



MARINE MAMMAL COMMISSION

28 March 2011

Mr. Gary D. Goecke
Chief, Environmental Assessment Section
Leasing and Environment (MS 5410)
Gulf of Mexico Outer Continental Shelf Region
Bureau of Ocean Energy Management, Regulation, and Enforcement
1201 Elmwood Park Boulevard, MS-5410
New Orleans, LA 70123-2394

Dear Mr. Goecke:

The Marine Mammal Commission, in consultation with its Committee of Scientific Advisors on Marine Mammals, has reviewed the Bureau of Ocean Energy Management, Regulation, and Enforcement's 9 February 2011 notice regarding its intent to prepare an environmental impact statement for its 2012-2017 leasing program in the Gulf of Mexico's Western and Central Planning Areas (76 Fed. Reg. 7228).

The Commission recently provided recommendations (enclosed) regarding a supplemental environmental impact statement for remaining lease sales under the 2007-2012 Gulf of Mexico leasing program. The current letter reiterates and expands on the importance of having adequate environmental information before proceeding with lease sales. Accordingly, the Commission provides the following recommendations and rationale.

RECOMMENDATIONS

The Marine Mammal Commission recommends that the Bureau of Ocean Energy Management, Regulation, and Enforcement—

- work with the National Marine Fisheries Service, the Fish and Wildlife Service, and the Marine Mammal Commission to develop comprehensive standards for baseline environmental information needed to evaluate the effects of offshore oil and gas operations on marine mammals and their environment;
- conduct an immediate, systematic, and rigorous expert review of the state of environmental knowledge in the Gulf to provide the basis for its proposed multi-sale environmental impact statement;
- use recommendations from that review to revise and expand its Environmental Studies Program for the Gulf to address priority research needs and data gaps prior to further lease sales;
- work with the oil and gas industry to fully fund and implement a revised and expanded Environmental Studies Program for the Gulf; and,
- provide a comprehensive analysis of the cumulative impacts expected from oil and gas operations, in the context of all other human uses of the offshore environment.

RATIONALE

Standards for environmental information

The Bureau's *Federal Register* notices indicate that its environmental impact statement will cover the 2012-2017 oil and gas leasing program in the Western and Central Gulf of Mexico, and the analysis will focus on the "potential environmental effects of oil and natural gas leasing, exploration, development, and production." To conduct a thorough analysis, the Bureau must have information sufficient to identify and characterize risks and the means for managing them so that decision-makers and the public are well informed about the potential adverse effects of oil and gas operations on the environment. Absent such information, the Bureau cannot fulfill the requirement of the National Environmental Policy Act to use all practicable means and measures to "foster and promote the general welfare, to create and maintain conditions under which man and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of present and future generations of Americans."

Each stage of oil and gas development presents risks to marine mammals and their habitat. At the exploration stage, seismic surveys used to locate oil and gas reservoirs may result in exposure to high intensity, pulsed noise that can cause acoustic or physical trauma (Gordon et al. 2004). Platform and pipeline construction and drilling for oil and gas at the exploration or production stage can physically alter marine habitats and displace sediments. Also habitat can become contaminated from drilling muds and cuttings (Neff 2010). Seismic surveys, construction, and drilling require vessel and air traffic that may increase the risk of vessel strikes, disrupt important behavior (e.g., foraging, reproduction), or cause animals to abandon prime habitat (Laist et al. 2001, Nowacek et al. 2001, Williams et al. 2006, Lusseau et al. 2009). The use of explosives in the decommissioning of oil and gas platforms can cause impact injury, as well as disrupt important behavior. The *Exxon Valdez* and *Deepwater Horizon* oil spills show that accidents can occur at different stages of development. Both the spilled oil and the associated response activities can have significant short- and long-term adverse environmental effects (Bodkin et al. 2002, Matkin et al. 2008).

The effects of oil and gas activities often are assessed by comparing baseline environmental conditions (that is, conditions prior to the activity in question) versus conditions after operations have begun. Despite decades of offshore oil and gas production in the Gulf of Mexico, with some exception, the responsible parties have yet to ensure that there is adequate baseline information to detect or determine if or how ongoing activities are affecting marine mammal species and stocks. Much of the marine mammal research funded by the Bureau is either outdated (e.g., cetacean surveys in the mid-1990s), or has been limited to only certain more easily studied species and certain types of effects (e.g., studies of sperm whale responses to seismic surveys and studies of sperm whale prey species). The research conducted is valuable, but it falls far short of providing a sufficient basis for assessing oil- and gas-related changes in population size, distribution, vital rates (survival, reproduction), habitat use, health and condition, behavior, or other aspects of marine mammal demography and ecology for all stocks. The Commission has written to the Bureau on several occasions recommending that it develop standards for baseline environmental information on marine mammals to guide data collection efforts and ensure that significant data gaps are addressed.

In developing these standards, the Bureau should seek out and take advantage of the considerable expertise available within the other federal agencies that have oversight and management responsibilities for marine mammals—the National Marine Fisheries Service, the Fish and Wildlife Service, and the Marine Mammal Commission. The value of interagency consultation in strengthening the Bureau’s environmental science program was highlighted by the National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling in their “Deep Water” report (Oil Spill Commission 2011). Consistent with the Oil Spill Commission’s findings, the Marine Mammal Commission repeats its prior recommendation that the Bureau of Ocean Energy Management, Regulation, and Enforcement work with the National Marine Fisheries Service, the Fish and Wildlife Service, and the Marine Mammal Commission to develop comprehensive standards for baseline environmental information needed to evaluate the effects of offshore oil and gas operations on marine mammals and their environment.

Incorporating new information on impacts of the Deepwater Horizon oil spill

The Commission considers it essential to have standards for baseline environmental information in place and for research to be conducted to address data gaps before any expansion of oil and gas development in the Gulf is allowed. However, the Bureau appears to instead be taking a “business as usual” approach. In its 15 March 2011 call for information and nominations for lease sales for the 2012-2017 Gulf of Mexico leasing program (76 Fed. Reg. 14040), the Bureau states that it “routinely assesses” the status of information acquisition efforts and the quality of information available for decisions regarding potential lease sales. The Bureau then concludes that “as a result of this continually ongoing assessment, it has been determined that the status of the existing and extensive data available for planning, analysis, and decisionmaking is adequate.” The Bureau provides no further details or rationale for these statements and the Marine Mammal Commission strongly disagrees with them.

The Commission does not know of any recent review conducted by the Bureau to assess the adequacy of current knowledge regarding environmental information in the Gulf, especially in light of potentially significant ecosystem changes resulting from the *Deepwater Horizon* oil spill. The Bureau’s Scientific Committee, charged with advising the Bureau on the feasibility, appropriateness, and scientific value of its Environmental Studies Program, has met only once since the *Deepwater Horizon* oil spill. To the Commission’s knowledge, the Bureau has made no changes to protected species research being conducted under the Gulf’s Environmental Studies Program as a result of the Scientific Committee’s recommendations or the *Deepwater Horizon* oil spill. The Commission continues to believe that, overall, current efforts to assess the various marine mammal species in the Gulf are inadequate. For example, the Gulf of Mexico is habitat for 59 marine mammal stocks. Of those, reasonable¹ abundance estimates are available for only 6 stocks. Despite this paucity of information, plans to obtain or increase the reliability of abundance estimates for the remaining 53 stocks remain unfunded.

Adopting a “business as usual” approach to environmental analyses following the worst oil spill in U.S. waters is unacceptable. Such an approach implicitly discounts the potential for

¹ Reasonable is defined here as having a coefficient of variation (CV) of less than or equal to 0.3.

significant changes to the marine environment resulting from the *Deepwater Horizon* event. It also ignores data gaps that previously had been overlooked or ignored but that were highlighted by the spill, such as health assessments to determine baseline levels of hydrocarbon-associated contaminants in marine wildlife species. Finally, such an approach seems entirely inconsistent with a statement from the Department of the Interior: “In light of the increasing levels of complexity and risk – and the consequent potential environmental impacts – associated with deepwater drilling, [the Department is] taking a fresh look at the [National Environmental Policy Act] process and the types of environmental reviews that should be required for offshore activity.”² For all these reasons, the Marine Mammal Commission recommends that the Bureau of Ocean Energy Management, Regulation, and Enforcement conduct an immediate, systematic, and rigorous expert review of the state of environmental knowledge in the Gulf to provide the basis for its proposed multi-sale environmental impact statement. The Marine Mammal Commission further recommends that the Bureau use recommendations from that expert review to revise and expand its Environmental Studies Program for the Gulf to address priority research needs and data gaps prior to further lease sales. As noted by the Oil Spill Commission, systematic efforts to fill data gaps can “help ensure that the selection of new lease areas is informed by a full understanding of potential impacts on important ecological resources.”

Industry involvement in funding for environmental research

Given limited government funding for environmental research, and in light of substantial and sustained profits in the oil and gas industry, the Commission believes that companies authorized by the Bureau and entrusted by the nation to exploit marine energy resources in a safe manner should take more responsibility for supporting research on the animals and ecosystems that are at risk from such exploitation. As such, these companies should bear much more of the cost of ensuring that adequate baseline information is available, environmental monitoring is adequate, and the potential for adverse effects on marine mammals and their environment is investigated to a point where it is well understood, and the risks are minimized.

The industry has funded important marine mammal research in the Gulf in the past, and these studies have helped provide a better understanding of marine mammal response to noise and other environmental perturbations. For example, several industry groups provided funds to help support the Minerals Management Service’s Sperm Whale Seismic Study (Jochens et al. 2008), specifically the Industry Research Funders Coalition and the International Association of Geophysical Contractors. However, current industry funding on marine mammals in the Gulf is minimal. To that end, the Marine Mammal Commission recommends that the Bureau of Ocean Energy Management, Regulation, and Enforcement work with the oil and gas industry to fully fund and implement a revised and expanded Environmental Studies Program for the Gulf.

² Dept. of the Interior Press Release, “Categorical Exclusions for Gulf Offshore Activity to be Limited While Interior Reviews NEPA Process and Develops Revised Policy,” August 16, 2010.

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Cumulative impacts

As part of its environmental analyses, the Bureau must consider the impacts of oil and gas operations in the context of other human activities or the effects of those activities, including fisheries; commercial shipping; tourism; chemical contaminant and nutrient run-off from shore-based and inland industry, agriculture, and residential developments; military activities; and climate disruption, including such specific effects as changes in the incidence and magnitude of hypoxic zones and harmful algal blooms. Climate disruption, in particular, likely will alter the physical, biological, and chemical environment, perhaps dramatically, during the lifetime of any oil and gas development activity in this region. Perhaps the most extensive changes will be from rising sea level and the most abrupt effects from an increase in the frequency and severity of storms in the Gulf. Furthermore, the impacts of other human activities in this region likely will expand as the human population grows. The U.S. Census Bureau projects an increase of 19 million people in the five Gulf states by 2030, which will require increasing resources and impose increasing stress on the marine environment. Therefore, the Marine Mammal Commission recommends that the Bureau of Ocean Energy Management, Regulation, and Enforcement provide a comprehensive analysis of the cumulative impacts expected from oil and gas operations, in the context of all other human uses of the offshore environment.

The Commission hopes you find these recommendations helpful. Please contact me if you have questions about our recommendations or if we can provide any further assistance.

Sincerely,



Timothy J. Ragen, Ph.D.
Executive Director

Enclosure: 3 Jan 2011 letter to J. Christopher, BOEMRE, New Orleans, LA

cc: Mr. David L. Hankla, Fish and Wildlife Service
Mr. James H. Lecky, National Marine Fisheries Service

Literature Cited

- Bodkin, J.L., B.E. Ballachey, T.A. Dean, A.K. Fukuyama, S.C. Jewett, L. McDonald, D.H. Monson, C.E. O'Clair, and G.R. VanBlaricom. 2002. Sea otter population status and the process of recovery from the 1989 Exxon Valdez oil spill. *Marine Ecology Progress Series* 241:237–253.
- Gordon, J., D. Gillespie, J. Potter, A. Frantzis, M.P. Simmonds, R. Swift, and D. Thompson. 2004. A review of the effects of seismic surveys on marine mammals. *Marine Technology Society Journal* 37(4):16-34.
- Jochens, A., D. Biggs, K. Benoit-Bird, D. Engelhaupt, J. Gordon, C. Hu, N. Jaquet, M. Johnson, R. Leben, B. Mate, P. Miller, J. Ortega-Ortiz, A. Thode, P. Tyack, and B. Würsig. 2008. Sperm whale seismic study in the Gulf of Mexico: Synthesis report. U.S. Dept. of the Interior,

- Minerals Management Service, Gulf of Mexico OCS Region, New Orleans, LA. OCS Study MMS 2008-006. 341 pp.
- Laist, D., A. Knowlton, J.G. Mead, A.S. Collett, and M. Podesta. 2001. Collisions between whales and ships. *Marine Mammal Science* 17(1):35–75.
- Lusseau, D., D.E. Bain, R. Williams, and J.C. Smith. 2009. Vessel traffic disrupts the foraging behavior of southern resident killer whales *Orcinus orca*. *Endangered Species Research* 6:211–221.
- Matkin, C.O., E.L. Saulitis, G.M. Ellis, P. Olesiuk, and S.D. Rice. 2008. Ongoing population-level impacts on killer whales *Orcinus orca* following the *Exxon Valdez* oil spill in Prince William Sound, Alaska. *Marine Ecology Progress Series* 356:269–281.
- Neff, J. 2010. Fate and effects of water based drilling muds and cuttings in cold water environments. A scientific review prepared for Shell Exploration and Production Company, Houston, Texas, 287 p.
- Nowacek, S.M., R.S. Wells, and A.R. Solow. 2001. Short-term effects of boat traffic on bottlenose dolphins, *Tursiops truncatus*, in Sarasota Bay, Florida. *Marine Mammal Science* 17(4):673–688.
- Oil Spill Commission. 2011. Deep Water: The Gulf oil disaster and the future of offshore drilling. Report to the President by the National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling, 382 p.
- Williams, R., D. Lusseau, and P.S. Hammond. 2006. Estimating relative energetic costs of human disturbance to killer whales (*Orcinus orca*). *Biological Conservation* 133:301–311.



MARINE MAMMAL COMMISSION

3 January 2011

Mr. Joseph Christopher
Regional Supervisor, Leasing and Environment
Gulf of Mexico Outer Continental Shelf Region
Bureau of Ocean Energy Management, Regulation, and Enforcement
1201 Elmwood Park Boulevard, MS-5410
New Orleans, LA 70123-2394

Dear Mr. Christopher:

The Marine Mammal Commission, in consultation with its Committee of Scientific Advisors on Marine Mammals, has reviewed the Bureau of Ocean Energy Management, Regulation, and Enforcement's 10 November 2010 and 16 November 2010 *Federal Register* notices regarding its intent to prepare a supplemental environmental impact statement for the remaining Western Planning Area and Central Planning Area lease sales in the 2007–2012 leasing program (75 Fed. Reg. 69122 and 75 Fed. Reg. 70023, respectively). The Commission provides the following recommendations and rationale.

RECOMMENDATIONS

The Marine Mammal Commission recommends that the Bureau of Ocean Energy Management, Regulation, and Enforcement—

- consult with the National Marine Fisheries Service, the Fish and Wildlife Service, and the Marine Mammal Commission to develop a set of standards for baseline information needed to assess the effects of oil and gas operations on marine mammals and their environment;
- initiate research on these topics prior to the resumption of lease sales in the Gulf of Mexico;
- consider ways to improve oil spill prevention and response capabilities by (1) requiring the industry to provide the resources for related research and technology development and (2) adding performance-based incentives for the industry; and
- prepare for public review a detailed description of the lessons learned and adjustments made to improve management of offshore oil and gas operations based on experience from the BP oil spill.

RATIONALE

The former Minerals Management Service proposed to hold 11 lease sales in the Gulf of Mexico during the 2007–2012 leasing program: five in the Western Planning Area (204, 207, 210, 215, and 218) and six in the Central Planning Area (205, 206, 208, 213, 216, and 222). By April 2010, when the BP Deepwater Horizon spill began, the Service had conducted seven of these lease sales (204, 205, 206, 207, 208, 210, and 213). In July 2010 the Bureau cancelled lease sale 215 and delayed action on the remaining sales. The Bureau has now issued a notice of intent to prepare a supplemental environmental impact statement for the remaining lease sales in the Central and Western Planning Areas. The notice indicates that the Bureau deemed a supplemental environmental impact statement necessary to “consider new circumstances and information arising, among other things, from the Deepwater Horizon blowout and spill.”

The BP spill is a stark reminder of the risks associated with offshore drilling. It was unprecedented in duration, volume of oil spilled, depth at which the spill occurred, and volume of dispersant used. It raised critical questions regarding the ability of the oil and gas industry to prevent and respond to a major spill, particularly in deep water. It also exposed inadequacies in drilling safety practices and equipment, and it raised important concerns regarding the adequacy of government oversight and planning for such a worst-case scenario. The Commission agrees that the Bureau should consider the new information resulting from the spill before continuing any remaining lease sales because much insight can be gained from a careful analysis of the Deepwater Horizon oil spill.

Limitations in Baseline Information

Among other things, the BP oil spill highlighted how little we know about the Gulf of Mexico marine ecosystem, its various biological components, and their vulnerability to spilled oil. Marine mammal stock assessment reports prepared by the National Marine Fisheries Service indicate that the Gulf is habitat for 58 marine mammal stocks. Abundance estimates are deemed acceptable, by that agency's standards, for only six of those stocks. In all but a few cases, the general lack of adequate pre-spill information will preclude a meaningful assessment of the effects of the spill on the marine mammal stocks. Such an assessment is mandated by the Oil Pollution Act of 1990 and is part of the basis for determining the damage done when a spill occurs and for compensating the public and restoring the environment to the extent possible.

Prior to the spill (i.e., in 2008¹), the Bureau described, as follows, the potential impacts of oil and gas operations on marine mammals. The description recognized the need for baseline scientific information and stated²:

Routine events related to a proposed action [in the Central or Western Planning Areas], particularly when mitigated as required [by the Minerals Management Service], are not expected to have long-term adverse effects on the size and productivity of any marine mammal species or population endemic to the northern Gulf of Mexico. Characteristics of impacts from accidental events depend on chronic or acute exposure, resulting in harassment, harm, or mortality to marine mammals, while exposure to dispersed hydrocarbons is likely to result in sublethal impacts. The effects of the incremental contribution of a proposed action, including the 181 South Area, combined with [other] activities may be deleterious to cetaceans occurring in the Gulf of Mexico. Biological significance of any mortality would depend, in part, on the size and reproductive rates of the affected stocks, as well as the number, age, and size of animals affected.

The information referenced in that statement is not available for the majority of the Gulf's marine mammals, although some information is available for a few stocks (i.e., sperm whales,

¹ Gulf of Mexico Outer Continental Shelf Oil and Gas Lease Sales: 2009–2012, Central Planning Area Sales 208, 213, 216, and 222 and Western Planning Area Sales 210, 215, and 218 – Final Supplemental Environmental Impact Statement OCS EIS/EA MMS 2008-041)

² At section 4.1.6

pantropical spotted dolphins, and a few bottlenose dolphin stocks). The Marine Mammal Commission has written to the Bureau on several occasions recommending that it work with the oil and gas industry, the National Marine Fisheries Service, and the Fish and Wildlife Service to collect better baseline information to enable the Service to determine if oil and gas activities, including accidents, cause harm to marine mammals and their habitat. Although the Minerals Management Service made efforts to do so (e.g., cetacean surveys in the mid-1990s, recent studies of sperm whale responses to seismic surveys) and although those efforts provided much valuable information, they did not produce enough of the right kind of data to ensure an adequate baseline for assessing the effects of oil and gas development. More information is needed on abundance, distribution, movement patterns, vital rates, foraging patterns, contaminant loads, health and condition, and vulnerability to various threats for the marine mammals that are at risk from oil and gas operations in the Gulf.

Therefore, the Marine Mammal Commission repeats its recommendation that the Bureau of Ocean Energy Management, Regulation, and Enforcement consult with the National Marine Fisheries Service, the Fish and Wildlife Service, and the Marine Mammal Commission to develop a set of standards for baseline information needed to assess the effects of oil and gas operations on marine mammals and their environment. The Commission considers this an urgent priority. Indeed, the need for better baseline information is one of the main lessons that should have been learned from the *Exxon Valdez* spill more than two decades ago. To that end, the Marine Mammal Commission also recommends that the Bureau of Ocean Energy Management, Regulation, and Enforcement initiate research on these topics prior to the resumption of lease sales in the Gulf of Mexico.

Responsibilities for Developing Prevention and Response Capabilities

Ongoing investigations of the causes of the Deepwater Horizon oil spill by the Bureau, the Coast Guard, the National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling, the National Academy of Engineering, and others will provide information to assist the Bureau in addressing the root causes of the oil spill. If comprehensive, the investigations also will provide recommendations for revising Bureau regulations, practices, and procedures to reduce the probability of another major oil spill and enhance oil spill response capabilities. Implementing these recommendations will likely require substantial investments in research and development of new technology by the Bureau and by the oil and gas industry.

However, the resources for such research and development often are simply not available. To address that problem, the Marine Mammal Commission has long emphasized two methods for supporting research needed to ensure protection of the marine environment. The first involves requiring the proponents for actions that pose risks to the environment to provide the resources needed to study and manage those risks. In this case, the Commission believes that the industry should be required to provide missing support for research and development of oil spill prevention and response technology. Addressing those risks in a responsible manner should be considered one of the industry's costs of doing business. The second involves incorporating performance-based incentives for action proponents to improve safety and protection methods. Such incentives could be incorporated into the leasing process to encourage the industry to expand or strengthen oil spill

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prevention and response capabilities. For example, the leasing process could be modified to give credit to firms with exemplary safety records or active, productive environmental safety research and development programs. Conversely, strong economic disincentives might be used to discourage poor performance, such as restricting the access to lease sales of firms that have poor safety records or inadequate resources to respond to a worst-case scenario spill.

To improve safety and environmental protection associated with offshore oil and gas development, the Marine Mammal Commission recommends that the Bureau of Ocean Energy Management, Regulation, and Enforcement consider ways to improve oil spill prevention and response capabilities by (1) requiring the industry to contribute the additional financial resources needed for related research and technology development and (2) adding performance-based incentives for the industry.

Lessons Learned and Adjustments Made

Finally, despite all the reviews of the BP spill and its causes, and all the new measures that have been considered, proposed, or implemented, it is difficult to judge whether sufficient new safeguards have been added to address the risks of another spill. Undoubtedly, a great deal was learned from the *Exxon Valdez* spill and was included in the Oil Pollution Act of 1990. In many regards, that Act provides a clear record of lessons learned and adjustments made to reduce the risks of further oil spills. The BP spill has stressed the Gulf region socially, economically, and ecologically, and this most recent catastrophic spill in U.S. waters should be used as an opportunity to learn how to reduce the risks from oil and gas operations. Although much work related to the BP spill is still underway and more information will be forthcoming, it is not clear if or how the Bureau has incorporated the lessons learned into its regulatory practices and what specific adjustments have been made or are being considered. Thus, it is important to document and explain how oil and gas management will be different in the future and to determine whether changes in management will reduce significantly the probability of further spills. Therefore, the Marine Mammal Commission recommends that the Bureau of Ocean Management, Regulation, and Enforcement prepare for public review a detailed description of the lessons learned and adjustments made, based on experience from the BP oil spill, to improve management of offshore oil and gas operations.

The Commission hopes you find these recommendations helpful. Please contact me if you have questions about our recommendations or if we can provide any further assistance.

Sincerely,



Timothy J. Ragen, Ph.D.
Executive Director