Environmental Studies Program: Ongoing Studies

Study Area(s): Beaufort Sea, Chukchi Sea

Administered By: Alaska OCS Region

Title: Northern Alaska Sea Ice Project Jukebox (AK-13-03-16)

BOEM Information Need(s) to be Addressed: This project will provide a better understanding of how both natural climate change and the effects of human impacts are affecting the ecosystem by documenting observations of the changing sea ice conditions by sea ice scientists and local residents of Barrow and Kotzebue, Alaska. The inclusion of Kotzebue will serve as a baseline of observations in that community. Documenting changes in sea ice on the outer continental shelf will allow for better anticipation of subsistence hunter impacts and adaptations. Information from this study will support Outer Continental Shelf Lands Act (OCSLA) and National Environmental Policy Act (NEPA) analyses and documentation for future lease sales, EPs, and DPPs, and may serve as the basis for long term monitoring for oil and gas exploration and development in the Chukchi and Beaufort Seas.

Total BOEM Cost: $60,663 plus Joint Funding ($60,633) **Period of Performance:** FY 2016-2018

Conducting Organization: CMI, UAF

Principal Investigator(s): Leslie McCartney

BOEM Contact: Dr. James Lima

Description:

Background: Sea ice is a key feature of the Arctic ecosystem and has been essential to life in coastal arctic Alaska for thousands of years. Shorefast ice provides habitat for marine mammals, influences productivity of food supplies for fish, seabirds and marine mammals, and offers access to subsistence foods for northern hunters. Given this important role in the coastal ecosystem, it is no surprise that shorefast ice also is a key feature of the icescape for humans. As an extension of the land, shorefast ice is used as a hunting and traveling platform by Arctic coastal communities and for the construction of ice roads and runways.

The *Northern Alaska Sea Ice Project Jukebox* is a longitudinal qualitative project where observations of changing sea ice are recorded. It was created by UAF in 2013, with a two-year grant from the North Pacific Research Board (NPRB), and currently spans the time period from 1978 to 2013 in the Barrow area. A project website provides access to historical and current observational recordings about sea ice in the Barrow region, creating a retrospective database of traditional knowledge and human adaptation to climate change. The Jukebox promotes using local and traditional knowledge to help understand the nearshore ice environment, and salvages archive materials through digital preservation it and website accessibility.

This study will create ten new audio/visual recordings with sea ice scientists and local residents of Barrow and Kotzebue, Alaska about their observations of changing sea ice conditions. The recordings will be added to the *Northern Alaska Sea Ice Project Jukebox*. Additionally, the study will add a photo gallery where photographs of various ice conditions and features can be viewed by users.

Objectives: The objective of this study is to document personal observations and traditional knowledge about ice in the nearshore environments near Barrow and Kotzebue to discover what has changed, how the Iñupiat are adapting to these changes, and how this knowledge can be useful in natural resource management and development decision-making.

Methods: This project will expand the *Northern Alaska Sea Ice Project Jukebox* website by recording at least five local participants each from Barrow and Kotzebue, Alaska discussing their personal observations of sea and traditional knowledge of sea ice in the region. Recordings will cover topics such as knowledge about nearshore and shorefast ice conditions, ice travel, changing sea ice conditions from year to year, coastal processes, and human adaptation to the changing environment. The recordings will also incorporate western scientific knowledge. The *Northern Alaska Sea Ice Project Jukebox* website will be updated to expand the Iñupiaq sea ice terminology resource. A gallery of photos will also be added of the various ice conditions and features that can be viewed by users. Researchers will collaborate with the North Slope Borough Iñupiat History, Language and Culture Commission and the Native Village of Kotzebue for selection of narrators, training opportunities, cultural relevancy, and translation assistance. The researchers will conduct community presentations in Barrow and Kotzebue to demonstrate the up-dated Jukebox to the residents and local educators. The Jukebox will be linked with other relevant national databases, such as the Exchange for Local Observations and Knowledge of the Arctic (ELOKA). All recordings will be accessioned into the Oral History Collection at the Alaska and Polar Regions Collections and Archives at UAF's Elmer E. Rasmuson Library.

Current Status: Completed

Final Product Due: July 2018

Publications Completed:

Brewster, K. 2018. Observations of a Changing Ice Environment in Northern Alaska. Poster presentation at the Alaska Marine Science Symposium, January 2018, Anchorage, AK.

McCartney, L and Brewster, K. 2018. Northern Alaska Sea Ice Project Juke Box: Phase III. Final Report. OCS Study BOEM 2018-027. Coastal Marine Institute, University of Alaska, Fairbanks, AK

Affiliated WWW Sites: http://www.boem.gov/akstudies/
http://www.cfos.uaf.edu/cmi/
http://www.jukebox.uaf.edu/seaice
https://marinecadastre.gov/espis/#/search/study/100132

Revised Date: August 8, 2018