Abundance and proportion of adult fish species of the Northeast U.S. Shelf; bottom trawl surveys were conducted by the Northeast Fisheries Science Center (NEFSC) during 1977-1987 and 1999-2008

Website: https://www.bco-dmo.org/dataset/560342
Data Type: Cruise Results
Version: 1
Version Date: 2015-06-11

Project
» Northeast Fisheries Science Center Bottom Trawl Survey (NEFSCBottomTrawl)

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

Contributors	Affiliation	Role
Hare, Jonathan	Northeast Fisheries Science Center - Narragansett (NOAA NEFSC)	Principal Investigator
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Abstract
Abundance and proportion of adult fish species of the Northeast U.S. Shelf; bottom trawl surveys were conducted by the Northeast Fisheries Science Center (NEFSC) during 1977-1987 and 1999-2008.

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Coverage

Spatial Extent: **N**:44.26110273 **E**:-65.91371179 **S**:35.87810748 **W**:-75.69231598
Temporal Extent: 1977 - 2008

Dataset Description

Abundance and proportion of adult fish species of the Northeast U.S. Shelf; bottom trawl surveys were conducted by the Northeast Fisheries Science Center (NEFSC) during 1977-1987 and 1999-2008.

Methods & Sampling

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.

Data Processing Description

Relative proportion (rel_proportion) of adults was calculated yearly for each of the 47 EcoMon plankton strata for the two seasons (1 = spring, 2 = fall). The number of plankton strata (n = 47) is lower than the bottom trawl survey (n = 108) as the narrow inshore stratum and the offshore shelf-break stratum of the bottom trawl survey (Azarovitz 1981) are combined in the EcoMon plankton sampling design. See the map of the EcoMon plankton strata (under Supplemental Files).

The number of adults per trawl was calculated by summing the number of fish caught greater than or equal to the estimated median size at maturity based on the swept area of the trawl. All trawls completed within a stratum, year, and season were averaged, and then this mean was multiplied by the stratum area (km2) to estimate stratum abundance (mean_abund). Thus, there were two estimates of adult abundance for each stratum per year, one for each season (spring and fall). The relative proportion of adults in a stratum and year for each season was estimated by dividing the estimated number of adults within a stratum and year in a single season by the sum of all strata from the year and season. If no samples were collected in a stratum for a year and season a 'nd' was placed in the mean_abund and rel_proportion columns.

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.

BCO-DMO Processing:
- Sorted data by taxa, year, season, strata.
- Replaced spaces with underscores in taxa names.
- Modified parameter names to conform with BCO-DMO naming conventions.
- Replaced 'NaN' with 'nd'.

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Data Files

File
adult_fish.csv (Comma Separated Values (.csv), 5.45 MB) MD5:3b01b28bfca20e147343ecde2d018854 Primary data file for dataset ID 560342

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Supplemental Files

File	
Azarovitz (1981) paper filename: Azarovitz1981.pdf Azarovitz (1981) paper	(Portable Document Format (.pdf), 910.60 KB) MD5:aabd40787953dfe7b57d01124ca8d915
Figure1 EcoMon Strata Map filename: Figure1_EcoMon_StrataMap.pdf Figure1 EcoMon Strata Map	(Portable Document Format (.pdf), 267.41 KB) MD5:dbb7896d1f51d91f85460aca04ebaec9

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Parameters

Parameter	Description	Units
taxa	Species/taxonomic name.	text
year	4 digit GMT year	dimensionless
season	1 digit code for sample season: 1=spring and 2=fall.	dimensionless
strata	2 digit code for EcoMon plankton strata. See a map of the EcoMon plankton strata (PDF).	dimensionless
lat	Strata latitude center in decimal degrees	decimal degrees
lon	Strata longitude center in decimal degrees	decimal degrees
area	Strata area in square kilometers	square kilomters (km^2)
mean_abund	Strata mean abundance (mean number of adults)	mean number of adults
rel_proportion	Strata relative proportion (% collected in a stratum for that season and year)	percentage (%)

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Instruments

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 Administation (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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