

The House Subcommittee on Fisheries, Wildlife and Oceans
Oversight Hearing on: “Our Natural Resources at Risk: The Short and Long Term
Impacts of the Deepwater Horizon Oil Spill”

Testimony of Donald Michael Fry, PhD

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Room 1324 Longworth House Office Building.

Chairman Bordallo, Ranking Member Brown, and distinguished members of the Insular Affairs, Oceans and Wildlife Subcommittee, I would like to thank you for inviting me to testify on behalf of the American Bird Conservancy (ABC) and the Federal Advisory Committee for Minerals Management Service Outer Continental Shelf Environmental Studies Program.

My name is Dr. Michael Fry, and I am the Director the Conservation Advocacy Program at American Bird Conservancy. In addition to being responsible for interpreting the science and federal policy issues concerning pesticides and other toxics, my job includes a issues related to the effects of wind projects on habitat impacts and mortality to birds.

My qualifications include a PhD in Animal Physiology from the University of California, Davis, and 35 years experience in avian ecology and toxicology at the University of California and at American Bird Conservancy. I serve as Chair of the Minerals Management Service, Outer Continental Shelf Environmental Studies Program, Science Advisory Committee.

American Bird Conservancy (ABC) is a 501(c)3 not-for-profit organization, whose mission is to conserve wild birds and their habitats throughout the Americas. It is the only U.S.-based, group dedicated solely to overcoming the greatest threats facing birds in the Western Hemisphere. In brief, ABC has been an active participant in national symposia on seabirds and has an active program for conservation of seabirds throughout the Americas and Pacific.

My second role today is that of Chairman of the Federal Advisory Scientific Committee for the Outer Continental Shelf Environmental Studies Program. I served on this committee from 1989 to 1996, as Chairman for two years, and I was reappointed to the Committee in 2006 and am the current Chairman. The Scientific Committee reviews the environmental studies program studies plan each year and makes recommendations on proposed studies and suggestions for program direction to the Secretary of Interior.

I am an avian toxicologist with experience in studying the effects of oil spills on populations of seabirds, including the pathology of oil and the effects on behavior and reproduction of birds exposed to oil. I conducted research on seabirds experimentally exposed to oil in the 1980s, and worked with the oil spill responders in Alaska following the Exxon Valdez spill. After the Exxon Valdez spill I participated in the Natural Resources Damage Assessment with the Trustees, and helped evaluate the long-term effects of the spill on the many bird species present in Coastal Alaska.

Oil exposure to seabirds causes a cascade of injuries. The initial injury is fouling, and everyone has seen photos of pelicans and other birds coated with oil so that they are unable to fly or forage for food. Oil, either fresh, weathered or chemically dispersed, destroys the insulation properties of feathers, and allows water to penetrate to the skin of birds. When this happens, the birds become cold, and must metabolize stored nutrients in order to maintain body temperature. This causes loss of stored fat followed by muscle wasting, so that the birds are severely weakened, cannot fly, cannot feed, and rapidly deteriorate. If not recovered by rescue teams within a few days, they will starve to death. If oiled birds are far out to sea, many will drown and sink without ever being detected. This is particularly true for diving juvenile Northern Gannets, which are highly pelagic and remain out at sea throughout the year. Gannets were the first birds recovered at sea in the Deepwater Horizon spill, and I fear that many will be oiled and never be detected or recovered.

The cascade of injury continues with internal oil exposure. Birds that attempt to clean themselves by preening oil from their feathers will ingest quantities of oil, which causes injury to the digestive tract, liver and kidneys, resulting in greatly elevated stress, and especially impaired kidney function. Exposure to fresh oil containing the gasoline components results in respiratory injury from inhalation of toxic fumes. Without adequate veterinary care, most moderately and heavily oiled birds will die.

The consequences of even light exposure to oil can be severe and long-term. We did studies in the 1980s in which we lightly oiled different species of seabirds with less than 1/3 of a teaspoon of oil. Most exposed birds abandoned their nests and failed to breed, or failed to hatch the few eggs that were laid, and shearwaters oiled in one year had impaired reproduction in the year following exposure as well. I expect that even lightly oiled pelicans, gulls, herons, and other birds exposed in this spill will have breeding failure this year, and the great disturbance in the colonies will carry forward at least into the breeding season of 2011. I sincerely hope that the oil spill responders and Natural Resource Damage Assessment teams will be able to continue their studies into future years to be able to adequately assess the injury to the ecosystem caused by this spill.

I would like to discuss the similarities and differences between the Exxon Valdez Oil Spill and the Deepwater Horizon (AKA Mississippi Canyon 252) oil spill.

The Exxon spill was a catastrophic event that occurred over a period of only a few days, but which spread across Southern Alaska for months. More than 1300 miles of shoreline were oiled, and even after cleaning it took years for the habitats to recover. Some sensitive habitats, such as shellfish beds of mussels in rocky intertidal areas still have oil present. The spill caused injury to many species of birds and marine mammals, and probably killed hundreds of thousands of birds, although only about 35,000 oiled birds were recovered. Some of the species, such as Bald Eagles, recovered quickly, with no detectable population effects after only a couple of years, while others, such as Marbled and Kittlitz's Murrelets, Harlequin Ducks, Black Oystercatchers, and Common Murres exhibited population level decreases that could be detected for several years. A few of the species may still not have recovered to pre-spill numbers, and it is now 21 years after the spill. Exxon was prosecuted and convicted for violations of the Migratory Bird treaty Act, and for violations of the Clean Water Act. I believe violations of both laws have also occurred with the Deepwater Horizon oil spill and warrant prosecution.

I expect that the Deepwater Horizon spill will have equally far reaching and long-term effects on bird species in the Gulf of Mexico, and that the wetlands and mangroves of the Gulf Coast will not recover for decades. Although I am not an expert on mangroves, I believe that if sensitive mangroves are killed, it is likely that some barrier islands will be weakened and may erode more quickly, increasing the risks of storm damage, especially during hurricane season. The presence of persistent oil in wetlands will have long-term negative effects on the colonial waterbirds that use these islands as nesting areas. Brown Pelicans, Laughing Gulls, herons, egrets, spoonbills, ibises and gallinules have already been affected, with responders having recovered more than 1000 birds alive and dead so far. I expect the number of injured wildlife to continue to increase, as it is impossible to prevent birds that are caring for chicks from trying to forage for food outside boomed areas, even if their breeding islands remain successfully protected by oil booms. Diving species such as pelicans and terns will continue to hunt for fish in oiled waters, and will become victims of the spill. The un-hatched eggs of these birds may become contaminated with oil, which will cause failure, and it is probable that entire colonies of wetland birds will fail this year, and perhaps experience lowered breeding success in future years.

A major difference between the Exxon Valdez spill and the Deepwater Horizon spill is the continuing release of huge quantities of oil and the constant release of fresh oil into the ecosystem. The depth of water is also a major difference, as the explosive discharges of oil at depth results in immediate natural dispersion of small droplets into the water column, in addition to the dispersion of oil using chemical dispersants. Dr. Ed Overton of LSU has eloquently described these phenomena, and has described the mix of very sticky weathered and un-weathered oil, which complicates the skimming and cleanup operations. Like the Exxon Valdez oil, this oil will continue to move with

currents and along shorelines and may oil a similar amount of shoreline, especially if blown toward shore during the anticipated storm season.

The endangered marine mammals of the Gulf of Mexico, especially Sperm Whales, I believe are at high risk of injury and death from this spill. Sperm Whales have been observed surfacing in the oil slicks, and could easily inhale oil which would cause injury or death. This occurred with Killer Whales (Orcas) during the Exxon Valdez, and although no Orca carcasses were observed or recovered in 1989, observers were able to identify missing members of whale pods (groups) in years following the spill and were able to document the injury to the Alaska whale population. A great deal of work has been done with the Gulf of Mexico population of Sperm Whales, and an emergency team of observers should be deployed to document whale behavior and potential injury from this continuing spill, which is occurring within known territories of Sperm Whales.

There are excellent teams of wildlife rehabilitators caring for oiled birds at several sites along the Gulf Coast. These are well trained people some of which I worked with in Alaska in 1989, and have been well organized with funds generated by the Oil Pollution Act of 1990, passed by Congress following the Exxon Valdez spill. These teams had equipment and supplies pre-deployed in the Mississippi Delta prior to the spill and staff were immediately sent to set up their facilities within days after the explosion and fire on the Deepwater Horizon rig. I believe this wildlife rescue effort will be successful in cleaning birds, as responders continue to clean oil from the beaches and coastal waters. However, if the spill continues, which is likely, the cleaned birds will have no safe place to return to, and it may be impossible to successfully return them to the wild. Even if birds are taken far outside the spill area, it is probable that they will try to return even hundreds of miles back to their breeding colonies, which may still be oiled, and this will prove disastrous for all the birds nesting along the Gulf Coast. There has been some press and media discussion of the futility of cleaning oiled birds, and some have even recommended that all oiled birds be euthanized humanely without attempting to clean or rehabilitate them. I strongly disagree. The knowledge of cleaning and rehabilitation of birds gained by bird rescuers during the past 40 years has been impressive. Every spill has been a training ground for increasing knowledge, which is shared and communicated at national meetings, in journal articles, and in training sessions every year. The success at cleaning and rehabilitation has improved over the years, and will continue in the future, as no one has been able to prevent oil spills from occurring. The Fish and Wildlife Service and private organizations have conducted radio telemetry studies to evaluate survival of oiled birds, and in many cases the cleaning and rehabilitation efforts have successfully returned many, or in some cases, most of the oiled birds back to the wild to successfully breed in subsequent years. This has not been true for some species and some oil spills, and the success has been highly variable from spill to spill, but I believe that continued wildlife response is very important and warranted. Just as human medicine and surgery have advanced over the past hundred years, the art and science of wildlife rehabilitation are advancing, and should continue, and should continue to be well funded.

I would like to briefly change subjects and discuss the Minerals Management Environmental Studies Program that my Federal Advisory Committee is charged with reviewing and evaluating. MMS contracts studies which are necessary targeted research on environmental issues related to offshore energy production, including risks to the environment and the technological advances to reduce risk and avoid environmental injury arising from energy production.

The MMS studies program began with a good record for comprehensive evaluation of the offshore environment and seabed and has continued during the period I have been a reviewer of the program. MMS began this program in the mid-1970s with a significant budget to contract, oversee and evaluate environmental studies, and developed an excellent baseline of studies during the 1970s and 1980s.

One of the primary charges of the studies program was, and continues to be, developing baseline information on the natural resources of areas with potential for energy production. MMS conducted a continent wide Outer Continental Shelf Environmental Studies Program (OCSESP) to inventory the resources offshore in the Gulf of Mexico, Eastern seaboard, Pacific Coast and Alaska. Without the MMS studies data, the US would not have had the scientific background to be able to assess the oil spill injury from the Exxon Valdez, nor would the US have been able to identify the significance of the injury to many species of seabirds, marine mammals, fish and their habitats.

I was a technical expert for the US and the Oil Spill Trustees on the injury and recovery of wildlife from the Exxon Valdez spill, and was a technical expert for the US in the ensuing litigation to recover funds from Exxon to restore the environment and compensate injured parties. Without the detailed studies funded by the MMS during their OCSESP program, identification of injury would not have been possible.

Today, however, the budget for the Environmental Studies Program at MMS is about 1/3 the \$55 million figure that it was in 1975, and if corrected for inflation, the current budget of approximately \$20 million is only about 10% of what it was in 1975.

MMS Environmental Studies Program Budget: 1973-2008

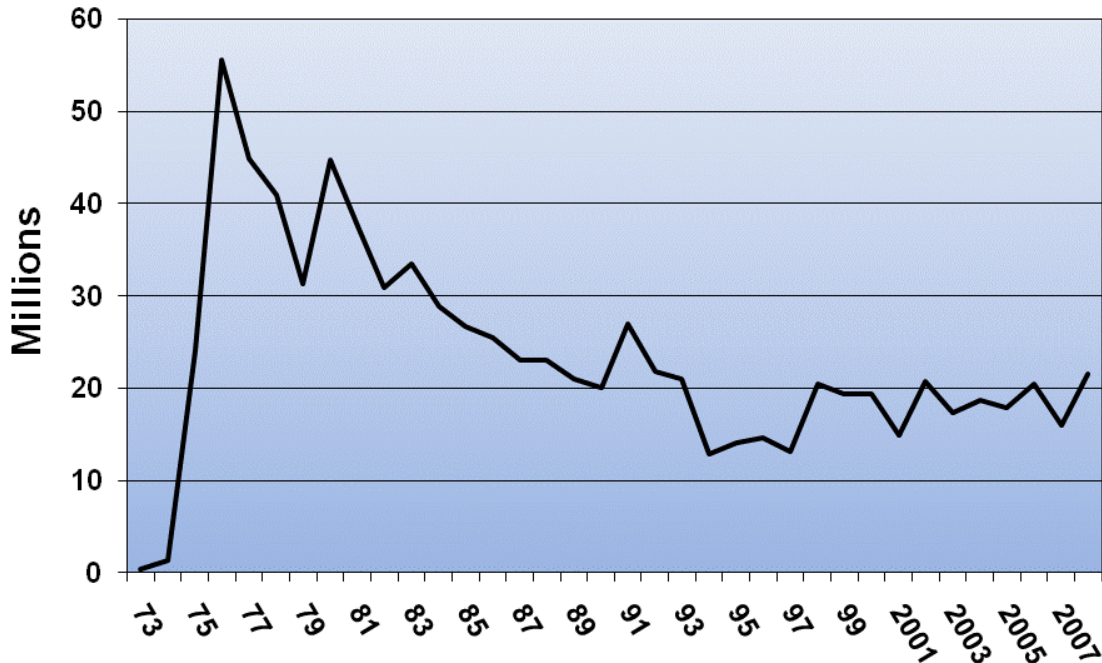


Figure 1. Graph of the Environmental Studies Budget for the period 1973-2007.
Source: MMS program presentation to the Science Committee 2008.

This is at a time of significant expansion of the mandate of MMS, not only evaluating vast new areas of the outer continental shelf off the East Coast of the US, the Eastern Gulf of Mexico, the Pacific Northwest, and the Arctic Ocean, but also for expanding the existing programs in the Western Gulf of Mexico, Southern California, and Alaska.

The new proposed leases in the Beaufort and Chukchi Seas in the Arctic Ocean will pose unprecedented challenges, and without adequate funding I foresee disasters in this uncompromising environment.

In addition, MMS is faced with new challenges of evaluating the environmental concerns of offshore wind technologies, which present very different challenges than that of assessing risks and technology development of offshore and deepwater oil and gas production. It has been the opinion of the MMS Science Advisory Committee that the current MMS Environmental Studies Program is severely underfunded, and the Scientific Committee in 2008 recommended to the Secretary of the Interior that the environmental studies budget should be at least doubled to adequately fund the necessary environmental studies that must be done to assess the offshore resources and protect the offshore environment, including the seabed. We repeated this recommendation at our 2009 meeting in Anchorage as well.

In the past, MMS has developed and carried out a comprehensive program to evaluate oil and gas exploration technologies, oil spill prevention, regulation of spills and discharge of oil drilling fluids and wastes. In addition, the Environmental Studies Program has conducted a program to identify and protect sensitive and unique sea bottom ecosystems, especially “hard bottom” communities, as well as marine mammals, seabirds and fish. They have conducted studies of the potential disturbance of seismic exploration noise on marine mammals, toxicity of oil to seabirds and other marine life, and disturbance of sensitive animals from placement of platforms and drilling operations. In my opinion, the MMS has successfully conducted a broad range of studies, and has reduced risks in the offshore environment with an excellent record up to this Spring.

I know that these are difficult economic times, but I urge the Subcommittee and your colleagues in Congress to adequately fund the environmental studies program so that with continued and expanded offshore development, both for oil and gas, and for alternative energy, the MMS will be able to continue their excellent record of environmental evaluation.

At the 2009 Anchorage meeting I made a personal plea for expanded environmental studies in the North Aleutian Basin, also known as Bristol Bay, because of the highly productive crab and red salmon fisheries, an extremely large number of migratory and resident seabirds, and critically endangered Pacific Right Whales found in the region.



Figure 2: Photograph of seabirds and a whale in the Bearing Sea, just north of Unimak Pass. Source: US Fish and Wildlife Service.

The Environmental Studies Program was unable to fund many valuable studies with their ever decreasing budgets (in constant dollars), and I personally recommended that no leasing be conducted in Bristol Bay or the Arctic Ocean until adequate studies could be undertaken to understand and minimize the risks to these highly sensitive habitats. Today I more strongly believe this, and I continue to recommend that leasing of Alaskan waters be deferred until adequate studies are undertaken to assess and minimize risks. It is especially important to better understand the risks posed by floating ice in the Arctic, as iceberg scars present on the ocean floor belie the dangers of icebergs or huge sheets of ice damaging oil production facilities with catastrophic consequences, as it will be even more difficult to clean up a spill in arctic waters than it is in the Gulf of Mexico, which is proving to be almost impossible. I believe it is highly irresponsible to continue leasing and exploration in icy waters without first studying and refining the safety and response techniques that will almost certainly be needed when the inevitable Arctic Ocean oil spill occurs.

In 2008, the U.S. collected almost \$23 billion in revenues from federal oil and gas production and leases: \$13 billion in royalties and \$10 billion in bonus bids. None of these dollars went back into the MMS program to fund the critical mission-related studies that MMS needs to be able to support their leasing activities. I personally think it has been a very dangerous situation for the Agency to try and continue to lease in uncharted waters without adequate studies, and I believe the consequences of inadequate funding by Congress, and the unknowns in attempting to cope with infrequent but highly injurious accidents such as the blowout of the well during operations aboard the Deepwater Horizon have been exacerbated by extending leasing beyond the understanding of the risks. MMS critically needs augmented funding to catch up to the demands of our domestic energy production.

I believe it is a very significant part of the budget graph that Congress augmented the studies Budget immediately after the Exxon Valdez oil Spill, but then just a few years later again substantially lowered the appropriations for this program. I believe it is not appropriate for Congress to continually cut budgets of mission oriented studies and expect that there will be no future consequences.

Recently it has been recommended that the MMS be split into three separate Bureaus to separate the royalty collection from the leasing and regulatory parts of the Agency. I have no opinion as to the appropriateness of this action, nor of the effect on the functioning of the Agency, but I would strongly plea that the mission-targeted studies program remain within the leasing branch, so that mission-oriented studies can best be designed and conducted in support of future leasing. I think it would be damaging to the Agency to transfer the Studies program into a another Agency, such as USGS, because the mission and focus of another Agency would be quite different, and the mission-targeted nature of the studies program would likely be lost, with consequential further

loss of critical information needed to understand the interactions between energy development and the environment and to reduce the risks of venturing into uncharted waters.

I thank the Committee for inviting me to present my views and the views of the Federal Advisory Committee at this hearing. If you have any questions I will attempt to respond now or later in writing.

Thank you very much for giving me this opportunity to testify,

D. Michael Fry, PhD