

US EPA ARCHIVE DOCUMENT

CATALOG DOCUMENTATION
REGIONAL ENVIRONMENTAL MONITORING AND ASSESSMENT PROGRAM - REGION 10
1994-1995 WASHINGTON/OREGON COASTAL STREAMS AND YAKIMA RIVER BASIN STREAMS
VALIDATED SAMPLE SURVEY DESIGN DATA

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1. DATA SET IDENTIFICATION

1.1 Title of Catalog Document

Regional Environmental Monitoring and Assessment Program - Region 10
1994-1995 Washington/Oregon Coastal Streams and Yakima Basin Streams
Validated Sample Survey Design Data Set

1.2 Authors of the Catalog Entry

U.S. EPA NHEERL Western Ecology Division
Corvallis, OR

1.3 Catalog Revision Date

23 March 1999

1.4 Data Set Name

SDESIGN

1.5 Task Group

Region 10

1.6 Data Set Identification Code

00003

1.7 Version

001

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 publication, 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 Regional EMAP 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 Investigators

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2.2 Investigation Participant - Sample Collection

U.S. Environmental Protection Agency
Office of Research and Development
Region 10
Oregon Department of Environmental Quality
Washington State Department of Ecology
Oregon State University
University of Washington
Yakama Indian Nation Environmental Protection Program

3. DATA SET ABSTRACT

3.1 Abstract of the Data Set

The DESIGN data set contains information on each stream sampled, such as the stream name, geographic location of the sample site, Strahler order, county and state. This data set also contains the statistical weighting factor which allows the data to be summarized into statements about the status of Washington/Oregon Coastal Streams and Yakima Basin Streams.

3.2 Keywords for the Data Set

weighting factor, probability design, statistical analysis, regional estimates

4. OBJECTIVES AND INTRODUCTION

4.1 Program and Project Objectives

4.1.1 Program Objective

The Regional Environmental Assessment and Monitoring Program (R-EMAP) was initiated to test the applicability of the EMAP approach to answer questions about ecological conditions at regional and local scales. Using EMAP's statistical design and indicator concepts, R-EMAP conducts projects at smaller geographic scales and in shorter time frames.

4.1.2 Project Objective

The objectives of Region 10 1994-1995 Washington/Oregon Coastal Streams and Yakima Basin Streams R-EMAP project were to:

1. Determine the ecological condition of wadeable, 1st-order through 3rd-order streams of the Coast Range Ecoregion and the Yakima River Basin (Columbia Basin Ecoregion).
2. Determine the relationship between the ecological condition of these streams and the predominant land used of the watersheds.
3. Provide the states of Washington and Oregon with information that would assist in the development of water quality biological criteria using indices based on fish/amphibian and invertebrate taxa assemblage information.
4. Determine the applicability of EMAP-derived methods for assessments of ecological condition within streams in the states of Washington and Oregon.

4.2 Data Set Objective

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.

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 factor for each stream site are also stored in this data set. The weighting factor is 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 Washington/Oregon Coastal Streams and Yakima Basin Streams during the specified sampling window.

5.1.2 Sample Collection Methods Summary

NA

5.1.3 Sampling Start Date

May 1994

May 1995

5.1.4 Sampling End Date

Oct 1994

Sept 1995

5.1.5 Platform

NA

5.1.6 Sampling Equipment

NA

5.1.7 Manufacturer of Sampling Equipment

NA

5.1.8 Key Variables

NA

5.1.9 Sampling Method Calibration

NA

5.1.10 Sample Collection Quality Control

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, 1994 Activities. EPA 600/X-91/080, Rev. 2.00. U.S. Environmental Protection Agency, Office of Research and Development, Las Vegas, NV 89193.

Hayslip, G. A. (editor). 1993. EPA Region 10 In-stream Biological Monitoring Handbook (for wadeable streams in the Pacific Northwest). EPA-910/9-92-013. U. S. Environmental Protection Agency - Region 10, Environmental Services Division, Seattle, WA 98101.

Merritt, G.D. 1994. Biological Assessment of wadeable Streams in the Coast Range Ecoregion and the Yakima River Basin: Final Quality Assurance Project Plan. Washington State Department of Ecology, Environmental Investigations and Laboratory Services, Olympia, WA, 15 pp.

5.1.11 Sample Collection Method Reference

Hayslip, G. A. (editor). 1993. EPA Region 10 In-stream Biological Monitoring Handbook (for wadeable streams in the Pacific Northwest). EPA-910/9-92-013. U. S. Environmental Protection Agency - Region 10, Environmental Services Division, Seattle, WA 98101.

Hayslip, G., D.J. Klemm, J.M. Lazorchak. 1994. Environmental Monitoring and Assessment Program Surface Waters and Region 10 Regional Environmental Monitoring and Assessment Program: 1994 Pilot Field Operations and Methods Manual for Streams on the Coast Range Ecoregion of Oregon and Washington and the Yakima River Basin. Office of Research and Development, U.S. Environmental Protection Agency, Cincinnati, OH.

Lazorchak, J.M., D.J. Klemm, and D.V. Peck. (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

NA

5.2 Data Preparation and Sample Processing

5.2.1 Sample Processing Objective

See Hayslip et al. (1994) and Hayslip (1993).

5.2.2 Sample Processing Methods Summary

See Hayslip et al. (1994) and Hayslip (1993).

5.2.3 Sample Processing Method Calibration

See Hayslip et al. (1994) and Hayslip (1993).

5.2.4 Sample Processing Quality Control

See Chaloud and Peck (1994), Merritt (1994), and Hayslip (1993).

5.2.5 Sample Processing Method Reference

See Hayslip et al. (1994) and Hayslip (1993).

6. DATA MANIPULATIONS

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 Data			Parameter Label
	SAS Name	Type	Len	
6	COUNTY	Char	25	Site County Location
13	ECOREG	Char	2	Revised Omernik Ecoregion Code
18	ECOREGL4	Char	3	Omernik Level IV Subcoregion Code
1	FLWSITE	Char	8	Flow Status Along Sample Reach
15	HEXAL_ID	Num	8	Hexal ID code
4	HUC	Char	9	Hydrologic Unit Code
10	LAT_DD	Num	8	Latitude (decimal degrees)
9	LON_DD	Num	8	Longitude (decimal degrees)
8	MAP100	Char	30	Site 100,000 Map Name
19	MAP250	Char	25	250,000 Scale Map Name

7	MAP75	Char	30	Site 7.5 Map Name
17	MAPFLOW	Char	9	Map Flow Class
16	MILE	Num	8	Mile number of segment (part of RF3 ID)
12	ORDER	Char	1	Strahler DLG Stream Order
11	RCH_TYP	Char	1	USGS Minor 1 Code
14	SEGM	Char	4	Segment number (part of RF3 ID)
2	SITECLS	Char	12	Stream X-Site Classification
5	STATE	Char	2	Site State Location
3	STRM_ID	Char	6	EMAP Stream Identifier
21	WGT_9495	Num	8	Joint 1994-95 sample weight (km)
20	YEARORIG	Num	8	Site Year Panel Origin

7.1.1 Precision to which values are reported

Data were reported to the number of decimal places noted in 7.1.

7.1.2 Minimum Value in Data Set

Name	Min
HEXAL_ID	2031300.74
LAT_DD	42.1114
LON_DD	-124.5862217
MILE	-1
WGT_9495	0
YEARORIG	1994

7.1.3 Maximum Value in Data Set

Name	Max
HEXAL_ID	2412322.7176
LAT_DD	48.1784
LON_DD	-119.2711
MILE	32.56
WGT_9495	793.661
YEARORIG	1995

7.2 Data Record Example

7.2.1 Column Names for Example Records

"COUNTY", "ECOREG", "ECOREGL4", "FLOWSITE", "HEXAL_ID", "HUC", "LAT_DD", "LON_DD", "MAP100", "MAP250", "MAP75", "MAPFLOW", "MILE", "ORDER", "RCH_TYP", "SEGM", "SITECLS", "STATE", "STRM_ID", "WGT_9495", "YEARORIG"

7.2.2 Example Data Records

"LANE", "1", "3d", "FLOWING", 2401331.7100, "17090003", 43.9209, -123.2335, "COTTAGE GROVE", " ", "Fox Hollow", "PERENNIAL", 0, "2", " ", "1632", "TARGET", "OR", "OR790S", 111.434, 1994

"POLK", "1", " ", "N/A", 2401003.7474, "17090008", 45.0482, -123.6043, "YAMHILL RIVER", " ", "Grand Ronde", "PERENNIAL", 0, "1", " ", "733", "INACCESSIBLE", "OR", "OR793S", 390.0195, 1994

"COLUMBIA", "1", "1d", "FLOWING", 2123202.7200, "17090012", 45.8898, -122.8621,
"VANCOUVER", " ", "Deer Island", "PERENNIAL", 0, "1", " ", "509",
"TARGET", "OR", "OR796S", 390.0195, 1994

8. GEOGRAPHIC AND SPATIAL INFORMATION

8.1 Minimum Longitude

-124 Degrees 35 Minutes 10 Seconds West (-124.5862217 Decimal Degrees)

8.2 Maximum Longitude

-119 Degrees 33 Minutes 42 Seconds West (-119.5619 Decimal Degrees)

8.3 Minimum Latitude

42 Degrees 6 Minutes 41 Seconds North (42.1114 Decimal Degrees)

8.4 Maximum Latitude

48 Degrees 10 Minutes 42 Seconds North (48.1784 Decimal Degrees)

8.5 Name of Area or Region

EPA Region 10
The sampling area included the Coast Range Ecoregion and the Yakima River Basin (Columbia Basin Ecoregion).

9. QUALITY CONTROL / QUALITY ASSURANCE

9.1 Data Quality Objectives

See Chaloud and Peck (1994), Merritt (1994), and Hayslip (1993).

9.2 Quality Assurance Procedures

See Chaloud and Peck (1994), Merritt (1994), and Hayslip (1993).

9.3 Unassessed Errors

NA

10. DATA ACCESS

10.1 Data Access Procedures

Data can be downloaded from the WWW site or contact personnel listed in Section 10.3.

10.2 Data Access Restrictions

Data can only be accessed from the WWW server.

10.3 Data Access Contact Persons

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Data Librarian EMAP-Information Management
U.S. EPA NHEERL-AED
401-782-3184
401-782-3030 (FAX)
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10.4 Data Set Format

Data files are in ASCII comma-delimited format.

10.5 Information Concerning Anonymous FTP

Data cannot be accessed via ftp.

10.6 Information Concerning WWW

Data can be downloaded from the WWW site.

10.7 EMAP CD-ROM Containing the Data

Data are not available on CD-ROM.

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, 1994 Activities. EPA 600/X-91/080, Rev. 2.00. U.S. Environmental Protection Agency, Office of Research and Development, Las Vegas, NV 89193.

Hayslip, G. A. (editor). 1993. EPA Region 10 In-stream Biological Monitoring Handbook (for wadeable streams in the Pacific Northwest). EPA-910/9-92-013. U. S. Environmental Protection Agency - Region 10, Environmental Services Division, Seattle, WA 98101.

Hayslip, G., D.J. Klemm, J.M. Lazorchak. 1994. Environmental Monitoring and Assessment Program Surface Waters and Region 10 Regional Environmental Monitoring and Assessment Program: 1994 Pilot Field Operations and Methods Manual for Streams on the Coast Range Ecoregion of Oregon and Washington and the Yakima River Basin. Office of Research and Development, U.S. Environmental Protection Agency, Cincinnati, OH.

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Merritt, G.D. 1994. Biological Assessment of wadeable Streams in the Coast Range Ecoregion and the Yakima River Basin: Final Quality Assurance Project Plan. Washington State Department of Ecology, Environmental Investigations and Laboratory Services, Olympia, WA, 15 pp.

12. TABLE OF ACRONYMS

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