

Environmental Studies Program: Studies Development Plan | FY 2019–2021

Title	Underwater Sound Signatures and Propagation for OCS Activities Permitted by BOEM
Administered by	Alaska OCS Region
BOEM Contact(s)	Rick Raymond; richard.raymond@boem.gov
Procurement Type(s)	Contract
Approx. Cost	\$125 (in thousands)
Performance Period	FY 2019–2020
Date Revised	November 13, 2018
PICOC Summary	
<i><u>Problem</u></i>	Newer, more accurate acoustic harassment criteria for marine mammals requires greater accuracy in NEPA analyses. No standardized source of noise spectra characteristics that links with accompanying datasets is available.
<i><u>Intervention</u></i>	This study would collate baseline information regarding noise from sources associated with human activities, especially oil and gas exploration and development. A search will be conducted of white and gray literature produced by government, private sector, non-governmental, and academic entities.
<i><u>Comparison</u></i>	The results will support analyses to discriminate anthropogenic noise sources and noise generated by the natural environment and biological sources.
<i><u>Outcome</u></i>	The project will produce a dataset of sound metrics for noises from a variety of sources associated with oil and gas exploration and development activities.
<i><u>Context</u></i>	The results will be relevant to all Outer Continental Shelf (OCS) Planning Areas

BOEM Information Need(s): BOEM needs information about noise from sources associated with oil and gas exploration and development activities to inform noise impacts analyses that meet the newer noise impact thresholds criteria issued by NMFS in 2016. Results will support noise impacts analyses at all levels of NEPA, and in Endangered Species Act (ESA) Section 7 consultations.

Background: Newer, more accurate acoustic harassment criteria for marine mammals requires greater accuracy in NEPA analyses. Historically, the sound metric of decibels (dB re 1 μ Pa) has been used in NEPA analyses, without serious consideration of the frequencies involved, or if marine mammals were capable of detecting such noises. These relationships are now being addressed in newer NEPA documents produced by BOEM; however, no standardized source of noise spectra characteristics is available that links with accompanying datasets.

Objectives: The goal of this study will develop a consolidated source of information that provides BOEM analysts with a basic tool to analyze the effects of anthropogenic noise on marine mammals in the Alaska OCS in support of NEPA.

Methods: Researchers will collect existing noise production data found in journal publications and gray literature reports produced by government, private sector, non-governmental, and academic entities. Efforts will focus on noises from different types of seismic surveys and drilling; anchor handling; vessel, aircraft and hovercraft traffic; on-ice activities; ancillary activities; sub-sea pipeline installation; etc. Specifically, collected data will include the metrics of frequency, dB re 1 μ Pa, and dB SEL₂₄, etc., and any other relevant metrics to support analysis of potential impacts from noise to marine mammals and other biota. Results will be presented in a final report, with the accompanying datasets in tabular format.

Specific Research Question(s):

1. What information is available regarding noise from sources associated with oil and gas exploration and development activities?
2. Given the existing knowledge on increased vessel traffic, what is the associated increase in anthropogenic noise?
3. What is the associated ecosystem response, in particular marine mammals?