

**CATALOG DOCUMENTATION
EMAP SURFACE WATERS PROGRAM LEVEL DATABASE
1993-1996 MID-ATLANTIC STREAMS DATA
STREAMS DESIGN DATA**

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1. DATA SET IDENTIFICATION

1.1 Title of Catalog Document
EMAP Surface Waters Lake Database
1993-1996 Mid-Atlantic Streams
Streams Design Data

1.2 Authors of the Catalog Entry
U.S. EPA NHEERL Western Ecology Division
Corvallis, OR

1.3 Catalog Revision Date
February 1999

1.4 Data Set Name
SDESIGN

1.5 Task Group
Surface Waters

1.6 Data Set Identification Code
130

1.7 Version
003

1.8 Requested Acknowledgment
These data were produced as part of the U.S. EPA's Environmental Monitoring and Assessment Program (EMAP). If you publish these data or use them for analyses in publications, 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 Surface Waters Program, it has not been subjected to Agency review, and therefore does not necessarily reflect the views of the Agency and no official endorsement of the conclusions should be inferred."

2. INVESTIGATOR INFORMATION

2.1 Principal Investigator

Dr. John Stoddard
U.S. Environmental Protection Agency
NHEERL Western Ecology Division
200 S.W. 35th Street
Corvallis, OR 97333

2.2 Investigation Participant - Sample Collection

3. DATA SET ABSTRACT

3.1 Abstract of the Data Set

The primary function of the stream design data are to provide the ability for researchers to calculate population estimates using data collected under the EMAP probability-based statistical survey design.

3.2 Keywords for the Data Set

weighting factors, probability design, statistical analysis, regional estimates.

4. OBJECTIVES AND INTRODUCTION

4.1 Program Objective

The Environmental Monitoring and Assessment Program (EMAP) was designed to periodically estimate the status and trends of the Nation's ecological resources on a regional basis. EMAP provides a strategy to identify and bound the extent, magnitude and location of environmental degradation and improvement on a regional scale based on a probability-based statistical survey design.

4.2 Data Set Objective

This data set is part of a demonstration project to evaluate approaches to monitoring streams in EMAP. The data set contains the statistical weighting factors which allow the data to be summarized into statements about the status of Streams in the Mid-Atlantic region.

4.3 Data Set Background Discussion

Data on the streams for site selection were summarized from digital and paper sources. Streams were classified as target or non-target; target streams were categorized by their Strahler order. Sample weights for each sampled stream were determined using the sample sizes for each Strahler order and the total length of streams within each order in the region. Locations along streams were chosen randomly, using the nesting attribute of the EMAP hierarchical address to spread the sample spatially across the region. Information on each sampled stream site was collected using information taken from maps, digital sources, and visits to the site.

4.4 Summary of Data Set Parameters

Information on each stream sampled, such as the stream name, geographic location of the sample site, Strahler order, county and state are stored in this data set. The weighting factors for each stream site are also stored in this data set. There are separate weighting factors for fish (fish assemblage and fish tissue), and for the other indicator types (chemistry, benthos, etc.). The weighting factors are to be used when computing regional estimates for the entire data set over the two year period. Further details on the methods which should be used when processing these data can be obtained from the Information Management contact, below.

5. DATA ACQUISITION AND PROCESSING METHODS

5.1 Data Acquisition

5.1.1 Sampling Objective

To allow scientists to summarize indicator data for the defined population of streams in the Mid-Atlantic region during a two month sampling window from July through mid-September.

5.1.2 Sample Collection Methods Summary Not Applicable

5.1.3 Sampling Start Date 1993

5.1.4 Sampling End Date 1996

5.1.5 Platform NA

5.1.6 Sampling Gear NA

5.1.7 Manufacturer of Instruments NA

5.1.8 Key Variables NA

5.1.9 Sampling Method Calibration

NA

5.1.10 Sample Collection Quality Control

See Lazorchak, et al. 1998.

5.1.11 Sample Collection Method Reference

Chaloud, D.J. and D.V. Peck. 1994. Environmental Monitoring and Assessment Program: Integrated Quality Assurance Project Plan for the Surface Waters Resource Group, 1994 Activities. EPA 600/X-91/080, Rev. 2.00. U.S. Environmental Protection Agency, Las Vegas Nevada.

Lazorchak, J.M., Klemm, D.J., and Peck D.V. (editors). 1998. Environmental Monitoring and Assessment Program- Surface Waters: Field Operations and Methods for Measuring the Ecological Condition of Wadeable Streams. EPA/620/R-94/004F. U.S. Environmental Protection Agency, Washington, D.C.

5.1.12 Sample Collection Method Deviations

5.2 DATA PREPARATION AND SAMPLE PROCESSING

5.2.1 Sample Processing Objective

See Lazorchak, et al. (1998) and Chaloud and Peck (1994).

5.2.2 Sample Processing Methods Summary

See Lazorchak, et al. (1998) and Chaloud and Peck (1994).

5.2.3 Sample Processing Method Calibration

See Lazorchak, et al. (1998) and Chaloud and Peck (1994).

5.2.4 Sample Processing Quality Control

See Lazorchak, et al. (1998) and Chaloud and Peck (1994).

5.2.5 Sample Processing Method Reference

See Lazorchak, et al. (1998) and Chaloud and Peck (1994).

6. DATA MANIPULATIONS

6.1 Name of New or Modified Values

None.

6.2 Data Manipulation Description

See Chaloud and Peck (1994).

7. DATA DESCRIPTION

7.1 Description of Parameters

Parameter Data			Parameter
SAS Name	Type	Len	Format Label

COUNTY	Char	12	Stream County Location
DOMECO	Char	4	Predominant ecoregion in watershed
DOMLAB	Char	40	Name of dominant ecoregion
DRAINA	Char	15	Large Scale Drainage Basin
DRAINAGE	Char	25	Major River Drainage Basin
DRAINB	Char	25	River Drainage Basin Label
FLowsITE	Char	8	\$ Flow Status Along Sample Reach
HEX_ID	Num	8	EMAP Hexagon ID
HUC	Char	8	Hydrologic Unit Code
LAT_DD	Num	8	Sample Site Latitude (Decimal Degrees)
LON_DD	Num	8	Sample Site Longitude (Decimal Degrees)
MAP100	Char	25	\$ 100,000 Scale Usgs Map Name
MAP75	Char	22	Stream Site 7.5 Map Name
MILE	Num	8	RF3 Mile ID
ORDER	Char	1	\$ RF3 Stream Order
RCH_TYP	Char	1	RF3 reach type (S=start,R=reg.)
REPEAT93	Char	1	\$ 1993 Index Repeat Visit Site (Y/N)
REPEAT94	Char	1	EMAP 1994 Index Repeat Site (Y/N)
REPEAT95	Char	1	2x2 Repeat Visit Site in 1995 (Y/N)
REPEAT96	Char	1	2x2 Repeat Visit Site in 1996 (Y/N)
SEGM	Char	5	RF3 Segment ID
SITECLS	Char	12	\$ Stream Sample Site Class
SITEECO	Char	3	Ecoregion at sample site
STATE	Char	7	Site State Location
STRMNAME	Char	40	Stream Name from 7.5 map
STRM_ID	Char	7	EMAP Stream Identifier
TIME_REP	Char	1	\$ Annual TIME revisit site? (Y/N)
WGT_1X93	Num	8	1X Grid Weight (km) for 1993 Prob. Sites
WGT_1X94	Num	8	1X Grid Weight (km) for 1994 Prob. Sites
WGT_1X95	Num	8	1X Grid Weight (km) for 1995 Prob. Sites
WGT_7X93	Num	8	1X/7X Weight (km) for 1993 Prob. Streams
WGT_7X94	Num	8	1X/7X Weight (km) for 1994 Prob. Streams
WGT_7X95	Num	8	1X/7X Weight (km) for 1995 Prob. Streams
WGT_FS93	Num	8	Fish Sample Weight (km) for 1993 Streams
WGT_FS94	Num	8	Fish Sample Weight (km) for 1994 Streams
YEAR	Num	8	Site year of data collection
YEARORIG	Num	8	Site Year Panel Origin

7.1.6 Precision to which values are reported

7.1.7 Minimum Value in Data Set

Name	Min
HEX_ID	1301311.73
LAT_DD	36.523061111
LON_DD	-83.60395
MILE	0
WGT_1X93	0
WGT_1X94	0
WGT_1X95	0
WGT_7X93	0
WGT_7X94	0
WGT_7X95	0
WGT_FS93	0
WGT_FS94	0
YEAR	1993
YEARORIG	1993

7.1.7 Maximum Value in Data Set

Name	Max
HEX_ID	1702330.72
LAT_DD	42.355663889
LON_DD	-74.2589
MILE	40.16
WGT_1X93	3257.754
WGT_1X94	6804.109
WGT_1X95	7084.946
WGT_7X93	3257.754
WGT_7X94	6804.109
WGT_7X95	7084.946
WGT_FS93	3257.754
WGT_FS94	6804.109
YEAR	1996
YEARORIG	1995

7.2 Data Record Example

7.2.1 Column Names for Example Records

"COUNTY", "DOMECO", "DOMLAB", "DRAINA", "DRAINAGE", "DRAINB", "FLOWSITE", "HEX_ID",
"HUC", "LAT_DD", "LON_DD", "MAP100", "MAP75", "MILE", "ORDER", "RCH_TYP", "REPEAT93",
"REPEAT94", "REPEAT95", "REPEAT96", "SEGM", "SITECLS", "SITEECO", "STATE",
"STRMNAME", "STRM_ID", "TIME_REP", "WGT_1X93", "WGT_1X94", "WGT_1X95", "WGT_7X93",
"WGT_7X94", "WGT_7X95", "WGT_FS93", "WGT_FS94", "YEAR", "YEARORIG"

7.2.2 Example Data Records

" ", " ", " ", " ", " ", " ", " ", " ", " ", " ", "N/A", 1420000, "2060008", 38.74980, -75.44465, " ",
" ", 8.42, "3", "R", " ", " ", " ", "N", " ", "20", "NO VISIT", " ", "DE",
"GRAVELLY BRANCH NANTICOKE RIVER", "DE000S", "N", 0, 0, 1180.824,
0, 0, 1180.824, 0, 0, 1995, 1995

"SUSSEX", " ", " ", " ", " ", " ", "DELAWARE", " ", "N/A", 1402222, "2040207",
38.78194, -75.17258, "SEAFORD", "LEWES", 0, "1", " ", " ", " ", " ", " ", " ", "661", "NON-MAHA",
" ", "DE", " ", "DE500S", "N", 3257.754, 0, 0, 3257.754, 0, 0, 3257.754, 0, 1993, 1993

"KENT", " ", " ", " ", " ", " ", "DELAWARE", " ", "N/A", 1313332, "2040207", 39.17705,
-75.51146, "DOVER", "DOVER", 4.34, "1", " ", " ", " ", " ", " ", " ", "866", "NON-MAHA",
" ", "DE", " ", "DE501S", "N", 3257.754, 0, 0, 3257.754, 0, 0, 3257.754, 0, 1993, 1993

8. GEOGRAPHIC AND SPATIAL INFORMATION

8.1 Minimum Longitude

-83 Degrees 14 Minutes 39 Seconds West (-83.24444 Decimal Degrees)

8.2 Maximum Longitude

-74 Degrees 15 Minutes 32 Seconds West (-74.25890 Decimal Degrees)

8.3 Minimum Latitude

36 Degrees 33 Minutes 12 Seconds North (36.55350 Decimal Degrees)

8.4 Maximum Latitude

42 Degrees 21 Minutes 20 Seconds North (42.35566 Decimal Degrees)

8.5 Name of Area or Region

Mid-Atlantic: EPA Region III which includes Delaware, Maryland, Virginia
and West Virginia

9. QUALITY CONTROL / QUALITY ASSURANCE

9.1 Data Quality Objectives

See Chaloud and Peck (1994)

9.2 Quality Assurance Procedures

See Chaloud and Peck (1994)

9.3 Unassessed Errors

NA

10. DATA ACCESS

10.1 Data Access Procedures

10.2 Data Access Restrictions

10.3 Data Access Contact Persons

10.4 Data Set Format

10.5 Information Concerning Anonymous FTP

10.6 Information Concerning Gopher and WWW

10.7 EMAP CD-ROM Containing the Data

11. REFERENCES

Chaloud, D.J. and D.V. Peck. 1994. Environmental Monitoring and Assessment Program - Surface Waters: Integrated Quality Assurance Project Plan for the Surface Waters Resource Group. U.S. Environmental Protection Agency. Office of Research and Development. Washington, D.C.

Diaz-Ramos, S., D.L. Stevens, Jr., and A.R. Olsen. 1996. EMAP Statistical Methods Manual. U.S. Environmental Protection Agency. Office of Research and Development. EPA/620/R-96/002.

Lazorchak, J.M., Klemm, D.J., and Peck D.V. (editors). 1998. Environmental Monitoring and Assessment Program- Surface Waters: Field Operations and Methods for Measuring the Ecological Condition of Wadeable Streams. EPA/620/R-94/004F. U.S. Environmental Protection Agency, Washington, D.C.

12. TABLE OF ACRONYMS

13. PERSONNEL INFORMATION

Project Manager
Dr. John Stoddard
U.S. Environmental Protection Agency
NHEERL Western Ecology Division
200 S.W. 35th Street
Corvallis, OR 97333
541-754-4441
541-754-4716(FAX)
stoddard@mail.cor.epa.gov

Quality Assurance Officer
Dave Peck
U.S. Environmental Protection Agency
NHEERL Western Ecology Division
200 S.W. 35th Street
Corvallis, OR 97333
541-754-4426
541-754-4716(FAX)
davep@mail.cor.epa.gov

Information Management, EMAP-Surface Waters
Marlys Cappaert
OAO c/o U.S. Environmental Protection Agency
NHEERL Western Ecology Division
200 S.W. 35th Street
Corvallis, OR 97333
541-754-4467
541-754-4716(FAX)
cappaert@mail.cor.epa.gov