CATALOG DOCUMENTATION
NATIONAL COASTAL ASSESSMENT- NORTHEAST DATABASE
YEARS 2000-2006
FISH TRAWL DATA; "FTRAWL"

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1. DATASET IDENTIFICATION

1.1 Title of Catalog document
National Coastal Assessment-Northeast Region Database
Years 2000-2006
Fish Trawl Data by Station

1.2 Authors of the Catalog entry
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1.3 Catalog revision date
October 2009

1.4 Dataset name
FTRAWL

1.5 Task Group
National Coastal Assessment-Northeast

1.6 Data Set Identification Code
009

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 (for full addresses see Section 13)

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3. DATASET ABSTRACT

3.1 Abstract of the Dataset

The FTRAWL data file contains the information regarding standard fish trawls conducted in 2000-2006. The file specifies the type of standard trawl conducted; trawl speed and duration; latitude and longitude of beginning and end points of the trawl; and the number of fish species caught per trawl. One record is presented per trawl.

3.2 Keywords for the Data Set

Trawl speed and duration, species abundance per trawl

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 objective of the FTRAWL data file is to report key parameters and the number of fish species caught per trawl during standard fish trawls

conducted Maine through Virginia in 2000-2006.

4.3 Background Discussion

Refer to Section 4.4 for a list of dataset parameters. Additional information about selected parameters are discussed in this section.

The information collected in the fish surveys are reported in five data files. FTRAWL presents information regarding fish trawls and abundance of unique species per standard trawl. FISH_CNT contains the number of fish per species per standard trawl. FISH_LEN specifies fork length of individual fish and the frequency and location of pathologies observed in a ship-board inspection. CRAB_LOB presents abundance and size data for crustaceans caught in standard trawls. TISSCHEM reports the concentrations of about 75 chemical analytes measured in composites samples of fish, lobsters or crabs collected at a station. The lookup table FISH_TAX lists the common and scientific names of all fish identified in standard trawls.

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 nonstandard trawls were conducted. This file contains information about the standard files only. For this reason, there is usually only one FTRAWLID value per station visit in this dataset. However, New York performed up to three standard trawls per visit, so for ST_COOP=NY, there can be three standard trawls per station visit identified by different FTRAWLID values. The speed and duration of the fish trawls were not uniform in surveys conducted by different state organizations (see Section 5.1.12).

Samples collected in 2000-2006 were analyzed by a variety of state and national-contract analytical labs, identified by the parameter LABCODE. The Table below lists the number of metal records analyzed by the indicated labs by ST_COOP and year (laboratory participation was identical for PAHs, PCBs, and pesticides). While some indications of minor systematic laboratory biases may be evident for some analytes and labs, the biases were not considered great enough to exclude the results from the database. The parameter LABCODE can be used to more carefully examine the results for laboratory bias. Addresses of the participating labs follow the Table.

Number of Fish Trawl Records by State and Year:

Count of Records	YEAR							
State	2000	2001	2002	2003	2004	2005	2006	Grand Total
ME	1	2		4				7
NH	22	21	20	85	47	18	21	234
MA	28							28
RI	12		14	12	12	14	12	76
CT	17	12	15	5	5	15	10	79
NY	23	29	128	58	43	47	44	372
NJ	48	53	47	32	46	16	13	255
DE	29	31	29	37	24	15	20	185
MD						19	11	30
VA						44	44	88
Grand Total	180	148	253	233	177	188	175	1354

NCA planners provide two alternate locations for a station location in the event that the original location cannot be sampled. The parameter STA_ALT indicates whether the station location was the original site, first alternate, or second alternate—STA_ALT = "A", "B", or "C", respectively. Also refer to discussion in the STATIONS metadata file regarding use of this parameter during analysis of the data.

4.4 Summary of Data Set Parameters

* denotes parameters that should be used as key fields when merging data files

*STATION	Station identifier
*STAT_ALT	Station location (A, B or C)
*EVNTDATE	Date of sampling event
FTRAWLID	Fish Trawl Id Number
FTRLFLAG	Flag indicating unsuccessful trawl
FSPECCNT	Total fish species in trawl (#)
FT_DUR	Duration of fish trawl (mmss)
FWTR_SPD	Trawl speed through water (knots)
BEG_LAT	Fish trawl beginning latitude (dec. deg)
BEG_LNG	Fish trawl beginning longitude (dec. deg)
END_LAT	Fish trawl end latitude (dec. deg)
END_LNG	Fish trawl end longitude (dec. deg)

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. NCA Standard trawls are idendified by TRWLTYPE=NCA. 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. Additional nonstandard trawls were conducted when necessary to collect enough fish for chemical analyses.

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 planned to be 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). In some cases, shorter or longer trawls were performed; the duration of the trawl is recorded in the variable FT_DUR. An auxiliary, nonstandard trawl was performed to collect fish for tissue chemistry samples if an insufficient quantity were 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 the scientific and common names listed in the FISH_TAX file. Fork lengths (carapace widths for crabs and lobster) in mm were measured on approximately the first 30 individuals of each species found at a station. A visual inspection for obvious signs of pathology was conducted on all fish measured for length. Subsets of fish,

crabs, or lobster were randomly chosen for chemical analysis. These test organisms were tagged and frozen individually, then combined into groups of 2-10 organisms of same species for later processing as composite samples. Each group was assigned a composite ID (SAMPLEID) and sent to the analytical lab for chemical analysis.

5.1.3 Beginning Sampling Date
2 August 2000

5.1.4 Ending Sampling Date
26 September 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 1½ 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 with the following trawl codes conducted trawls for durations other than the standard 10 minutes:

FTRLTYPE	Name	Trawl Duration
NH	New Hampshire Fish Survey	4 min
MA	Massachusetts Fish Survey	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

NAME	TYPE	LENGTH	LABEL
STATION	Char	9	Station Identifier
STAT_ALT	Char	1	Station Location (A,B or C)
EVNTDATE	Num	8	Event Date
FTRAWLID	Char	15	Fish Trawl ID Number
FTRLFLAG	Char	20	Status of Completed Fish Trawl
FTRLTYPE	Char	5	Fish Trawl Type (Standard/Nonstandard)
FSPECCNT	Num	4	Total Fish Species in Trawl (#)

FT_DUR	Char	10	Duration of Fish Trawl (mmss)
FWTR_SPD	Num	4	Trawl Speed through Water (knots)
BEG_LAT	Num	8	Fish Trawl Beginning Latitude (dd)
BEG_LNG	Num	8	Fish Trawl Beginning Longitude (dd)
END_LAT	Num	8	Fish Trawl End Latitude (dd)
END_LNG	Num	8	Fish Trawl End Longitude (dd)

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

PARAMETER	MIN
evntdate	8/2/2000
FSPECCNT	0
FWTR_SPD	0.4
BEG_LAT	35.244
BEG_LNG	-79.9675
END_LAT	30.3732
END_LNG	-79.9715

7.1.4 Maximum Value in Data set

PARAMETER	MAX
evntdate	9/26/2006
FSPECCNT	20
FWTR_SPD	4.5
BEG_LAT	43.2588
BEG_LNG	-70.0952
END_LAT	43.2588
END_LNG	-70.0953

7.2 Data Record Example

station	stat_alt	evntdate	FTRAWLID	FTRLFLAG	FTRLTYPE	FSPECCNT
CT03-0241	A	9/22/2003		SUCCESSFUL		15
CT03-0242	A	9/15/2003		SUCCESSFUL		18
CT03-0243	A	9/26/2003		SUCCESSFUL		19

FT_DUR	FWTR_SPD	BEG_LAT	BEG_LNG	END_LAT	END_LNG	GEARCODE
30						CT
30						CT
30						CT

8. GEOGRAPHIC AND SPATIAL INFORMATION

8.1 Minimum Longitude (Westernmost)
-77.304 decimal degrees

8.2 Maximum Longitude (Easternmost)
-66.946 decimal degrees

8.3 Minimum Latitude (Southernmost)
36.564 decimal degrees

8.4 Maximum Latitude (Northernmost)
45.1848 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
http://www.epa.gov/emap/nca/html/regions/index.html

10.2 Data Access Restrictions
None

10.3 Data Access Contact Persons
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10.4 Dataset Format
ASCII (CSV) and SAS Export files

10.5 Information Concerning Anonymous FTP
Not available

10.6 Information Concerning WWW
No gopher access, 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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