

## **Environmental Studies Program: Ongoing Studies**

**Study Area(s):** Cook Inlet

**Administered By:** Alaska OCS Region

**Title:** ShoreZone along the Alaska Peninsula (AK-15-03)

**BOEM Information Need(s) to be Addressed:** ShoreZone mapping is a technique that will provide BOEM with the most comprehensive biological, physical, and geomorphologic data of the Alaska coastal areas. The BOEM analysts and decision-makers will use shoreline mapping information for identifying high priority fish and wildlife habitats in NEPA and ESA analyses and documentation for lease sales, EPs and DPPs, and in BOEM decision-making.

**Total BOEM Cost:** \$450,000  
plus Joint Funding (~\$200,000)

**Period of Performance:** FY 2015-2018

**Conducting Organization:** Moran Environmental Recovery LCC

**Principal Investigator(s):** Sarah Cook

**BOEM Contact:** [Rick Raymond](#)

### **Description:**

**Background:** The spatial distribution of nearshore habitats is important information for land and resource managers and decision-makers, and numerous shoreline classification methods have been applied to our coasts. Recent efforts, however, have focused on a partnership of numerous scientists, GIS and web specialists, non-government organizations, and local, State, and Federal agencies. This partnership is applying ShoreZone protocols to build a contiguous, integrated dataset of coastal habitats and imagery for Alaska's coast.

In 2001, the Cook Inlet Regional Citizens' Advisory Council (CIRCAC) began a program to apply the ShoreZone mapping protocols to Cook Inlet and led the development of the first web-based access to the data and imagery. This program was later expanded to include the outer Kenai Peninsula coast, Kodiak Island, and the Alaska Peninsula. CIRCAC also initiated an Alaska ground-station program that has now expanded to include hundreds of stations throughout the Gulf of Alaska and North Slope. By 2005, NOAA's National Marine Fisheries Service stepped forward to provide web-site and data support and currently provides the necessary personnel to manage, update, and serve the data to the public and has also led efforts to map southeast Alaska and develop a larger statewide partnership. By 2012, the program had expanded to the U.S. Arctic with BOEM-sponsored aerial and on-the-ground surveys.

Despite the successful expansion of the ShoreZone program to include much of Alaska's coast, there are still several significant spatial gaps, including portions of the coastline within or adjacent to the Cook Inlet Planning Area. These areas include the Alaska

Peninsula coastline from the Katmai National Park boundary to the Cold Bay area. Also, the Barren Islands were not attempted during earlier surveys in the Cook Inlet area and are an obvious spatial gap to the contiguous, continuous habitat data and imagery for the Gulf of Alaska. A survey along these coastlines would also provide the opportunity to re-survey sections of the Katmai National Park coastline to conduct a project for assessing ShoreZone's applicability for detecting large-scale changes to some biological or geomorphic classifications. Recent studies by the NPS along this coast have shown large-scale loss of mussel bed habitats along portions of the coast. Since ShoreZone maps mussel beds as an along-shore and across-shore bioband, it would be an opportunity to assess whether ShoreZone data (and imagery) can provide a baseline for detecting or illustrating significant changes between periodic surveys in areas determined to be of high interest or sensitivity.

These proposed surveys would close a spatial gap in the Gulf of Alaska ShoreZone data and imagery that has precluded queries of coastal habitat data in areas downstream of existing and potential future oil exploration, development, and production activities in Cook Inlet. Field survey is expected to occur in May 2016.

#### Objectives:

- Map the along-shore and across-shore geomorphic and biological habitat features using the aerial survey imagery and narration by a biologist and a geomorphologist utilizing the most recent ShoreZone protocols.
- Ground-truth aerial survey results through shore-station surveys along this coast to verify geomorphic features and to describe invertebrate and seaweed assemblages.
- Publicly disseminate all data and imagery via the ShoreZone website, and Cook Inlet Response Tool.
- Assess whether ShoreZone imagery and mapped data can capture some of the larger-scale changes that have been observed in some areas along the Katmai National Park shoreline since the original ShoreZone surveys were conducted in the area in 2003.

Methods: Conduct ShoreZone aerial surveys of the Barren Islands and along the Alaska Peninsula coastline from the northern border of the Katmai National Park coastline to the Cold Bay area where the 2011 Alaska Peninsula surveys ended. The aerial surveys and mapping would take place according to the ShoreZone Coastal Habitat Mapping Protocol for Alaska. Shore-stations surveys should take place at a series of stations over a range of habitat types known to occur along these shorelines (e.g. exposed rocky, rock platforms, exposed boulder beaches, semi-exposed and semi-protected cobble beaches, salt marshes, eelgrass beds). The compiled data and imagery will be posted to the existing ShoreZone website and shore-station data would be collected and disseminated in the same manner as for other locations in Alaska. Data would be also archived at NODC.

**Current Status:** Completed

**Final Report Due:** August 2018

**Publications Completed:**

Cook S., Daley S., Saupe S., Lindeberg M., Morris M., Morrow K., Myers R., Park A.  
2018. ShoreZone Imaging and Mapping Along the Alaska Peninsula. Anchorage  
(AK): US Department of the Interior, Bureau of Ocean Energy Management. OCS  
Study BOEM 2018-037, 301 p.

**Affiliated WWW Sites:** <http://www.boem.gov/akstudies/>  
<https://alaskafisheries.noaa.gov/mapping/szflex/>  
<https://marinecadastre.gov/espis/#/search/study/100079>

**Revised Date:** February 4, 2019