

Environmental Studies Program: Completed Study

Title	Community Based Monitoring in Arctic and Cook Inlet Coastal Zone, Extension of the Local Environmental Observer (LEO) Network (AK-16-05)
Administered by	Alaska Regional Office
BOEM Contact(s)	James T. Lima, Ph.D.
Procurement Type(s)	Cooperative Agreement
Conducting Organizations(s)	Alaska Native Tribal Health Consortium, Inc. (ANTHC)
Total BOEM Cost	\$400,000
Performance Period	FY 2016–2021
Final Report Due	September 2021
Date Revised	March 3, 2022
PICOC Summary	
<i><u>Problem</u></i>	Coastal Alaska is undergoing changes that affect subsistence harvests on the land and at sea.
<i><u>Intervention</u></i>	Collect and analyze frontline observations by residents of rural communities including Alaska Native subsistence harvesters, who can readily identify abnormalities in local habitat, prey availability, species composition, and seasonal timing of ecological processes.
<i><u>Comparison</u></i>	Evaluate observations of unexpected conditions against that expected based on traditional/local ecological knowledge and Western scientific knowledge.
<i><u>Outcome</u></i>	Documenting and dissemination of information of changing conditions in the Alaska and Northern Hemisphere Arctic and subarctic areas.
<i><u>Context</u></i>	Arctic and Cook Inlet communities

BOEM Information Need(s): BOEM needs the most up-to-date information on a variety of environmental variables to effectively conduct environmental analyses against a backdrop of changing environmental conditions. BOEM is collaborating with the ANTHC, on an established environmental observation network to enhance its utility for documenting changing environmental conditions and to assess the range of implications for human communities.

Background: LEO is a volunteer program of mostly tribal environmental professionals who share information about environmental events where they live, post observations on public sites and coordinate with technical experts to identify appropriate actions. The purpose is to increase understanding about climate change and other drivers of environmental conditions to facilitate development of appropriate adaptation strategies. ANTHC serves as the hub for the LEO Network.

Members self-enroll via the LEO Network website. Since the program was initiated in January 2012, more than 800 individuals in 234 communities have enrolled across Alaska. They receive training on how to be effective observers and use of the tools available through the LEO Network. Posted observations

are reviewed in monthly webinars and annual conferences and updates are communicated through social media and a weekly e-news to network members and a list-serve of over 1500 subscribers.

Dozens of State, Tribal, and Federal agencies and academic institutions provide technical consultation support to LEO based on their topical expertise. Most of these communities are coastal, but there is growing participation in interior Alaska as well. The Network maintains a database of community-based observations on a wide range of topics including extreme weather, floods, erosion, ice changes, permafrost thaw, invasive species, infrastructure damage, environmental contamination, and changes in the health, range, and behavior of fish, insects, birds and wildlife.

Objectives:

- Identify and promote pathways for incorporating observations and real time documentation in the coastal Arctic and Cook Inlet regions.
- Increase understanding about environmental change.
- Enhance tools available at the community and regional level to assess impacts.
- Improve communication and collaboration among communities, State of Alaska and Federal government, and other institutions.
- Facilitate development of healthy and effective adaptation strategies.
- Document community-based valuations of environmental resources.

Methods: 1) Enroll and train new members in the observation network protocols. 2) Manage and evaluate observation content. 3) Transfer observation content to data systems. 4) Connect observers with technical experts in partner organization to evaluate observations. 5) Distribute new observations via Google maps, LEO network, website and social media. 6) Hold monthly webinars to review observations. 7) Synthesize data for dissemination through the Alaska One Health System.

Specific Research Question(s): What are the circumstances or observed indications of unexpected environmental change in Alaska.

Current Status: Completed

Publications Completed:

Brubaker, M.Y., Brook, M.J., Lujan, E.N., and Mack, D.D. 2021. Community-based monitoring in Arctic and Cook Inlet Coastal Zones: Extension of the Local Environmental Observer (LEO) Network. OCS Study BOEM 2021-050. Anchorage, AK: U.S. Department of the Interior, Bureau of Ocean Energy Management. 28 p.

Brubaker, M. 2017. A Citizen Observer system for monitoring Environmental change. Presentation at the Alaska Eskimo Whaling Commission Meeting, December 2017.

Mosites, E. et. al. 2018 Environmental observation, social media, and One Health action: A description of the Local Environmental Observer (LEO) network. One Health Journal. 6 (2018) 29-33

Affiliated WWW Sites:

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

<https://marinecadastre.gov/epis/#/search/study/100138>

<https://anthc.org/what-we-do/community-environment-and-health/leo-network/>

<http://www.leonetwork.org/>