

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
WATERSHED LAND USE 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
Watershed Land Use Data Set

1.2 Authors of the Catalog Entry

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

1.3 Catalog Revision Date

11 February 1999

1.4 Data Set Name

WATCHR

1.5 Task Group

Region 10

1.6 Data Set Identification Code

00001

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

Gretchen Hayslip
U.S. EPA Region 10

Glenn Merritt
Washington State Department of Ecology

Rick Hafele
Oregon Department of Environmental Quality

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 WATCHR data set contains the results of analysis of the stream watershed characteristics and watershed land use characteristics which influence stream quality. The data set includes both physical characteristics and derived human influence characteristics of the watershed.

3.2 Keywords for the Data Set

watershed, land cover, land use, road density, human population, stream watersheds

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 watershed land use data is to provide a description of the watershed setting within which the stream exists.

4.3 Data Set Background Discussion

The stream watershed land use data can provide insight into what the expected conditions in the stream are and insight into the extent to which human activities within the watershed impact the stream quality. Watershed land use information is gathered to describe the watershed setting, thus helping to define the "expected conditions" for the stream, and to describe the human activities within the watershed which are expected to impact stream quality.

4.4 Summary of Data Set Parameters

The watershed land use data set parameters includes physical characteristics of the watershed such as area, elevation, and approximate distance to ocean. This data set also includes derived

human influence characteristics of the watershed such as land use categorization, housing unit and human population density, and point pollution source characterization.

5. DATA ACQUISITION AND PROCESSING METHODS

5.1 Data Acquisition

5.1.1 Sampling Objective

To obtain a picture of watershed characteristics based on the most recent data sources which are available.

5.1.2 Sample Collection Methods Summary

The watershed for each stream is outlined on a map and digitized into a GIS coverage. This coverage is overlain with other data sources, such as satellite based landcover data, or digital information on road networks, or data bases on point source discharges. The watershed intersection of these coverages is then summarized for each watershed and collapsed into a series of watershed characteristics or metrics.

5.1.3 Sampling Start Date

NA

5.1.4 Sampling End Date

NA

5.1.5 Platform

NA

5.1.6 Sampling Equipment

Sun Work Station and ARC-INFO GIS software

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

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

NA

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

6.3 Data Manipulation Description

NA

7. DATA DESCRIPTION

7.1 Description of Parameters

#	Parameter Data			Parameter
	SAS Name	Type	Len	Format Label
9	AG_TOT	Num	8	% OF WATERSHED IN AGRICULTURAL LANDS
4	AREA_HA	Num	8	Area of watershed in hectares
14	BAR_TOT	Num	8	% BARREN LANDS (ROCK,SAND,BEACH)
17	DISTOT	Num	8	SUM HUMAN DISTURBED LAND USE IN WSHED
27	ECO	Char	8	LEVEL IV ECOREGIONS OF OR. AND WA.(1996)
2	ELEV_OR	Num	8	Elevation for Oregon sample sites (m)
29	ELEV_WA	Num	8	LOWEST ELEVATION (M) FROM 90 M. DEM
10	FOR_TOT	Num	8	% OF WATERSHED IN ALL FORESTED LANDS
13	H2O_TOT	Num	8	% OF WATERSHED IN WATER
3	HI_PT_OR	Num	8	High point for Oregon sample sites (m)
28	HI_PT_WA	Num	8	HIGHEST ELEVATION (M) FROM 90 M. DEM
21	HOUDENKM	Num	8	HOUSING UNIT DENSITY (HOUSING/SQ.KM)
19	HOUSINGU	Num	8	ESTIMATED HOUSING UNITS IN WATERSHED
24	KM_SEA	Num	8	APPROX. DISTANCE TO OCEAN
32	LAT_DD	Num	8	Latitude (decimal degrees)
31	LON_DD	Num	8	Longitude (decimal degrees)
22	LTROFF_M	Num	8	APPROX. METERS OF ANN. RUNOFF(30YR AVG)
12	MINE_TOT	Num	8	% STRIP MINES/QUARRIES/GRAVEL LANDS
30	MSLOPE	Num	8	AVERAGE SLOPE % FROM 90 METER DEM
26	NESTEDWS	Char	8	WSHEDS WHICH ARE NESTED WITHIN THIS WSHE
20	POPDENKM	Num	8	POPULATION DENSITY (POPEST/SQ.KM)
18	POPEST	Num	8	ESTIMATED HUMAN POPULATIONS IN WATERSHED
23	PRECIP_M	Num	8	APPROX. ANNUAL METERS OF PRECIPITATION
7	RD_DEN	Num	8	ROAD DENSITY (tot_rd/area_ws)
15	RNG_TOT	Num	8	% OF WATERSHED IN RANGE LANDS
25	SECTNAME	Char	30	FENNEMAN (1946) SECTION NAME
1	STRM_ID	Char	8	EMAP Stream Identifier
6	STUDY			Not applicable to the study
5	TOT_RD	Num	8	METERS OF ROAD IN WATERSHED
16	TUN_TOT	Num	8	% OF WATERSHED IN TUNDRA
8	URB_TOT	Num	8	% OF WATERSHED IN URBAN LANDS
11	WETL_TOT	Num	8	% FOREST AND NONFOREST WETLANDS ** (USGS

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
AG_TOT	0
AREA_HA	9.24
BAR_TOT	0
DISTOT	0
ELEV_OR	3.05
ELEV_WA	28
FOR_TOT	0
H2O_TOT	0
HI_PT_OR	195.07
HI_PT_WA	97
HOUDENKM	0
HOUSINGU	0
KM_SEA	1.1
LAT_DD	42.1114
LON_DD	-124.5862217
LTROFF_M	0.0926
MINE_TOT	0
MSLOPE	0
POPDENKM	0
POPEST	0
PRECIP_M	0.21
RD_DEN	0
RNG_TOT	0
TOT_RD	0
TUN_TOT	0
URB_TOT	0
WETL_TOT	0

7.1.3 Maximum Value in Data Set

Name	Max
AG_TOT	79.93
AREA_HA	30882.94
BAR_TOT	0.23
DISTOT	79.93
ELEV_OR	621.79
ELEV_WA	1341
FOR_TOT	100.01
H2O_TOT	4.95
HI_PT_OR	1395.98
HI_PT_WA	2324
HOUDENKM	14.099
HOUSINGU	428.166
KM_SEA	237.2
LAT_DD	48.1784
LON_DD	-119.5619
LTROFF_M	4.064
MINE_TOT	0.76
MSLOPE	50
POPDENKM	36.859

POPEST 967.353
PRECIP_M 4.939
RD_DEN 40.81
RNG_TOT 52.66
TOT_RD 458238.75
TUN_TOT 29.94
URB_TOT 3.16
WETL_TOT 4.11

7.2 Data Record Example

7.2.1 Column Names for Example Records

"AG_TOT", "AREA_HA", "BAR_TOT", "DISTOT", "ECO", "ELEV_OR", "ELEV_WA", "FOR_TOT",
"H2O_TOT", "HI_PT_OR", "HI_PT_WA", "HOUDENKM", "HOUSINGU", "KM_SEA", "LAT_DD",
"LON_DD", "LTROFF_M", "MINE_TOT", "MSLOPE", "NESTEDWS", "POPDENKM", "POPEST",
"PRECIP_M", "RD_DEN", "RNG_TOT", "SECTNAME", "STRM_ID", "STUDY", "TOT_RD",
"TUN_TOT", "URB_TOT", "WETL_TOT"

7.2.2 Example Data Records

.,833.29,.,.,, " ",76.2,.,.,.,,265.18,.,.,.,,45.991677169,-122.8964313,.,.,,
., " ",.,.,.,.,, " ", "OR001S", " ",.,.,.,.,
.,6738.11,.,.,, " ",152.4,.,.,.,,643.74,.,.,.,,44.138895486,-123.4394569,.,.,,
., " ",.,.,.,.,, " ", "OR003S", " ",.,.,.,.,
.,101.95,.,.,, " ",384.05,.,.,.,,652.27,.,.,.,,45.296137129,-123.3771323,.,.,,
., " ",.,.,.,.,, " ", "OR005S", " ",.,.,.,.,

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

Gretchen Hayslip
Environmental Services Division
Region 10
U.S. Environmental Protection Agency
1200 Sixth Avenue, ES-097
Seattle, WA 98101
206-553-1685
206-553-0119 (FAX)
hayslip.gretchen@epamail.epa.gov

Data Librarian EMAP-Information Management
U.S. EPA NHEERL-AED
401-782-3184
401-782-3030 (FAX)
hughes.melissa@epa.gov

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

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12. TABLE OF ACRONYMS

13. PERSONNEL INFORMATION

Project Manager
Gretchen Hayslip
Environmental Services Division
Region 10
U.S. Environmental Protection Agency
1200 Sixth Avenue, ES-097
Seattle, WA 98101
206-553-1685
206-553-0119 (FAX)
hayslip.gretchen@epamail.epa.gov

R-EMAP Project Leader for Washington State
Glenn Merritt
Washington State Department of Ecology
Watershed Assessments Section
300 Desmond Drive, P.O. Box 47710
Olympia, WA 98504-7710
206-407-6777
206-407-6884 (FAX)

R-EMAP Project Leader for Oregon
Rick Hafele
Oregon Department of Environmental Quality
811 SW 6th Avenue
Portland, OR 97204-1390
503-229-5983
503-229-6124 (FAX)
rick.hafele@state.or.us

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