

BOEM ENVIRONMENTAL STUDIES PROGRAM: Ongoing Studies

Region: Alaska

Planning Area(s): Beaufort Sea, Chukchi Sea, Bering Sea

Title: Bowhead Whale Feeding Variability in the Western Alaskan Beaufort Sea: Satellite Tracking of Bowhead Whales (AK-06-01; AK-10-01)

BOEM Information Need(s) to be Addressed: With additional information on the importance of the study area to feeding bowhead whales, and a better understanding of potentially predictable factors that correlate with variations in whale behavior, alternative mitigation options for future Beaufort Sea lease sales may be feasible. Also, this study addresses a conservation recommendation in NMFS' 2001 *Arctic Region Biological Opinion* to study "the use of the Beaufort Sea by feeding bowheads and assess the importance of this feeding to the health and well-being of these animals." Information from this study will be used for permit approvals for all Beaufort Sea Lease Sales and NEPA analysis and documentation for Beaufort Sea Lease Sales, EPs and DPPs.

Total Cost: \$2,000,000 plus Joint Funding **Period of Performance:** FY 2005-2012

Conducting Organization: ADF&G

BOEM Contact: [Jeff Denton](#)

Description:

Background: A previous MMS study estimated the extent to which the bowhead whale population utilizes OCS areas in the eastern Alaskan Beaufort Sea for feeding, as well as that area's importance to individual whales. Additional research on this subject has been requested particularly at locations other than those included in the previous study. In a 2001 Arctic Region Biological Opinion NMFS made a Conservation Recommendation that MMS (now BOEM) continue to study "the use of the Beaufort Sea by feeding bowheads and assess the importance of this feeding to the health and wellbeing of these animals." Other stakeholders have recommended that MMS/BOEM expand the scope of the research to include the entire Alaskan Beaufort Sea.

This profile describes the satellite tracking task in support of the Bowhead Feeding Variability Study. Overall, the study, aims at achieving an understanding of the factors enhancing or limiting the expression of feeding behavior in various locations in the western Alaskan Beaufort Sea. Implicit to the proposed study is the assumption that feeding by bowhead whales occurs with some degree of regularity during August-October the western Beaufort Sea study area. It is further assumed that variation in feeding behavior potentially results from any, or all, of a variety of environmental and behavioral variables including, but not limited to: sea ice coverage, oceanographic conditions, prey concentrations, and movements by whales, potentially from summering areas in both the Beaufort Sea and Chukchi Sea. By understanding how such factors are related to bowhead feeding in western Beaufort Sea locations near offshore oil and gas leases, BOEM would be in a better position to mitigate potential effects of such actions on bowheads and their populations.

Objectives: To better understand the relationship between feeding, environmental and behavioral variables on the timing and spatial extent of bowhead feeding in the western Alaska Beaufort Sea; specifically to:

- Document the movements of whales of various ages, sexes, and reproductive statuses from the Beaufort Sea and Chukchi Sea within, into and out of the study area.
- Document feeding and other behaviors at locations in the Beaufort and Chukchi seas with emphasis on timing and dynamics/variability.
- Estimate the rate and timing of travel of whales during migration.

Methods: Collaborations will be developed between whaling captains, AEWC, NSB, ADF&G, NMFS, BOEM and other interested parties to resolve roles in permitting, co-sponsorship and implementation. Satellite transmitters will be deployed on bowhead whales near Native villages in the Beaufort, Chukchi and Bering seas during spring and fall migrations. Transmissions would be monitored and data analyzed. The study will be carefully coordinated with the AEWC and Whaling Captains Associations in Barrow, Nuiqsut and Kaktovik to avoid interference with fall subsistence hunts and, where feasible, to involve whaling communities directly in the conduct of the study.

Current Status: Ongoing

Final Report Due: August 2013

Publications Completed:

- Citta, J. C., L. T. Quakenbush, J. C. George, R. J. Small, M P Heide-Jorgensen, H. Brower. B. Adams, L. Brower. 2012. Winter Movements of Bowhead Whales (*Balaena mysticetus*) in the Bering Sea. *Arctic* 65(1):13-34.
- Quakenbush, L., J. Citta, J. C. George, M. P. Heide-Jorgensen, R. Small, H. Brower, L. Harwood, B. Adams, L. Brower, G. Tagarook, C. Pokiak, J. Pokiak. 2012. Seasonal Movements of the Bering-Chukchi-Beaufort Stock of Bowhead whales: 2006-2011 Satellite Telemetry Results. Presented to the Scientific Committee of the International Whaling Commission, June, 2012, SC/64/BRG1; Panama City Panama. 22pp.
- Quakenbush, L. T., R. J. Small, and J. C. Citta. 2010. Satellite Tracking of Western Arctic Bowhead Whales. OCS Study BOEMRE: 2010-033. Anchorage, AK.
- Quakenbush, L. T., J. J. Citta, J. C. George, R. J. Small, and M. P. Heide-Jørgensen. 2010. Fall and winter movements of bowhead whales (*Balaena mysticetus*) in the Chukchi Sea and within a potential petroleum development area. *Arctic* 63(3): 289-307.
- Quakenbush, L., H. Brower, Jr., J. Citta, M.P. Heide-Jørgensen, J.C. George, and R. Small. 2009. Some Satellite Telemetry Results on BCB Bowhead Whales, 2006–2009. Presented to the Bowhead/Right/Gray whale committee of the International Whaling Commission, Madeira Portugal.
- Quakenbush, L., H.P. Huntington. 2010. Traditional Knowledge Regarding Bowhead Whales in the Chukchi Sea near Wainwright, Alaska. Final Report. Coastal Management Institute, School of Fisheries and Ocean Sciences, University of Alaska Fairbanks. 13pp.

Affiliated WWW Sites:

<http://www.boem.gov/akstudies/>

<http://www.wildlife.alaska.gov/index.cfm?adfg=marinemammals.bowhead>

http://www.wildlife.alaska.gov/management/mm/bowhead_poster.pdf

http://www.wildlife.alaska.gov/management/mm/bow_move_chukchi_sea.pdf

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ESPIS: Environmental Studies Program Information System

All *completed* ESP studies can be found

here: http://www.data.boem.gov/homepg/data_center/other/espis/espisfront.asp