

US EPA ARCHIVE DOCUMENT

CATALOG DOCUMENTATION  
NATIONAL COASTAL ASSESSMENT DATABASE  
NORTHEAST REGION 2000-2002  
NETTED ORGANISMS LENGTH DATA  
TRAWL STATION SUMMARY DATA  
TRAWL TAXON ABUNDANCE DATA BY STATION

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1. DATASET IDENTIFICATION
    - 1.1 Title of Catalog document  
National Coastal Assessment Database  
Northeast Region 2000-2002  
Netted Organism Length Data by Taxon and Station  
Trawl Summary Data  
Trawl Abundance Data by Station and Taxon
    - 1.2 Authors of the Catalog entry  
John Kiddon, U.S. EPA NHEERL-AED  
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    - 1.3 Catalog revision date  
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    - 1.4 Dataset names  
Netted Organism Length Data  
Trawl Summary Data  
Trawl Abundance Data by Station and Taxon
    - 1.5 Task Group  
National Coastal Assessment-Northeast
    - 1.6 Data Set Identification Codes  
009, 010, 011
    - 1.7 Version  
001
    - 1.8 Request for Acknowledgment  
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## 2. INVESTIGATOR INFORMATION

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## 3. DATASET ABSTRACT

### 3.1 Abstract of the Dataset

The Netted Organism, Trawl Taxon Abundance and Trawl Station Summary data contain information regarding the contents of standard fish trawls conducted in estuaries of the northeast in 2000-02. Netted Organisms specifies the type of standard trawl conducted and the fork length (mm) of each individual measured from a trawl. The Trawl Taxon Abundance Data by Station data report the abundance of each fish species caught in a standard trawl at a station. The Trawl Station Summary data report the total abundance and number of taxa caught in a standard trawl at a station.

### 3.2 Keywords for the Data Set

Trawl type, Latin name, abundance, fork length

## 4. OBJECTIVES AND INTRODUCTION

### 4.1 Program Objective

The National Coastal Assessment (NCA) is a national monitoring and assessment program with the primary goal of providing a consistent evaluation of the estuarine condition in U.S. estuaries. It is an initiative of the Environmental Monitoring and Assessment Program (EMAP), and is a partnership of several federal and state environmental agencies, including: EPA's Regions, Office of Research and Development, and Office of Water; state environmental protection agencies in the 24 marine coastal states and Puerto Rico; and the United States Geological Survey (USGS) and the National Oceanic and Atmospheric Agency (NOAA). The five-year NCA program was initiated in 2000.

Stations were randomly selected using EMAP's probabilistic sampling framework and were sampled once during a summer index period (June to October). A consistent suite of indicators was used to measure conditions in the water, sediment, and in benthic and fish communities. The measured data may be used by the states to meet their reporting requirements under the Clean Water Act, Section 305(b). The data will also be used to generate a series of national reports characterizing the condition of the Nation's estuaries.

### 4.2 Data Set Objective

The objectives of these data files are to report abundance and characteristics of fish species caught in standard fish trawls conducted at stations in 2000-02.

### 4.3 Background Discussion

A two-year sampling design was employed for 2000-2001 NCA program in the Northeast. Analysts may therefore wish to consider the two years of data together.

The information collected in the fish surveys are reported in three data sets. Trawl Station Summary presents information regarding fish trawls and total taxa and abundance caught per standard trawl. Netted Organisms reports fork length of individual fish by species. A species list (coast\_sp.txt) with taxonomic information and official Integrated Taxonomic Information System (ITIS) codes and unofficial codes (E\*) for invalid species is available under 'The current taxonomic list' link at <http://www.epa.gov/emap/nca/html/data/>. The Table below reports the number of fish trawls conducted in 2000 and 2001 by the state cooperatives in the northeastern states.

State Cooperative	Count of Stations		
	2000	2001	Total
Maine			
New Hampshire	23	23	46
Massachusetts Fish Survey	28		28
Rhode Island	2		2
Rhode Island Fish Survey	10		10
Connecticut	9		9
Connecticut Fish Survey	19	12	31
New York	12	29	41
New Jersey Coast	30	38	68
New Jersey/Delaware Bay	35	35	70
Delaware Inland Bays	14	13	27
Total	182	150	332

The information reported in this file pertains to trawls conducted to characterize community structure (identification and abundance of fish species). If the standard trawl did not provide a sufficient number of fish for chemical analyses, additional non-standard trawls were conducted. This file contains information only about the standard trawls.

The speed and duration of the fish trawls were not uniform in surveys conducted by different state organizations. Therefore, fish community measures cannot be easily compared across all states.

If a standard length trawl could not be completed due to sea conditions or gear failure, then Gear Type is set to "Unsuccessful trawl".

Massachusetts did not participate in the NCA program in 2002. Rhode Island conducted fish trawls only in 2002, and collected physical water parameters in conjunction with the trawls. Connecticut collected all parameters, but at an abbreviated group of in-shore stations (stations in the Long Island Sound intended for sampling in 2002 were sampled in 2003).

#### 4.4 Summary of Data Set Parameters

Abundance data and number of taxa are reported by station and individual fork length is reported by taxon and station.

### 5. DATA ACQUISITION AND PROCESSING METHODS

#### 5.1 Data Acquisition / Field Sampling

The sample collection methods used by USEPA trained field crews will be described here. Any significant variations by other NCA partners are noted in Section 5.1.12.

##### 5.1.1 Sampling Objective

To collect a representative sample of fish at a station using a standard trawl.

### 5.1.2 Sample Collection and Ship-Board Processing: Methods Summary

The EPA standard fish trawl was conducted using a funnel-shaped net that filters fish from the near bottom waters. Fish were herded into the net by ground wire and an overhanging panel. Standard trawls were 10+-2 minutes in duration with a towing speed of 2-3 knots through the water against the prevailing current (1-3 knots relative to the bottom). An auxiliary, nonstandard trawl was performed to collect fish for tissue chemistry samples if an insufficient quantity was obtained in the standard trawl. Fish from the auxiliary trawls were used for chemical analyses only, and were not included in the standardized survey counts used to characterize the fish community structure.

All fish caught in a standard trawl were counted on board ship and immediately identified using scientific and common names. Fork lengths in mm were measured on approximately the first 30 individuals of each species found at a station.

### 5.1.3 Beginning Sampling Date

7 July 2000  
12 July 2001  
12 July 2002

### 5.1.4 Ending Sampling Date

20 October 2000  
29 October 2001  
29 October 2002

### 5.1.5 Sampling Platform

All program partners collected samples from various gasoline or diesel powered boats, 25 to 27 feet in length.

### 5.1.6 Sampling Equipment

The trawl net consisted of a funnel-shaped high-rise sampling trawl. The net includes a 16 meter tow line, a chain sweep, 5 cm mesh wings, and a 2.5 cm cod end.

### 5.1.7 Manufacturer of Sampling Equipment

Not applicable

### 5.1.8 Key Variables

Not applicable

### 5.1.9 Sample Collection: Calibration

The sampling gear does not require calibration.

### 5.1.10 Sample Collection: Quality Control

A trawl was considered void if one or more of the following conditions occurred:

1. Trawl could not be completed because of boat malfunction, vessel traffic, or major disruption of gear
2. Boat speed exceeded the prescribed range
3. The cod-end became untied
4. The net was filled with mud or debris
5. A portion of the catch was lost prior to processing
6. The tow lines became separated
7. The net was torn in a way that significantly altered net efficiency

If a successful trawl could not be performed within 1.5 hours, the site was considered un-samplable. Quality assurance audits were performed to verify the identification and measurement techniques of the field crew.

5.1.11 Sample Collection: References

Strobel, C.J. 2000. Coastal 2000-Northeast Component: Field Operations Manual U. S. Environmental Protection Agency, National Health and Environmental Effects Research Laboratory, Atlantic Ecology Division, Narragansett, RI. EPA/620/R-00/002.

5.1.12 Sample Collection: Alternate Methods

Trawl records from the Groups below did not follow NCA standards for length of trawl.

Group	Name	Description
CT	Connecticut Fish Survey Trawl	30 minutes standard
RI	Rhode Island Fish Survey Trawl	20 minutes standard
MA	MA Fish Survey Trawl (2000 only)	20 minutes standard
NH	New Hampshire modified Standard	4 minutes standard

5.2 Data Preparation and Sample Processing

All parameters reported in this file were measured aboard ship immediately following the trawl.

5.2.1 Sample Processing Objective

Not applicable

5.2.2 Sample Processing: Methods Summary

Not applicable

5.2.3 Sample Processing: Calibration

Not applicable

5.2.4 Sample Processing: Quality Control

Not applicable

5.2.5 Sample Processing: References

Not applicable

5.2.6 Sample Processing: Alternate Methods

Not applicable

6. DATA ANALYSIS AND MANIPULATIONS

6.1 Name of New or Modified Values

Not applicable

6.2 Data Manipulation Description

Not applicable

7. DATA DESCRIPTION

7.1 Description of Parameters

7.1.1 Components of the Data Set

7.1.1.1 Netted Organisms Data

Attribute Name	Format	Description
Data Group	VARCHAR2(4)	Data Group Conducting Sampling
Sampling Year	NUMBER(4.0)	Year when Data Were Collected
Station Name	VARCHAR2(20)	The Station Identifier
Sampling Collection Date	DATE	Date of Sample Collection
Collection Type	VARCHAR2(5)	Type of collection-Trawl or seine
Replicate Number	VARCHAR2(1)	Trawl/Seine Replicate Number
Latin Name	VARCHAR2(78)	Latin name of the Taxon
Abundance (#)	NUMBER(6.0)	Taxon Abundance (#/sample)
Lengths Measured	NUMBER(5.0)	Number of Lengths Measured
Taxon Mean Length (mm)	NUMBER(6.1)	Mean Length (mm) of Ind. by Taxon

Taxon SD Length (mm)	NUMBER(6.1)	Standard Deviation of Length (mm)
Gear Type	VARCHAR2(50)	Description of gear

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#### 7.1.1.2 Trawl Taxon Abundance Data by Station

Attribute Name	Format	Description
Data Group Code	VARCHAR2(4)	Data group conducting sampling
Sampling Year	NUMBER(4.0)	Year during when were collected
Station Name	VARCHAR2(20)	The station identifier
Sampling Collection Date	DATE	Date of sample collection
Collection Type	VARCHAR2(5)	Type of collection - trawl or seine
Total Trawls	NUMBER(2.0)	Number of trawls/seines conducted
Latin Name	VARCHAR2(78)	Latin name of the taxon
Total Abundance (#)	NUMBER(5.0)	Total taxon abundance in 'n' trawls
Lengths Measured (#)	NUMBER(4.0)	Number of lengths measured
Taxon Length (Mean)	NUMBER(5.2)	Mean length of taxon in 'n' trawls
Taxon Length (SD)	NUMBER(5.2)	SD length in 'n' trawls
Lengths Units	VARCHAR2(15)	Length units

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#### 7.1.1.3 Trawl Station Summary

Attribute Name	Format	Description
Data Group	VARCHAR2(4)	Data Group Conducting Sampling
Sampling Year	NUMBER(4.0)	Year when Data Were Collected
Station Name	VARCHAR2(20)	The Station Identifier
Sampling Collection Date	DATE	Date of Sample Collection
Collection Type	VARCHAR2(5)	Type of collection-Trawl or seine
Total Trawls	NUMBER(2.0)	Number of Trawls/Seines conducted
Total Taxa (#)	NUMBER(5.0)	# taxa in 'n' trawls at a station
Total Abundance (#)	NUMBER(5.0)	# number of organisms in 'n' trawls
Mean Taxa (#)	NUMBER(5.1)	Mean # taxa in 'n' trawls at a station
Mean Abundance (#)	NUMBER(5.1)	Mean # number of organisms in 'n' trawls
Gear Type	VARCHAR2(50)	Type of collection - Trawl or seine

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7.1.2 Precision of Reported Values  
As displayed in Section 7.1.3 and 7.1.4.

#### 7.1.3 Minimum Value in Data set

Trawl Station Summary

Variable	Minimum Value
Total Abundance (#)	0
Total Taxa (#)	0

#### Netted Organisms Data

Variable	Minimum Value
Taxon Mean Length (mm)	10

#### 7.1.4 Maximum Value in Data set

Trawl Station Summary

Variable	Maximum Value
Total Abundance (#)	8078
Total Taxa (#)	23

Variable	Maximum Value
Netted Organisms Data	
Taxon Mean Length (mm)	1733

## 7.2 Data Record Example

### 7.2.1 Column Names for Example Records

#### 7.2.1.1 Trawl Station Summary

Data Group, Sampling Year, Station Name, Sampling Collection Date, Latitude Decimal Degrees, Longitude Decimal Degrees, Collection Type, Total Trawls, Total Taxa (#), Total Abundance (#), Gear Type

#### 7.2.1.2 Trawl Taxon Abundance Data by Station

Data Group, Sampling Year, Station Name, Sampling Collection Date, Latitude Decimal Degrees, Longitude Decimal Degrees, Collection Type, Total Trawls, Latin Name, Total Abundance (#), Lengths Measured (#), Taxon Length (Mean), Length (Standard Deviation), Length Units, Measurement Type, Biomass, Biomass Units, QA Code

#### 7.2.1.3 Netted Organisms Data

Data Group, Sampling Year, Station Name, Sampling Collection Date, Latitude Decimal Degrees, Longitude Decimal Degrees, Collection Type, Replicate Number, Latin Name, Common Name, Taxon Mean Length, Length Units, Gear Type

### 7.2.2 Example Data Records

#### 7.2.2.1 Trawl Station Summary

National Coastal Assessment-Northeast/Connecticut, 2000, CT00-0001-A, 17-AUG-2000, 41.151, -73.22, Trawl, 1, 3, 54, Funnel-shaped high-rise sampling trawl

National Coastal Assessment-Northeast/Connecticut, 2000, CT00-0003-A, 04-AUG-2000, 41.288, -73.071, Trawl, 1, Unsuccessful trawl

National Coastal Assessment-Northeast/Connecticut, 2000, CT00-0005-A, 18-SEP-2000, 41.274, -72.327, Trawl, 1, 4, 7, Funnel-shaped high-rise sampling trawl

#### 7.2.2.2 Trawl Taxon Abundance Data by Station

National Coastal Assessment-Northeast/Connecticut Fish Survey, 2001, CT01-0050-A, 12-SEP-2001, 41.247, -72.331, Trawl, 1, Paralichthys dentatus, 4

National Coastal Assessment-Northeast/Connecticut Fish Survey 2001, CT01-0050-A, 12-SEP-2001, 41.247, -72.331, Trawl, 1, Raja erinacea, 1

National Coastal Assessment-Northeast/Connecticut Fish Survey 2001, CT01-0052-A, 12-SEP-2001, 41.236, -72.404, Trawl, 1, Cynoscion regalis, 3

#### 7.2.2.3 Netted Organisms Data

National Coastal Assessment-Northeast/Connecticut, 2000, CT00-0001-A, 17-AUG-2000, 41.151, -73.22, Trawl, 1, Cynoscion regalis, weakfish, 67.0, mm, Funnel-shaped high-rise sampling trawl

National Coastal Assessment-Northeast/Connecticut, 2000, CT00-0001-A, 17-AUG-2000, 41.151, -73.22, Trawl, 1, Cynoscion regalis, weakfish, 75.0, mm, Funnel-shaped high-rise sampling trawl

National Coastal Assessment-Northeast/Connecticut, 2000, CT00-0001-A, 17-AUG-2000, 41.151, -73.22, Trawl, 1, Paralichthys dentatus, summer flounder, 334.0, mm, Funnel-shaped high-rise sampling trawl

## 8. GEOGRAPHIC AND SPATIAL INFORMATION

### 8.1 Minimum Longitude (Westernmost)

-75.7737 decimal degrees

### 8.2 Maximum Longitude (Easternmost)

-66.98 decimal degrees

8.3 Minimum Latitude (Southernmost)  
38.4521 decimal degrees

8.4 Maximum Latitude (Northernmost)  
44.9456 decimal degrees

8.5 Name of area or region  
The National Coastal Assessment Northeast Region covers the northeastern US coastline from Maine to Delaware

9. QUALITY CONTROL AND QUALITY ASSURANCE

9.1 Measurement Quality Objectives

9.2 Data Quality Assurance Procedures  
Inspection of the sampling gear for tears or improper assemblage is done at the beginning of every trawl event.

10. DATA ACCESS

10.1 Data Access Procedures  
Data can be downloaded from the web at: <http://www.epa.gov/emap/nca/html/data/>

10.2 Data Access Restrictions  
None

10.3 Data Access Contact Persons  
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10.4 Dataset Format  
Tab-delimited ASCII files

10.5 Information Concerning Anonymous FTP  
Not available

10.6 Information Concerning WWW  
See Section 10.1 for WWW access

10.7 EMAP CD-ROM Containing the Dataset  
Data not available on CD-ROM

11. REFERENCES

Strobel, C.J. 2000. Environmental Monitoring and Assessment Program: Coastal 2000 - Northeast component: field operations manual. Narragansett (RI): U.S. Environmental Protection Agency, National Health and Environmental Effects Research Laboratory, Atlantic Ecology Division. EPA/620/R-00/002. 68 p.

U.S. EPA. 2001. National Coastal Assessment: Field Operations Manual. U.S. Environmental Protection Agency, Office of Research and Development, National Health and Environmental Effects Research Laboratory, Gulf Ecology Division, Gulf Breeze, FL. EPA/620/R-01/003. 72 p.

U.S. EPA. 2001. Environmental Monitoring and Assessment Program (EMAP): National Coastal Assessment Quality Assurance Project Plan 2001-2004. U.S. Environmental Protection Agency, Office of Research and Development, National Health and Environmental Effects Research Laboratory, Gulf Ecology Division, Gulf Breeze, FL. EPA/620/R-01/002. 189 p.

## 12. TABLE OF ACRONYMS

AED	Atlantic Ecology Division
DE	Delaware
CT	Connecticut
EMAP	Environmental Monitoring and Assessment Program
EPA	Environmental Protection Agency
MA	Massachusetts
ME	Maine
mm	Millimeter
NCA	National Coastal Assessment
NH	New Hampshire
NHEERL	National Health and Environmental Effects Research Laboratory
NJ	New Jersey
NY	New York
NYC	New York City
PA	Pennsylvania
QA/QC	Quality Assurance/Quality Control
RI	Rhode Island
UNH	University of New Hampshire
WWW	World Wide Web

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