

US EPA ARCHIVE DOCUMENT

CATALOG DOCUMENTATION  
EMAP-ESTUARIES PROGRAM LEVEL DATABASE  
1993 DELAWARE AND MARYLAND COASTAL BAYS  
PHYSICAL BOTTOM DATA FROM RANDOM AND ITE SITES

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1. DATA SET IDENTIFICATION

1.1 Title of Catalog document

Coastal Bays Database  
1993 Delaware and Maryland Bays  
Physical Data from Random and ITE Sites

1.2 Author of the Catalog entry

Melissa Hughes, OAO Corporation

1.3 Catalog revision date

18 December 1996

1.4 Data set name

PHYSITE, PHYSRAN

## 1.5 Task Group

Mid-Atlantic Integration and Assessment (MAIA)

## 1.6 Data set identification code

202

## 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

Dr. Frederick W. Kutz  
U.S. Environmental Protection Agency - Region III

### 2.2. Investigation Participant-Sample Collection

Janis C. Chaillou  
Versar, Inc.

## 3. DATA SET ABSTRACT

### 3.1 Abstract of the Data Set

The Physical Water Quality file presents bottom data from a Hydrolab Surveyor II. Depth, pH, salinity and temperature are reported for each Random and ITE site. Since ITE sites were visited more than once, data are reported for each visit.

### 3.2 Keywords for the Data Set

Bottom physical measurements, pH, salinity, temperature, depth, dissolved oxygen

## 4. OBJECTIVES AND INTRODUCTION

### 4.1 Program Objective

The objective of the Coastal Bays Joint Assessment was to assess the ecological condition of the Delaware and Maryland coastal bays, compare the current ecological condition of the bays with their historical condition and to evaluate indicators and sampling design

elements that can be used to direct future monitoring activities in the system.

#### 4.2 Data Set Objective

The objective of the Vertical Profile data set is to provide summary data of bottom values of specific water column measurements recorded for each station and visit.

#### 4.3 Data Set Background Discussion

Measurements of physical characteristics provide basic information about the environmental setting of a sample site. Knowledge of the physical context in which biological and chemical data are collected is important for interpreting results accurately because physical characteristics of the environment determine the distribution and species composition of estuarine communities, particularly assemblages of benthic macroinvertebrates. Salinity and temperature are among the most important factors controlling the distribution of biota and ecological processes in estuaries. Depth, bottom salinity, temperature and pH were measured to describe the physical conditions at sites in the coastal bays.

#### 4.4 Summary of Data Set Parameters

Bottom water quality measurements are reported for each vertical profile taken at a station. These included: temperature, salinity, dissolved oxygen, pH and depth.

### 5. DATA ACQUISITION AND PROCESSING METHODS

#### 5.1 Data Acquisition

##### 5.1.1 Sampling Objective

To collect high-quality vertical water column profiles to characterize the physical conditions at a sampling site.

##### 5.1.2 Sample Collection Methods Summary

The Hydrolab was attached to the end of a winch cable with a shackle. The instrument was swung over the side of the boat, turned on and lowered to just below the water surface. The instrument was then lowered through the water column until it reached the bottom. Criteria were set for in situ water quality measurements:

Bottom Depth (m)	Water Quality Measurements
< 1	Surface (0.5 m below the surface)
1-2	Surface, bottom (0.5 m above the bottom)
2-3.3	Surface, midpoint, bottom
>3.3	1 meter intervals from surface to bottom

##### 5.1.3 Sampling Start Date

12 July 1993

#### 5.1.4 Sampling End Date

30 September 1993

#### 5.1.5 Platform

Sampling was conducted from 7 m (21 ft) Privateer equipped with an electric winch with a 12-foot boom.

#### 5.1.6 Sampling Gear

Hydrolab Surveyor II

#### 5.1.7 Manufacturer of Instrument

NA

#### 5.1.8 Key Variables

This data set contains bottom values measured at the time of sampling.

#### 5.1.9 Sampling Method Calibration

NA

#### 5.1.10 Sample Collection Quality Control

NA

#### 5.1.11 Sample Collection Method Reference

NA

#### 5.1.12 Sample Collection Method Deviations

NA

### 5.2 Data Preparation and Sample Processing

#### 5.2.1 Sample Processing Objective

Ensure accurate data collection; all probes functioning properly.

#### 5.2.2 Sample Processing Methods Summary

NA

#### 5.2.3 Sample Processing Method Calibration

NA

#### 5.2.4 Sample Processing Quality Control

NA

5.2.5 Sample Processing Method Reference

NA

6. DATA MANIPULATIONS

6.1 Name of New or Modified Values

NA

6.2 Data Manipulation Description

NA

7. DATA DOCUMENTATION

7.1 Description of Parameters

Parameter #	SAS Name	Data Type	Len	Format	Parameter Label
1	SITE	Num	8	3.	Site Number
2	EVNTDATE	Num	8	MMDDYY8.	Date when Sample Collected
3	EVNTNUM	Num	8	5.	Event Number
4	B_TEMP	Num	8	5.2	Bottom Temperature
5	B_PH	Num	8	5.2	Bottom pH (pH)
6	B_SALIN	Num	8	4.1	Bottom Salinity (ppt)
7	B_DEPTH	Num	8	6.2	Bottom Depth (m)

7.1.6 Precision to which values are reported

The number of decimal places for each value reflects the precision of the probe.

7.1.7 Minimum Value in Data Set by Parameter

B_TEMP	19.16
B_PH	7.00
B_SALIN	2.8
B_DEPTH	0.61

7.1.7 Maximum Value in Data Set by Parameter

B_TEMP	37.40
B_PH	9.82
B_SALIN	36.2
B_DEPTH	3.66

7.2 Data Record Example

7.2.1 Column Names for Example Records

SITE EVNTDATE EVNTNUM B\_TEMP B\_PH B\_SALIN B\_DEPTH

7.2.2 Example Data Records

OBS	SITE	EVNTDATE	EVNTNUM	B_TEMP	B_PH	B_SALIN	B_DEPTH
1	101	08/10/93	1091	25.75	7.73	16.3	1.22
2	102	08/10/93	1092	25.82	8.13	8.4	0.91
3	105	07/15/93	2016	37.40	7.70	21.6	1.22
4	106	08/17/93	1117	27.46	7.63	27.8	1.52
5	107	08/04/93	1080	28.71	7.46	26.9	1.22

8. GEOGRAPHIC AND SPATIAL INFORMATION

8.1 Minimum Longitude

-77 Degrees 19 Minutes 51.00 Decimal Seconds

8.2 Maximum Longitude

-69 Degrees 56 Minutes 27.60 Decimal Seconds

8.3 Minimum Latitude

36 Degrees 51 Minutes 51.00 Decimal Seconds

8.4 Maximum Latitude

42 Degrees 05 Minutes 15.49 Decimal Seconds

8.5 Name of area or region

Delaware and Maryland Coastal Bays

Stations were located in coastal bays along the East Coast of the United States in the States of Delaware and Maryland. Four major subsystems included Rehobeth Bay, Indian River Bay, Assawoman Bay and Chincoteague Bay. Areas of interest included Indian River, St. Martin River, Trappe Creek and artificial lagoons.

9. QUALITY CONTROL/QUALITY ASSURANCE

9.1 Data Quality Objectives

Measurement quality objectives were outlined in the Quality Assurance Project Plan (Valente et al., 1990). Accuracy and precision goals are outlined below:

Measurement Quality Objectives for EMAP-Estuaries Indicators and associated data.

Data Type	Maximum Allowable		
	Accuracy Goal	Precision Goal	Completeness Goal
Salinity	1 ppt	10 %	90 %
Depth	0.5 m	10 %	90 %
pH	0.2 units	NA	90 %
Temperature	0.5 deg C	NA	90 %

## 9.2 Quality Assurance Procedures

NA

## 9.3 Unassessed Errors

NA

## 10. DATA ACCESS

### 10.1 Data Access Procedures

Data can be requested from a contact under Section 10.3.  
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

Dr. Frederick W. Kutz  
U.S. Environmental Protection Agency  
Region III  
(410)305-2742 (Tel.)

### 10.4 Data Set Format

Data can be transmitted in a variety of formats derived from  
SAS data sets.

### 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 server.

### 10.7 EMAP CD-ROM Containing the Data Set

Data are not available on CD-ROM

## 11. REFERENCES

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