



MARINE MAMMAL COMMISSION

9 April 2010

Mr. P. Michael Payne, Chief
Permits, Conservation, and Education Division
Office of Protected Resources
National Marine Fisheries Service
1315 East-West Highway
Silver Spring, Maryland 20190-3225

Dear Mr. Payne:

The Marine Mammal Commission, in consultation with its Committee of Scientific Advisors on Marine Mammals, has reviewed the National Marine Fisheries Service's Notice of Intent to Prepare an Environmental Impact Statement on the Effects of Oil and Gas Activities in the Arctic Ocean (75 Fed. Reg. 6175). The Commission does not normally comment on notices of intent. However, in this case, the Commission has three main concerns regarding such activities, and it believes that those concerns must be addressed if the environmental impact statement is to be considered complete. With those concerns in mind, the Commission provides the following recommendation and rationale.

RECOMMENDATION

The Marine Mammal Commission recommends that the National Marine Fisheries Service include in any environmental impact statement on the effects of oil and gas activities in the Arctic Ocean—

- a more robust approach that involves convening the responsible agencies, industries, and interested stakeholders to develop and then implement a coordinated and comprehensive assessment of ecosystem baseline conditions before oil and gas operations (including exploration) progress further;
- a means for coordinating seismic surveys in the Chukchi and Beaufort Seas in such a way that needed seismic information will be obtained with the least amount of seismic activity and resulting disturbance; and
- a mechanism to ensure coordinated efforts by all agencies, industries, communities, non-governmental organizations, and stakeholders to integrate all the biological, physical, and social information pertinent to oil and gas exploration and production into a spatially and temporally explicit framework for analyzing and modeling the resulting effects on Arctic marine ecosystems.

RATIONALE

The rationale for the above recommendation is as follows.

Baseline Information

For conservation and subsistence purposes, the primary concern with regard to oil and gas development in the Chukchi and Beaufort Seas is that, over time, those activities will adversely modify coastal and offshore ecosystems by disturbing wildlife or degrading habitat. The primary basis for assessing such changes is through comparison of baseline conditions (that is, conditions prior to the increase in activity) versus conditions after operations have begun.

Because the biological and physical properties of the potentially affected ecosystems vary, describing baseline conditions is not a trivial task; it requires an ability to characterize both measures of central tendency (e.g., mean, median values) as well as patterns in and variability about those measures. The most obvious patterns are apparent over space and time (e.g., coastal versus pelagic, shallow versus deep, open water versus ice-covered). Furthermore, baseline conditions are exhibiting directional trends as a function of climate change. Thus, accurately characterizing “baseline” conditions is a significant challenge. It is true that some characteristics of these ecosystems have been altered already, but to fail now to conduct the best possible baseline assessment simply perpetuates the sliding baseline phenomenon.

That being said, the current mode of operation is to assess conditions in limited areas and periods during breaks in exploration activities and then to use that information as a reliable indication of baseline conditions. Although the data collected in that manner may be useful, those data may not reflect baseline conditions at all if the effects of a survey are widely distributed over space and persist for periods longer than the typical shutdown. If the data collected do not really reflect baseline conditions and if they are never integrated into a more robust, comprehensive assessment of the affected ecosystem, then such studies are, in essence, little more than perfunctory costs of doing business in the region.

Indeed, in the Commission’s view, this current mode of operation is not sufficient to support a robust evaluation of the real effects of oil and gas operations on marine ecosystems. Therefore, the Marine Mammal Commission recommends that the subject environmental impact statement include a more robust approach that involves convening the responsible agencies, industries, and interested stakeholders to develop and then implement a coordinated and comprehensive assessment of ecosystem baseline conditions before oil and gas operations (including exploration) progress further.

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 elements of 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, thus generating—at least to a degree—redundant data. In essence, the lack of coordination in conducting surveys, and the failure to share the resulting data, may well 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 National Marine Fisheries Service include in the environmental impact statement a means for coordinating seismic surveys in the Chukchi and Beaufort Seas in such a way that needed seismic information will be obtained with the least amount of seismic activity and resulting disturbance.

Data Integration and Synthesis

At the recent “Open Water” meeting in Anchorage, it was apparent that the involved agencies, industries, and Alaska Native communities had collected extensive data that could be useful for assessing the effects of oil and gas development in the Chukchi and Beaufort Seas. However, it was equally apparent that the data had not been well integrated into a comprehensive ecosystem assessment. The potential for such integration was most apparent with regard to changes in the physical environment (e.g., formation and break-up of sea ice), the spatial and temporal distribution of biological or ecological processes (e.g., bowhead whale migration and feeding), and the seasonal round of human activities (e.g., subsistence harvesting, industrial operations). With a coordinated effort, all the information could be integrated into a spatial/temporal analytical framework with which to characterize the interactions among physical, biological, and human components. The end result would provide not only a clearer picture of how the various activities and processes are related but also a clearer indication of the cumulative effects of industrial activities and ways to manage them. In addition, a robust integration and synthesis of data could provide a basis for modeling or predicting the effects of future activities under different scenarios of climate change and development. Such a tool could be valuable in guiding future management decisions.

In natural resource management, we rarely have such an opportunity to integrate physical, biological, and social information into a broad ecosystem synthesis and use the results to guide management processes. If ever there was an opportunity to highlight the value of ecosystem-based management, this must surely be it. The Marine Mammal Commission recommends that the National Marine Fisheries Service take full advantage of this opportunity and include in its environmental impact statement a mechanism to ensure coordinated efforts by all agencies, industries, communities, non-governmental organizations, and stakeholders to integrate all the biological, physical, and social information pertinent to oil and gas exploration and production into a

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spatially and temporally explicit framework for analyzing and modeling the resulting effects on Arctic marine ecosystems.

Please contact me if you have questions regarding the above recommendations.

Sincerely,



Timothy J. Ragen, Ph.D.
Executive Director

Cc: James Kendall, Minerals Management Service