



November 18, 2010

Senator Bob Graham, Co-Chair
Mr. William K. Reilly, Co-Chair
National Commission on the BP Deepwater Horizon Oil Spill
and Offshore Drilling
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Washington, DC 20005

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Dear Chairman Graham and Chairman Reilly:

As the National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling begins to finalize its recommendations to guard against and mitigate the impact of oil spills associated with offshore drilling, we respectfully request that the Commission examines the potential role of marine protected areas (MPAs) such as national marine sanctuaries in future management of human activities offshore. MPAs have been conclusively shown to improve the health of ocean ecosystems both within and beyond their boundaries. The establishment of properly designed and managed MPAs, including national marine sanctuaries, will help prevent offshore drilling in sensitive areas – and oil spills associated with such activity – while simultaneously building the capacity of ecosystems and natural populations to recover from oil spills and other disturbances.

It is critical that the Commission provides a comprehensive suite of recommendations in response to the BP Deepwater Horizon oil spill. Although much of the Commission's work has involved examination of the causes of the BP Deepwater Horizon blowout and necessary revisions to offshore drilling management practices, we strongly encourage you to include in your final report recommendations that concern protection of the nation's ecologically and economically essential marine ecosystems. First and foremost, we believe it is vital that the Commission recommend repeal of the moratorium on new national marine sanctuaries as an option to guard against and mitigate the impact of oil spills associated with offshore drilling. Our resource managers deserve a full menu of ocean management options, including national marine sanctuaries, as the nation works to restore the Gulf of Mexico and manage ocean ecosystems across the country.

Our comments seek to explain the reasons why MPAs, including national marine sanctuaries, are appropriate tools for guarding against and mitigating the impact of oil spills associated with offshore drilling. In addition, we propose creation of a Gulf of Mexico MPA network as compensatory mitigation for ecological

damages caused by the BP Deepwater Horizon oil spill. An executive summary of our recommendations is presented immediately below, and a more detailed rationale can be found on the following pages.

We appreciate your attention to issues affecting national marine sanctuaries and your ongoing efforts to improve the health of our ocean.

Sincerely,



Jason M Patlis
President & CEO

cc: Commissioner Beinecke
Commissioner Boesch
Commissioner Garcia
Commissioner Murray
Commissioner Ulmer
Christopher Smith, Designated Federal Officer
Richard Lazarus, Executive Director, National Commission on the BP Deepwater
Horizon Oil Spill and Offshore Drilling
Eric Roston, Senior Analyst, National Commission on the BP Deepwater Horizon Oil
Spill and Offshore Drilling

Executive Summary

Sanctuaries Guard Against Oil Spills Associated with Offshore Drilling

National marine sanctuaries in the United States' Exclusive Economic Zone (EEZ) would help guard against future oil spills associated with offshore drilling in nationally significant areas by reducing the area available for oil and gas exploration and production and in turn reducing the risk of oil spills that can result from such activities.

Sanctuaries Mitigate the Impact of Oil Spills Associated with Offshore Drilling

The current scientific consensus reflects an understanding that MPAs can mitigate the impact of oil spills associated with offshore drilling by fostering ecological resilience – the ability of natural systems to withstand and recover from disturbances like oil spills – at a variety of spatial scales.

Improvements to Sanctuary Laws and Regulations Applicable to Offshore Drilling Would Protect the Environment and Natural Resources

It is vital that the moratorium on new national marine sanctuaries be removed as the Commission develops options to mitigate the impact of oil spills associated with offshore drilling – our resource managers deserve a full menu of ocean management options as the nation works to restore the Gulf of Mexico and manage ocean ecosystems across the country.

The primary purpose of the National Marine Sanctuaries Act must be clarified to promote the long-term protection of living and non-living marine and coastal resources, which is essential to fostering resilience and enabling ecosystems to recover from the impact of oil spills associated with offshore drilling.

A portion of government revenues generated from the exploitation of ocean resources, along with fines and penalties levied to compensate for the destruction or degradation of marine resources, should be invested in ocean ecosystems to foster resilience and mitigate the impact of oil spills associated with offshore drilling.

Sanctuaries Offer a Broad Range of Restoration Approaches and Options

MPAs, including national marine sanctuaries, in sensitive areas could function as mitigation banks to offset the loss or degradation of marine resources as part of a compensatory mitigation policy for oil spills associated with offshore drilling.

Part of the Solution: A Gulf of Mexico Network

The BP Deepwater Horizon oil spill has underscored the need for a fully funded program of proactive mitigation designed to buffer the impact of oil spills associated with offshore drilling before they occur.

A network of MPAs comprising hard-bottom habitats connected by the Loop Current, including national marine sanctuaries, will mitigate the impact of the BP Deepwater Horizon oil spill, and potential future oil spills associated with offshore drilling, by fostering resilience in the Gulf of Mexico's marine ecosystems and enabling them to better withstand and recover from disturbance over time.

Guarding Against Oil Spills Associated with Offshore Drilling

National marine sanctuaries guard against oil spills associated with offshore drilling within nationally significant areas by simply eliminating the possibility that exploration, development, or production activities could occur within their boundaries.

In the broadest sense, MPAs are areas of the ocean in which certain human activities are limited or prevented.¹ Currently, the National Marine Sanctuary System prohibits by regulation exploring for, developing, or producing oil, gas, or hydrocarbons within the boundaries of eight national marine sanctuaries and one marine national monument.² The five sanctuaries for which this regulation is not in place likely lack recoverable hydrocarbons beneath the seafloor, indicating that offshore drilling has been subject to regulatory prohibition only in sanctuaries where such activity is feasible and could threaten protected marine resources. With few specific, grandfathered exceptions in and adjacent to Southern California's Channel Islands and the Gulf of Mexico's Flower Garden Banks, national marine sanctuaries are areas where offshore drilling does not occur.³

Looking forward, any national marine sanctuaries designated in the Gulf of Mexico would likely carry the same prohibition on offshore drilling that applies to the two existing sanctuaries there (Flower Garden Banks and Florida Keys). National marine sanctuaries located anywhere in the United States' EEZ would guard against future oil spills associated with offshore drilling by reducing the area available for oil and gas exploration and production and in turn reducing the risk of oil spills that can result from such activities.

National marine sanctuaries' authority and responsibility to regulate pollution and vessel discharges also provides a means by which they guard against oil spills. Significantly, eight of the 14 sites that comprise the National Marine Sanctuary System have regulations that prohibit discharging or depositing, from beyond the boundaries of the sanctuaries, any materials that subsequently enter the sanctuaries and injure protected resources therein.⁴ In effect, these regulations provide a buffer zone around the sanctuaries where the discharge of harmful pollutants such as oil, hydraulic fluid, and other materials necessary for offshore drilling activity is prohibited.

When combined, the sanctuary regulations discussed above provide a means of guarding against oil spills both inside and outside sanctuary boundaries. The hydrocarbon and discharge rules prevent offshore drilling outright within sanctuaries and present conditions that make such activity infeasible adjacent to sanctuaries. It is very likely that future sanctuaries would have identical regulations concerning offshore drilling and pollution.

Mitigating the Impact of Oil Spills Associated with Offshore Drilling

The current scientific consensus reflects an understanding that MPAs can mitigate the impact of oil spills associated with offshore drilling by fostering ecological resilience – the ability of natural systems to withstand and recover from disturbances like oil spills – at a variety of spatial scales.^{5,6}

In the context of mitigating the impact of oil spills associated with offshore drilling, a resilient ecosystem would be able to resist and quickly recover from the impacts of spilled oil in the water column or on the seafloor. According to 2009 recommendations provided to NOAA by the Marine Protected Areas Federal Advisory Committee, ecological resilience can be defined as:

“...the capacity of an ecosystem or natural population to resist or recover from major changes in structure and function following natural and human-caused disturbances, without undergoing a shift to a vastly different regime that is undesirable and very difficult to reverse from a human perspective.”⁷

As the definition states, a resilient system would also be less likely to undergo a regime shift that could result in the provision of fewer ecosystem goods and services, or goods and services of diminished quality, to human populations. Numerous studies have indicated the toxicity of oil to marine life: it is clear that oil spills represent episodes of acute disturbance for ocean ecosystems whose effects could be mitigated by fostering resilience.^{8,9}

First introduced in 1973, the concept of resilience in natural systems references an understanding of ecology in which ecosystems are constantly disturbed from static equilibrium states by both natural and human causes.¹⁰ In this model, the conditions by which certain equilibrium states persist, and the magnitude of disturbance required to shift to a new equilibrium state, are of primary concern. For example, tropical coral reefs exist in two primary equilibrium states, or regimes: in one regime the reef is dominated by living corals, and in the other the reef is dominated by algae. Humans generally prefer the live coral regime because it provides more ecosystem goods and services (e.g. fisheries, coastal protection, tourism and recreation) than does the algae-dominated regime, and so the key issue for managers is to determine how reefs can be more resilient when disturbed and prevented from shifting towards the less-beneficial algal regime.¹¹

Properly designed and managed MPAs, including national marine sanctuaries, and MPA networks can employ at least three strategies for maintaining or restoring ecological resilience: increasing buffering capacity, managing at multiple scales, and providing sources of renewal all come into play.¹² Buffering occurs when managers mitigate the effect(s) of one disturbance in an effort to increase the system's ability to cope with other forms of disturbance. Management at multiple scales is particularly relevant to MPA networks, which can build resilience by establishing representative, replicated, viable, and connected protected areas – effectively providing redundancy at multiple levels to ensure that the catastrophic loss of any particular site does not jeopardize the entire system.¹³ Finally, MPAs are themselves sources of renewal for adjacent areas due to the larval dispersal and spillover effects by which benefits occurring inside an MPA can be transferred outside its boundaries.¹⁴

The scientific literature provides compelling evidence that MPAs can successfully increase buffering capacity for the protection of various ocean ecosystems. In kelp forests around the world, MPAs that protect sea urchin predators like sea otters and lobsters serve to increase resilience by enabling those species to prevent the over-grazing of kelp by urchins.^{15,16,17} In tropical ecosystems, herbivorous fishes are key to the persistence of coral-dominated reefs, and MPAs that prevent overfishing on herbivorous fishes have been shown to build resilience and help avoid regime shifts to algae-dominated reefs.^{18,19,20} Furthermore, recent analysis shows that MPAs are effective at preventing the loss of corals, and keeping coral-dominated reef ecosystems intact, on a global scale.²¹ Although MPAs cannot directly prevent coral bleaching or other threats associated with global climate change, buffering actions that address water quality issues, pollution, or overfishing can increase a reef's resilience to bleaching or outbreaks of disease.^{22,23,24,25} Similarly, buffering actions within MPAs can increase marine ecosystems' resilience to the impact of oil spills associated with offshore drilling.

Efforts to increase buffering capacity and improve ecosystem health within MPAs produce direct, tangible benefits that enable ecosystems to better withstand the impact of oil spills. No-take marine reserves, a subset of MPAs, are remarkably effective at increasing the biomass, density, and individual size of animals, in addition to increasing overall

biodiversity, within reserve boundaries (the ‘reserve effect’).²⁶ These effects have been observed in both tropical and temperate ecosystems, and overall, mean responses to reserve establishment include a 446% increase in biomass, a 166% increase in density, a 28% increase in organism size, and a 21% increase in biodiversity.²⁷ Significantly, reserves produce these positive outcomes relatively quickly: the direct effects of reserve protection, such as increases in biomass, first appear within only five years of reserve establishment, on average.²⁸ The indirect effects of reserves, including fostering resilience through the maintenance of ecosystem structure and function (as in the kelp forest and coral reef examples discussed above), take longer to appear and are first observed, on average, roughly 13 years after reserve establishment.²⁹

Establishment of MPAs that displace fishing effort has been the subject of much controversy, but new research reveals that marine reserves are likely to compensate fishermen for lost catch.^{30,31,32} In one specific study, the loss of fishing grounds within a marine reserve was outweighed by the spillover effect: establishment of the reserve led to a 10% increase, by weight, in the average, net annual catch and provided a concrete benefit to the fishery.³³

When individual MPA sites are linked in an ecological network and managed at multiple spatial scales, they can enhance resilience across far broader areas.^{34,35} This approach, where MPAs are connected by larval dispersal and the movement of adult organisms that ‘spill over’ MPA boundaries, spreads risk and provides insurance against the destruction of any one site and its associated demographic and genetic diversity.^{36,37,38} The dispersal of drifting or swimming larvae from a parent animal can seed areas anywhere from one meter to 1000 kilometers away, and this process has been shown to augment populations outside of MPAs relatively quickly.^{39,40} Quantitative estimates of spillover indicate that its effects are detectable up to at least 600 meters beyond the boundaries of marine reserves.⁴¹ Spillover and larval dispersal from protected areas enable MPA networks to foster resilience on a regional basis, enabling the accelerated renewal of degraded areas including those affected by oil spills associated with offshore drilling.^{42,43}

It is clear that MPAs can help mitigate the impact of oil spills associated with offshore drilling by increasing buffering capacity, managing at multiple scales, and providing sources of renewal. By fostering resilience in marine ecosystems, MPAs facilitate the ability of ocean wildlife and habitats to resist and quickly recover from the impacts of spilled oil in the water column or on the seafloor.

Improvements to Federal Laws and Regulations Applicable to Offshore Drilling that would Protect the Environment and Natural Resources

It is vital that the moratorium on new national marine sanctuaries be removed as the Commission develops options to mitigate the impact of oil spills associated with offshore drilling. Our resource managers deserve a full menu of ocean management options as the nation works to restore the Gulf of Mexico and manage ocean ecosystems across the country.

The law governing the National Marine Sanctuary System, the National Marine Sanctuaries Act (16 USC 1431, *et seq*), currently includes a *de facto* moratorium on new sanctuary sites.⁴⁴ The BP Deepwater Horizon oil spill underscores the need for NOAA, as federal trustee of marine and coastal resources, to regain its authority to identify our most special ocean places and promote economically and environmentally sustainable activities within them before any marine resource damage occurs. Repealing the moratorium would give NOAA a critical tool to foster resilience in marine ecosystems throughout the United States’ EEZ, mitigate the impact of past and future oil spills, and better enable ocean science to

inform marine resource management as envisioned by the National Ocean Policy and Long-Term Recovery Plan for America's Gulf Coast.^{45,46} Restoring the Federal government's only option for permanent protection and comprehensive management of the marine environment – national marine sanctuaries – would promote robust public participation, avoid the use of unilateral tools like the Antiquities Act, and enable the burden of regulation to be spread among various user groups.

The primary purpose of the National Marine Sanctuaries Act must be clarified to promote the long-term protection of living and non-living marine and coastal resources, which is essential to fostering resilience and enabling ecosystems to recover from the impact of oil spills associated with offshore drilling.

At present, the National Marine Sanctuaries Act allows diverse public and private uses of the national marine sanctuaries, ranging from commercial fishing, recreational angling, and subsistence uses to other commercial and recreational activities, scientific research, and education. Although some of these uses are compatible with the National Marine Sanctuary System's goal to maintain, restore, and enhance natural habitats, populations, and ecological processes, several commercial and recreational activities currently allowed within sanctuaries either hinder or directly offset resource protection efforts in these sensitive areas.⁴⁷ For example, even though sanctuaries typically disallow offshore drilling, the prohibitions on such activity result from regulatory or Presidential action: the National Marine Sanctuaries Act does not itself contain a statutory ban on offshore drilling in designated areas. Furthermore, many national marine sanctuaries do not prohibit the use of towed bottom fishing gear within their boundaries even though the destructive nature of this fishing technique is undeniable.^{48,49,50,51,52,53} In the Stellwagen Bank National Marine Sanctuary, managers recently reported that each year, "virtually every square kilometer of the sanctuary is physically disturbed by fishing."⁵⁴ The direct and explicit prioritization of resource protection in the National Marine Sanctuaries Act will allow sanctuaries to more effectively foster resilience and mitigate the impact of oil spills associated with offshore drilling.

A portion of government revenues generated from the exploitation of ocean resources, along with fines and penalties levied to compensate for the destruction or degradation of marine resources, should be invested in ocean ecosystems to foster resilience and mitigate the impact of oil spills associated with offshore drilling.

It is generally understood that the establishment of dedicated funding mechanisms would foster resilience by better enabling the sustained maintenance, restoration, and protection of marine and coastal ecosystems.^{55,56,57,58} With respect to oil spills, however, penalties collected under the Clean Water Act are deposited into the Oil Spill Liability Trust Fund for cleanup and response efforts connected to future spills – these funds are not available for expenditure on restoration or proactive mitigation measures that foster resilience.⁵⁹ Similarly, the Land and Water Conservation Fund receives a portion of royalty revenue associated with offshore drilling, but those funds are generally used for the preservation of terrestrial outdoor recreation opportunities and not invested back into the marine ecosystems being exploited by offshore oil and gas activity.⁶⁰ The recently-released 'Long-Term Recovery Plan after the Deepwater Horizon Oil Spill' recognized the need to match offshore revenues with offshore investment by recommending that Clean Water Act penalties from the BP Deepwater Horizon oil spill be directed specifically towards Gulf of Mexico restoration.⁶¹

In addition to highlighting a lack of appropriate resources for post-spill restoration, the BP Deepwater Horizon oil spill has underscored the need for a program of proactive mitigation

designed to buffer the impact of oil spills associated with offshore drilling before they occur. The establishment of direct connections between the revenues associated with offshore resources and funding mechanisms used to ensure the maintenance, protection, and restoration of those resources should be expanded beyond Clean Water Act penalties to include a range of royalties and fines authorized under various statutes. Bipartisan legislation that would establish such connections, through creation of an ocean trust fund supported by government revenues associated with offshore drilling, has been introduced during the last four Congresses and this year passed the House of Representatives.^{62,63,64,65,66,67,68} Establishment of an Ocean Resources Conservation Trust Fund or National Endowment for the Oceans, or the redirection of Oil Spill Liability Trust Fund or Land and Water Conservation Fund revenues towards fostering resilience in marine ecosystems, will greatly improve the government's ability to protect the environment and natural resources from the impact of oil spills associated with offshore drilling.

Restoration Approaches and Options

MPAs, including national marine sanctuaries, in sensitive areas could function as mitigation banks to offset the loss or degradation of marine resources as part of a compensatory mitigation policy for oil spills associated with offshore drilling.

Compensatory mitigation provides an efficient and effective way to implement the nation's policies to protect, maintain, and restore the health and biological diversity of ocean, coastal, and Great Lakes ecosystems and resources and protect, enhance, and prevent the degradation of coral reefs, including those in the Gulf of Mexico.^{69,70} The Clean Water Act uses this approach in pursuing its primary objective "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters."⁷¹ Recognizing that certain human activities are accompanied by unavoidable adverse impacts to the nation's waters, regulations under the Clean Water Act use compensatory mitigation as a critical tool in helping the government implement its 'no net loss' policy for wetlands.⁷² Similarly, compensatory mitigation could be used to offset the loss or degradation of marine resources due to oil spills associated with offshore drilling.

Compensatory mitigation involves the restoration, creation, enhancement, and/or preservation of natural resources that is designed to compensate for unavoidable impacts to those resources.⁷³ The Territory of Guam has recently adopted a compensatory mitigation policy that goes beyond wetlands to directly discuss marine resources including coral reefs and seagrass beds; this approach has been recommended in the Atlantic, Caribbean, and Pacific since at least 2003.^{74,75,76} Moreover, Guam's policy specifically identifies MPA creation or expansion as a candidate mitigation project that can "offset the loss of marine resources" by providing active management for highly functional and ecologically necessary ocean ecosystems.⁷⁷

Mitigation banks are a preferred method of providing compensatory mitigation, where the amount of mitigation credit earned is dependent on the size and quality of habitat restored, created, enhanced, or preserved.^{78,79,80} Properly designed and managed MPAs in the United States' EEZ, including national marine sanctuaries, and MPA networks can serve as mitigation banks by directly enhancing ecosystem function within their boundaries and simultaneously fostering resilience over larger spatial scales. It is clear that MPAs are successful at restoring, enhancing, and preserving marine and coastal ecosystems, and they have a critical role to play in implementing a compensatory mitigation approach to oil spills associated with offshore drilling.

Part of the Solution: A Gulf of Mexico Network

A network of MPAs, including national marine sanctuaries, would foster resilience in geographically discrete, enormously productive, and ecologically vital Gulf of Mexico habitats that are interconnected by ocean currents and dependent upon one another for population replenishment and ecosystem stability.

The Gulf of Mexico's isolated hard-bottom habitats are refugia, feeding and breeding grounds, and epicenters of productivity for thousands of corals, sponges, fish, and other tropical species: hard-bottom areas are key candidates of interest for protection, maintenance, and restoration within national marine sanctuaries. Encircling the Gulf from Mexico's Campeche Banks to the Florida Keys, these habitat islands lie an average of 70 miles from today's shoreline in depths averaging 200 to 300 feet. Each feature is relatively small, ranging in size from one-fifth of a square mile to 460 square miles, and many have already been set aside for some level of protection by the National Marine Fisheries Service or Bureau of Ocean Energy Management, Regulation, and Enforcement. The average size of the habitat islands is roughly 20 square miles, with their combined area less than one-fifth of one percent (< 0.2%) of the total Gulf of Mexico.⁸¹

Significantly, hard-bottom habitats in the Gulf of Mexico are connected by the system's major pattern of ocean circulation, the Loop Current. This current moves tropical species into the Gulf of Mexico from the Caribbean and also helps disperse animals within the Gulf itself, promoting the larval dispersal and spillover effects by which MPAs are ecologically linked and able to transfer benefits to unprotected areas. The Gulf of Mexico is also strongly connected 'upstream' to the Caribbean and 'downstream' to the Atlantic by the Loop Current, Florida Current and Gulf Stream.⁸²

A network of MPAs comprising hard-bottom habitats connected by the Loop Current, including national marine sanctuaries, will mitigate the impact of the BP Deepwater Horizon oil spill, and potential future oil spills associated with offshore drilling, by fostering resilience in the Gulf of Mexico's marine ecosystems and enabling them to better withstand and recover from disturbance over time.⁸³

While we recognize that MPA networks and national marine sanctuaries alone cannot address all of the challenges posed by the BP Deepwater Horizon oil spill, it is clear that these tools would help the nation guard against and mitigate the impact of oil spills associated with offshore drilling by prohibiting drilling in discrete areas and fostering resilience at various scales. The Commission's inclusion of recommendations concerning MPAs would represent a substantial and long-term commitment to preserving nationally significant marine and coastal ecosystems and sheltering them from oil spills associated with offshore drilling. We strongly encourage you to support repeal of the *de facto* moratorium on new national marine sanctuaries, and the creation of a compensatory network of MPAs throughout the Gulf of Mexico, as appropriate and essential components of the government's overall response to the BP Deepwater Horizon oil spill.

We appreciate the opportunity to submit comments to the National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling. If you have any questions, please contact Jeb Berman at jeb@nmsfocean.org or 202.870.0387.

Endnotes

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