

BOEMRE ENVIRONMENTAL STUDIES PROGRAM: ONGOING STUDIES

Region: National

Planning Area: Chukchi Sea and Pacific Coast

Title: An Opportunistic Study of Hearing in Sea Otters (*Enhydra lutris*):
Measurement of Auditory Detection Thresholds for Tonal and
Industry Sounds (NT-09-x10)

Total Cost: \$173,754.00

Period of Performance: FY 2009-2011

Conducting Organization: Joseph M. Long Marine Laboratory, University of California

BOEMRE Contact: Dr. Jim Price

Description:

Background: Possible damage to the hearing of marine mammals and the consequent ecological impacts are of concern to BOEMRE in assessing environmental impacts of offshore operations. Considerable research effort has been expended to determine the sensitivity of marine animals (predominantly mammals, turtles, and fish) to sounds generated by offshore activities and consequences to the organisms' hearing, behavior, ability to navigate, find food, reproduce, track offspring, etc.. There now exists a fair amount of knowledge relevant to whales but much less that is relevant to other species. In particular, science knows almost nothing about pinniped hearing and the ecological impact of sounds on pinnipeds. This study will be the first step in acquiring the ability to make environmental impact assessments of offshore-operations-generated noise on sea otters.

Sea otters are common along the U. S. Pacific coast, an area of some existing oil and gas operations and a potential area for alternative energy development. Also, they have been seen in shallower areas of the Chukchi Sea, an area of possible oil and gas development. This proposed study will help BOEMRE assess adverse impact to these animals from offshore noise in the air (from support aircraft) and in the water.

Objectives: produce in-air and in-water audiograms (hearing sensitivity as a function of frequency) of sea otters covering a wide range of frequencies

Methods: The audiograms will be obtained from behavioral techniques applied to trained sea otters in a laboratory very well equipped to make the necessary measurements of sound intensity, perform the training, and do the behavioral exercises with the animals.

Importance to BOEMRE: auditory range of sea otter hearing

Current Status: Ongoing

Final Report Due: 07/08/11

Publications:

Affiliated WWW Sites:

Revised Date: July 28, 2010

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