the plan and the environmental benefits of the project should be clearly established and economically

[1] See attachments for map and five large-scale ecosystem restoration case studies.

defensible. The Restoration Task Force should update the three-year list of projects annually.

The Restoration Task Force should base all decisions and prioritization of projects on the best available science and recommendations from the Science Advisory Committee and utilize adaptive management principles. Highest priority should be given to projects that will make the greatest contribution in restoring biological productivity and ecosystem functions in the Gulf of Mexico region, without regard to geographic location. Moreover, in selecting projects under the plan, the Restoration Task Force should give priority to large-scale projects that have not been or are not likely to be funded under other environmental restoration and protection programs authorized for areas in the Gulf of Mexico. To take advantage of existing efforts and to expedite the process, the initial plan should give high priority to funding projects authorized by title VII of the Water Resources Development Act of 2007.

Management of Conflict

Identifying areas of conflict and developing a way forward is vital to progress. Engaging all stakeholders – including landowners, environmental interests, oil and gas companies, navigation, and the fishing and tourism industries – with facilitation can help refine the problem, identify acceptable solutions, and increase collaboration. In the event the conflict is not resolved and consensus does not exist, decisions of the Restoration Task Force should be taken by a majority of the members by vote.

Funding

Sustained, dedicated funding is critical to the long-term conservation of the Gulf. It would be impossible to conduct restoration at the scale required without funding certainty from year to year. Compared to other Great Water Body programs, the Gulf of Mexico has received very little direct federal funding. TNC recommends appropriated funding consistent with the budget prepared by the Restoration Task Force. In addition, potential opportunities for restoration have emerged as the result of the Deepwater Horizon spill. If established, funding from these sources should be used to supplement funding for projects and programs recommended by the Restoration Task Force. These include:

- *Establishment of a Gulf Coast and Estuaries Fund.* In the soon-to-be released poll mentioned early in this testimony, over three-fourths of respondents favor creation of a separate fund for the Gulf region and the Mississippi River Delta that includes penalty payments from BP for violating the Clean Water Act and the Oil Pollution Act. Most of the Clean Water Act fines from the Deepwater Horizon Spill should be used to jump start a Gulf Coast and Estuaries Fund. (The balance of fine money should be used to establish the Gulf of Mexico Endowment described below). Even though spill-related funding may be significant, it will prove insufficient in providing the sustained funding required to achieve system-

wide restoration in the Gulf. For this reason, TNC advocates dedicating a share of the increase in per barrel oil and gas taxes currently under consideration by Congress to long-term, Gulf-wide restoration. Previously estimated costs for large scale Gulf restoration have been roughly approximated at $600 million a year for 30+ years, which could be provided by dedicating $.10 of the proposed increase, should it pass. This dedicated funding will help conserve a resource that provides the nation with a significant portion of our domestic energy supply, along with the natural, cultural and other economic resources upon which we depend.

- *Use of NRDA funding for comprehensive restoration***.** The expenditure of Natural Resource Damage Assessment (NRDA) funds should be informed by the comprehensive plan for Gulf of Mexico restoration that is created by the Restoration Task Force recommended herein. Only then will it be possible to couple spill damage compensation for the loss of habitat with long-term, ecosystem-wide restoration for both ecological and human benefits.

- *Creation of an endowment for the Gulf of Mexico from Clean Water Act (CWA) fine money to ensure payments made by BP are not a one-time investment, but instead a sustained source of funding for Gulf recovery***.** TNC proposes that up to $1.5 billion of the CWA fine money be used to create an endowment for the Gulf of Mexico to be administered by an agency designated by the President consistent with the plans and activities of the Restoration Task Force. The endowment would maintain the fine money in an account in perpetuity and distribute interest earnings on an annual basis as grants for Gulf Coast recovery and other critical activities. The grants could go to state agencies, local governments, non-profit organizations, and universities on a competitive basis. As a sustained source of funding, this initiative would ensure that the people of the Gulf region are fully involved in its recovery and have a source of funding for environmental and related economic restoration that extends beyond the immediate cleanup of the spill.

  These funds could be placed in a dedicated account managed by the Treasury Department. Each year the Secretary of the Treasury would report on the amount of funds immediately available for expenditure and projected to be available over the next ten years. The comprehensive Gulf Restoration Plan mentioned previously would guide expenditure of these and other Gulf restoration funds to the most strategic and effective locations for people and the environment.

Reinvestment of Funding from Mineral Resource Development

The principle that offshore revenues should be reinvested is not new, but today more than ever we stand witness to the environmental pressure that coastal development creates on our natural resources. To restore, conserve and make these resources more resilient, The Nature Conservancy proposes establishing an Ocean Trust Fund and full funding of the Land and Water Conservation Fund, which by statute is already supported by Outer Continental Shelf revenues.

Ocean Trust Fund

The Nature Conservancy recommends using proceeds from offshore oil and gas leasing to create a $1 billion per year Ocean Trust Fund that would support long-term marine and coastal stewardship. Such a fund could sustain a permanent system of marine governance in the Gulf of Mexico and elsewhere that would bring together federal and state agencies to administer research, monitoring, and improved resource management. It would also provide funding for marine conservation and restoration projects. A few key principles for the fund include:

- *Initial Emphasis on the Gulf.* An Ocean Trust Fund might give initial emphasis to Gulf of Mexico restoration as a pilot project for development of a nationwide Ocean Trust Fund program.

- *Use of Funds.* Offshore revenues should be reinvested in activities that provide lasting habitat and biodiversity value. Potential uses include: acquisition and restoration of coastal areas; science, data collection, mapping and spatial planning; mitigation of damage to fish, wildlife or natural resources; planning assistance and administrative costs; and implementation of federally-approved marine conservation management plans.

- *Funds to Coastal States.* Fifty percent of Americans live near the coasts. This development combined with offshore activities significantly impacts the marine resources which must bear the day-to-day operations, as well as catastrophic events. A significant share of any Ocean Trust Fund must be vested with all coastal and Great Lakes states. Funds should be split between competitive processes and formula allocations.

- *Incentives for New Drilling.* Any formula allocation for revenue sharing should not in itself create incentives for new oil and gas production.

Land and Water Conservation Fund

The Land and Water Conservation Fund (LWCF) was authorized in 1965. It is the principal source of federal funding to acquire land for the U.S. Fish and Wildlife Service,

National Park Service and U.S. Forest Service, each of which have significant holdings adjacent to and benefiting the Gulf. The LWCF also supports state-based conservation investments throughout the nation.
There are numerous National Wildlife Refuges and other Federal, state and local public lands around the Gulf and its estuaries where LWCF funding could acquire inholdings and well planned additions including the freshwater and tidal wetlands so essential to the health of the Gulf.

The Nature Conservancy supports full and dedicated funding of the Land and Water Conservation Fund at $900 million annually; the LWCF would continue to be derived from offshore oil and gas leasing revenue, but this income would be dedicated to the LWCF.

Acting Decisively to Put in Place Multiple Funding Sources

There are now pending in Congress measures to support Gulf of Mexico restoration through bills that would allocate Clean Water Act fines to long term Gulf restoration, create an Ocean Trust Fund and provide full and dedicated funding for the Land and Water Conservation Fund. Legislation accomplishing all of this has already passed the House in the form of H.R. 3534. The Senate could, similarly, bring establishment of a Gulf Coast and Estuaries Fund, creation of an Ocean Trust Fund and full funding of the Land and Water Conservation Fund together in landmark legislation that would not only assure restoration of the Gulf of Mexico but would over time assure conservation and restoration of other estuaries and other exceptional places all across America. We urge this Congress to act on this agenda before adjourning for the year.

Funding Existing Authorized Projects and Programs

In addition, increased funding for components of existing authorizations or programs could contribute to the long-term health of the Gulf. Examples include:

- Water Resource Development Act
- Mississippi Coastal Improvements Plan (MsCIP)
- National Estuary Programs
- Coastal Impact Assistance Program

Partnership Opportunities

Another opportunity for funding is investment by the businesses, industries, and communities that depend upon a healthy Gulf environment. Consideration should be given for the development of opportunities for non-governmental partners to contribute to the sustainability of their region.

The Future of the Gulf Depends on Us

Restoration is, like politics, the art of the possible. Restoring the Gulf of Mexico, then, is not about turning back time, it's about seeing a new way forward. Over the last 100 years, human activities both in the Gulf and in upstream reaches, have altered the natural infrastructure of the Gulf—the marshes and the oyster reefs, the seagrass beds, the mangroves, the barrier islands and the nearshore environments. As these places have been degraded, the overall health of the Gulf has suffered. The suffering shows itself in Dead Zones in the Gulf, in declining fisheries and lost water quality, in disappearing marshes and dying reefs.

In more technical terms, the Gulf has lost much of its resilience—it is no longer robust and strong. It has lost the ability to absorb damage and recover its health and now has many underlying health problems that magnify the damage caused by natural and manmade disasters. The oil spill in the Gulf is adding profound insult to what was already dire injury.

The effects of the BP spill on the communities and ecosystems of the Gulf are tragic and still unfolding. But the crisis of the spill is bringing renewed focus on the need for a new future for the Gulf of Mexico, one that begins to restore and reverse decades of degradation and decline that have affected the region. The people and the ecosystems of the Gulf are incredibly resilient, but they need our help. We owe it to them to do everything we can to help restore this valuable ecosystem for the benefit of the Gulf of Mexico region and the nation.

This is a moment of decision for the Gulf of Mexico region and the nation. Without decisive action now, it is certain that we will continue to witness the decline of one of the world's most productive seas, an erosion of the economy of the region and nation, and increased and profound damages to human communities.

Attachments

Five Gulf case studies to illustrate large-scale restoration

The Mississippi River Delta, Louisiana: The Delta of the Mississippi River, is a 3-million-acre ecosystem containing extraordinary biodiversity. It provides habitat for an array of plant and animal species, including 79 that are rare, threatened or endangered. It contains 25 percent of the world's population of Piping Plover, 75 percent of Mississippi and the Central Flyway's wintering waterfowl. From the Delta comes 34 percent of the nation's oysters and one-third of its total fisheries.

In 1928, levees were constructed along the Mississippi River to prevent flooding and facilitate navigation, ending the natural process of spring flooding that provides regular replenishment of sediments and freshwater to the coast of Louisiana. In addition, thousands of miles of canals were dug to support oil and gas exploration, allowing saltwater deep into the Delta. These events, coupled with natural and man-induced subsidence, has resulted in the rapid loss of marshes and the disappearance of Louisiana's coast at the rate of 25 square miles per year.

The most rapidly disappearing place on the continent, the Mississippi River Delta has also been hardest hit by the oil spill. But the region was struggling even before oil came ashore and made an already urgent situation more challenging.

Returning fresh water and sediment to the Delta has long been recognized as key to restoring coastal wetlands and sustaining this ecosystem. It is also an important step in helping the estuary recover from the losses caused by the spill. Restoring key habitats, such as oyster reefs, will directly benefit the species — both recreational and commercial — that are important to the economy of the region.

Mississippi Sound, Mississippi: The Mississippi Sound represents the entire Mississippi coastal area, and its health is critical to everything that happens on the Coast. The Sound is set off from the open Gulf by the pristine barrier islands of Gulf Islands National Seashore, creating a large and highly productive brackish water estuary, home to important commercial and sport fisheries. All Mississippi coastal rivers and bays empty into the Sound—each of these bays are home to large expanses of productive salt marshes.

Like all North American coastal areas, Mississippi has undergone rapid population growth, with the accompanying conversion of marshes, savannahs and coastal forests to commercial and residential use. Habitat loss and degradation has reduced marsh areas, damaged oyster reefs and seagrass habitats and exposed Coast residents to increasing risk

from tropical weather. The newest challenge to the Mississippi Coast and all of its neighbors is the massive Deepwater Horizon oil spill.

Habitats critical to Mississippi Sound—seagrasses, coastal marshes, oyster reefs—have already been identified and work is ongoing. The restoration of the Mississippi Sound is the key to environmental, economic, and aesthetic future of the Gulf Coast.

Apalachicola Bay, Florida: Located along Florida's Panhandle, the Apalachicola Bay is the ultimate destination of many of the South's most important rivers—rivers that supply drinking water, waste management, hydropower, irrigation, and navigation to one of the fastest growing regions of the nation. Given the high demand for the water that eventually flows into the Apalachicola River, maintaining fresh water flow into the bay is an ongoing challenge.

But without this water, the Apalachicola River basin would lose much of its biodiversity and Apalachicola Bay would lose its productive oyster reefs, reefs that supply approximately 10 percent of the nation's entire oyster harvest each year. However, most of the reefs in Apalachicola Bay are worked and harvested within a short timeframe. Natural oyster reef structures are nearly completely gone.

This is significant because natural oyster reefs are not flat, but rather have significant three-dimensional structure provide important habitat for numerous species of fish and invertebrates. While it is important to maintain the vibrant oyster fishery in Apalachicola Bay, the resilience of the fishery as well as the health of the entire Bay would benefit greatly from expanded restoration and protection of core natural oyster reefs.

Matagorda/San Antonio Bays, Texas: The marshes, coastal prairies and islands of the Matagorda and San Antonio Bays lie at the end of the Central Flyway, one of four primary routes for migratory birds in North America. And while the Gulf of Mexico is a very large system, its parts are connected—by ocean currents, by the annual migration of marine life and birds, and by the economic, cultural and historical relationships among its communities. And, increasingly, its parts are linked by common problems. The natural and human communities around the Gulf face rising threats that include polluted water, over-fishing, and loss of natural habitat, including marshes, oyster reefs and seagrass.

The seagrasses that grow in the shallows of coastal bays and estuaries are the foundation of life in the Gulf of Mexico. Underwater meadows of shoalgrass, turtlegrass, manateegrass and other seagrasses protect water quality and clarity, and serve as a nursery for the shrimp, shellfish and the sport fish prized by anglers, including redfish, drum and sea trout. Yet, conservationists, anglers and concerned citizens are becoming increasingly aware that seagrasses are in decline.

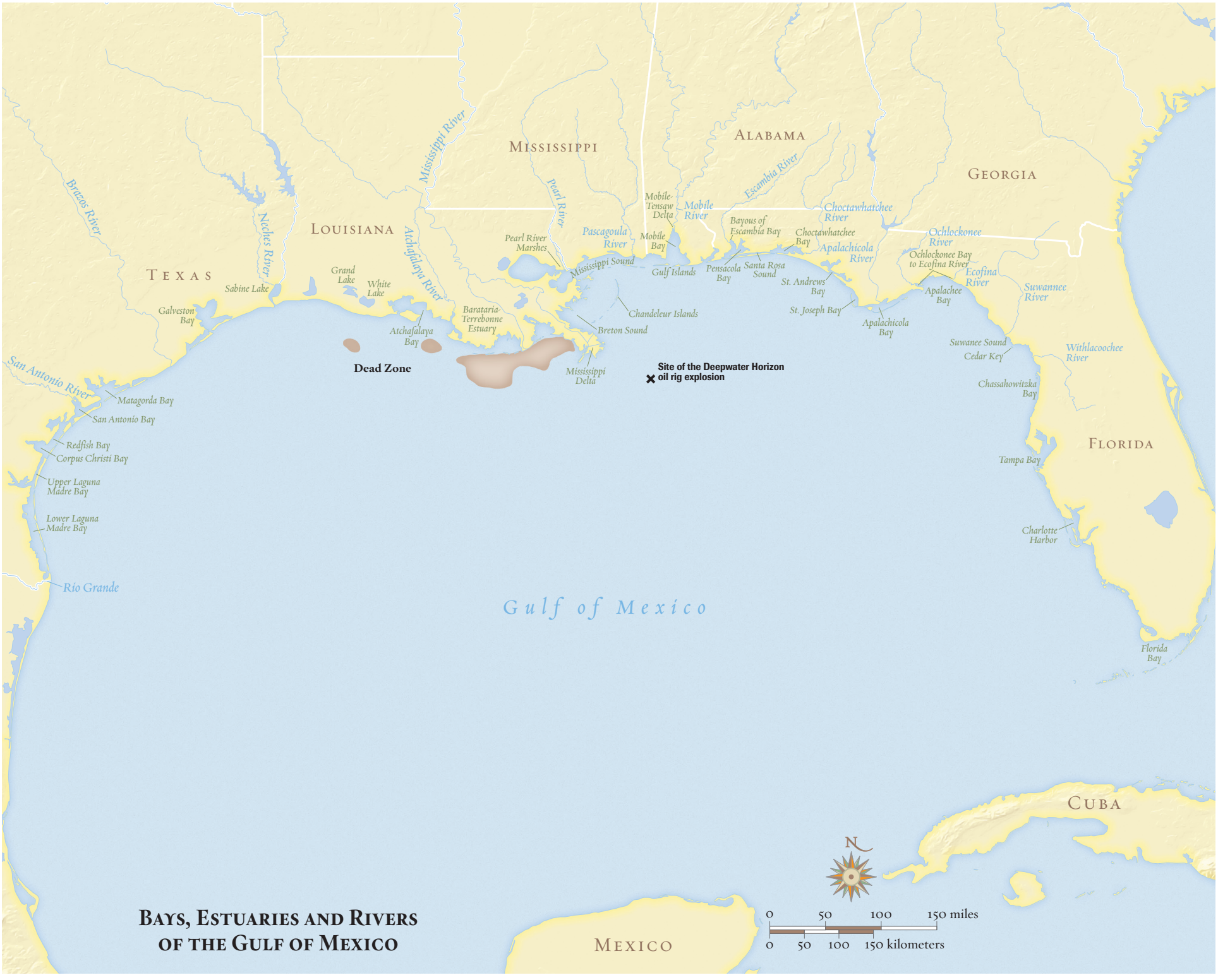
Over the past 20 years, studies show that shoalgrass, for example, has decreased by 60 percent. At the same time, underwater areas that lack vegetation entirely have increased

by nearly 300 percent. The declining quantity and quality of these seagrass habitats now represent a major threat to shrimp, fish and other species depending on them. Ducks and other birds, sea turtles and crabs need seagrass to thrive.

Mobile Bay, Alabama: Adding a distinctive notch to Alabama's Gulf Coast shoreline, Mobile Bay—with an average depth of 10 feet—is one of the shallowest bays of its kind. It is also the fourth largest estuary in the United States and plays an important role in sheltering and nurturing many species, including the finfish, shrimp and oysters, that are vital to Gulf communities.

Over the last decades, Mobile Bay has seen significant loss of marsh, seagrass and oyster reef habitats through dredge-and-fill activities, sea walls and jetties, erosion, storm events and other causes, thus offering one of the largest potential areas for outright restoration, replacement and enhancement of these lost habitats on the Northern Gulf Coast.

This type of habitat replacement/restoration has long-term benefits in helping to improve on-going problems in Mobile Bay, from stormwater to the "free-floating bottom sediment" issue to shoreline erosion. While the marsh component is critical to rebuilding habitat for quick fish stock recovery, it will also aid in stormwater remediation, including nitrogen capture. This effort will also make the coastline more resilient to any impacts from hurricanes, oil spills or climate change.



Bays, Estuaries and Rivers of the Gulf of Mexico