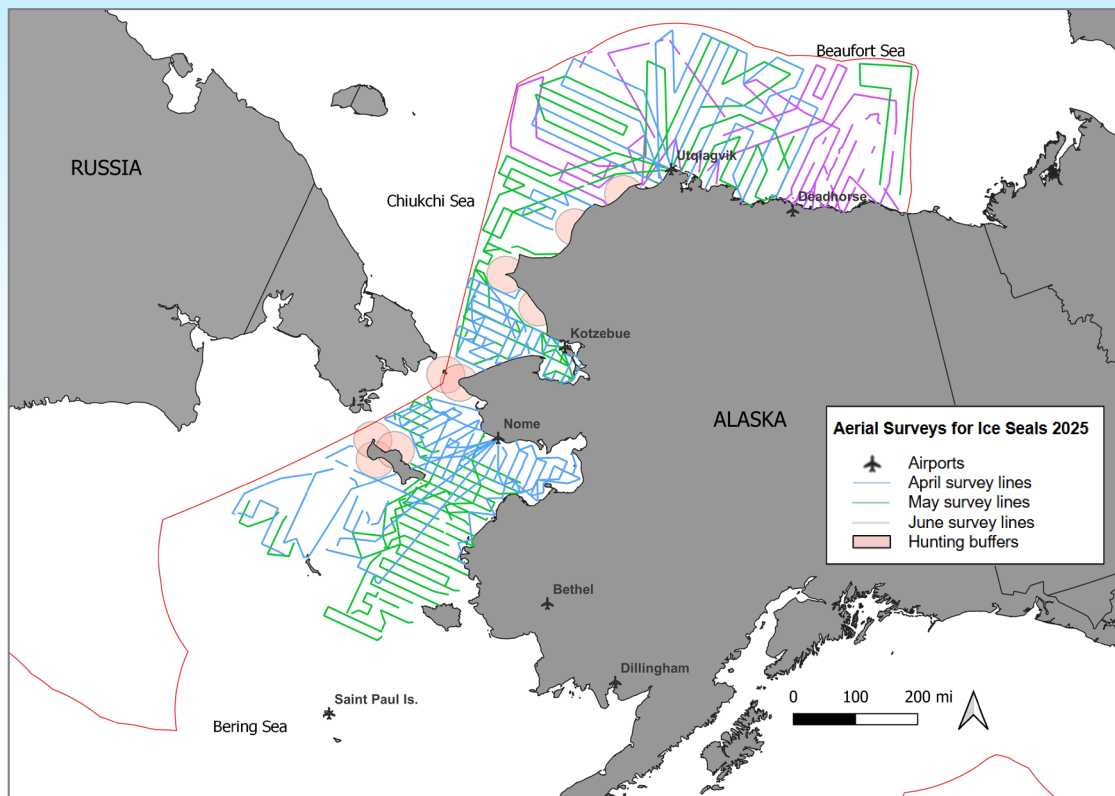




2025 Aerial Survey of Ice Seals in the Bering, Chukchi, & Beaufort Seas

April 4 – June 10 2025



Survey Summary

Between April 4 and June 10, scientists from NOAA Fisheries' Alaska Fisheries Science Center and the University of Washington's Cooperative Institute for Climate, Ocean, and Ecosystem Studies completed a comprehensive aerial survey to determine the abundance and distribution of spotted seals, ribbon seals, bearded seals, and ringed seals, throughout their range in U.S. waters of the Bering, Chukchi, and Beaufort seas.

Working from Nome, Bethel, Kotzebue, Barrow, and Deadhorse, Alaska, the survey team completed 58 survey flights totaling 39,663 km (24,645 miles) of "effort", as seen in the map above.

This project is included in the annual Alaska Ice Seal Research Plan which describes research priorities for ice-associated seals in Alaska, and was developed by the Alaska Native Ice Seal Committee's Co-management Working Group.

Data Collection

Two NOAA aircraft flew at a target altitude of 1,000 feet and used cameras to collect color and thermal images of the sea ice habitat below. One plane also carried experimental ultraviolet cameras. Cameras collected imagery covering a swath 400-500 meters wide below the planes. A machine learning algorithm processed thermal imagery in flight to help find animals and determine which images to save.

Flight lines were planned each night using current satellite imagery of sea ice. The team worked to spread the survey effort over space and time, to ensure the data captures how animals use the changing sea ice habitat. Daily flight plans were sent to interested parties via email prior to each flight.

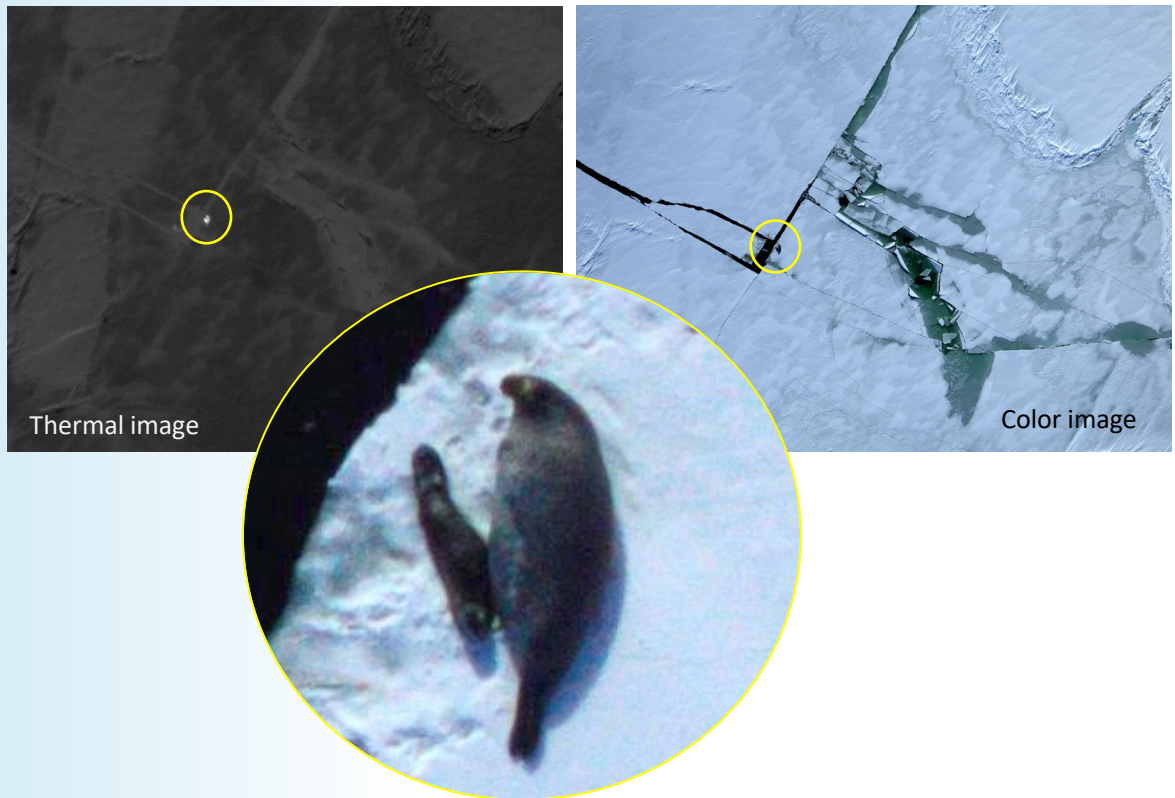
Analysis

Experienced ice seal biologists will review thermal detections to identify animals on the sea ice and determine species. Following a number of quality control steps, data will be analyzed to estimate abundance and distribution for each species. Progress will be shared through community meetings and reports as the team works to process terabytes of data.



Above: NOAA Twin Otter aircraft and survey team with King Air survey plane in the background. From left to right: Ben Hou, LCDR Max Anderson, Stacie Koslovsky, Jessica Lindsay, Adam Romlein, and LT Elias Shiheiber. Photo taken in Nome, Alaska.

Below: Example imagery collected during the 2025 ice seal survey effort. A recently born bearded seal pup and mom seen (circled in yellow) in the thermal imagery (left), color imagery (right), and cropped color insert. (Images collected under NMFS Permit No. 23858)



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