



MARINE MAMMAL COMMISSION

15 February 2012

Mr. Gary D. Goecke
Chief, Regional Assessment Section
Office of the Environment
Gulf of Mexico Outer Continental Shelf Region
Bureau of Ocean Energy Management
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 (1) the Bureau of Ocean Energy Management's draft environmental impact statement on the Gulf of Mexico Outer Continental Shelf proposed 2012-2017 oil and gas lease sales for the Western and Central Planning Areas and (2) the associated 30 December 2011 *Federal Register* notice (76 Fed. Reg. 82319).

The Commission provided a number of recommendations in response to the notice of intent to prepare an environmental impact statement for the 2007-2012 Gulf of Mexico leasing program (enclosed). Those recommendations are submitted again for the Bureau's consideration and action. To supplement those recommendations, the Commission provides the following additional recommendations and rationale.

RECOMMENDATIONS

The Marine Mammal Commission recommends that the Bureau of Ocean Energy Management—

- review the Commission's enclosed statement of research needs, consult with the National Oceanic and Atmospheric Administration, the Fish and Wildlife Service, and the Marine Mammal Commission on long-term, high priority research and monitoring needs related to the Deepwater Horizon oil spill, and incorporate those priorities into its Environmental Studies Program;
- work with the National Marine Fisheries Service, the Fish and Wildlife Service, academia, and industry partners to develop a comprehensive monitoring program for the Gulf of Mexico ecosystem, including its marine mammal populations; and
- revise its environmental impact statement to include alternative strategies for seismic studies that would provide opportunities for avoiding unnecessary redundancy and thereby minimizing the associated ecosystem disturbance.

Investigating long-term oil spill effects

The April 2010 explosion of BP's Deepwater Horizon offshore drilling unit in the Gulf of Mexico resulted in an oil spill with significant ecological, social, and economic consequences. Achieving a full understanding of the spill's effects likely will require years of assessment because

some effects may continue or worsen, whereas others may not yet have been realized or become apparent.

A full accounting of the spill's effects on wildlife is not possible because of the lack of pre-spill baseline information. In the Gulf, the lack of such information for marine mammals has been and continues to be a serious and longstanding problem. One of the major lessons of the *Exxon Valdez* oil spill was that assessing spill effects requires good baseline information (Loughlin 1994, Matkin et al. 2008). Now, two decades later, the evidence indicates that lesson still has not been heeded. Of the 57 marine mammal stocks identified in the Gulf, baseline information is adequate for only a handful of them.

The lack of baseline information for the majority of Gulf marine mammal stocks, and research capacity generally, is related largely to inadequate research funding, personnel, and infrastructure (e.g., research vessels, analytical laboratories). As a result, studies to assess the long-term effects of the Deepwater Horizon oil spill likely will be hampered by inadequate resources and, if the past is any indication of the future, focused on a small subset of the Gulf's marine mammals (i.e., bottlenose dolphins and sperm whales).

Such assessments also will be confounded by the many other human activities and natural phenomenon that affect the Gulf—seismic surveys and routine oil and gas operations, commercial and recreational fisheries, commercial shipping, coastal development, military activities, tourism, hypoxia and anoxia, harmful algal blooms, hurricanes, natural oil seeps, and climate disruption. Undoubtedly, distinguishing the effects of those risk factors from the effects of the spill on the Gulf's marine ecosystem will be a challenge. However, that does not lessen the responsibility of the regulating federal agencies for trying to do so.

To facilitate assessment of the long-term effects of the Gulf spill, the Commission has prepared the enclosed report, "Assessing the Long-term Effects of the BP Deepwater Horizon Oil Spill on Marine Mammals in the Gulf of Mexico: A Statement of Research Needs." The Commission prepared the report with input from scientists and managers from the Bureau, the National Oceanic and Atmospheric Administration, and the Fish and Wildlife Service. The report outlines the legal mandates for assessing a spill's overall effects and details the likely effects of oil spills on marine mammals. It characterizes research efforts to date, highlights the overall need to improve assessment and monitoring of the Gulf's marine mammals, and outlines priorities for future efforts. Although virtually all assessment and monitoring efforts should be given high priority during or immediately after a spill, the likelihood of detecting certain impacts decreases with time and the utility and value of certain types of research declines accordingly. Therefore, the statement of research needs gives highest priority to tasks aimed at understanding potential long-term effects, including (1) assessing the health status of stranded or live-captured animals; (2) assessing oil spill-related changes in the ecosystem leading to a potential reduction in prey availability; (3) evaluating other ecosystem changes that are harmful to marine mammals and that may have been exacerbated by the spill (e.g., harmful algal blooms, hypoxia or anoxia); and (4) determining the extent to which exposure to oil and/or response activities leads to a reduction in status involving individual animal fitness, population vital rates (survival and reproduction), and population abundance and trends.

The Commission developed this statement of research needs to help guide the Bureau and other regulatory agencies as they develop plans to assess the long-term effects of the Gulf spill. The Marine Mammal Commission recommends that the Bureau of Ocean Energy Management review the Commission's enclosed statement of research needs, consult with the National Oceanic and Atmospheric Administration, the Fish and Wildlife Service, and the Marine Mammal Commission on long-term, high priority research and monitoring needs related to the Deepwater Horizon oil spill, and incorporate those priorities into its Environmental Studies Program.

Comprehensive monitoring program

Many of the shortcomings in our understanding of spill effects reflect an inadequate monitoring program for oil and gas activities generally. As a nation, we cannot make a legitimate claim to be science-based in our management of natural resources if we do not commit to comprehensive monitoring of our unintended but potentially significant effects on the marine environment. A comprehensive monitoring program should be sufficient to identify and avoid potential harmful interactions with sensitive populations (e.g., those listed as threatened or endangered under the Endangered Species Act or depleted under the Marine Mammal Protection Act) and impacts on particularly sensitive areas. For potentially affected marine mammals, the necessary information includes their stock structure, population status, abundance and trends, distribution and seasonal movements, habitat use patterns, and trophic relationships. A comprehensive monitoring program also should be collected at temporal and spatial scales necessary to characterize the inherent variability in the affected ecosystems. Indeed, the collection of baseline information requires a long-term commitment of effort and resources to provide the knowledge needed to detect or determine the extent of adverse effects associated with oil and gas development and otherwise provide a strong foundation for responsible management of marine ecosystems.

In fact, the Bureau's Environmental Studies Program has committed significant resources to comprehensive, multi-agency, multi-year programs to collect data on the abundance and seasonal distribution of certain marine mammals and other wildlife in the U.S. Atlantic and Arctic, areas targeted for development of new domestic energy sources. The Commission commends those efforts. The investment in research and monitoring in the Gulf of Mexico pales in comparison, which is remarkable because the Gulf has been, is, and will remain for the foreseeable future, the most important U.S. region for offshore oil-production.

The Commission believes that the Bureau must commit to a long-term, comprehensive monitoring program in the Gulf if it is to ensure that the Gulf's marine environment is adequately protected from the adverse effects of oil and gas production. Clearly, the Bureau cannot be solely responsible and such a program must be coordinated with the National Marine Fisheries Service, the Fish and Wildlife Service, academia, and industry partners. The program should include a strategy for assessing the status of marine mammal populations, characterizing important natural history traits including habitat use, determining vulnerability to threats from oil and gas activities, and identifying and developing appropriate mitigation and monitoring measures. A number of research tools are available for collecting this information, including vessel and aircraft surveys, passive acoustics, telemetry tagging, biopsy sampling, photo-identification studies, and information obtained from stranded animals. Therefore, the Marine Mammal Commission recommends that the Bureau

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of Ocean Energy Management work with the National Marine Fisheries Service, the Fish and Wildlife Service, academia, and industry partners to develop a comprehensive monitoring program for the Gulf of Mexico ecosystem, including its marine mammal populations.

Minimizing duplicative seismic surveys

In the course of oil and gas operations, seismic surveys are used for at least four purposes: (1) to explore broadly for oil and gas reservoirs, (2) to investigate in detail an area where exploratory drilling may be attempted, (3) to guide drilling activities, and (4) to monitor changes in reservoirs as extraction proceeds. These surveys are among the most disturbing oil and gas activities, particularly for organisms such as marine mammals, as they introduce extensive sound energy into the water. The amount of disturbance is a function of multiple factors, including the frequency and intensity of surveys conducted in a particular area.

Currently, each oil and gas company either conducts its own seismic surveys or contracts with another company to conduct the surveys on its behalf. If multiple companies are interested in the same or adjacent areas, then, over the course of oil and gas development, a given area may be surveyed on multiple occasions, thereby generating unnecessary, redundant data. In essence, the lack of coordination in conducting surveys and the failure to share the resulting data may be causing unnecessary disturbance to ecosystems and their associated biological communities. In other words, marine seismic surveys are not being managed to achieve the least practicable environmental impact.

With that concern in mind, the Marine Mammal Commission recommends that the Bureau of Ocean Energy Management revise its environmental impact statement to include alternative strategies for seismic studies that would provide opportunities for avoiding unnecessary redundancy and thereby minimizing the associated ecosystem disturbance.

Please contact me if you have questions about the Commission's recommendations or comments.

Sincerely,



Timothy J. Ragen, Ph.D.
Executive Director

Enclosures (3)

cc: David Bernhart, National Marine Fisheries Service
Deborah Epperson, Bureau of Ocean Energy Management
David Hankla, Fish and Wildlife Service

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References

- Loughlin, T. (ed.). 1994. Marine mammals and the *Exxon Valdez*. Academic Press, San Diego, CA, 395 pages.
- 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.