

# Beyond the Horizon

## *A Vision for the Gulf of Mexico on the Second Anniversary of the Deepwater Horizon Oil Spill*

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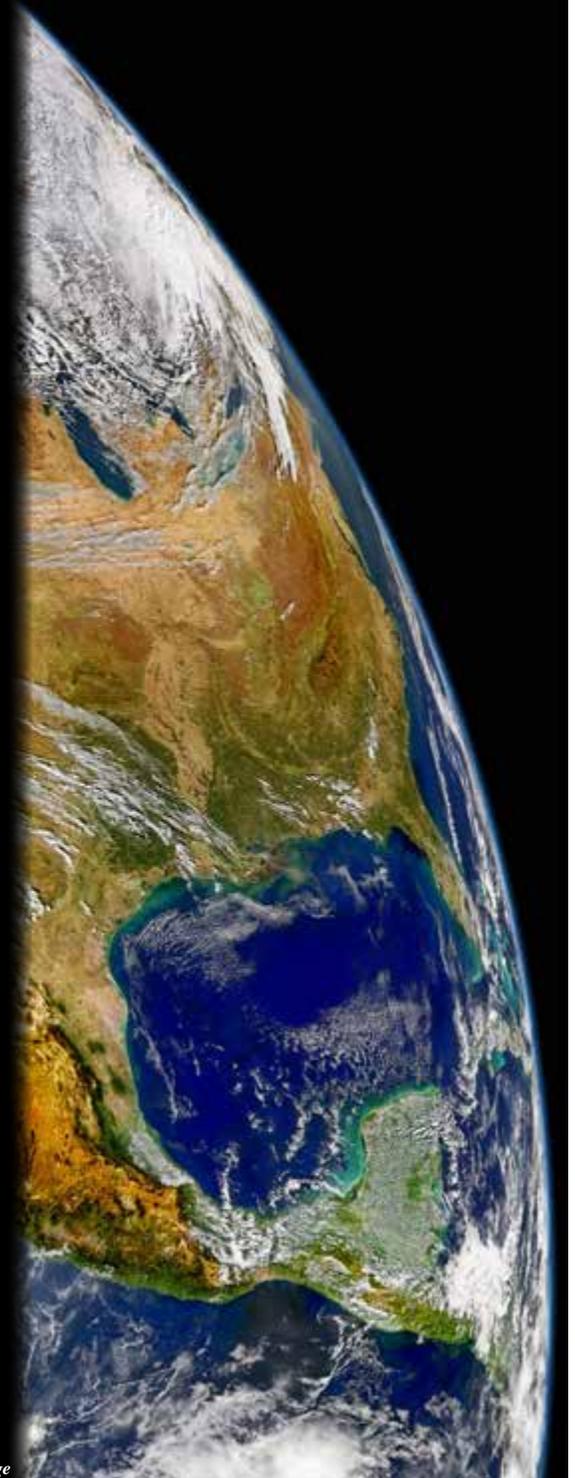
The tragedy of the Deepwater Horizon accident on April 20, 2010, and the environmental disaster it produced, created a national awareness of what is at stake in the Gulf of Mexico. If we are complacent in how we use the Gulf environment and its resources, we are destined to “clean-up” our mistakes instead of prevent them. We have seen how lives, economies and ecosystems in the Gulf can be disconnected by these mistakes.

On this second anniversary of the Deepwater Horizon spill, we need to begin a new relationship with the Gulf of Mexico: a relationship that uses the Gulf’s important products, which are essential to our economic prosperity, and a relationship that protects important places, which are essential to the Gulf’s ecological integrity. These two goals are not incompatible. One only needs to look to the two places in the Gulf where ecological stewardship and compatible use co-exist.

The Flower Garden Banks National Marine Sanctuary, 100 miles off Galveston Texas, and the Florida Keys National Marine Sanctuary are biological gems amid some of the most heavily used ocean spaces in America. These sanctuaries embrace a public stewardship process that ensures their natural resources remain accessible, while their biological wonders and ecological integrity are monitored and protected.

The strength of this integrity and the vitality of species protected by sanctuaries not only depend on the conditions within sanctuary boundaries, but also on the conditions at other biologically significant sites that ring the Gulf. This network of places and the diverse populations of seafloor and oceanic species they attract, are united by the biological products they exchange, and by the flow of currents and species that move between them.

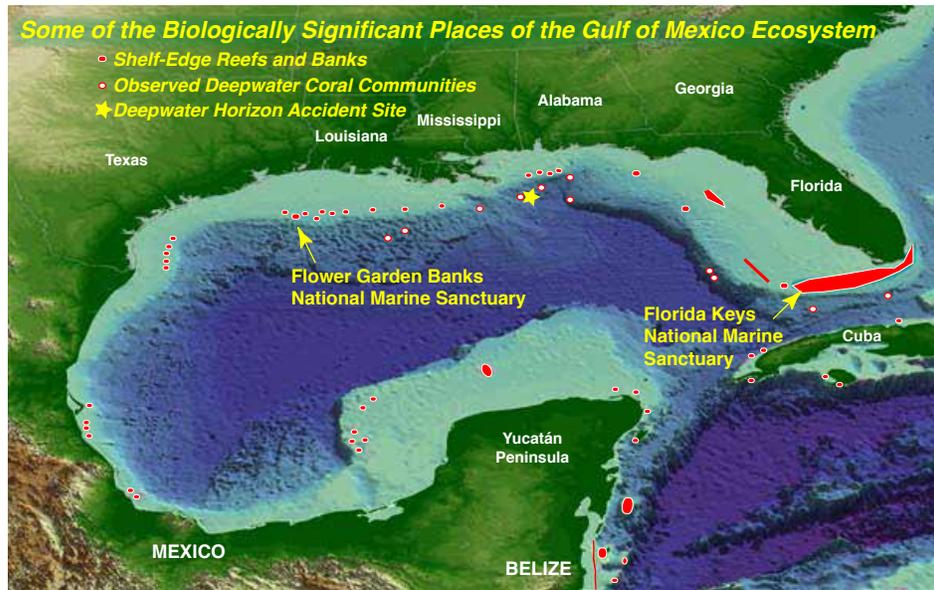
Using our public sanctuary process at these other special places would strengthen the Gulf of Mexico. Such a network of sanctuaries would function in unison to restore depleted species and damaged communities, as well as sustain the resources within our existing sanctuaries. It would also create a more resilient Gulf of Mexico ecosystem, better prepared to withstanding future impacts and environmental changes. Creating a sanctuary network is a way to give back to the Gulf what we have taken away.



NASA Image

# What is the Gulf of Mexico?

The Gulf of Mexico is a deep basin of 1.5 million km<sup>2</sup> surrounded by a broad, shallow shelf (about 50% of its area) which is physically, biologically and socially connected to the Caribbean Sea, the U.S. East Coast and the Atlantic by the Loop Current, the Florida Current and the Gulf Stream, and by a vital network of commerce within and between the nations of region. Arguably, we know more about the ecology and biological diversity of the Gulf than any other comparable body of water on the planet. Thanks to the exploration research of the oil industry and the many universities and research institutions ringing the Gulf, there is a rich scientific background on the geological history and underlying structure, general ecological setting, and the biological diversity of the region. The existing marine protected areas of the Gulf are topographic high points that rise above the sediment-dominated coastal shelf and, like islands everywhere, are refuges for biological diversity which can replenish other areas after significant natural or human disturbances.

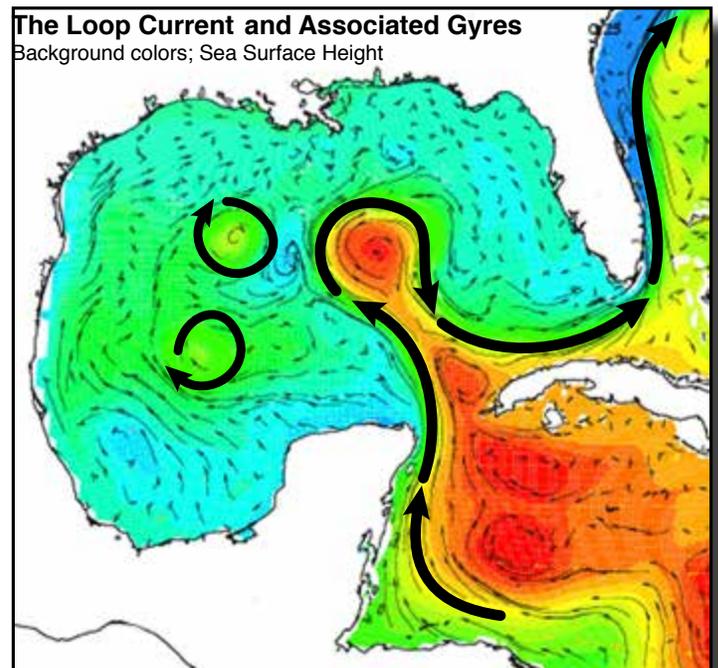


The Gulf of Mexico is the most industrialized body of water in the world, supporting nationally prominent industries, commercial fisheries, shipping lanes and ports. The Gulf has the largest oil and natural gas fields in the world supported by huge refining and transport capacity along the coast and in major ports. The offshore oil industry is particularly important with 4000 producing offshore oil platforms; many thousands more capped wells and abandoned rigs; thousands of miles of oil and gas pipelines; chronic minor spills and natural seeps. Exploitation of proven deep-water petroleum reserves is just beginning.

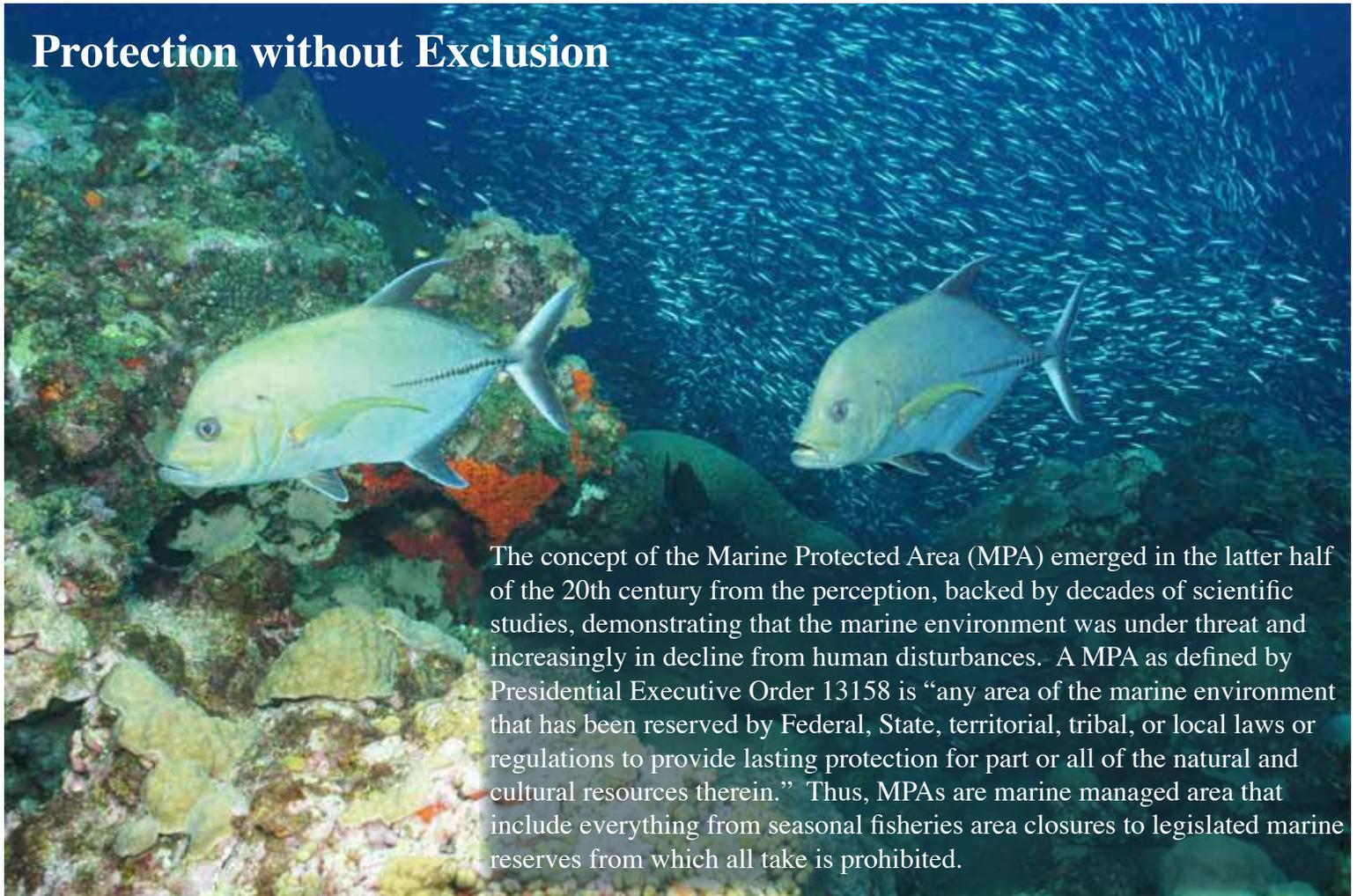
The Mississippi River, draining more than 50% of the contiguous U.S. land area, delivers sediments and pollutants to the Gulf that originate in the Nation's Grain Belt. The "Dead Zone," an annual development of low oxygen waters in the northern Gulf that result from the decomposition of phytoplankton blooms fed by excessive amounts of nutrients off the mouth of the Mississippi, has increased in size and impact. The Loop Current carries the signature of these pollutants to the coral reefs of the Florida Keys and north along the east coast.

The West Florida Shelf and the relatively wide shallow rim of the Gulf support important commercial and recreational fisheries for snapper, grouper, and sharks, which have a major economic and ecological impact. Florida is particularly economically dependent upon tourism, clean beaches, recreational fishing and boating and unpolluted waters.

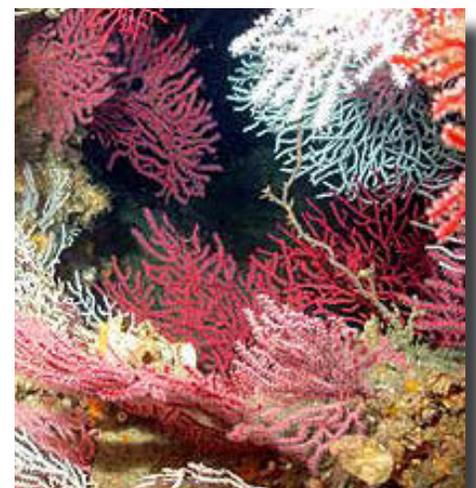
The Gulf of Mexico is resistant to the consequences of these uses and remains a key natural ocean habitat supporting the seasonal spawning of whale sharks, bluefin tuna and mating sperm whales. It has large and diverse coastal wetlands, unique deep-sea brine lakes and methane ice fields, great biodiversity and the largest recreational fishing and boating industry in the US. While the Gulf is demonstrably a resilient large marine ecosystem, its future health will depend upon careful stewardship of its resources. This will include ecosystem-based approaches to governance, networks of marine protected areas and delineating critical areas for both commerce and conservation.



# Protection without Exclusion



The concept of the Marine Protected Area (MPA) emerged in the latter half of the 20th century from the perception, backed by decades of scientific studies, demonstrating that the marine environment was under threat and increasingly in decline from human disturbances. A MPA as defined by Presidential Executive Order 13158 is “any area of the marine environment that has been reserved by Federal, State, territorial, tribal, or local laws or regulations to provide lasting protection for part or all of the natural and cultural resources therein.” Thus, MPAs are marine managed area that include everything from seasonal fisheries area closures to legislated marine reserves from which all take is prohibited.



Clockwise from left:  
iStockphoto, GP Schmahl,  
L. Horne, L. Horne

MPAs include protections, but they are also multiple use areas where governance often works to sustain human use of marine resources. Unlike the current fragmented, overlapping, and redundant management of marine areas by sectoral interests, such as fishing, minerals interests and recreation, MPA governance encompasses the regional marine environment, the multiplicity of human uses, and the ecosystem services that it provides to human society. The current accepted and most effective model for MPAs in the U.S. is NOAA’s Office of National Marine Sanctuaries.

# Out of Adversity, Comes Opportunity



We need to begin a new dialogue about the Gulf of Mexico in order to strengthen its economy, ecology and culture. The purpose of this discussion should be twofold:

- Build a consensus for establishing ecologically significant protections for key GOM sites to ensure that they continue to provide important services to our society.
- Identify mechanisms that allow comprehensive approaches to management as well as significant involvement of the public in decision-making.

The Deepwater Horizon oil spill provided a focal point of crisis for the Gulf of Mexico ecosystem. The extent of the known environmental damage was unprecedented and the extent of the unknown damage, particularly in deep waters offshore, prompted a major social dialog, which encompassed the economic value of all the Gulf's resources and the need for adequate protection and governance to insure continued use of these resources.

In May 2011, a year after the spill, representatives from scientific organizations, government, the oil industry, commercial fishing and water recreation held a workshop at Mote Marine Laboratory in Sarasota, FL ([www.mote.org/beyondhorizon](http://www.mote.org/beyondhorizon)). The meeting was designed to build on the long-standing concept to create a network of MPAs in the Gulf. It highlighted differences and concerns among the diverse group of stakeholders in attendance, but it also showed that there is a remarkable congruity in

perspective: we are interconnected biophysically, socially and economically by the Gulf of Mexico, and the Gulf needs ecosystem-wide management that takes into account the integration of humans and nature. Central to this perspective is a proposal to link a number of marine managed areas – some already established, some new, and all vetted -- into an ecologically and socially sustainable network.

Just as the Deepwater Horizon disaster provided a focal point for consideration of the future of the Gulf of Mexico, it may also provide funding in unprecedented amounts for research, restoration and mitigation. Projected over the next 10 years, we will greatly extend our understanding of the scope of the oil spill, our basic understanding of the structure and functioning of the Gulf's ecosystem, and the human economic and social dependencies on the resources of the region.

While damage from the Deepwater Horizon oil spill may be relatively easily assessed and restoration measures implemented in the coastal regions of the Gulf, assessment of offshore damage is difficult to impossible. Beyond the Horizon provides a viable way to mitigate these damages with a network of marine protected areas, covering the full range of the biodiversity of the Gulf. It will also provide replicate reference areas for adaptive management, allowing long-term studies to assess and mitigate future changes caused by human and natural disturbances.

# A Consensus Framework for Beyond the Horizon

The Beyond the Horizon Workshop in May 2011 came to a consensus on a framework for developing a network of MPAs in the Gulf of Mexico:

***Perform Risk Assessment to establish need.*** Much is known about the natural resources of the Gulf of Mexico and about human needs for resources and services from the Gulf's ecosystem. But much is unknown. We are in an era of rapid and uncertain environmental change through relentlessly expanding human populations and global climate change. Risk analysis is a way of dealing with this uncertainty by understanding what we are attempting to manage, by assigning action priorities on the basis of a quantitative assessment of those risks and by building public confidence in the actions.

***Support additional peer-reviewed science of connectivity.*** The connectivity of all parts of the Gulf of Mexico by ocean currents is well-known in broad outline. For example, we know and can predict the annual incursions of the Loop Current into the Gulf and the formation of persistent gyres, which travel west to the Texas coast. Similarly, we can also predict the intrusion of episodic floodwaters from the Mississippi River as far as the Florida Keys and beyond. But if Beyond the Horizon is to function as a network, the fine details of the physical and ecological connections between its individual units must be better understood.

***Establish use criteria prior to creating a MPA:*** The large human population surrounding the Gulf with its myriad of uses of the Gulf's resources mandates that the social sciences and public participation play a major role in the implementation of Beyond the Horizon. We humans are political animals who don't like sudden involuntary changes in our lives, tend to distrust government and treasure our freedoms and our constitutional rights to make our points of view heard. Economics is the underlying driver of our society. Marine governance, conservation, and sustainability must be shown to serve our needs for economic opportunity. Most of the nation's existing marine sanctuaries were established by local people who recognized the importance of their marine resources and saw a problem that could be addressed by the governance framework of a MPA. Beyond the Horizon will use this experience in the considerably larger and more complex negotiations that must accompany the formation of a Gulf-wide MPA network.

***Develop a plan for regulation and enforcement:*** MPAs require regulations and effective enforcement. A corollary to our healthy distrust of government is that rules and regulations will not apply equally to all. One of the key outcomes of public involvement in every step of the process, from the creation of an MPA to its inclusion in a network, is that people have a vested interest in the success of the MPA. Self-governance will be the key to enforcement.

***Develop a performance monitoring plan:*** Another corollary to good governance is that people want to know if it is working. This approach is broadly known as Adaptive Management where the actions of management are routinely assessed, measured and changed in response to knowledge gained. Beyond the Horizon will require a monitoring and assessment plan with periodic reporting requirements and milestones. As has been the case in most of the national marine sanctuaries, public involvement in assessment and monitoring has helped to gain acceptance and greatly assisted the outreach that has been essential to their success.



A manta ray is seen swimming in clear blue water above a coral reef. The manta ray is dark with white markings on its underside. The coral reef below is diverse and colorful, with various types of coral and small fish visible. The overall scene is a vibrant underwater ecosystem.

## A Commitment to the Gulf of Mexico

Beyond the Horizon represents a bold commitment to the Gulf of Mexico and to the Nation – a Nation whose economy depends on the abundant natural resources in the Gulf of Mexico. It is a flagship for engaging the communities, scientists and users of the Gulf of Mexico in an essential effort to identify and protect ecologically important places in the beautiful waters of the Gulf. This action will assist the restoration of the Gulf's marine environment following the devastating oil spill in 2010 and enhance its resiliency to future disturbances. Most significantly, this effort is a collaborative process that involves the oil and gas industry, commercial and recreational fishermen, and the communities of the Gulf Coast to enhance the economic benefits and protection of the Gulf's vital natural systems.

This commitment is one that all the people of the United States can rally behind. It will preserve our connections to the Gulf that are so essential to our history, culture and economy, and at the same time ensure that the Gulf environment and ecosystem are adequately compensated for all they have given us, and with care, will continue to give to us in the future.

The scientists, managers and educators of NOAA's Office of National Marine Sanctuaries have dedicated themselves to the stewardship of our existing system of national treasures that are our National Marine Sanctuaries. We need to harness the talent and experience of all who know the Gulf and entrust NOAA and its partners to use that expertise to bring new areas into the Gulf's network of sanctuary sites. These sanctuary designations will be designed to allow activities that will not harm sensitive and important biological places and will protect their ecological role in maintaining the Gulf ecosystem.

Beyond the Horizon isn't just about sending money to the Gulf of Mexico. Compensation for what was the most tragic event in our relationship with the Gulf of Mexico will help restore the Gulf's environment and communities. But the Gulf of Mexico deserves more than money. The Gulf deserves our pride -- pride in what it has given to us and pride in what we can give back.