CATALOG DOCUMENTATION
NATIONAL COASTAL ASSESSMENT DATABASE
NORTHEAST REGION 2000-2006
NETTED ORGANISMS LENGTH DATA
TRAWL STATION SUMMARY DATA
TRAWL TAXON ABUNDANCE DATA BY STATION

TABLE OF CONTENTS

1. DATASET IDENTIFICATION

1.1 Title of Catalog document

National Coastal Assessment Database
Northeast Region 2000-2006
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

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1.3 Catalog revision date

June 2010

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

EMAP requests that all individuals who download EMAP data acknowledge the source of these data in any reports, papers, or presentations. If you publish these data, please include a statement similar to: "Some or all of the data described in this article were produced by the U. S. Environmental

Protection Agency through its Environmental Monitoring and Assessment Program (EMAP)."

2. INVESTIGATOR INFORMATION

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2.2 Sample Collection Investigators

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2.3 Sample Processing Investigators

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3. DATASET ABSTRACT

3.1 Abstract of the Dataset

The Netted Organism, Trawl Taxon Abundance and Trawl Station Summary data sets contain information on the contents of standard fish trawls conducted in estuaries of the northeast in 2000-06. Netted Organisms specifies the type of standard trawl conducted and the fork length (mm), carapace width (mm) or carapace length (mm) of up to 30 individual fish or crustaceans (blue crab, lobster or horseshoe crab) caught in a trawl. The Trawl Taxon Abundance Data by Station data report the abundance of fish and crustacean species caught in standard trawls at a station. The Trawl Station Summary data report total abundance and number of taxa caught in standard trawls at stations.

3.2 Keywords for the Data Set

Trawl type, Latin name, abundance per trawl, fork length, carapace width, fish species, crustaceans, carapace 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 NCA program was initiated in 2000 and completed in 2006.

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 were also used to generate a series of national reports characterizing the condition of the Nation’s estuaries http://www.epa.gov/nccr/.

4.2 Data Set Objective

The objectives of these data sets are to report characteristics of fish

and crustacean species caught in standard fish trawls conducted at stations in 2000-06.

4.3 Background Discussion

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 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 about the standard files only.

The speed and duration of the fish trawls were not uniform in surveys conducted by different state organizations (see Section 5.1.12). 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 and did not provide fish survey data to the NCA program in 2003-04. 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. Maine purchased lobster caught in designated estuaries in 2000.

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 Dates

7 July 2000
25 June 2001
2 May 2002
1 May 2003
16 April 2004
20 June 2005
1 June 2006

5.1.4 Ending Sampling Dates

20 October 2000
31 October 2001
31 October 2002
7 November 2003
4 November 2004
22 November 2005
24 November 2006

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 unsampleable. 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
NH	New Hampshire Fish	4 min
MA	Massachusetts Fish	20 min
RI	Rhode Island Fish Survey	20 min
CT	Connecticut Fish Survey	30 min
DE/DI	Delaware Fish Survey	5 min
VA	Virginia Fish Survey	5 min

5.2 Data Preparation and Sample Processing

All parameters reported in this file were measured aboard ship immediately following the trawl (see Section 5.1).

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 Code	VARCHAR2(4)	Data group conducting sampling
Sampling Year	NUMBER(4.0)	Year of data collection
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 Length (mm)	NUMBER(6.1)	Length (mm) of Ind. of the Taxon
Taxon SD Length (mm)	NUMBER(6.1)	Standard Deviation of Length (mm)
Gear Type	VARCHAR2(50)	Type of collection - Trawl or seine

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 of data collection
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

7.1.1.3 Trawl Station Summary

Attribute Name	Format	Description
Data Group Code	VARCHAR2(4)	Data group conducting sampling
Sampling Year	NUMBER(4.0)	Year of data collection
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)	Total # taxa in 'n' trawls at a station
Total Abundance (#)	NUMBER(5.0)	Total # number organisms in 'n' trawls
Mean Taxa (#)	NUMBER(5.1)	Mean # taxa in 'n' trawls at a station
Mean Abundance (#)	NUMBER(5.1)	Mean # number organisms in 'n' trawls
Gear Type	VARCHAR2(50)	Type of collection - Trawl or seine

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 (#)	8402
Total Taxa (#)	23

Variable	Maximum Value
Netted Organisms Data	
Taxon Mean Length (mm)	2031

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)
-75.774 decimal degrees

8.2 Maximum Longitude (Easternmost)
-66.98 decimal degrees

8.3 Minimum Latitude (Southernmost)
38.452 decimal degrees

8.4 Maximum Latitude (Northernmost)
45.185 decimal degrees

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

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 accessed 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
Data can be downloaded from the WWW server.

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
EMAP Environmental Monitoring and Assessment Program
EPA Environmental Protection Agency
NCA National Coastal Assessment
NHEERL National Health and Environmental Effects Research Laboratory
QA/QC Quality Assurance/Quality Control

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