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Written Testimony of Jim Ayers, Ocean Conservancy

"Looking to the Future: Lessons in Prevention, Response, and Restoration from the Gulf Oil Spill"

July 20, 2011

Chairman Begich, Ranking Member Snowe, and Members of the Subcommittee, thank you for the invitation to participate in today's hearing. My name is Jim Ayers, and I am the founder and President of Alaska Strategies, a conservation consulting firm. I am testifying today in my capacity as a senior advisor and consultant for Ocean Conservancy, a national marine conservation organization that has promoted healthy and diverse ocean ecosystems since its founding in 1972. Ocean Conservancy is supported by more than 500,000 members and volunteers, with its headquarters in Washington, DC.

You have invited me here today to discuss two broad topics: first, the efficacy of the laws, regulations, and policies that relate to oil spills and spill response and prevention on the Outer Continental Shelf (OCS); and second, the progress and viability of long-term restoration in the Gulf of Mexico in the wake of the BP Deepwater Horizon oil disaster.

My perspective on these topics is informed by substantial experience dealing with offshore oil spills and restoration efforts. Most recently, I was a representative on the U.S. Coast Guard's Incident Specific Preparedness Review for the response to the BP Deepwater Horizon oil spill—a review designed "to examine the implementation and effectiveness of the preparedness and response to the BP Deepwater Horizon incident."[1] Earlier in my career, I was the first executive director of the *Exxon Valdez* Oil Spill Trustee Council, where I led the effort to develop and implement a comprehensive restoration plan for the region affected by the *Exxon Valdez* spill, and helped establish a long-term research and monitoring fund designed to enhance recovery and restoration.

Before proceeding any further with my testimony, I would like to acknowledge that the BP Deepwater Horizon oil disaster was a human and environmental tragedy. It killed 11 men, seriously injured 16 others, and discharged roughly 205 million gallons of oil into the Gulf of Mexico. The disaster impacted lives, livelihoods, and the rich and diverse Gulf of Mexico ecosystem that is a national treasure and cornerstone of the regional economy.

[1] U.S. Coast Guard, Final Report: Incident Specific Preparedness Review for the BP Deepwater Horizon Oil Spill (Jan. 2011), at 1.

Now, more than a year after the BP Deepwater Horizon disaster, the United States stands at yet another major crossroads, and we must decide which way we want to go. On one hand, we can turn a blind eye to the shortcomings of the statutes that govern offshore oil and gas operations and spill response, maintaining the status quo and hoping for the best. On the other hand, we can acknowledge the gaps and flaws in the existing system and enact reforms designed to prevent future offshore oil disasters and promote preparedness, safety, and protection of ecosystem services vital to our nation. I believe it is imperative that we choose the latter. In our pursuit of energy, we must minimize risks to the natural environment to ensure diverse, healthy ecosystems capable of supporting the economy and human health—for this generation and the next. But to do so, Congress must take meaningful action now.

In Part I below, I address the existing framework that governs spill prevention and response, and recommend a series of reforms to the OCS oil and gas process. In general, these reforms strive to integrate spill prevention and response into OCS policies and decision-making processes. Then, in Part II, I discuss restoration efforts in the wake of the BP Deepwater Horizon oil spill, and recommend actions that will bolster effective long-term restoration in the Gulf of Mexico and better preparedness in frontier regions which may soon experience increasing levels of oil and gas activity.

I. OIL SPILL PREVENTION AND RESPONSE MUST BE INTEGRATED INTO THE OCS OIL AND GAS PROCESS.

The Oil Pollution Act of 1990—enacted in the wake of the *Exxon Valdez* oil spill—is the primary statute governing issues of planning, prevention, response, and liability for oil spills in marine waters.[2] OPA 90 introduced several critical reforms, including technical standards, improved response planning, funding for research and development, and liability and compensation requirements. Under OPA 90's amendments to the Clean Water Act, the federal government may respond to a spill event by "federalizing" the spill and engaging directly in the cleanup, monitoring the responsible party's cleanup efforts, or directing the responsible party in implementation of the response.[3] These changes have made it more likely that the relevant contingency plans would be properly carried out during a major spill. OPA 90 also expanded the role and breadth of the National Contingency Plan (NCP) and linked the NCP to area response plans, regional response plans, and facility-level response plans—a multi-layered planning and response system intended to improve spill preparedness and response effectiveness.

Despite the benefits of the spill prevention and response framework established by OPA 90, the present system suffers from a significant flaw: for the most part, the OPA 90 framework exists separate and apart from the rest of the OCS oil and gas development process. As a result, preparedness regarding spill prevention and response is not integrated adequately into OCS

[2] *See, e.g.*, Nat'l Comm'n on the BP Deepwater Horizon Oil Spill and Offshore Drilling, Deep Water: The Gulf Oil Disaster and the Future of Offshore Drilling (2011) at 83 [hereinafter National Commission].
[3] 33 U.S.C. §1321(c)(1)(B).

policy, and does not play a significant role in many OCS decision-making processes. The following sections include recommendations to address this problem.

A. Prevention of oil spills should start with ensuring that energy development takes place only in appropriate locations, where it can be undertaken without undue risk to environmental, human, and economic health.

A little over a year ago, President Obama issued an Executive Order establishing a National Ocean Policy. That policy includes a set of overarching guiding principles for management decisions and actions toward achieving the vision of "an America whose stewardship ensures that the ocean, our coasts, and the Great Lakes are healthy and resilient, safe and productive, and understood and treasured so as to promote the well-being, prosperity, and security of present and future generations."[4] Prevention of oil spills should begin at the highest level, by ensuring that our National Energy Policy and our National Ocean Policy are aligned. As we pursue currently available energy resources, we must do so in a way that is safe for energy workers and allows us to maintain a healthy environment for this and future generations. Safe and responsible development of current energy sources, combined with sensible conservation measures and investments and a commitment to developing more sustainable energy options going forward, will help ensure that there are economic opportunities, healthy and diverse ecosystems, and a clean and safe environment in the future.

More specifically, we must ensure that energy development occurs only in safe and appropriate locations. Oil and gas lease sales, exploratory drilling, and development and production on the OCS are appropriate only when there is sufficient science to support informed decisions that such actions can proceed with minimal risk to the health of ocean and coastal ecosystems. To help ensure that economic sectors other than oil and gas development are given adequate consideration, Congress should support the implementation of a more comprehensive system of regional planning for the conservation and management of marine resources. In addition, Congress should amend the nation's existing OCS policy statement to make protection, maintenance, and restoration of coastal and ocean ecosystems a primary policy objective.

To help ensure that energy development occurs safely and only in appropriate locations, expert agencies in addition to the Bureau of Ocean Energy Management, Regulation and Enforcement (BOEMRE) should play a greater role in decisions about, and preparation of environmental analyses for, oil and gas operations.[5] These agencies should include the National Oceanic and Atmospheric Administration (NOAA), the U.S. Fish and Wildlife Service (USFWS), the U.S. Coast Guard, and others. For example, Congress should change Section 18 of the Outer Continental Shelf Lands Act to give the Secretary of Commerce a greater role in the initial decisions about if, when, where, and how to allow oil and gas leasing, exploration, and development on the OCS.

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[4] Exec. Order No. 13547, 75 Fed. Reg. 43,023, 43,023 (July 22, 2010).

[5] *See, e.g.*, National Commission at 264 (recommending that Congress amend the Outer Continental Shelf Lands Act "to provide NOAA with a formal consultative role during the development of the five-year lease plan and lease sale stages.").

Congress could amend Section 18 so that the Secretaries of Commerce and of the Interior have joint and equal responsibility for preparing five-year oil and gas leasing programs. Alternatively, Congress could amend Section 18 to require the concurrence of the Secretary of Commerce before any five-year leasing program is finalized and implemented. Similarly, the U.S. Coast Guard should play a role in identifying how oil and gas activities on the OCS proceed.

To facilitate more meaningful environmental analysis before exploration and drilling activities proceed, OCS planning areas—at least in frontier areas—should be smaller and focused more precisely on specific lease tracts.[6] Congress, for example, could amend section 18 of the Outer Continental Shelf Lands Act to specify an upper limit on the percentage of a frontier planning area that may be included in any one five-year oil and gas leasing program. Alternatively, Congress could require DOI to use tract-style leasing in frontier areas, rather than offering enormous portions of planning areas.

Finally, areas of the marine environment that are particularly significant—such as essential fish habitats, areas of high productivity, or areas supporting important concentrations of wildlife, migratory pathways, and subsistence use—should be protected from the impacts of OCS oil and gas activities. Regulators should preserve the resilience of marine ecosystems by placing important ecological areas off-limits to drilling and ensure that such areas are well buffered from oil and gas activities elsewhere in the region. Congress should amend the law to require regulatory agencies, during their planning processes, to identify any important ecological areas and explain the protection measures necessary to preserve the integrity and function of those areas.

B. Making informed decisions about oil spill prevention and response requires adequate baseline scientific information.

To understand fully the potential impacts on the local ecosystem from a large-scale spill—and to determine how best to respond to a spill—decision-makers require adequate baseline science. Scientific baseline data and risk analyses should inform decisions about whether, when, and where to allow OCS oil and gas activities. As a result, before permitting OCS activities to proceed, Congress should require the availability of specific types and quantities of baseline scientific information gathered over time at scales appropriate to the decisions that must be made. This information might include physical characteristics—such as data on the sea floor, ocean currents, wind and weather patterns, and water temperature and salinity—as well as information about the ecosystem, such as the presence, distribution, and abundance of species and the relationships among those species. Collection of baseline science should include and incorporate local and traditional knowledge from affected communities. This approach would ensure that expert concerns are heard from the outset, and would help avoid later complications. “Doing it right” is an expression that many of us use with reference to oil and gas

[6] *Cf. id.* at 262 (recommending reducing the size of lease sales “in less well explored areas,” so that the “geographic scope [of the lease sale] allows for a meaningful analysis of potential environmental impacts and identification of areas of ecological significance”).

activity, and doing it right means taking the time and spending the money to gather the necessary science to support smart decisions.

Certain types of scientific information, such as identifying sensitive areas and locations of critical ecological processes, are necessary to help plan for and implement oil spill response operations. In addition, baseline science is necessary in carrying out a natural resource damage assessment following an oil spill, because the impacts from the spill must be measured against the environmental baseline that existed prior to the spill.[7] This is not possible without a robust time series of baseline data gathered over an appropriate geographic area. During my time with the *Exxon Valdez* Oil Spill Trustee Council, not a day went by when we did not rue the lack of baseline data gathered prior to that disastrous event. Baseline data are particularly lacking in frontier areas such as the Arctic.[8]

Congress should require the collection of specific types of baseline science information before areas can be considered for oil and gas leasing. For example, before an area is considered for leasing in a five-year program, Congress should require at least three years of baseline weather, water, wind, ocean chemistry, and other environmental data. It should also require similar baseline studies for wildlife—including fish, birds, invertebrates, and marine mammals—and of the sea floor environment. Unless and until such data are compiled for a given area of the OCS, that area should not be eligible for leasing. In addition, Congress should enact requirements designed to ensure a more rigorous and meaningful evaluation of environmental sensitivity and marine productivity. This requirement should be integrated and coordinated with baseline science information.

Congress should support collection of baseline scientific data through integrated programs that undertake research, monitoring, documentation of local and traditional knowledge, and synthesis. Such work would, for example, assess and monitor populations of principal species in the ecosystem and the biological and physical factors that affect their abundance and distribution; construct and maintain an updated quantitative food web model; identify sensitive species and important ecological areas; and enhance understanding of temporal and spatial variability within ecosystems. These programs would require secure and stable sources of funding.

[7] *See, e.g.*, 15 C.F.R. § 990.52 (noting that natural resource trustees "must quantify the degree, and spatial and temporal extent of such injuries relative to baseline."); *see also id.* § 990.30 (defining "baseline" as "the condition of the natural resources and services that would have existed had the [oil spill] incident not occurred.").

[8] *See generally* Holland-Bartels, Leslie, and Brenda Pierce, eds., An evaluation of the science needs to inform decisions on Outer Continental Shelf energy development in the Chukchi and Beaufort Seas, Alaska: U.S. Geological Survey Circular 1370 (2011); Coastal Response Research Center, Natural Resources Damage Assessment (NRDA) in Arctic Waters: The Dialogue Begins, Univ. of New Hampshire (2010). *See also* National Commission at 303 (recognizing that ""scientific research on the ecosystems of the Arctic is difficult and expensive. Good information exists for only a few species, and even for those, just for certain times of the year or in certain areas.").

C. Rigorous risk assessment is critical to preventing oil spills and ensuring preparedness.

As development planning and activities are considered, regulators must undertake a rigorous analysis of potential impacts and risks. As noted above, federal agencies in addition to BOEMRE should have a greater role in planning for and conducting environmental analyses of OCS oil and gas activities. Risk analysis should be science-based, and subject to external, expert peer review. Analysis pursuant to the National Environmental Policy Act (NEPA) should be substantive—not mere window dressing—and OCS drilling operations should not be categorically excluded from environmental review. All OCS drilling activities should be subject to site-specific NEPA analysis, either an Environmental Assessment or an Environmental Impact Statement.

The BP Deepwater Horizon disaster highlighted the risk of failing to engage in worst-case oil spill planning. When making decisions that involve the potential for catastrophic results—such as major oil spills—environmental analyses must take seriously the potential for disaster. This is true even if the probability of an individual occurrence is low, because the harm from such an event may be very great.[9] Federal regulators must analyze low-probability, high-risk events to ensure that they are prepared for a worst-case. In light of the BP Deepwater Horizon disaster, the Council on Environmental Quality concluded that federal regulators must "take steps to incorporate catastrophic risk analysis."[10] The National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling (National Commission) recommended that regulators "incorporate the 'worst-case scenario' calculations from industry oil spill response plans into NEPA documents and other environmental analyses or reviews" to inform the agency's "estimates for potential oil spill situations in its environmental analyses."[11]

D. Government regulators and industry operators must ensure that they have trained personnel and equipment sufficient to contain, control, and clean up a worst case discharge.

To protect healthy, diverse ocean ecosystems for future generations, regulators and the oil and gas industry must ensure that facility-specific oil spill response plans provide for the immediate availability of equipment and trained personnel sufficient to contain, control, and clean-up a worst-case discharge. Equipment must be based reasonably close to potential accident sites, and trained teams of responders must be available in-region to operate the equipment in accordance with the pre-approved plan.

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[9] *See, e.g.*, 40 C.F.R. § 1502.22(b)(4) (noting that in a NEPA analysis when information is missing or unavailable, "reasonably foreseeable" impacts include "impacts which have catastrophic consequences, even if their probability of occurrence is low, provided that the analysis of the impacts is supported by credible scientific evidence, is not based on pure conjecture, and is within the rule of reason").

[10] Council on Envtl. Quality, *Report Regarding the Minerals Management Service's National Environmental Policy Act Policies, Practices, and Procedures as They Relate to Outer Continental Shelf Oil and Gas Exploration and Development* (Aug. 16, 2010) at 27.

[11] National Commission at 267.

Worst-case scenario planning will help federal regulators and OCS operators anticipate their needs in the event of a major oil spill or other emergency event. The BP Deepwater Horizon disaster showed that the existing planning standard—responding to a worst-case scenario spill in 30 days—is unrealistic for an offshore well blowout. The law should be changed to require operators to meet a performance standard based on a true worst-case scenario oil spill. For an exploration well the worst case oil spill scenario time frame should be increased to at least 90 days (the time it takes to drill a relief well). The worst-case oil spill volume should be based on that 90-day period multiplied by a maximum flow rate of 60,000 barrels of oil per day, unless the operator can provide reservoir and engineering data to prove that the flow rate will be less.

To be effective in an emergency, response capability must be mobilized immediately. For that to happen, equipment and personnel must be either pre-positioned near potential spill sites or quickly mobilized from nearby locations that actually have those resources on site. Spill response plans often rely upon contracts with spill response companies or regional consortia, and delays in mobilization of an effective spill response may result from the lack of actual capacity in the area of the spill. If a response plan calls for contractors to provide equipment and trained personnel for the response, actual capacity must be demonstrated ahead of time.

In addition to implementing more stringent planning and response standards, assessment of industry oil spill response plans must be more rigorous. For example, in the Arctic, BOEMRE approved an oil spill response plan in which Shell Offshore, Inc. claimed that it would recover 90 percent of the oil spilled during a worst case discharge from its proposed facility in the Beaufort Sea[12]—even though a 90 percent recovery rate is, without question, wholly unrealistic. The agency approved Shell's plan despite the fact that in earlier planning documents, the agency had acknowledged that "[o]n average, spill-response efforts result in recovery of approximately 10-20% of the oil released to the ocean environment."[13] This lax oversight led DOI's Office of Inspector General to conclude that review of oil spill response plans "does not ensure that critical data are correct."[14]

Finally, to facilitate more serious review of oil spill response plans for offshore facilities, broaden the scope of review, and promote better information-sharing, multiple federal agencies should—in a coordinated and timely fashion—review and approve these plans. In addition to interagency review of oil spill response plans for OCS facilities, there should be

[12] *See* Shell Offshore Inc., *Beaufort Sea Regional Exploration Oil Discharge Prevention and Contingency Plan* (Jan. 2010) at unnumbered page following I-12 (containing BOEMRE approval letter); *id.* at 1-29 (assuming that only ten percent of the discharge from a hypothetical blowout will "escape [ ] primary offshore recovery efforts").

[13] Minerals Management Service, Final Environmental Impact Statement: Beaufort Sea Planning Area Oil and Gas Lease Sales 186, 195, and 202 p. IV-17 (Feb. 2003).

[14] Office of Inspector General, U.S. Department of the Interior, *A New Horizon: Looking to the Future of the Bureau of Ocean Energy Management, Regulation and Enforcement* (Dec. 2010), at 44.

public comment on such plans.[15] The National Commission endorsed the idea of interagency spill plan review:

> In addition to the Department of the Interior, other agencies with relevant scientific and operational expertise should play a role in evaluating spill response plans to verify that operators can conduct the response and containment operations detailed in their plans. Specifically, oil spill response plans, including source-control measures, should be subject to interagency review and approval by the Coast Guard, EPA, and NOAA. Other parts of the federal government, such as Department of Energy national laboratories that possess relevant scientific expertise, could be consulted.[16]

The National Commission also noted that interagency review of oil spill response plans for OCS facilities would facilitate greater integration of those plans with broader-level area contingency plans and regional contingency plans because it would "involve[e] the agencies with primary responsibility for government spill response planning in oversight of industry planning."[17]

In particular, the Coast Guard should have a formal role in the review of facility oil spill response plans. As it stands now, DOI has the primary responsibility to review facility response plans, even though the Coast Guard is ultimately responsible for response efforts on the water. As a result, the Coast Guard—the on-scene coordinator and lead agency for response to offshore spills—has not taken an active role in reviewing facility response plans. If it did, the Coast Guard might be able to suggest improvements or refinements that could make facility response plans more effective. Congress should ensure that the Coast Guard participates formally in spill prevention and response planning for OCS oil and gas facilities.

E. OCS oil and gas operations must use the best available engineering and technology in their prevention and response toolkits.

A recent DOI Inspector General Report concluded that the "process for developing or updating standards and regulations has not kept pace with new and emerging offshore technologies."[18] Going forward, we must ensure that OCS facilities use the best available engineering, technology, and safety procedures to maximize the protection of workers, ocean and coastal ecosystems, and the coastal businesses and economies that rely on those ecosystems.

Operators of all new offshore leases should be required to demonstrate that they are using the most effective safety technology for exploration or development activity as a precondition to

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[15] *See id.* ("Plans should also be made available for a public comment period prior to final approval and response plans should be made available to the public following their approval.")
[16] National Commission at 266-67.
[17] *Id,* at 267.
[18] Office of Inspector General, U.S. Department of the Interior, *A New Horizon: Looking to the Future of the Bureau of Ocean Energy Management, Regulation and Enforcement* (Dec. 2010), at 44.

drilling.[19] Standards regarding spill prevention technologies should be implemented, as well. These might require redundant engineering controls, such as multiple or improved blowout prevention systems, on-site blowout containment structures, and double-walled pipes or tanks. All OCS leases should be required to incorporate the most environmentally protective timing and location stipulations and terms to reduce the potential for environmental damage.

Spill response technologies also must be improved. Estimates following the BP Deepwater Horizon disaster reveal that despite the massive effort that BP activated to clean up the oil,[20] response efforts were able to remove or chemically disperse—without removal of the dispersed oil—only about one-third of the oil that was discharged from the Macondo well.[21] The National Commission determined that "[t]he technology available for cleaning up oil spills has improved only incrementally since 1990."[22] The Commission further observed that "[f]ederal research and development programs in this area are underfunded," and the major oil companies have committed minimal resources to in-house research and development related to spill response technology."[23]

To spur better on-water cleanup results and more investment in research and development for response technologies, regulators should require operators to demonstrate the ability to meet specific performance standards in real-world conditions in the lease area before allowing operators to conduct drilling operations. The performance standards should require operators to demonstrate in simulated field trials that they have in place adequate equipment, personnel, and resources to respond effectively in the event of a catastrophic spill. Operators should show that they can deploy their resources in real-world conditions and that the chosen equipment is effective in meeting an established oil removal performance target. These spill response standards should be enforced through independent third-party review of facility response plans and regular audits during the period of exploration and production.

F. Congress must provide the funding necessary to ensure adequate preparedness.

It will not be enough to require adequate oil spill preparedness in legislation or agency regulations. Congress also must commit the necessary financial resources to enable relevant

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[19] At present, OCSLA provides for "the use of the best available and safest technologies . . . on all new drilling and production operations and, wherever practicable, on existing operations." 43 U.S.C. § 1347(b). However, this requirement is weakened significantly by other provisions: it applies only to certain types of equipment, and the Secretary of the Interior may waive the requirement if he determines that the additional cost of using the "best" or "safest" technology outweighs the additional benefits of using the technology. *Id.*

[20] At its peak, more than 45,000 people were involved in the response effort. *National Commission Report* at 133.

[21] *See* Jane Lubchenco *et al.*, *BP Deepwater Horizon Oil Budget: What Happened to the Oil?* (Aug. 4, 2010) *available at* http://www.restorethegulf.gov/sites/default/files/imported_pdfs/posted/2931/Oil_Budget_description_8_3_FINAL.844091.pdf (estimating that of the 4.9 million barrels of oil that was discharged, responders recovered 17% directly from the wellhead, skimmed 3%, burned 5%, and chemically dispersed 8%, for a total of 33%).

[22] National Commission at 269.

[23] *Id.* at 270.

federal agencies, such as the Coast Guard, NOAA, DOI, and others, to do their jobs. Absent stable and adequate funding for oil spill preparedness, federal agencies may not be able to carry out their responsibilities to plan, prepare, and respond to incidents, and to contain, control, and clean-up a major oil spill. Ensuring adequate preparedness is simply one of the costs of doing business. A small increase in the per-barrel tax that funds the Oil Spill Liability Trust Fund could provide funding for federal agencies to better meet their responsibilities to prepare and respond to oil spills.

Taking a broader perspective, Congress should also ensure that the United States has the financial resources necessary to be an effective steward of its ocean and coastal ecosystems. Despite the importance of these ecosystems and the risks posed by oil and gas and other activities, there is no dedicated source of funding to support conservation and management activities. Congress should invest revenues derived from offshore development in a fund dedicated to ocean and coastal restoration and conservation. Given the economic and ecological importance of our ocean and coasts, we should invest more in monitoring, researching, protecting, and restoring the health of these systems and promoting their resilience so that they can better recover when disasters happen, whether man-made or natural.

In May, Ranking Member Snowe and Senator Whitehouse, along with Chairman Rockefeller and Senators Inouye, Nelson, Stabenow, and Landrieu, introduced legislation to make crucial investments in cleaner and healthier oceans across the country. The National Endowment for the Oceans Act takes the common-sense step of using money the government already gets from economic activities on our oceans, and directs a portion of those funds towards keeping our oceans clean and healthy. Money from the endowment could then be distributed as grants to states and tribes for bottom-up, on-the-ground conservation and research to protect our oceans. Reinvesting a portion of revenue made from ocean resources is a fair and reasonable way to fund the work to protect ocean health, and ultimately economic health. We commend the bill's sponsors for their leadership on this issue and urge the committee to move the National Endowment for the Oceans Act forward.

II. CONGRESS MUST COMMIT TO LONG-TERM RESTORATION IN THE GULF OF MEXICO.

The Gulf of Mexico region and ecosystem are vital to the United States in many respects, including oil and gas resources, seafood production, shipping, and recreation, to name only a few. While the Gulf of Mexico region has benefited from and is heavily dependent on oil and gas production, it has also paid a high environmental price for it. Going forward, a sound energy development policy must include a commitment to restore the Gulf of Mexico ecosystem and communities following last summer's BP Deepwater Horizon disaster and decades of degradation. Congress must do its part to ensure that the people and environment in the Gulf region are made whole following that disaster, and the decades of environmental degradation that preceded it, by dedicating a major portion of Clean Water Act penalties to recovery and restoration in the Gulf.

A. Restoration efforts in the Gulf of Mexico require dedicated, predictable funding.

Dedicated, predictable funding will be critical to successful restoration. Congress should dedicate Clean Water Act penalties associated with the BP Deepwater Horizon disaster to fund restoration in the Gulf of Mexico. The National Commission recommended that 80 percent of such penalties be dedicated to that purpose.[24] Several bills have been introduced in the Senate that would accomplish that purpose. For example, Chairman Rockefeller introduced S. 1140, the "Gulf Coast Restoration Act,'' which calls for 80 percent of Clean Water Act penalties to be deposited into a "Gulf Coast Ecosystem Restoration Fund."

Restoration funding should be structured in a way that results in dedicated, predictable funding streams. For example, an endowment should be established to support long-term research and monitoring needed to assess the health of the Gulf, evaluate the efficacy of restoration measures, and facilitate adaptive management. I will expand on this idea in Subsection D, below. The revenue stream from the endowment could also provide valuable support for the work of Gulf Coast research institutions, which are in a good position to make lasting contributions to the overall recovery of the Gulf ecosystem and economy.

B. Gulf restoration efforts must address a variety of issues.

Successful restoration of the Gulf ecosystem—including preserving the region's unique culture and traditions and promoting its economic restoration—will require sound management, stable and coordinated funding, prudent project selection, stewardship of the full ecosystem, and monitoring and adaptive management over the long-term. Restoration should focus on five key strategies:

1. Protecting, restoring, and enhancing the coast and wetlands: Restore resilience to coastal areas and nourish wetlands through major projects in the Mississippi River delta and elsewhere in the five-state region.
2. Maintaining healthy, sustainable fisheries: Restore and sustain Gulf of Mexico fisheries through investments in science, technology, fishing fleet performance, and strategies to restore depleted fish populations and support sustainable long-term management.
3. Restoring and protecting coastal and marine habitats: Enhance key coastal and marine habitats like oyster reefs, seagrass beds, corals, and nesting sites for birds and turtles to strengthen and restore critical ecosystem services, such as shoreline protection, tourism, and fishing.
4. Shrinking the dead zone in the northern Gulf of Mexico: Implement nutrient reduction strategies in the Mississippi River watershed to reduce the size and duration of the hypoxia zone to improve marine health and increase fisheries productivity in the Gulf of Mexico.

[24] National Commission at 280.

5. Taking the pulse of the Gulf ecosystem: Create a permanently-funded, long-term Gulf of Mexico ecosystem monitoring and research program to provide the basis for adaptive management of coastal and marine natural resources.

C. Restoration efforts are underway in the Gulf, but success will require a common goal, a comprehensive restoration program, public involvement, incorporation of science, and clear, measurable objectives.

Federal and state restoration planning activities in the Gulf of Mexico are currently underway through the Deepwater Horizon Oil Spill Trustee Council, which implements the natural resources damage assessment (NRDA) and restoration program under OPA 90, and the Gulf Coast Ecosystem Restoration Task Force (Task Force), which was established by Executive Order.[25] The executive order instructs the Task Force to prepare a Gulf Coast Ecosystem Restoration Strategy by October 2011;[26] this document is intended to guide development of a broader ecosystem restoration effort in the event that Congress allocates Clean Water Act fines for that purpose. The Trustee Council is preparing a programmatic environmental impact statement on a NRDA-based Gulf restoration program, and we anticipate release of the draft late this year or early next. In the meantime, BP has provided one billion dollars in early restoration funds and there is a flurry of activity as state and federal agencies, as well as many stakeholders, consider how those funds can best be allocated.

We are pleased that the Task Force and Trustee Council are developing and evaluating restoration strategies and that a down payment of one billion dollars is now available to jump-start restoration efforts on the ground and in the water. However, based on my experience with the *Exxon Valdez* program, I want to share some perspective and offer several suggestions to help ensure that the restoration program in the Gulf is designed to achieve maximum long-term benefit to the ecosystem and communities in the region.

(1) Restoration of the Gulf ecosystem will require a common vision and a comprehensive program to guide restoration efforts.

Restoration in the Gulf of Mexico must start with an understanding of how the ecosystem works and a shared vision of what comprises a restored and sustained Gulf ecosystem. To achieve that vision requires development and implementation of an integrated, strategic program to guide and coordinate restoration efforts. In the Gulf, that program must address not only injuries caused by the BP Deepwater Horizon oil disaster, but also the systemic, decades-long degradation of the Gulf ecosystem. The restoration program must embrace the whole Gulf ecosystem, from coasts and marshes under state jurisdictions to blue-water environments managed by the federal government.

[25] Executive Order 13554 of October 5, 2010: Establishing the Gulf Coast Ecosystem Restoration Task Force, 75 Fed. Reg. 62,313, 62,313-17 (Oct. 8, 2010).
[26] *Id.* at 62,315.

To make the most of limited resources, all restoration projects in the Gulf—including those funded with early restoration money—must be part of the overarching restoration program. This will demand discipline. When funding is limited and money is on the table, there is a real temptation to use those funds for support of projects that have been languishing on the shelf, waiting for the availability of money. While I have no doubt that many of those projects are meritorious, if they are not part of an integrated, strategic suite of projects, they will not be effective tools in the pursuit of Gulf restoration. A haphazard assortment of unrelated efforts—however well intentioned—will not yield success. Setting aside differences and focusing on the disciplined implementation of an integrated restoration program will greatly enhance chances for success.

(2) Transparency and public involvement are critical to successful restoration.

Having served in government in many capacities and for many years, I know there is a tendency to think that we—as professional public servants—know best how to get the job done. It is critical, however, that restoration in the Gulf engage the public through a formal and recognized process that includes broad representation from communities and stakeholders in the region. No major decisions should be made—including allocation of funds for early restoration—without full engagement of the public in a process that is open, transparent, and consistent across the Gulf region. In the *Exxon Valdez* program we bent over backwards to engage the public. At times it was difficult and even tedious, but in the end, it resulted in a better program, one in which the public was invested. Public engagement is critical to long-term success.

Part of public participation is sharing information with the public about what is being studied and learned in the course of the damage assessment. We learned the hard way in the *Exxon Valdez* program that not disclosing information about the harm caused by spilled oil fed the public's worst fears and left a legacy of bitterness about government secrecy.

Given the potential for NRDA-related litigation, we acknowledge the need for caution in what information is disclosed to the public, but federal and state governments should do more to provide information in a way that is useful to and understandable by the public. We truly appreciate that the trustees are posting individual study designs approved by the governments and BP on the internet, but what is lacking is a description of how these pieces fit together in an overall damage assessment plan and a summary-level glimpse of what is being learned. The former is essential if the public is to evaluate whether the right scientific work is underway. The latter is essential if we are to engage intelligently in restoration planning, including offering informed opinions about allocation of early restoration funds.

Following the *Exxon Valdez*, Exxon and the governments had an adversarial relationship. Notwithstanding this fact, within 5 months of the *Exxon Valdez* oil spill, federal and state trustees released a damage assessment plan with project descriptions and costs and invited

public comment on their efforts.[27] A similar document was released annually until a settlement was achieved. This level of information sharing would seem appropriate following the BP Deepwater Horizon event, especially given that the relationship between the responsible party and the governments is far more cooperative.

(3) External, independent scientific peer review is vital.

Along with public participation, there is critical need to incorporate external, independent scientific peer review into the program from the very outset. We acknowledge and appreciate that the damage assessment involves consultation with and review by outside experts, but we urge the trustees to extend that approach to every aspect of the restoration program. The restoration program as a whole, and every restoration project—including those funded through early restoration—should be subjected to external review.

In the *Exxon Valdez* program, we contracted with a chief scientist who did not work for any government agency and was not associated with any requests for restoration funds. His job was to manage a peer review panel and provide independent advice to the Trustee Council's executive director and to the Trustee Council itself. The chief scientist and peer review panel examined every project funded by the Trustee Council, as well as the overall restoration plan itself. I am very proud of this effort and believe it vastly improved the quality of the work and the effectiveness of our restoration program.

(4) The restoration program and restoration projects must be guided by objective criteria and clear, measurable goals.

Finally, it is critical that both the restoration program as a whole and every project have clear, measureable goals. A series of objective criteria should be used to make decisions about funding. For NRDA-based restoration, these criteria should be the same across the Gulf region and be consistently applied, including early restoration projects. Having an appropriate set of criteria and measurable goals will not only improve decisions about which projects go forward, it will facilitate monitoring and evaluation during and after implementation. The sums of money potentially available for restoration are too large to have anything but the most rigorous approach to decision-making in order to enhance accountability and public trust. As a model, I have attached a set of guiding principles and criteria developed by Ocean Conservancy; these are based in part on policies adopted and implemented by the *Exxon Valdez* Oil Spill Trustee Council.

In short, successful restoration of the Gulf ecosystem will require a common vision of restoration, one that embraces the entire ecosystem, from coasts and marshes to the open water environments that stretch out beyond the shoreline. It will also demand the development and implementation of a comprehensive, integrated, Gulf-wide, science-based

[27] *Exxon Valdez* Oil Spill Trustee Council, State/Federal Natural Resource Damage Assessment Plan for the *Exxon Valdez* Oil Spill, Juneau, Alaska (Aug. 1989).

strategy and program. This program must be built on strong public participation and must incorporate external scientific peer review at every level. Finally, all restoration projects should have clear, measurable goals and be rigorously screened using objective criteria. Ten and twenty years down the road, when Congress asks the Government Accountability Office or the National Research Council to review the Gulf restoration program, we all hope they will conclude that these efforts resulted in tangible, lasting benefit for the Gulf ecosystem and hence its communities and economy.

D. Congress should support a long-term scientific research and monitoring program in the Gulf of Mexico, and should consider exporting the model to frontier areas such as the Arctic.

While I suspect that most people will agree that planning and design of restoration projects should be science-based, it is just as important that science is used to monitor and evaluate the results. To that end, we urge Congress to support the creation of a long-term scientific research and monitoring program to support restoration of and resource management in the Gulf of Mexico. In addition, we urge Congress to support a scientific research and monitoring program for the Arctic, so that we can make informed management decisions and avoid the type of degradation that has plagued the Gulf of Mexico.

(1) Congress should establish a long-term, permanently funded scientific research and monitoring program for the Gulf of Mexico.

Even in the absence of events like the BP oil disaster, the Gulf of Mexico ecosystem is in perpetual flux. Natural changes in oceanographic conditions, combined with chronic impacts from past and present human activities on land or at sea, affect habitat quantity and quality, as well as the abundance and distribution of marine life. Understanding change in the Gulf ecosystem—whether from natural or anthropogenic causes—requires long-term science and is essential to restoration, management, and conservation over the long term.

As discussed above, restoration of the Gulf ecosystem must be informed, supported, and evaluated by science. A robust, long-term science program must be in place from the outset. Such a program should take advantage of the work on BP oil-related impacts being carried out in the NRDA and by independent researchers, and should be designed to detect lingering or sublethal injuries that extend over many years. More broadly, a restoration science program should provide information to support the design and selection of ecosystem restoration projects, evaluate the effectiveness of those projects and the overall program, and facilitate adaptive management going forward.

The *Exxon Valdez* Oil Spill Trustee Council made an early decision to make a major investment of restoration funds in science, both to facilitate restoration of oil-spill injuries and to guide management and conservation efforts in the future. That investment in science continues more than 20 years after the oil spill. In addition, Congress established and endowed the North Pacific Research Board in Alaska as a source of competitive grants to support applied research

that contributed to management and conservation of marine resources.[28] Research funded by the North Pacific Research Board has improved scientists' ability to forecast ecosystem changes, answered important questions about fish-habitat relationships, and led to more informed resource management decisions.

Drawing in part on the Alaska experience, members of the scientific and conservation communities have proposed versions of a permanent, endowed Gulf of Mexico Ecosystem Monitoring (GEM) program to supplement and extend beyond the restoration science carried out in connection with NRDA and Restoration Task Force programs in the Gulf. The GEM program should include and support an expanded, ongoing Ocean Observing System in the Gulf of Mexico so that ocean scientists can detect changes in the marine ecosystem and forecast the impacts of those changes on ecosystem productivity and fishery resources. We strongly recommend that Congress create a permanently-funded GEM program.

To fund a GEM program, Congress should segregate a portion of the Clean Water Act penalties associated with the BP Deepwater Horizon disaster into a separate account within the U.S. Treasury. It should dedicate the revenue stream from the earnings of that account, after adjusting for inflation, to the support of the GEM program and its ecosystem monitoring and research projects. Grants should be awarded on a competitive basis to academic institutions, marine research consortia, government agencies, and other appropriate entities with an emphasis on developing an integrated series of scientific research and monitoring projects over a long time horizon. To ensure an adequate level of continuing support, Congress should designate on the order of $1 billion of the Clean Water Act penalties for the separate GEM account. GEM grants should be administered by a decision-making board established and operated by a regional entity, such as the Gulf of Mexico Alliance, under the fiscal and administrative authority of the U.S. Department of Commerce. Members of the board should include stakeholders from the Gulf region, as well as representatives of key federal and state agencies and academic institutions.

(2) Congress should act now to establish a long-term scientific research and monitoring program in the Arctic.

Establishing a long-term scientific research and monitoring program will support restoration efforts in the Gulf of Mexico in the wake of the BP Deepwater Horizon disaster and decades of systemic degradation. But there is no reason that development and implementation of a science plan should come about only after a region has been degraded or affected by a catastrophe. On the contrary, the best time to conduct scientific research and monitoring comes before an area is exposed to widespread industrial activity and its attendant risks. This allows scientists to establish an accurate baseline that can help guide management decisions, including decisions about whether, when, where, and how to pursue oil and gas operations.

[28] P.L. 105-83, § 401(e), 111 Stat. 66-67 (Nov. 14, 1997); *codified at* 43 U.S.C. 1474d(e).

With warming temperatures, decreasing seasonal ice, and advancing technology, the Arctic is becoming more accessible to commercial and industrial users. Ship traffic is already on the rise, and the oil and gas industry is anxious to explore the region. But the Arctic is a challenging area in which to operate, and its environment is particularly fragile. Moreover, the Arctic is not well understood, and there are significant gaps in our knowledge of this rapidly changing ecosystem.[29] In short, we need to act now to ensure that we have the baseline scientific data that will allow us to make informed management decisions and no-regrets choices about industrial activities in the region. To that end, we urge Congress to support the immediate development and implementation of a long-term, comprehensive, integrated science program for the Arctic.

IV. Conclusion

Ocean Conservancy recognizes that the United States must continue to develop energy sources needed to sustain and promote economic growth and support our social needs. But the catastrophe in the Gulf of Mexico shows that we must learn to do so in ways that are safe for energy workers and that allow us to maintain a healthy environment for this and future generations.

[29] *See generally* Holland-Bartels, Leslie, and Brenda Pierce, eds., An evaluation of the science needs to inform decisions on Outer Continental Shelf energy development in the Chukchi and Beaufort Seas, Alaska: U.S. Geological Survey Circular 1370 (2011); Coastal Response Research Center, Natural Resources Damage Assessment (NRDA) in Arctic Waters: The Dialogue Begins, Univ. of New Hampshire (2010). *See also* National Commission at 303 (recognizing that ""scientific research on the ecosystems of the Arctic is difficult and expensive. Good information exists for only a few species, and even for those, just for certain times of the year or in certain areas.").

Attachment

United States Senate
Committee on Commerce, Science, and Transportation
Subcommittee on Oceans, Atmosphere, Fisheries, and Coast Guard

Written Testimony of Jim Ayers, Ocean Conservancy

"Looking to the Future: Lessons in Prevention, Response, and Restoration from the Gulf Oil Spill"

July 20, 2011

Ocean Conservancy

Principles for Effective Restoration and Criteria for Selecting and Funding Restoration Projects

Principles for Effective Restoration

The principles below are intended to guide development of restoration decision-making structures, processes, and plans, to measure their sufficiency, and to enhance their accountability:

Sound Management

- Efficient, transparent, responsive, and accountable to the public;
- Active, full participation by relevant federal entities and all Gulf states, individually and collectively, over time;
- A formal and recognized process that engages the public, including broad representation from regional communities and stakeholders;
- Commitment by federal and state partners to incorporate local and traditional knowledge in management decisions;
- Coordination between the Natural Resources Damage Assessment and Restoration process (NRDA) conducted in response to the BP oil disaster and the

broader restoration planning functions of Gulf Coast Ecosystem Restoration Task Force; and

- A comprehensive science-based ecosystem restoration strategy—resting on a clear vision for a healthy Gulf ecosystem—and supplemented by annual work plans, progress reports, and periodic requests for project proposals.

Stable and Coordinated Funding

- Coordination of projects from funds allocated from various revenue sources (to ensure that projects are consistent, complementary and not duplicative);

- Predictable funding streams, consistent from year to year, and sustained over the long-term;

- Funding levels commensurate with the magnitude of the restoration goals; and

- Endowment established to permanently support the research and monitoring needed to assess the health of the Gulf, evaluate the efficacy of restoration measures, and facilitate adaptive management.

- Funds provided by the parties responsible for the oil disaster under the Oil Pollution Act of 1990, Clean Water Act, and other sources, such as the Migratory Bird Treaty Act and Endangered Species Act; and

- Additional funds contributed by the private sector for matching or leveraging restoration funds provided by state and federal governments.

Prudent Project Selection

- Established criteria clearly link projects to specific, measurable, feasible objectives;

- Projects subject to independent scientific peer review in selection and evaluation processes; and

- Projects coordinated and integrated projects within the framework of a comprehensive ecosystem restoration strategy.

Stewardship

- Restoration and enhancement of the Gulf of Mexico ecosystem from coastal to open blue-water environments;

- Habitat protection and enhancement that provide long-term resiliency and sustainability for coastal communities;

- Rehabilitation of degraded natural resources and ecosystem services that provide sustainable economic opportunity and human uses.

Sentinel System for the Future

- Monitoring and management systems in place to identify and address lingering injury from BP oil and evaluate effectiveness of restoration projects and make necessary adjustments based on performance in achieving goals; and

- Permanent "take the pulse of the Gulf" science program to track ecosystem health, identify emerging problems, and facilitate solutions.

Criteria for Selecting and Funding Restoration Projects

As restoration moves from planning to implementation, there will be a myriad of proposals for projects on which to spend restoration funds. The ultimate success of these projects—which must be measured by the health and resilience of the ecosystem—rests on selection, implementation, and evaluation of a series of integrated projects, consistent with a Gulf-wide plan, and rigorous application of criteria to ensure that only the best and most appropriate projects are funded. The restoration program that emerges should take a comprehensive, integrated ecosystem approach and should strive for restoration that is greater than the sum of individual projects. This is no easy task, and criteria can be structured to emphasize different goals and values. The criteria described below can be applied at the strategic level, as well as at the level of individual projects.

The following criteria, based in part on those developed and tested by the *Exxon Valdez* Oil Spill Trustee Council, are recommended for guiding project selection for Gulf restoration related to injuries or losses caused by the BP disaster or long-term environmental degradation:

- Restoration will contribute to a healthy, productive and biologically diverse coastal and marine ecosystem that supports the services necessary for the people who live or work in the area.

- Restoration uses an ecosystem approach based on an understanding of factors that control the populations of species or condition of habitats found in coastal and marine areas.

- Priority will be given to restoration projects that facilitate recovery of injured natural resources and lost services by addressing systemic problems facing the ecosystem, including historical degradation.

- Priority will be given to restoration of natural resources and ecosystem services that have economic, cultural and subsistence value to people living or working along the Gulf coast and that bring long-term benefit to multiple species.

- Possible unintended negative effects on non-target resources and services must be assessed in considering restoration projects.

- Competitive, innovative and cost-effective proposals for restoration projects will be encouraged.

- Restoration priorities and activities will be re-evaluated as information on the extent and significance of injury to natural resources is obtained from the Natural Resource Damage Assessment and from other scientific sources.

- Restoration activities should state a clear, measurable and achievable endpoint.

- Priority will be given to activities that involve multi-disciplinary, interagency or collaborative partnerships.

- Restoration activities will be subject to independent scientific review before approval.

- Restoration must include meaningful public participation at all levels – planning, project design, implementation and review.

- Restoration must reflect public ownership of the process by timely release and reasonable access to information and data.

- Long-term monitoring programs and decision support tools shall be established to assess performance of restoration activities, allow for adaptive management and measure the health of the Gulf ecosystem.