CATALOG DOCUMENTATION
REGIONAL EMAP DATABASE
1993-1994 NEW YORK/NEW JERSEY HARBOR SYSTEM
BENTHIC SPECIES REPLICATE ABUNDANCE BY SITE

TABLE OF CONTENTS

1. DATA SET IDENTIFICATION

1.1 Title of Catalog document

Regional EMAP Database
1993-1994 New York/New Jersey Harbor System
Benthic Species Replicate Abundance by Site

1.2 Author of the Catalog entry

Melissa Hughes, OAO Corporation

1.3 Catalog revision date

1 July 1997

1.4 Data set name

BENTHIC SPECIES REPLICATE ABUNDANCE DATA

1.5 Task Group

Regional Environmental Monitoring and Assessment Program

1.6 Data set identification code

226

1.7 Version

001

1.8 Requested Acknowledgment

If you plan to publish these data in any way, EPA requires a standard statement for work it has supported:

"Although the data described in this article have been funded wholly or in part by the U. S. Environmental Protection Agency through its EMAP-Estuaries Program, it has not been subjected to Agency review, and therefore does not necessarily reflect the views of the Agency and no official endorsement should be inferred."

2. INVESTIGATOR INFORMATION

2.1 Principal Investigator

Ms. Darvene A. Adams
U.S. Environmental Protection Agency - Region II

2.2. Investigation Participant

Mr. Joel S. O'Connor
U.S. Environmental Protection Agency - Region II

3. DATA SET ABSTRACT

3.1 Abstract of the Data Set

The BENTHIC SPECIES REPLICATE ABUNDANCE data set presents data on each benthic taxon identified in each acceptable grab collected at a station. A count of organisms of the taxon identified from each grab is recorded. Each taxon is identified by Latin name.

3.2 Keywords for the Data Set

Benthic Species, Benthic Species Abundance, Species Abundance, Species Composition, Taxon Abundance, Benthic Taxon Abundance

4. OBJECTIVES AND INTRODUCTION

4.1 Program Objective

The project was designed to support resource management decisions related to pollution control and remediation throughout the New York/New Jersey (NY/NJ) Harbor and Bight Apex and to assist the New York-New Jersey Harbor Estuary Program (HEP) in developing a

contaminant monitoring strategy to be included in the Comprehensive Conservation and Management Plan (CCMP) for the NY/NJ Harbor system.

4.2 Data Set Objective

To provide an overview of the abundance of benthic organisms in the NY/NJ harbor region based on random sampling.

4.3 Data Set Background Discussion

The New York/New Jersey Harbor System has been susceptible to toxic contamination due to surrounding land uses. Harbor sediments are contaminant reservoirs which can function as a secondary source of these land use contaminants. Contaminated sediments pose a substantial threat to Harbor resources and are a management challenge. Adverse changes in the biota of the system have been documented with increasing frequency, and many of these changes have been linked to toxic contamination.

4.4 Summary of Data Set Parameters

The Benthic Abundance data set values were based on the results of identifying the epifauna in the replicate samples.

5. DATA ACQUISITION AND PROCESSING METHODS

5.1 Data Acquisition

5.1.1 Sampling Objective

Collect sediment grab samples suitable for the identification of benthic organisms.

5.1.2 Sample Collection Methods Summary

The grab sampler was lowered through the water column; the grab penetrated the sediment by gravity releasing a trigger allowing the jaws to close. When the grab was pulled from the sediment using the winch, the jaws closed, encapsulating the sediment sample.

Three macroinvertebrate grabs per sampling station were collected using the 0.04-m2 Young-modified van Veen grab. Benthic grabs were alternated with sediment chemistry/toxicity grabs. Benthic samples were gently washed through a 0.5 mm mesh sieve. The material was preserved in a 10% buffered formaldehyde-rose bengal solution.

5.1.3 Sampling Start Date

July 1993
July 1994

5.1.4 Sampling End Date

September 1993
September 1994

5.1.5 Platform

Sampling was conducted from two U.S.EPA research vessels, the R/V CLEAN WATERS and OSV PETER W. ANDERSON.

5.1.6 Sampling Gear

A 0.04-m2 or 0.1-m2, stainless steel, Young-modified Van Veen Grab sampler was used to collect sediment grabs. This grab sampled an area of 440 cm2 and a maximum depth of penetration in the sediment of 10 cm.

5.1.7 Manufacturer of Sampling Equipment

Young's Welding, Sandwich, MA

5.1.8 Key Variables

No data were recorded at the time of sample collection.

5.1.9 Collection Method Calibration

The sampling gear did not require any calibration. It required inspection for deformities incurred due to mishandling or impact on rocky substrates.

5.1.10 Sample Collection Quality Control

A successful grab had relatively level, intact sediment over the entire area of the grab and a sediment depth at the center of at least 5 centimeters. Unacceptable grabs included those with grossly slumped surfaces and those completely filled to the top, where the sediment was in direct contact with the hinged top.

The van Veen Grab was rinsed with ambient seawater between grabs at a station to remove remaining organisms. It was thoroughly cleaned with detergent and water between stations.

5.1.11 Sample Collection Method Reference

Reifsteck, D.M., C.J. Strobel and D.J. Keith. 1993. Environmental Monitoring and Assessment Program - Near Coastal Component: 1993 Virginian Province Field Operations and Safety Manual. U.S. EPA NHEERL-AED. Narragansett, RI.

5.2 Data Preparation and Sample Processing

5.2.1 Sample Processing Objective

Process benthic sediment samples to accurately identify and enumerate benthic infauna.

5.2.2 Sample Processing Methods Summary

Three replicate grabs for benthic macroinvertebrate community structure were obtained at each station. Invertebrates from two of these were sorted and identified; the third replicate was archived. The macrobenthos were identified to the lowest practical taxonomic category.

5.2.3 Sample Processing Method Calibration

NA.

5.2.4 Sample Processing Quality Control

Rare or previously undocumented specimens from the Harbor were put aside in a reference collection.

5.2.5 Sample Processing Method Reference

Adams, D.A., J.S. O'Connor and S.B. Weisberg. 1996. Sediment Quality of the NY/NJ Harbor System. Draft Final Report. U.S. Environmental Protection Agency-Region 2. Edison, NJ. October 1996.

5.2.6 Sample Processing Method Deviations

NA

6. DATA MANIPULATIONS

NA

6.1 Name of new or modified values

NA

6.2 Data Manipulation Description

NA

6.3 Data Manipulation Examples

NA

7. DATA DESCRIPTION

7.1 Description of Parameters

#	Parameter SAS Name	Data Type	Len	Format	Parameter Label
1	STATION	Char	8	0	Station Name
2	REP	Num	8	8	Replicate Number
3	COD_EMAP	Char	8	16	EMAP Taxonomic Code
4	ABUNDANC	Num	8	24	Number (#) of Organisms
5	TAXNAME	Char	50	32	EMAP Name
6	FAMILY	Char	20	106	Family

7.1.6 Precision to which values are reported

The abundance is reported as a whole number.

7.1.7 Minimum value in data set

Variable	MINIMUM
REP	1.0000000
ABUNDANC	0

7.1.8 Maximum value in Data Set

Variable	MAXIMUM
REP	2.0000000
ABUNDANC	5108.00

7.2 Data Record Example

7.2.1 Column Names for Example Records

STATION DATE LATIN NAME REP # T_ABN FAMILY

7.2.2 Example Data Records

STATION	DATE	LATIN NAME	REP #	T_ABN	FAMILY
BA002	931003	Ampharetidae	1	8	Ampharetidae
BA002	931003	Aricidea catherinae	1	6	Paraonidae
BA002	931003	Gammarus annulatus	1	7	Gammaridae
BA002	931003	Goniadella gracilis	1	16	Goniadidae
BA002	931003	Mediomastus ambiseta	1	2	Capitellidae

8. GEOGRAPHIC AND SPATIAL INFORMATION

8.1 Minimum Longitude

-74 Degrees 16 Minutes 17.76 Decimal Seconds

8.2 Maximum Longitude

-73 Degrees 21 Minutes 0.72 Decimal Seconds

8.3 Minimum Latitude

40 Degrees 10 Minutes 35.00 Decimal Seconds

8.4 Maximum Latitude

41 Degrees 4 Minutes 53.22 Decimal Seconds

8.5 Name of area or region

New York/New Jersey Harbor System

Six sub-basins were sampled in the New York/New Jersey Harbor, including: Upper Harbor, Newark Bay, Lower Harbor (includes Raritan and Sandy Hook Bays),

Jamaica Bay, western Long Island Sound and the New York Bight Apex. For purposes of this study, the region includes the lower portions of the Hudson, Passaic, Harlem, Hackensack and Raritan Rivers, upstream to a near-bottom salinity of 15 ppt, the East River to Long Island Sound and Lower Harbor to the Atlantic Ocean. The New York Bight Apex is defined as the area of ocean bounded on the northwest by the transect from Sandy Hook, NJ to Rockaway Point, NY, the east by 73 deg 30' W longitude and the south by 40 deg. 10'N latitude. The eastern boundary of the western Long Island Sound sub-basin is 73 deg 24' W longitude (from Eaton's Neck Point, NY to Norwalk, CT).

9. QUALITY CONTROL AND QUALITY ASSURANCE

9.1 Data Quality Objectives

Quality assurance goals were developed and followed for each sample type.

9.2 Quality Assurance/Quality Control Procedures

Ten percent of all samples were reprocessed and subjected to A second QA evaluation. Taxonomic identifications were Verified using reference organisms obtained from EMAP's reference collection.

9.3 Quality Assessment Results

These in-house QC measures met the requirements established in the QA Plan.

9.4 Unassessed Errors

NA

10. DATA ACCESS

10.1 Data Access Procedures

Data can be downloaded from the WWW server.

10.2 Data Access Restrictions

Data can only be accessed from the WWW server.

10.3 Data Access Contact Persons

Ms. Darvene A. Adams
U.S. EPA Region II

10.4 Data Set Format

NA

10.5 Information Concerning Anonymous FTP

Data cannot be accessed via ftp.

10.6 Information Concerning Gopher and WWW

Data can be downloaded from the WWW servers.

10.7 EMAP CD-ROM Containing the Data Set

Data are not available on CD-ROM

11. REFERENCES

Adams, D.A. and M. Hunt. 1993. Quality Assurance Project Plan for Environmental Monitoring Projects, "Sediment Quality of the NY/NJ Harbor." U.S. Environmental Protection Agency-Region 2. Edison, NJ.

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12. TABLE OF ACRONYMS

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