NOAA FISHERIES

Northeast Surveys

Next generation technologies and techniques:

UNCREWED SYSTEMS

UNDERWATER MICROPHONES

HABCAM

ENVIRONMENTAL DNA

ARTIFICIAL INTELLIGENCE

The Northeast Fisheries Science Center and its partners monitor the abundance, distribution, and health of marine life and ecosystems with surveys off the coast of Maine to North Carolina. Timing is especially critical to these surveys because of large seasonal cycles in temperature in the Northeast U.S. Shelf Ecosystem. Consistency is also important for ensuring the data we collect is comparable from year to year. Many Northeast surveys have multiple objectives, which allow us to get more insights from our time in the field.

The data we collect helps maintain the long-term sustainability of regional commercial and recreational fisheries, protected resources, and habitats. It also helps coastal communities adapt to climate change and other effects of a changing ocean environment.

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

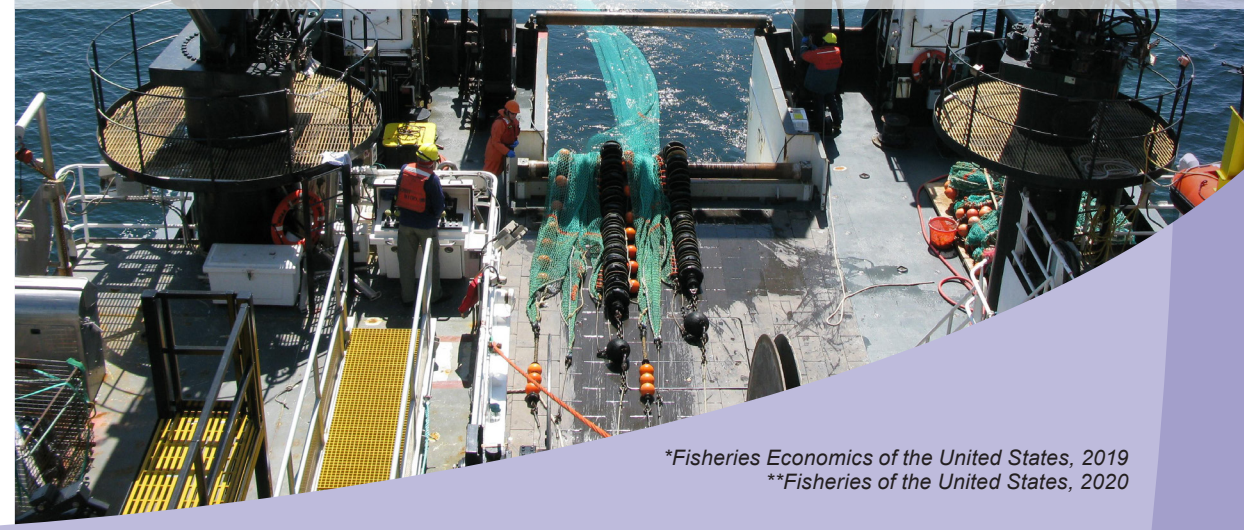
$5.8 BILLION REGIONAL GDP CONTRIBUTION FROM RECREATIONAL FISHING AND THE SEAFOOD INDUSTRY*

173,000 JOBS FROM RECREATIONAL FISHING AND THE SEAFOOD INDUSTRY*

TOP PORT NATIONWIDE **FOR LANDINGS VALUE** FOR 21 CONSECUTIVE YEARS**

PROTECTION OF ENDANGERED NORTH ATLANTIC RIGHT WHALES

ONE OF THE BEST-UNDERSTOOD **MARINE ECOSYSTEMS IN THE WORLD**



*Fisheries Economics of the United States, 2019
**Fisheries of the United States, 2020

Multispecies Bottom Trawl Surveys

First survey conducted: The standardized annual survey started in 1963

Frequency: Annually in the spring and fall

Species: More than 50 species, with a focus on haddock, white hake, red hake, Atlantic cod, cusk, halibut, wolfish, tilefish, thorny skate, summer flounder, black sea bass, scup, and dogfish

What we do: We identify species, record information on total catch numbers, and record the weight, length, maturity, sex, and diet content of caught species. We collect biological samples from a portion of the catch to determine ages and gather genetic data. The biological samples also allow us to collect more detailed information on species' ability to produce offspring, what they are eating, and their energy value as prey for other species. Throughout the survey area, we gather data on ocean temperature, salinity, and dissolved oxygen. At some stations, we collect zooplankton, fish eggs, and larvae to get more information on fish species and on the ecosystem as a whole.

Partners: Commercial fishing industry

Data uses and benefits: This is one of the longest-running surveys of its kind in the world. The data we collect is used to monitor the distribution and relative abundance of fish and invertebrate species on the continental shelf and upper slope of the Northwest Atlantic Ocean. This information supports stock assessments and feeds into fishery management decisions on sustainable allowable catches.

Ecosystem Monitoring Surveys

First survey conducted: 1973

Frequency: Annually in late spring, summer, late fall, and winter, with complementary sampling during the Multispecies Bottom Trawl Survey in the spring and fall

What we do: We sample plankton, fish eggs, and larvae. We also collect water column temperature, salinity, and carbon data and record sightings of marine mammals, sea turtles, and seabirds.

Partners: NOAA, other U.S. federal agencies, universities, research institutions, and international partners

Data uses and benefits: The data allows us to monitor the ecosystem, which is critical to maintaining the health of regional fisheries and protected resources. We use the information to define marine habitat boundaries and monitor changes in climate and ocean acidification. The survey also helps us estimate fish spawning stock size, location, and biodiversity and understand protected species migration and behaviors.

North Atlantic Right Whale Surveys

First survey conducted: 1998

Frequency: Throughout the year

What we do: We record sightings of North Atlantic right whales from planes and ships. We also deploy underwater microphones to record calls, collect images from uncrewed aircraft, deploy suction-cup tags that record movement and behavior, and collect fetal and genetic samples.

Partners: New England Aquarium, University of Rhode Island, Center for Coastal Studies, Woods Hole Oceanographic Institution, and others

Data uses and benefits: These surveys are critical to identifying individuals and monitoring the population health of one of the world's most endangered whales. The findings also inform conservation measures under the Endangered Species Act.

Read more about science in the Northeast:
www.fisheries.noaa.gov/region/new-england-mid-atlantic#science