

Adult fish biomass of the Northeast U.S. Shelf Ecosystem from NOAA Ship Trawl-Survey-Vessel NEFSC-Bottom_Trawl in the Coast of U.S. between Cape Hatteras and Nova Scotia from 1963-2013 (NEFSCBottomTrawl project)

Website: <https://www.bco-dmo.org/dataset/637753>

Data Type: Cruise Results

Version: final

Version Date: 2016-02-02

Project

» [Northeast Fisheries Science Center Bottom Trawl Survey](#) (NEFSCBottomTrawl)

Program

» [National Marine Fisheries Service / Northeast Fisheries Science Center](#) (NMFS/NEFSC)

| Contributors | Affiliation | Role |
|-----------------------------------|--|------------------------|
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Dataset Description

Biomass data of adult fish species of the Northeast U.S. Shelf; bottom trawl surveys were conducted by the Northeast Fisheries Science Center (NEFSC) between 1963-2013.

Methods & Sampling

The Northeast Fisheries Science Center (NEFSC) has conducted bottom trawl surveys for juvenile and adult fish on the Northeast US Shelf since 1963 (Azarovitz 1981). The surveys were conducted in the spring (March-April) and fall (September-October) using a stratified random design. All fish for each species were counted and weighed. These data represent kg of fish per tow. Zero means no fish of that species were caught in that tow.

Temperature and salinity values were obtained with a surface bucket for the temperature and a surface water sample was collected for a subsequent salinity measurement. In inshore areas, a bottom salinity was also taken.

References:

Azarovitz TR. 1981. A brief historical review of the Woods Hole Laboratory trawl survey time series. Canadian Special Publication of Fisheries and Aquatic Sciences. 58:62-7. ([PDF](#))

Data Processing Description

Biomass of adult fish was calculated yearly between 1963 and 2012 for spring and fall. The number of strata in the bottom trawl survey is 108.

Unlike the 'stratum' of the adult fish numbers data, the 'strata group' of the biomass data represents a code. For example offshore strata 1 is coded as 01010 with the first 01 representing the strata group, the second 01 the strata number and the last 0 the substrata (Only a few have these where a strata was broken in half). R truncates the 01 strata group to 1 so in R the offshore strata 1 is 1010. Inshore strata start with 03 and offshore south of Hatteras start with 08, inshore south of Hatteras 07, and shellfish 06.

References:

Azarovitz TR. 1981. A brief historical review of the Woods Hole Laboratory trawl survey time series. Canadian Special Publication of Fisheries and Aquatic Sciences. 58:62-7. ([PDF](#))

BCO-DMO Processing:

- Replaced spaces with underscores in taxa names.
- Modified parameter names to conform with BCO-DMO naming conventions.
- Replaced 'NA' in environmental measurements with 'nd'. Replaced 'NA' in fish biomass columns with '0'.

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Data Files

| File |
|---|
| adult_fish_biomass_rs.csv (Comma Separated Values (.csv), 8.78 MB) MD5:95c4e6c4f7bbb26cac5d8c0dc76b605c |
| Primary data file for dataset ID 637753 |

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Parameters

| Parameter | Description | Units |
|---------------------|--|------------------------|
| common name biomass | Biomass of each species, described by common name. | kg per tow |
| year | 4 digit GMT year | dimensionless |
| season | Spring or Fall | dimensionless |
| strata_group | 4 digit code. first digit is region, second two digits are stratum and last digit is subsample of stratum. Zero in the last digit means the strata was not subsampled. | dimensionless |
| lat | Strata latitude center in decimal degrees | decimal degrees |
| lon | Strata longitude center in decimal degrees | decimal degrees |
| cruise_id | Cruise Identifier is six-digit number representing the four digit year of cruise deployment and the two digit sequential cruise within that year. | numbers |
| vessel_abbrev | Two digit abbreviation for ship. AL=Albatross IV, etc. | two digit abbreviation |
| station | Sequential station number for each cruise_id. | number |
| depth | depth of the trawl | meters |
| temp_surface | temperature at the surface | degrees Celsius |
| sal_surface | salinity at the surface | dimensionless |
| temp_bottom | temperature at the bottom | degrees Celsius |
| sal_bottom | salinity at the bottom | dimensionless |
| site | general location of the tow; GOM: Gulf of Maine; SS: Scotian Shelf; MAB: Mid-Atlantic Bight; GB: Georges Bank | text |

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Instruments

| | |
|---|---|
| Dataset-specific Instrument Name | bucket for salinity sample |
| Generic Instrument Name | bucket |
| Dataset-specific Description | buckets were used to collect water for salinity samples at the surface and if not too deep, the bottom. |
| Generic Instrument Description | A bucket used to collect surface sea water samples. |

| | |
|---|--|
| Dataset-specific Instrument Name | bucket thermometer |
| Generic Instrument Name | bucket thermometer |
| Dataset-specific Description | thermometer encased in a small, thick plastic bucket with a rope attached. |
| Generic Instrument Description | a thermometer embedded in a small, sturdy, thick plastic container with a rope attached. Heave the bucket overboard and it catches water and the thermometer inside reads the temperature. |

| | |
|---|---|
| Dataset-specific Instrument Name | |
| Generic Instrument Name | Otter Trawl |
| Dataset-specific Description | For specific details on the adult fish collection gear, see: Azarovitz TR. 1981. A brief historical review of the Woods Hole Laboratory trawl survey time series. Canadian Special Publication of Fisheries and Aquatic Sciences. 58:62-7. (PDF) |
| Generic Instrument Description | Otter trawls have large rectangular otter boards which are used to keep the mouth of the trawl net open. Otter boards are made of timber or steel and are positioned in such a way that the hydrodynamic forces, acting on them when the net is towed along the seabed, pushes them outwards and prevents the mouth of the net from closing. The speed that the trawl is towed at depends on the swimming speed of the species which is being targeted and the exact gear that is being used, but for most demersal species, a speed of around 4 knots (7 km/h) is appropriate. More: http://en.wikipedia.org/wiki/Bottom_trawling |

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Deployments

NEFSC-Bottom_Trawl

| | |
|--------------------|---|
| Website | https://www.bco-dmo.org/deployment/637779 |
| Platform | NOAA Ship Trawl-Survey-Vessel |
| Start Date | 1963-09-01 |
| End Date | 2008-12-31 |
| Description | This is a 'catch-all' deployment for 50 years of Fisheries surveys. |

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Project Information

Northeast Fisheries Science Center Bottom Trawl Survey (NEFSCBottomTrawl)

Coverage: Northeast U.S. Shelf Ecosystem from Cape Hatteras, North Carolina to Cape Sable, Nova Scotia

The Northeast Fisheries Science Center (NEFSC) has conducted bottom trawl surveys for juvenile and adult fish on the NEUS Shelf over the past four decades (Azarovitz 1981). The surveys were conducted in the spring (March-April) and fall (September-October) using a stratified random design. All fish for each species were counted and weighed. Literature values of the estimated median size at maturity (50th percentile) were used for most species to determine size at maturity and only mature adults were included the catch estimates.

References:

Azarovitz TR. 1981. A brief historical review of the Woods Hole Laboratory trawl survey time series. Canadian Special Publication of Fisheries and Aquatic Sciences. 58:62-7. ([PDF](#))

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Program Information

National Marine Fisheries Service / Northeast Fisheries Science Center (NMFS/NEFSC)

Website: <http://www.nefsc.noaa.gov/history/nefsc.html>

Coverage: U.S. Continental Shelf

The [Northeast Fisheries Science Center](#) is the research arm of NOAA Fisheries in the Northeast region. The Center plans, develops, and manages a multidisciplinary program of basic and applied research to: (1) better understand living marine resources of the Northeast Continental Shelf Ecosystem from the Gulf of Maine to Cape Hatteras, and the habitat quality essential for their existence and continued productivity; and (2) describe and provide to management, industry, and the public, options for the conservation and utilization of living marine resources, and for the restoration and maintenance of marine environmental quality.

The functions are carried out through the coordinated efforts of research facilities located in Massachusetts, Rhode Island, Connecticut, New Jersey, and Washington, DC.

[NOAA's National Marine Fisheries Service](#) is the federal agency, a division of the Department of Commerce, responsible for the stewardship of the nation's living marine resources and their habitat. NOAA's National Marine Fisheries Service is responsible for the management, conservation and protection of living marine resources within the United States' Exclusive Economic Zone (water three to 200 mile offshore). Using the tools provided by the Magnuson-Stevens Act, NOAA's National Marine Fisheries Service assesses and predicts the status of fish stocks, ensures compliance with fisheries regulations and works to reduce wasteful fishing practices. Under the Marine Mammal Protection Act and the Endangered Species Act, NOAA's National Marine Fisheries Service recovers protected marine species (i.e. whales, turtles) without unnecessarily impeding economic and recreational opportunities. With the help of the six regional offices and eight councils, NOAA's National Marine Fisheries Service is able to work with communities on fishery management issues. NOAA's National Marine Fisheries Service works to promote sustainable fisheries and to prevent lost economic potential associated with overfishing, declining species and degraded habitats. NOAA's National Marine Fisheries Service strives to balance competing public needs.

[National Oceanic and Atmospheric Administration \(NOAA\)](#) is an agency that enriches life through science. Our reach goes from the surface of the sun to the depths of the ocean floor as we work to keep citizens informed of the changing environment around them.

From daily weather forecasts, severe storm warnings and climate monitoring to fisheries management, coastal restoration and supporting marine commerce, NOAA's products and services support economic vitality and affect more than one-third of America's gross domestic product. NOAA's dedicated scientists use cutting-edge research and high-tech instrumentation to provide citizens, planners, emergency managers and other decision makers with reliable information they need when they need it.

NOAA's roots date back to 1807, when the Nation's first scientific agency, the Survey of the Coast, was established. Since then, NOAA has evolved to meet the needs of a changing country. NOAA maintains a presence in every state and has emerged as an international leader on scientific and environmental matters.

NOAA's mission touches the lives of every American and we are proud of our role in protecting life and property and conserving and protecting natural resources.

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