

US EPA ARCHIVE DOCUMENT

CATALOG DOCUMENTATION
EMAP SURFACE WATERS PROGRAM LEVEL DATABASE
1997-1998 Mid-Atlantic Integrated Assessment Program
Periphyton Counts Data

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1. DATA SET IDENTIFICATION

1.1 Title of Catalog Document

1997-1998 Mid-Atlantic Integrated Assessment Program
Periphyton Counts Data

1.2 Authors of the Catalog Entry

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

1.3 Catalog Revision Date

August 2000

1.4 Data Set Name

PERICNT

1.5 Task Group

Surface Waters

1.6 Data Set Identification Code

137

1.7 Version

003

1.8 Requested Acknowledgement

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 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

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2.2 Investigation Participants - Sample Collection

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State of West Virginia
State of Maryland
University of Maryland
U.S. Environmental Protection Agency
Office of Research and Development
Region III

3. DATA SET ABSTRACT

3.1 Abstract of the Data Set

The data set contains the results of diatom and soft algae counts from samples collected from erosional and depositional habitats located at each of nine interior cross-section transects. Counts for each diatom species and algal genera are represented as raw laboratory counts, relative abundances, and counts per area sampled.

3.2 Keywords for the Data Set

algae, bacteria, count, organic matter, periphyton, protozoa

4. OBJECTIVES AND INTRODUCTION

4.1 Program Objective

In 1997 and 1998 the Ecological Monitoring and Assessment Program (EMAP) Surface Waters Program became a collaborator in the Mid-Atlantic Integrated Assessment (MAIA) project, which is attempting to produce an assessment of the condition of surface water and estuarine resources. The MAIA project represents a follow-up to the MAHA study, with an expanded geographic scope (southern New York to northern North Carolina, with more sites located in the Piedmont and Coastal Plain regions) and a different index period (July-September).

4.2 Data Set Objective

This data set is part of the MAIA project to characterize spatial and temporal variability of ecological indicators and demonstrate the ability of a suite of ecological indicators to estimate the condition of regional populations of aquatic resources.

4.3 Data Set Background Discussion

The primary function of the periphyton data set is to provide a count of the periphyton species present in the stream at the time of sampling. Periphyton represents an integral component of stream biological integrity. Periphyton is algae, fungi, bacteria, protozoa, and associated organic matter associated

with channel substrates. Periphyton are useful indicators of environmental condition because they respond rapidly and are sensitive to a number of anthropogenic disturbances, including habitat destruction, contamination by nutrients, metals, herbicides, hydrocarbons, and acidification.

4.4 Summary of Data Set Parameters

Percentage of counts as live cells in the sample for each species. Flow type at sample point is also indicated.

5. DATA ACQUISITION AND PROCESSING METHODS

5.1 Data Acquisition

5.1.1 Sampling Objective

To obtain counts of periphyton species at the sample site.

5.1.2 Sample Collection Methods Summary

Periphyton samples were collected from erosional and depositional habitats located at each of nine interior cross-section transects (transects "B" through "J") established within the sampling reach, according to the protocols outlined in Lazorchak et. al (1998).

5.1.3 Sampling Start Date

July 1997

5.1.4 Sampling End Date

September 1998

5.1.5 Platform

NA

5.1.6 Sampling Gear

Plastic funnel, 500ml plastic bottles, stiff-bristled toothbrush, 60-ml syringe, and a wash bottle.

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

NA

5.2 DATA PREPARATION AND SAMPLE DESIGN

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 SAS Name	Data Type	Len	Format	Parameter Label
12	ABUND	Num	8		Taxon Population Per cm ² Sampled
14	ALL_RELABUND	Num	8		Proportion of total population that is this taxon
15	COMMENT	Char	200		Sample comment
3	DATE_COL	Num	8	MMDDYY	Date of Site Visit
10	DIATOM_RAW	Num	8		Unadjusted (Raw) Diatom Counts
13	DIATOM_RELABUND	Num	8		Proportion of diatom population that is this taxon
16	LAT_DD	Num	8		X-Site Latitude (decimal degrees)
17	LON_DD	Num	8		X-Site Longitude (decimal degrees)
11	PALMER_RAW	Num	8		Unadjusted (Raw) Palmer Counts
6	SAMPLED	Char	30		Site Sampled Code
7	SAMPTYPE	Char	20		Sample Method

7.1 Description of Parameters (con't)

5	SAMP_ID	Num	8	Sample Tracking Number (Barcode)
1	SITE_ID	Char	15	Site Identification Code
8	TAXACODE	Char	9	Unique genera or species code
9	TAXON	Char	100	Latin Designation
2	VISIT_NO	Num	8	Within Year Site Visit Number
4	YEAR	Num	4	Year of Site Visit

7.1.6 Precision to which values are reported

7.1.7 Minimum Value in Data Set

Name	Min
-----	-----
LAT_DD	36.5535
LON_DD	-83.24443889
RHNOMET	0
RH_BKVG	0
RH_CHALT	0
RH_CHBKC	1
RH_CHQST	0
RH_CHSIN	3
RH_EMB	0
RH_EPISB	0
RH_FQRIF	0
RH_GRAZ	0
RH_INCVR	0
RH_POLSB	0
RH_POLVR	2
RH_RIPVG	0
RH_SEDDP	0
RH_SUM	0
RH_VELOD	0
RH_XHAB	2
VISIT_NO	1
YEAR	1993

7.1.7 Maximum Value in Data Set

Name	Max
-----	-----
LAT_DD	42.355663889
LON_DD	-74.2589
RHNOMET	12
RH_BKVG	20
RH_CHALT	20
RH_CHBKC	20
RH_CHQST	20
RH_CHSIN	19
RH_EMB	20
RH_EPISB	20
RH_FQRIF	20

7.1.7 Maximum Value in Data Set (con't)

RH_GRAZ	20
RH_INCVR	20
RH_POLSB	18
RH_POLVR	20
RH_RIPVG	20
RH_SEDDP	20
RH_SUM	235
RH_VELOD	20
RH_XHAB	19.5833
VISIT_NO	2
YEAR	1994

7.2 Data Record Example

7.2.1 Column Names for Example Records

"ABUND", "ALL_RELABUND", "COMMENT", "DATE_COL", "DIATOM_RAW", "DIATOM_RELABUND",
 "LAT_DD", "LON_DD", "PALMER_RAW", "SAMPLED", "SAMPTYPE", "SAMP_ID", "SITE_ID",
 "TAXACODE", "TAXON", "VISIT_NO", "YEAR"

7.2.2 Example Data Records

711.35,0.0024753946," ",09/08/1997,3,0.0054054054,38.247943,81.886602,..,
 "Yes","POOL",235530,"MAIA97-001","BANAVIRO",
 "Bacillariophyta Navicula viridula v rostellata (Kützing) Cleve",1,1997
 1422.69,0.0049507545," ",09/08/1997,6,0.0108108108,38.247943,-81.886602,..,
 "Yes","POOL",235530,"MAIA97-001","BANAMLU",
 "Bacillariophyta Navicula menisculus Schumann",1,1997
 4268.08,0.0148522983," ",09/08/1997,18,0.0324324324,38.247943,-81.886602,..,
 "Yes","POOL",235530,"MAIA97-001","BACCPLLI",
 "Bacillariophyta Cocconeis placentula v lineata (Ehrenberg) Van Heurck Van
 Heurck",1,1997
 3082.5,0.0107266521," ",09/08/1997,13,0.0234234234,38.247943,-81.886602,..,
 "Yes","POOL",235530,"MAIA97-001","BANIINC",
 "Bacillariophyta Nitzschia inconspicua Grunow",1,1997
 948.46,0.003300503," ",09/08/1997,4,0.0072072072,38.247943,-81.886602,..,
 "Yes","POOL",235530,"MAIA97-001","BANACRP",
 "Bacillariophyta Navicula cryptocephala Kützing",1,1997

8. GEOGRAPHIC AND SPATIAL INFORMATION

8.1 Minimum Longitude

-83 Degrees 33 Minutes 20 Seconds West (-83.555659 Decimal Degrees)

8.2 Maximum Longitude

-74 Degrees 41 Minutes 17 Seconds West (-74.688136 Decimal Degrees)

8.3 Minimum Latitude

35 Degrees 10 Minutes 58 Seconds North (35.182938 Decimal Degrees)

8.4 Maximum Latitude

42 Degrees 34 Minutes 1 Seconds North (42.567163 Decimal Degrees)

8.5 Name of Area or Region

Mid Atlantic: EPA Region III which includes Delaware, Maryland, New York, 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 WWW

10.7 EMAP CD-ROM Containing the Data

11. REFERENCES

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.

12. TABLE OF ACRONYMS

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