

## Environmental Studies Program: Ongoing Study

Title	Using Multiple Tools to Assess Marine Mammal Distribution, Numbers, and Habitat use in Cook Inlet (AK-22-03)
Administered by	Alaska Regional Office
BOEM Contact(s)	TBD
Procurement Type(s)	TBD
Conducting Organization(s)	TBD
Total BOEM Cost	TBD
Performance Period	FY 2022–2025
Final Report Due	TBD
Date Revised	March 8, 2022
PICOC Summary	
<i><u>Problem</u></i>	Updated information is needed on the temporal occurrence, distribution, and habitat use of cetaceans in Cook Inlet to evaluate potential effects from future OCS activities. Federal agencies need reliable information on the abundance and distribution on various ESA-listed large whale species (e.g., humpback, fin) and endangered Cook Inlet beluga whales to accurately evaluate potential impacts to these species and inform mitigation.
<i><u>Intervention</u></i>	A combination of aerial and vessel surveys, paired with DNA sampling and satellite tagging, will provide seasonal information on abundance and distribution and year-round documentation of occurrence and quantification of the potential for disturbance.
<i><u>Comparison</u></i>	The implementation of a directed study will provide this information for a variety of uses by multiple agencies, including agency analyses, incidental harassment authorization requests, and future comparisons of anthropogenic impacts on cetacean distribution in this important area.
<i><u>Outcome</u></i>	This study will provide up-to-date information about endangered large whales, Cook Inlet beluga, and other cetacean species in a key area of interest for oil and gas operations.
<i><u>Context</u></i>	Cook Inlet

**BOEM Information Need(s):** Information gained from this study is needed to establish abundance and distribution of several species of marine mammals, including two endangered large whale species (i.e., humpback, fin) and Cook Inlet beluga whales in lower Cook Inlet. Increased understanding of the seasonal density and distribution of the relevant species will assist BOEM and NMFS in pre- and post-lease NEPA assessment, design of temporal and spatial mitigation, and monitoring effects of activities. Results will support future ESA Section 7 consultations and preparation of future BOEM Biological Assessments/Evaluations and NMFS Biological Opinions.

**Background:** There are numerous species of marine mammals that occur within Lower Cook Inlet (LCI). Endangered fin whales are known to be present and to feed in this and adjacent areas in large numbers year-round, and feed intensively within and downstream of this area seasonally. Up to three populations of humpback whales (including one threatened and one endangered) occur in this area; assessment of the extent of use by these three populations is currently based on dated information. Aerial surveys, satellite-tag data, and passive acoustics show belugas inhabit LCI waters; knowledge of their distribution and use of the lower Inlet is scarce due to limited survey effort. Detection of the critically endangered North Pacific right whale in the bays of eastern Kodiak Island and historical sightings along the southern entrance to Shelikof Strait and near the Barren Islands demonstrate the potential presence of this ESA-listed species near Cook Inlet. Several other marine mammal species are present in or near these areas, including blue, sei, gray, killer, and minke whales, as well as harbor and Dall's porpoise, but their year-round seasonal distribution is not well documented and seasonal estimates of density from dedicated surveys are unavailable.

**Objectives:**

- Document the geospatial and temporal distribution of cetaceans in the LCI, from Kalgin Island to the entrance to Cook Inlet.
- Document Cook Inlet beluga seasonal occurrence throughout the LCI for multiple years.
- Determine the stock identity for humpback whales in LCI
- Assess spatial use of LCI habitats by large cetaceans, including potential movement corridors

**Methods:** In year 1, aerial surveys for endangered large whales and Cook Inlet belugas will be conducted in the LCI in spring, summer, and fall to provide information on abundance and distribution. In year 2, vessel surveys will take place in the same seasons. Vessel surveys will include DNA collection to determine stock identity of humpback and fin whales, as well as satellite tagging to assess spatial use patterns in large whales. Together, these methods will provide information on seasonal spatial density of cetacean species in LCI.

**Specific Research Question(s):**

1. What is the cetacean density and seasonal distribution in and around the Cook Inlet lease areas, as well as in the surrounding coastal areas that could be impacted by OCS development?
2. What is the spatial density of ESA endangered cetaceans (Western north Pacific humpback whales, fin whales, and North Pacific right whale) in LCI?
3. What are the habitats and movement corridors used by large cetaceans in LCI?

**Current Status:** Current Status: Planned new start

**Publications Completed:** None

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