

**Marine Mammal Commission**  
4340 East-West Highway, Room 905  
Bethesda, MD 20814

30 March 2009

Mr. John Goll  
Regional Director  
Alaska OCS Region  
Minerals Management Service  
3801 Centerpoint Drive, Suite 500  
Anchorage, Alaska 99503-5820

Dear Mr. Goll:

The Marine Mammal Commission, in consultation with its Committee of Scientific Advisors on Marine Mammals, has reviewed the Minerals Management Service's draft environmental impact statement (DEIS) for Beaufort Sea and Chukchi Sea Planning Areas Oil and Gas Lease Sales 209, 212, 217, and 221 (73 Fed. Reg. 77835). The Commission commends the Service for its efforts to complete this complex document on Arctic lease sales and the activities that may flow from them. The Commission provides the following recommendations and rationale with the intent of improving the statement and thereby better informing decision-makers and the public about potential strategies for and risks associated with oil and gas development in the Beaufort and Chukchi Seas.

## **RECOMMENDATIONS**

The Marine Mammal Commission recommends that the Minerals Management Service revise its DEIS by—

- adding an alternative that contrasts the potential costs and benefits of coastal and offshore development and deferral of the entire coastal region under consideration;
- providing a comprehensive description of the key risks associated with oil and gas development under Arctic marine conditions, the measures required to address those risks, the efficacy of existing measures, and means for improving those measures when they fall short of their objective;
- describing the frequency and proprietary nature of the seismic studies conducted over the continental shelf areas of the Beaufort and Chukchi Seas and evaluating whether the frequency and intensity of such studies could be reduced by making results available to all oil companies or developing other mechanisms to reduce their frequency and intensity while still meeting the companies' needs for seismic information;
- including a species-by-species review of the pertinent literature to ensure inclusion of all salient reports pertaining to the species or species groups that may be affected;
- providing a more comprehensive and quantitative assessment of cumulative effects taking into account the limitations of the proposed mitigation measures; and
- expanding its tables of impact to include worst-case scenarios, the probability of their occurrence, and the potential consequences, should they occur.

## **RATIONALE**

Oil and gas lease sales in the Beaufort and Chukchi Seas provide one mechanism for helping to meet our nation's energy demands in the foreseeable future. They also pose a risk of significant adverse effects on (1) the marine living resources in or near the proposed lease areas and (2) the people that depend on those resources, particularly Alaska Natives who use them for subsistence purposes.

The primary risks associated with oil and gas production from these areas are (a) contamination (e.g., oil spills or leaks, fuel spills, disposal of drilling muds); (b) noise and disturbance from seismic surveys, construction, exploratory and development drilling, support operations, and spill responses; (c) habitat degradation from contamination, construction, and drilling; (d) marine mammal/ship collisions involving construction and support activities; (e) unmitigable effects on the distribution and abundance of marine mammals that can be taken by Alaska Natives for subsistence purposes; and (f) the cumulative effects of those and other risk factors arising from additional human activities in the action and adjacent areas (e.g., commercial shipping, commercial fishing, military exercises, tourism, coastal development, and oil and gas development in Alaska state waters and Canadian waters).

The companies that explore the Beaufort and Chukchi Seas for oil and gas will implement a considerable set of mitigation measures to avoid or minimize the effects of these risk factors. Those mitigation measures will include such things as the application of engineering and technology aimed at preventing and responding to adverse effects (e.g., spill prevention and response measures); the implementation of spatial and temporal constraints on seismic surveys, construction, and operations; and the use of equipment, training, and exercises to maximize response capabilities. The Commission also assumes that oil and gas companies will coordinate with other parties in the proposed lease areas to avoid significant adverse interactions or unnecessary duplication of activities.

Despite all these important efforts, oil and gas development in these regions still poses significant risks to the affected marine ecosystems. Viewed in a broad context, and based in part on the information in this DEIS, the Marine Mammal Commission believes that—

- development of oil and gas operations in the areas of concern will likely occur over many decades;
- the demand for oil during that period is difficult to predict and will be a function of many factors, including growing energy demands as well as shifting emphasis to alternative energy sources;
- the potential adverse effects of oil and gas production appear to be greater in coastal regions that exhibit greater biological diversity, where spilled oil is more likely to contact benthic substrates and cause greater ecological disruption, and where Alaska Natives must find the resources to satisfy their subsistence needs;

- oil and gas development strategies that minimize the probability of an accident are crucial because current response measures are either unproven or known to be only marginally effective (e.g., oil spill response in ice) in harsh Arctic conditions;
- the Beaufort and Chukchi ecosystems are particularly vulnerable because they are in what is expected to be a prolonged period of relative ecological instability as the Arctic climate changes;
- expanding human activities will add to climate-related risks to the Beaufort and Chukchi ecosystems;
- current baseline data to assess and mitigate the effects of climate change and human activities in the Arctic is limited; and
- approaches to oil and gas development that allow time to devise better prevention and mitigation measures should reduce the overall risk to these ecosystems during the period of exploitation.

These observations all point support the notion that is oil and gas are going to be extracted from the Chukchi and Beaufort Sea, then the Service should consider a strategy of deferring oil and gas development in those areas that are more vulnerable to potential adverse effects, including coastal regions that include areas where spring leads and polynyas tend to develop. As described in the DEIS, the costs of deferring activities in coastal areas in the Beaufort and Chukchi Seas would be an estimated reduction of 12 and 21 percent in oil and gas available for extraction, respectively. The benefits would be additional time to improve prevention, response, and mitigation measures in the more vulnerable coastal ecosystems and a reduction of risk to Alaska Native communities that depend on coastal ecosystems for subsistence.

### **A Coastal Versus Offshore Alternative**

The alternatives put forward in the DEIS do not provide a sharp distinction between oil and gas development in offshore versus coastal areas, particularly in the Beaufort Sea where the area under consideration more closely approaches the coastline and where the continental shelf break divides the region under consideration into distinct coastal and offshore habitats. Although the existing alternatives allow for deferral of activities in some coastal areas, the parsing of the coastal area essentially minimizes the benefits that might accrue from deferring the entire coastal region. The end result is that deferral of any single parsed area does not provide significant benefits relative to alternative 2, which does not distinguish between offshore and coastal areas at all. This is clearly evident in the Executive Summary table of impact conclusions, which reveals virtually no distinction among the alternatives (i.e., conclusions for alternatives 3 through 6, whether in the Beaufort or Chukchi Sea, are virtually identical to conclusions for alternative 2). The approach taken is surprising because the relative costs and benefits of offshore versus coastal oil and gas exploitation have been debated at length in other regions of the United States. In fact, the DEIS dismisses a number of suggested alternatives that were aimed at this very distinction.

To provide a comprehensive assessment of the costs and benefits of a full coastal deferral, the Marine Mammal Commission recommends that the Minerals Management Service revise its

DEIS by adding an alternative that contrasts the potential costs and benefits of coastal and offshore development and deferral of the entire coastal region under consideration. Such an alternative should draw a clearer distinction for decision-makers and the public based on biological differences (e.g., species present); the potential consequences of contaminants, noise, disturbance, vessel activity, and habitat degradation in offshore versus coastal ecosystems; the utility of various mitigation measures; the difficulty of working in these two environments; and the implications for Alaska Native communities along Alaska's northern and northwestern coastline.

### **Mitigation Measures and Their Efficacy**

The DEIS notes various statutes and regulations that establish a framework for mitigation and points to a number of Notices to Lessees and Operators. The DEIS also indicates that it imposes multiple requirements on lessees and operators to ensure adequate mitigation. Unfortunately, the description of mitigation measures—with its multiple references to other documents—is more confusing than enlightening, and the Commission cannot see how decision-makers or the public could possibly make informed judgments regarding these proposed lease sales based on the information provided. In particular, the DEIS fails to address some of the fundamental questions regarding mitigation measures for oil and gas operations in the Arctic marine environment. The most obvious are related to the challenge of responding to oil spills in or under the ice. Although efforts are underway to develop response strategies in icy conditions, existing response measures are unproven at best and, if response measures under other conditions are any indication, those used in ice are likely to be minimally effective. This information seems vital for decision-makers and the public, but the DEIS does not provide a direct and thorough discussion of such matters. In the end, decision-makers and the public are left in the position of having to assume that the existing statutes, regulations, notices to lessees and operators, and the ability of oil companies to implement these mitigation measures somehow will prove adequate. Absent a thorough description of the mitigation measures and their efficacy, the Marine Mammal Commission cannot concur that such is the case.

A description of the efficacy of mitigation measures is particularly important in a DEIS such as this. Agencies and industries whose activities pose threats to the marine ecosystem often rely on mitigation measures that are unproven or known to be marginally effective, at best. For example, Navy vessels and seismic survey vessels often carry observers to watch for marine mammals and use sightings within safety zones as a basis for curtailing or stopping operations. Although these observation efforts undoubtedly are helpful at preventing physical harm, only a portion of the marine mammals in the area are likely to be detected. Detection rates may be exceeding low under some conditions, such as during periods of inclement weather or darkness. Similarly, agencies and industries often rely on “ramp-up” procedures to give animals in an area an opportunity to leave before noise levels become intolerable, but they have not collected the data to determine if these procedures are effective or, alternatively, involve greater risk because curious animals approach the sound source instead of moving away from it. The underlying concern regarding mitigation measures is whether they work and, if not, how they can be improved, replaced, or supplemented. To inform decision-makers and the public, the Commission believes that the action agencies have an obligation to develop mitigation measures, assess and describe their efficacy, and undertake the

research needed to improve them if they fall short of acceptable standards. For all these reasons, the Marine Mammal Commission recommends that the Minerals Management Service revise its DEIS by providing a comprehensive description of the key risks associated with oil and gas development under Arctic marine conditions, the measures required to address those risks, the efficacy of existing measures, and means for improving those measures when they fall short of their objective.

Finally on the topic of mitigation, the DEIS indicates that the Service will require industry to develop “Adaptive Management Mitigation Plans” to ensure there are no unmitigable adverse effects to subsistence resources or harvests. As a general principle, the Commission supports the notion of adaptive management. However, the value of this approach depends, in part, on whether the approach is applied in a precautionary or non-precautionary manner – that is, on whether it is like to make over-protection or under-protection errors. The Commission believes that the former is clearly preferable to ensure no unmitigable adverse effects on the marine environment or subsistence users. With that in mind, stakeholders should be an integral part of the process for developing mitigation measures.

### **Unnecessary Repetition of Seismic Studies**

Figure 3.2.1-4 is one of the more remarkable graphics in the DEIS because it suggests intensely concentrated seismic studies in both regions, but particularly over the continental shelf area in the Beaufort Sea. The period of time over which the area was surveyed is not clear from the graphic, but it raises questions as to whether such intense surveying is needed and whether some surveys are unnecessarily redundant because the information from seismic studies is considered proprietary and not shared. Seismic studies are among the more controversial activities associated with oil and gas development as they may disturb or injure marine mammals or cause them to alter their habitat-use patterns in ways that are biologically significant or significant to Alaska Natives that harvest them for subsistence purposes. To clarify the need for such intense surveys, the Marine Mammal Commission recommends that the Minerals Management Service revise its DEIS by describing the frequency and proprietary nature of the seismic studies conducted over the continental shelf areas of the Beaufort and Chukchi Seas and evaluating whether the frequency and intensity of such studies could be reduced by making results available to all oil companies or developing other mechanisms to reduce their frequency and intensity while still meeting the companies’ needs for seismic information.

### **Species-Specific Reviews**

In reviewing the DEIS the Commission did not find reference to the following publication:

Amstrup, S.C., G.M. Durner, T.L. McDonald, and W.R. Johnson. 2006. Estimating potential effects of hypothetical oil spills on polar bears. Alaska Science Center, U.S. Geological Survey, Department of the Interior.

During the review period we were not able to go through the DEIS and compare the descriptions of potential effects to ensure that all the relevant literature was considered. But the absence of this

particular report was disconcerting. A number of articles by Amstrup were cited regarding polar bears, some of which were published after this article. Given its relevance, and the possibility that other key literature might have been overlooked, the Marine Mammal Commission recommends that the Service revise its DEIS by including a species-by-species review of the pertinent literature to ensure inclusion of all salient reports pertaining to the species or species groups that may be affected. Such a review would inform decision-makers and the public about risks to specific species. It also might help identify biologically sensitive areas that the Service could protect with time/area closures or should avoid altogether in its oil and gas lease sales.

### **Assessment of Cumulative Effects**

The cumulative effects of a proposed action, combined with the effects of other activities in the same area, often are the most difficult to characterize and mitigate. The DEIS recognizes their importance, stating that “without proposed mitigation in place, cumulative effects on subsistence resources and harvests from noise and disturbance would be major” (page 4-324). The DEIS concludes, however, alternatives would result in negligible to minor direct, indirect and cumulative effects to ESA listed bowhead and humpback whales” (page 4-446). The Commission has difficulty reconciling these statements because the efficacy of mitigation measures to protect bowhead whales is still a matter of legitimate debate and concern. For these reasons, the Marine Mammal Commission recommends that the Minerals Management Service revise its DEIS by providing a more comprehensive and quantitative assessment of cumulative effects taking into account the limitations of the proposed mitigation measures.

### **Describing Risk**

Finally, the Commission believes that the manner in which the DEIS expresses conclusions about risks could inadvertently mislead decision-makers and the public. With respect to any particular adverse event (e.g., an oil spill), risk is generally defined as a function of two considerations, the probability of the event and the consequences if it occurs. The DEIS tends to describe risks in terms of anticipated outcomes (i.e., certain effects “are expected to be” or “should be”), but this approach is tantamount to describing the best possible outcome. Consider a DEIS statement regarding potential impact to bowhead whales: “Alternative 2 would result in negligible to minor direct, indirect, and cumulative effects to ESA-listed bowhead ... whales.” What this statement does not convey is the possibility and consequence of a large spill in the migratory path of bowhead whales – a worst-case scenario that is a primary concern for both Alaska Natives and conservationists and that should be taken into account by decision-makers and the public as they consider these oil and gas lease sales. The manner in which risk-related data are presented may have considerable influence on decision-making and, for that reason, it is imperative that the DEIS provide clear, objective statements of the probability and consequences of major adverse events. Therefore, the Marine Mammal Commission recommends that the Minerals Management Service revise the DEIS by expanding its tables of impact to include worst-case scenarios, the probability of their occurrence, and the potential consequences, should they occur.

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The Commission hopes that these recommendations and rationale are helpful. Please contact me if you have questions.

Sincerely,



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Executive Director