

DEPARTMENT OF THE INTERIOR

US Geological Survey

**Environmental Assessment and the Finding of No Significant Impact (FONSI)
Pursuant to the National Environmental Protection Act (NEPA)**

**Marine Geophysical Survey by the R/V Marcus G. Langseth in the Central-Western
Bering Sea, Alaska, August 2011**

AGENCY: US Geological Survey, US Department of Interior.

ACTION: Finding of No Significant Impact.

SUMMARY: In accordance with the National Environmental Policy Act of 1969, as amended, the US Geological Survey (USGS) has prepared a Final Environmental Assessment and a Finding of No Significant Impact (FONSI) for a Marine Geophysical Survey by the R/V Marcus G. Langseth in the Central-Western Bering Sea, August 2011.

Introduction

An environmental assessment (EA) has been completed by the US Geological Survey (USGS) for a marine seismic survey to be conducted on board the R/V Marcus G. Langseth in the western Bering Sea, August 2011. This EA is based, in part, on an environmental assessment report prepared by LGL Alaska Associates (LGL) on behalf of USGS, entitled, "Draft Environmental Assessment by the R/V Marcus G. Langseth in the Central-Western Bering Sea, August 2011:

http://walrus.wr.usgs.gov/EA/ECS_EA/

The conclusions from the LGL report were used to inform the USGS management of potential environmental impacts of the 2011 cruise.

The LGL report addressed potential impacts of the seismic survey on marine mammals, as well as other species of concern in and near the study area, including fish, and invertebrates and their habitat. This document also provided information in support of the Section 7(a) consultation under the Endangered Species Act and application to the National Marine Fisheries Service (NMFS) for an Incidental Harassment Authorization (IHA) submitted by the USGS for this research. USGS posted the draft environmental assessment on the USGS web site noted above for a 30-day comment period from April 21 to May 23, 2011. A notice of the availability of the draft EA was posted in the Anchorage Times May 23 to 27, 2011. No public comments were received.

Minor technical adjustments to the LGL report were made as a result of interactions and discussions with the principal investigator (PI) and with NMFS. These changes did not alter the overall findings of the report or USGS's concurrence with the report conclusions.

Project Objectives and Context

The project seeks to better understand the geologic framework and sedimentary thickness of the sediments underlying the Bering Sea, with the intent of establishing the limits of the US and Canadian extended continental shelves (ECS) under the provisions of Article 76 of the Convention on the Law of the Sea. Sedimentary thickness is a critical factor in the determination of ECS limits, and Article 76 stipulates that these thicknesses should be measured using seismic reflection profiling methods.

Summary of Action and Alternatives

The action is a seismic survey to be conducted in and beyond the US Exclusive Economic Zone (EEZ) west of Alaska, using a 36-airgun array of approximately 6,600 cubic inch total volume, towed approximately 9 meters below the sea surface. The airgun array creates a seismic pulse at approximately 20-second intervals continuously during the survey. Water depths in the survey area are no shallower than 1,000 meters, and the closest approach of the survey to the Alaskan coastline is approximately 350 kilometers (189 nautical miles). The seismic survey will consist of approximately 3,750 kilometers (2,025 nautical miles) of survey lines, which should take approximately 19 days to complete at the planned survey speed of 4.5 knots.

One alternative to the action is to conduct the survey at an alternative time. However, weather conditions in the Bering Sea and ship schedules constrain the possible time window to May through September. In addition, scheduling the survey in August when daylight hours are still relatively long will facilitate observations of marine wildlife in

accordance with the Incidental Harassment Authorization from NMFS and Endangered Species Act considerations.

Another alternative to conducting the seismic survey is the "No Action" alternative, i.e., do not conduct the operations. If the planned research were not conducted, the "No Action" alternative would result in no disturbance to marine mammals attributable to the activities, and no environmental impacts of other types of marine species. The seismic data necessary to establish an ECS limit would not be collected, and the US could not under the terms of UNCLOS Article 76 establish ECS limits in the Bering Sea.

The "No Action" alternative would result in a lost opportunity to obtain important scientific data and knowledge relevant and necessary to the establishment of US ECS limits.

Summary of environmental consequences

The potential effects of sounds from airguns are described in detail in the final EA and might include one or more of the following: tolerance, masking of natural sounds, behavioral disturbance, and at least in theory, temporary or permanent hearing impairment, or non-auditory physical or physiological effects. It is highly unlikely that the project will result in any cases of temporary or especially permanent hearing impairment, or any significant non-auditory physical or physiological effects. Some behavioral disturbance may be expected, but would be localized and short-term.

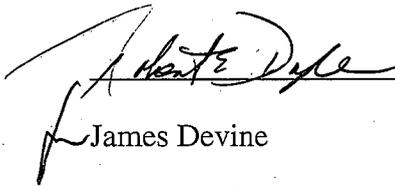
The activity will include a mitigation protocol to minimize impacts on marine mammals that may be present during the conduct of the research to a level of insignificance. As detailed in the IHA, mitigation measures that will be adopted include: airgun ramp ups; a minimum of two (2) dedicated observers maintaining a visual watch during daylight hours of airgun operations; passive acoustic monitoring (PAM) to augment visual observations; 30 minutes of observations before and during ramp ups during the day and at night; airgun power-down or shutdown when marine mammals are detected in or about to enter designated exclusion zones; and avoidance of any concentrations of right, sperm, grey and humpback whales or individual sea turtles.

With the planned monitoring and mitigation measures, unavoidable impacts to each species of marine mammal that could be encountered are expected to be limited to short-term, localized changes in behavior and distribution near the seismic vessel. At most, effects on marine mammals may be interpreted as falling within the U.S. Marine Mammal Protection Act (MMPA) definition of "Level B Harassment" for those species managed by NMFS. No long-term or significant effects are expected on individual marine mammals, or the populations to which they belong, or on their habitats.

Given the great water depths in which the survey will be conducted (1,000 to 4,000 meters), the project will have minimal impact on fish resources. No effects on essential fish habitat (EFH) are forecast. Impacts of seismic sounds on birds at rest or foraging in the water are possible, although none are expected to be significant to any bird populations. Sea turtles may be encountered, although populations in the cold waters of the North Pacific are expected to be minimal.

Conclusions

The USGS has reviewed the EA and concluded that implementation of the activity will not have a significant impact on the environment. An environmental impact statement (EIS) will not be prepared. Consequently, implementation of the activity is not a major federal action having a significant impact on the environment within the meaning of the National Environmental Policy Act (NEPA). Therefore, on behalf of the USGS, I authorize the issuance of a Finding of No Significant Impact (FONSI) for the marine seismic survey in the Bering Sea to be conducted on board the R/V Marcus Langseth in August, 2011.

 7/29/11

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AUTHORITY: 40 CFR 1506.6, 40 CFR 1506.10