

## MMS ENVIRONMENTAL STUDIES PROGRAM: ONGOING STUDIES

**Region:** Alaska

**Planning Areas:** North Aleutian Basin

**Title:** Spatial and Temporal Mapping of Nearshore Juvenile Fish and Settling Crab in the North Aleutian Basin (AK-08-08)

**MMS Information Need(s) to be Addressed:** Information on seasonal distribution, abundance, and habitat use are necessary to assess oil spill risks to sensitive lifestages of fish and crab for North Aleutian Basin NEPA analyses. The information from this study will be used for pre- and post-sale NEPA/EIS analysis and documentation, and by MMS analysts for mitigation of potential effects of OCS exploration and development in the NAB.

**Total Cost:** \$396,000

**Period of Performance:** FY 2008-2010

**Conducting Organization:** Organization if known or TBD

**MMS Contact:** [Chief, Alaska Environmental Studies Section](#)

### **Description:**

*Background* It would be difficult to identify an area in the Bering Sea, or possibly anywhere in the world that has greater fisheries use issues than the North Aleutian planning area. Crab, a highly valued commercial fisheries and subsistence resource, are extremely sensitive to oil at very low concentrations. Furthermore, the juvenile and larval stages lifestages of fish and crab are the most vulnerable. Loss of a single juvenile year-class could affect future commercial fisheries and ecological productivity. However, information on spatial and temporal patterns of sensitive life stages in the nearshore North Aleutian Basin is lacking or out of date, especially in light of ecological changes that have occurred in recent decades.

The MMS-sponsored “North Aleutian Basin Information Status and Research Planning Meeting” recently identified studies that could provide useful information to upcoming National Environmental Policy Act (NEPA) Environmental Impact Statements (EIS), analysis of potential mitigation of impacts, and post-sale needs such as for use in NEPA reviews of exploration or development plans. Of those, this study profile has been identified by the Alaska OCS Region as a highly time-sensitive and important decision-applicable information need, and of such mission importance that it should be initiated as soon as possible to assure information availability pursuant to the proposed 5 year program.

### *Objectives*

1. Identify spatial and seasonal location of larval and juvenile fish and crab larvae settling areas.
2. Develop Geographical Information Systems (GIS) based maps and attribute tables of sensitive fish and crab lifestages for oil spill risk analysis.
3. Identify high priority locations for mitigation or deferral areas under consideration in environmental assessments.

*Methods* Geographically delineate the location and timing of larval nurseries, juvenile rearing, and crab settling areas through aerial digital imaging and Light Detection and Ranging (LiDAR). Perform ground truthing of digital imaging and LiDAR (a process similar to ground truthing acoustic fish surveys) through use of local fishing vessels. Provide GIS -mapped layers for EIS analysis of potential sensitive areas.

**Current Status:** In procurement

**Final Report Due:** N/A

**Publications Completed:** N/A

**Affiliated WWW Sites:** <http://www.mms.gov/alaska/>

**Revised Date:** March 2008