



Introduction

The Alaska Fisheries Science Center (AFSC) of the National Marine Fisheries Service (NMFS), National Oceanic & Atmospheric Administration (NOAA), conducts research on marine mammals off the coasts of Alaska, Washington, Oregon, and California. Research projects focus on ecology and behavior, population dynamics, life history, and status and trends. Research results assist NOAA and other agencies in making science-informed decisions for sound management of marine resources.

CETACEAN RESEARCH

Marine Mammal Passive Acoustic Recorders

- Location** Bering, Beaufort, and Chukchi Seas, and Gulf of Alaska
- Timing** May, August, September, October
- Funding** NOAA, Bureau of Ocean Energy Management (BOEM), U.S. Navy, North Pacific Research Board (NPRB), Marine Mammal Commission
- Project** This project continues over a decade of passive acoustic monitoring of marine mammals in the Alaskan high Arctic and Bering Sea. Long-term passive acoustic recorder moorings have been distributed throughout the main migratory pathways and in wintering and summering grounds of many Arctic and subarctic marine mammals. The sensors also monitor noise levels from anthropogenic sources. Most moorings are co-located with long-term oceanographic moorings. Collaborators include NOAA Pacific Marine Environmental Lab, NOAA Resource Assessment and Conservation Engineering, Cornell University, and Department of Fisheries and Oceans Canada.
- Contact** Catherine.Berchok@noaa.gov

Cook Inlet Beluga Aerial Surveys

- Location** Cook Inlet
- Timing** November 2020, March 2021, June 2021
- Funding** NOAA, BOEM
- Project** Aerial surveys will be conducted to estimate winter distribution of belugas in November 2020 and March 2021. A survey to determine abundance and trend will be conducted in June 2021. Tracklines are flown along the entire coast north of Augustine Island and sawtooth tracklines cross the inlet. Observations will be compared to passive acoustic recordings obtained year-round at set locations within the inlet.
- Contact** Kim.Shelden@noaa.gov

Cook Inlet Beluga Aerial Photogrammetry

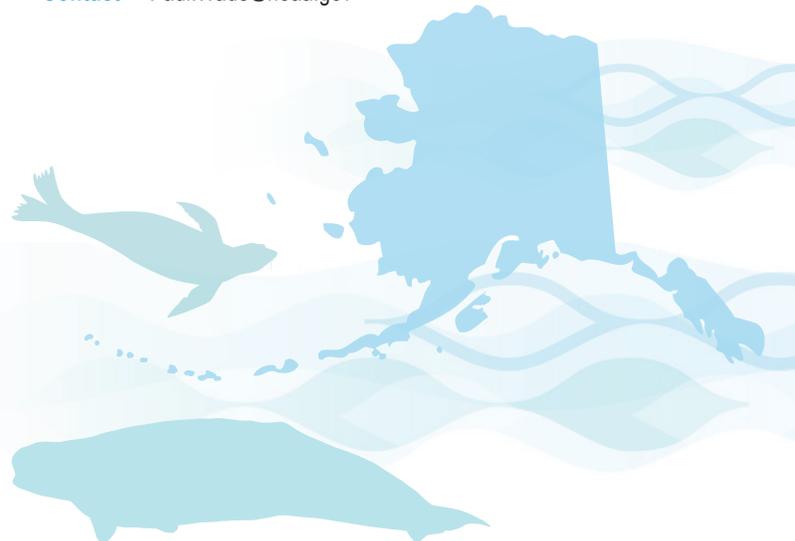
- Location** Cook Inlet
- Timing** August – September
- Funding** NOAA
- Project** Photogrammetry surveys will be conducted to estimate age classes and an index of beluga calf production in late August/early September. A hexacopter unmanned aircraft system equipped with a high-resolution camera will be used to photograph beluga groups. Individuals will be measured to provide blowhole to dorsal ridge lengths, and whales will be assigned to calf, juvenile, and adult age classes based on relative lengths.
- Contact** Paul.Wade@noaa.gov

Cook Inlet Beluga Biopsy Study

- Location** Cook Inlet
- Timing** August – September
- Funding** NOAA
- Project** A boat-based biopsy survey will be conducted to provide information on the sex, genetics, diet, and hormonal status (for stress, pregnancy, sexual maturity, etc.) of individual beluga whales. In collaboration with GREMM scientists, blubber samples will be collected using a darting gun. Photographs of each biopsied whale, and associated whales, will be taken and analyzed to identify individuals, which will be matched to the existing Cook Inlet Beluga Whale Photo-ID Project catalog.
- Contact** Paul.Wade@noaa.gov

Cook Inlet Beluga Acoustic Monitoring

- Location** Cook Inlet
- Timing** May – June, September – October
- Funding** NOAA, BOEM, ADF&G
- Project** Passive acoustic recorders will be used in Cook Inlet to identify feeding grounds for the endangered beluga whale population and to characterize potential noise-related disturbance. Recordings will also identify year-round spatial habitat use by other cetaceans such as harbor and Dall's porpoises, and killer whales. This project will maintain thirteen acoustic mooring packages serviced twice per year.
- Contact** Paul.Wade@noaa.gov



Steller Sea Lion Vessel-based Studies

Location Eastern Aleutian Islands and Western and Central Gulf of Alaska

Timing July

Funding NOAA

Project To estimate survival, reproductive rates, and movements of Steller sea lions, direct observations of sea lions will be made in the eastern Aleutian Islands and western and central Gulf of Alaska.

Contact Tom.Gelatt@noaa.gov

Steller Sea Lion Vessel-based Studies

Location Western and Central Aleutian Islands

Timing June – July

Funding NOAA

Project To estimate survival, reproductive rates, and movements of Steller sea lions, direct and indirect (from remote camera installations) observations of sea lions will be made in the western and central Aleutian Islands west of Adak, Alaska. An unmanned aerial system will be used to supplement manned aircraft aerial surveys to obtain sea lion counts for determining abundance and distribution. Steller sea lion pups will be captured and sampled for studies of condition and contaminants burden.

Contact Tom.Gelatt@noaa.gov

Steller Sea Lion Aerial Surveys

Location Aleutian Islands

Timing June – July

Funding NOAA

Project High-resolution aerial photographic surveys of Steller sea lions will be conducted using manned and unmanned aircraft during the peak of the breeding season. Sea lion pups, juveniles, and adults hauled out on terrestrial sites will be surveyed throughout the eastern Aleutian Islands west of Samalga Pass using manned aircraft, while unmanned aircraft associated with a research vessel will be used in the central and western Aleutian Islands. Time series of counts dating from the mid-1970s are used to track overall and regional trends in population abundance to monitor recovery of the endangered western population.

Contact Tom.Gelatt@noaa.gov

Northern Fur Seal Vital Rates Studies

Location Pribilof Islands

Timing August – November

Funding NOAA

Project Previously tagged seals will be observed to collect information for demographic studies of survival and reproduction by seasonal workers on both islands. In late fall (Sept-Oct), a cohort of pups and adult females will also be tagged.

Contact Tom.Gelatt@noaa.gov

Northern Fur Seal Population Assessment

Location Pribilof Islands

Timing July – August

Funding NOAA

Project Counts will be conducted in early July of adult male fur seals on both Pribilof Islands. In August, a sample of pups will be temporarily marked and counted to provide an estimate of pup production. In the summer of 2021 test flights with unmanned aircraft will also be tested as a tool for assessing population size.

Contact Tom.Gelatt@noaa.gov

Aerial Surveys of Ice-associated Seals and Polar Bears

Location Beaufort Sea (based out of Deadhorse and Utqiagvik)

Timing April – June

Funding NOAA, USFWS, USGS

Project Multispectral (i.e., infrared, visual, ultraviolet) aerial surveys will be flown over the sea ice habitat of the southern Beaufort Sea. Imagery will be used to detect and classify the species of animals on the sea ice to estimate abundance for ice seals and polar bears. Imagery will also be used to improve deep learning algorithms to increase the efficiency and accuracy of the image processing and survey results. Survey flights will maintain a 30 mile buffer around the communities of Utqiagvik, Wainwright, and Pt. Lay during spring whaling.

Contact Peter.Boveng@noaa.gov

Unmanned Surveys of Pinnipeds in the Aleutian Islands

Location Western Aleutian Islands (Attu, Agattu, Alaid, Nizki, and Shemya Islands)

Timing September

Funding NOAA

Project A medium-range, fixed-wing unmanned aircraft system (UAS) based at Eareckson Air Station, Shemya Island, will be used to survey Steller sea lion and harbor seal sites in the western Aleutian Islands. Our goals are to evaluate the feasibility of transitioning from manned to unmanned aerial surveys of pinnipeds in remote parts of Alaska to reduce risks to NOAA personnel and aircraft, and to advance the application of beyond visual line-of-sight UAS operations in the United States.

Contact Peter.Boveng@noaa.gov

Unmanned Surveys of Harbor Seals in the Pribilof Islands

Location St. Paul, St. George, Walrus and Otter islands

Timing July – September

Funding NOAA

Project Surveys for harbor seals will be conducted using a small unmanned aircraft system (sUAS) in the Pribilof Islands in order to develop an image-based, community approach to monitoring this isolated harbor seal stock. We will leverage UAS expertise and local knowledge from the Aleut Community of St. Paul Island to conduct the surveys. This project is part of our ongoing efforts to collaborate with local community partners and improve our understanding of harbor seals throughout the Pribilof Islands.

Contact Peter.Boveng@noaa.gov

Harbor Seal Aerial Surveys

Location Glacial fjord and coastal habitats in Prince William Sound, Gulf of Alaska, and Southeast Alaska

Timing August, September

Funding NOAA

Project Aerial photographic surveys will be conducted using manned aircraft to estimate the distribution and abundance of harbor seals in Alaska. We will conduct aerial surveys for harbor seals using a NOAA Twin Otter aircraft over glacial fjord and coastal habitats in Prince William Sound, Gulf of Alaska, and Southeast Alaska. These surveys will collect visual and infrared imagery of harbor seals resting on ice floes within glacial fjords and along the coastline of Alaska.

Contact Peter.Boveng@noaa.gov



NOAA FISHERIES

Alaska Fisheries Science Center

2021 Alaska Marine Mammal Field Work

Months in which field work will occur (2021)		M	A	M	J	J	A	S	O	N	
◆	Marine Mammal Passive Acoustic Recorders			✓			✓	✓	✓		
—	Cook Inlet Beluga Aerial Surveys	November 2020, March 2021, June 2021									
○	Cook Inlet Beluga Biopsy and Photogrammetry Study						✓	✓			
▲	Cook Inlet Beluga Acoustic Monitoring			✓	✓			✓	✓		
—	Steller Sea Lion Vessel-based Studies - GOA					✓					
—	Steller Sea Lion Vessel-based Studies				✓	✓					
●	Steller Sea Lion Aerial Surveys (UAS)				✓	✓					
●	Steller Sea Lion Aerial Surveys				✓	✓					
○	Northern Fur Seal Vital Rates Studies						✓	✓	✓	✓	
○	Northern Fur Seal Population Assessment					✓	✓				
■	Aerial Surveys of Ice-associated Seals and Polar Bears	✓	✓	✓							
■	Unmanned Surveys of Pinnipeds in the Aleutian Islands							✓			
○	Unmanned Surveys of Harbor Seals in the Pribilof Islands							✓			
■	Harbor Seal Aerial Surveys						✓	✓			

