

BOEM ENVIRONMENTAL STUDIES PROGRAM: Ongoing Studies

Region: Alaska

Planning Area(s): Beaufort Sea

Title: Marine Arctic Ecosystems Study (MARES): A Multi-Agency NOPP Partnership (NT-13-05)

BOEM Information Need(s) to be Addressed: Through this multi-agency agreement under the National Oceanographic Partnership Program (NOPP) BOEM expects to enhance multi-lateral arctic research coordination and to improve regulatory decisions and NEPA analyses pertinent to lease sales, EPs, and DPPs in the Beaufort Sea. The partnership will lead to specific task orders and objectives that will be developed and procured as discrete study profiles. Final reports will be available to inform NEPA analyses and decision-making; interim data products and inputs may also be used to address information needs.

Total Cost: \$5,470,500
plus Joint Funding

Period of Performance: FY 2015-2019

Conducting Organization: Stantec Consulting Services Inc.

BOEM Contact: [Carol Fairfield](#); [Kate Wedemeyer](#)

Description:

Background: BOEM needs additional comprehensive and integrated information in the Arctic on the spatio-temporal distribution of fundamental physical, biological and chemical variables, their associated interactions and regulating mechanisms, as well as the distribution of cultural and subsistence resources which sustain local communities. This information will be used to better understand and assess arctic ecosystem sensitivities and vulnerabilities as a function of space and time to aid decision-makers in minimizing the impact of the oil & gas activities on the Outer Continental Shelf. The resulting information will support NEPA analyses, environmental impact assessments, in validating models, as well as in Oil-Spill Risk Analysis. Additionally, these observations and improved description and understanding of biogeochemical and physical interactions will aid to improve the accuracy of model simulations and forecasts. Coordinated observational and modeling efforts will produce information that will be analyzed from different perspectives: a) ecosystem understanding and environmental protection, b) climate change and monitoring, and c) Oil-Spill Risk Analysis.

This partnership between BOEM, ONR, Shell, and USARC responds to the National Ocean Policy in addressing Arctic, climate change & acidification, and monitoring through an integrated ecosystem approach while coordinating the efforts of several Federal agencies. It is also responsive to the Interagency Arctic Research & Policy Committee (IARPC) 5-year plan (2014-2018) and research priorities. In addition this study will also address MMS study recommendations: 2010-018 (Beaufort Sea Physical

Oceanography) and 2010-032 (cANIMIDA synthesis), and the recommendations of the White House's Council for Environmental Quality (CEQ) of 2010. By entering into a NOPP partnership, BOEM anticipates that all participating agencies will leverage funds and resources and thus avoid redundant efforts while contributing their complementary expertise.

Objectives:

- Identify and delineate areas of high biological productivity, as well as relative sensitivities and resiliencies to changes in environmental conditions within ecosystem components. This includes a detailed description of different trophic levels and their composition in terms of species abundance, distribution, and behavior in both ice free and ice covered habitat.
- Provide a qualitative and quantitative description of the biogeochemical-physical interactions and feedback processes in ice free and ice covered areas.
- Provide a detailed spatio-temporal description of ocean currents at different depths along the Beaufort continental shelf, including ice covered areas.

Methods: Proposed studies will emphasize an integrated, or ecosystems approach to data collection or synthesis. Each study will be based on the application of appropriate scientific methodologies, coordinating observational and modeling efforts, while focused on essential processes, functions and interactions among organisms and their environment. Proposed studies will recognize that humans, with their cultural diversity, are an integral component of ecosystems, and will accommodate appropriate methods of integration where possible, including access to traditional knowledge with active involvement of Alaska Natives in research planning and execution. Proposed studies will also seek to advance, where appropriate, the use of technology and instrumentation in monitoring and understanding complex ecosystem processes.

Current Status: Ongoing

Final Report Due: September 2019

Publications Completed: None

Affiliated WWW Sites: <http://www.boem.gov/akstudies/>

Revised Date: August 2016

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