NOAA FISHERIES

Alaska Surveys

Alaska is the gateway to the Arctic. Using surveys, the Alaska Fisheries Science Center and its partners collect data and information needed to maintain sustainable U.S. Arctic and sub-Arctic marine ecosystems. This helps ensure resilient coastal communities and economic opportunities for commercial and recreational fisheries.

The rich marine resources in these areas are an important part of Alaska's history, culture, and economy. The region is also warming faster than anywhere else on the planet, leading to record heat waves, rapidly declining and changing sea ice, melting glaciers, and dramatic shifts in marine ecosystems. Our surveys are vital to understanding how ecosystems are responding to changing climate and ocean conditions. They allow us to make informed decisions to maintain the health and resilience of Alaska's fisheries, protected resources, and habitats. Survey findings also support our co-management agreements with Alaska Native communities to preserve their rich cultural heritage and food security.

Next generation technologies and techniques:

- UNCREWED SYSTEMS
- CUSTOMIZED CAMERA SYSTEMS
- SEAFLOOR-MOUNTED SONAR SYSTEMS
- ARTIFICIAL INTELLIGENCE
- ENVIRONMENTAL DNA

SURVEYS SUPPORT: NOAA Fisheries research surveys provide data critical to the stewardship of our nation's ocean resources and their habitat.

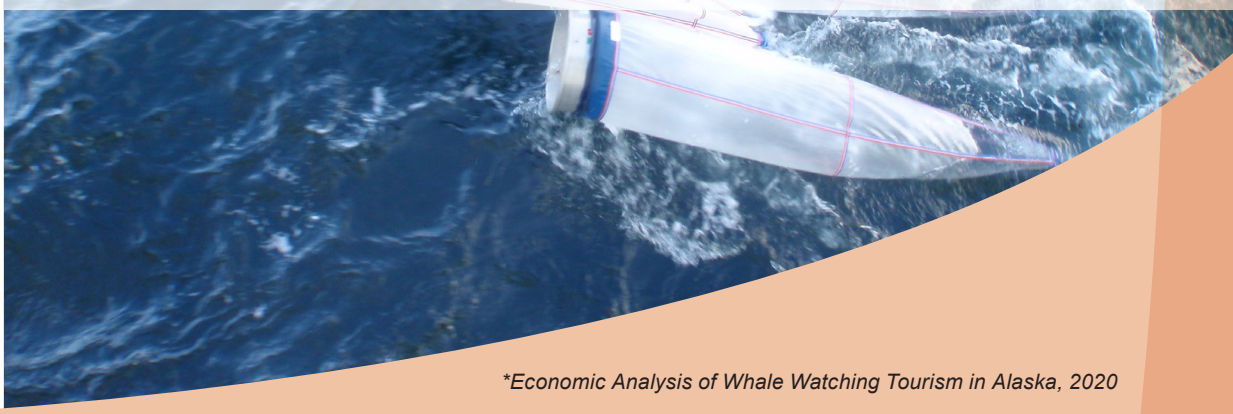
SUSTAINABLE SUPPLY OF **60% OF SEAFOOD PRODUCED IN UNITED STATES**

SECOND LARGEST FISHERY IN THE WORLD BY VOLUME

$86 MILLION WHALE WATCHING INDUSTRY*

FOOD SECURITY FOR SUBSISTENCE HARVESTERS AND COASTAL COMMUNITIES

PRESERVATION OF RICH CULTURAL HERITAGES OF ALASKA NATIVE POPULATIONS



Economic Analysis of Whale Watching Tourism in Alaska, 2020

Bottom and Acoustic Trawl Surveys

Years of data: More than 30 years

Species: Walleye pollock, Pacific cod, flatfishes, crab, Pacific ocean perch, rockfish species, and other bottom-dwelling species

What we do: We collect data on the abundance and distribution of important commercial fish species and ocean conditions from NOAA ships or chartered fishing vessels. In recent years, we have had to expand our surveys into the northern Bering Sea due to the loss of sea ice and warmer-than-average ocean temperatures.

Partners: NOAA Office of Marine and Aviation Operations, State of Alaska, and the commercial fishing industry

Data uses and benefits: These surveys are the foundational source of data for our groundfish and crab stock assessment models. They also inform additional ecosystem studies and our annual ecosystem status reports. Findings from some of these surveys support Alaska's pollock fishery, the second-largest in the world and worth about $1.9 billion.

EcoFOCI Larval and Juvenile Fish Surveys

Years of data: More than 20 years

Frequency: Usually every spring and fall

Species: Commercial, recreational, and subsistence fish species, salmon, forage fish, plankton, and marine mammals

What we do: We collect data on larval and juvenile fish and ocean conditions.

Partners: NOAA Research Pacific Marine Environmental Laboratory, State of Alaska, and University of Alaska Fairbanks

Data uses and benefits: The data is invaluable to our understanding of and ability to predict the dynamic relationships among climate, fisheries, and the marine environment. This information helps us maintain the sustainability of Alaska marine life and healthy ecosystems. The survey helps us understand the critical early life stages of commercial fish species that, if they survive, support future commercial fisheries. It also allows us to learn more about Alaska's plankton and zooplankton community, which are food for fish, whales, seabirds, and other species in Alaska. We use the information in ecosystem reports, socio-economic profiles, climate modeling, and fish and marine mammal stock assessments, as well as to inform groundfish management.

Ice-Associated Seals Aerial Surveys

Frequency: Opportunistically, usually in the spring

Species: Bearded, ringed, ribbon, and spotted seals and polar bears

What we do: We measure the abundance of ice seals and polar bears in the Beaufort, Chukchi, and Bering seas from a NOAA plane or charter plane using multispectral images and artificial intelligence.

Partners: U.S. Geological Survey, U.S. Fish and Wildlife Service, NOAA Office of Marine and Aviation Operations, and the deep learning industry

Data uses and benefits: We use the data in population assessments. The images are also used to improve deep learning algorithms that increase the efficiency and accuracy of photo survey results.

Read about other surveys in Alaska:
www.fisheries.noaa.gov/region/alaska#science