

US EPA ARCHIVE DOCUMENT

CATALOG DOCUMENTATION
REGIONAL ENVIRONMENTAL MONITORING AND ASSESSMENT PROGRAM - REGION 1
1993-1994 FISH TISSUE CONTAMINATION IN MAINE LAKES
LAKE LOCATION AND MORPHOMETRIC DATA

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1. DATA SET IDENTIFICATION

1.1 Title of Catalog document

Regional Environmental Monitoring and Assessment Program - Region 1
1993-94 Fish Tissue Contamination in Maine Lakes
Lake Location and Morphometric Data

1.2 Author of the Catalog entry

Melissa Hughes, OAO Corporation

1.3 Catalog revision date

6 March 1998

1.4 Data set name

REMAPLKS

1.5 Task Group

Region 1

1.6 Data set identification code

00001

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 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

Barry Mower
Jeanne DiFranco
Linda Bacon
David Courtemanch
State of Maine Department of Environmental Protection

2.2 Investigation Participant-Sample Collection

Not applicable

3. DATA SET ABSTRACT

3.1 Abstract of the Data Set

The R-EMAP Region 1 Lake Location and Morphometric data set contains geographic and physical (morphometric) information on 125 of 150 targeted lakes in the State of Maine. These 150 lakes were selected from a population of 1800 Maine lakes that have been surveyed by the Maine Department of Inland Fisheries and Wildlife (DIFW). The remaining target lakes were not sampled due to limitations such as accessibility and availability of desired fish species.

3.2 Keywords for the Data Set

Lake, Maine, surface water, physical characteristics, morphometric characteristics, lake location, EPA region

4. OBJECTIVES AND INTRODUCTION

4.1 Program and Project Objectives

4.1.1 Program Objective

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 primary goal of this study was to estimate the levels of contamination in fish populations, and the risk these levels pose to human and wildlife consumers. The primary objective was to determine concentrations of cadmium, lead, mercury, PCBs and selected pesticides in fish collected from Maine lakes.

4.2 Data Set Objective

The Lake Location and Morphometric data set characterizes the geographic and physical information of 125 Maine lakes using existing databases developed by the State of Maine.

4.3 Data Set Background Discussion

From a population of 1800 Maine lakes and ponds that have been surveyed by the Maine DIFW and have principal fisheries, one hundred and fifty lakes were selected using the EMAP sampling design. This method is based on the requirements for probability sampling used in statistical analyses, and ensures that the water bodies were chosen randomly and represent all geographic areas of the state. All lakes and ponds in Maine have been assigned unique "MIDAS" (Maine Information Display Analysis System) numbers that are used throughout this study.

4.4 Summary of Data Set Parameters

These data set values were extracted from two existing databases developed by the State of Maine. These are the Maine DIFW surveyed lakes database and the Maine Department of Environmental Protection (DEP) Lake Inventory Report database.

5. DATA ACQUISITION AND PROCESSING METHODS

5.1 Data Acquisition

5.1.1 Sampling Objective

Not applicable.

5.1.2 Sample Collection Methods Summary

Not applicable.

5.1.3 Sampling Start Date

June 1993
September 1994

5.1.4 Sampling End Date

September 1993
September 1994

5.1.5 Platform

Not applicable.

5.1.6 Sampling Equipment

Not applicable.

7.1 Description of Parameters, continued

| # | Parameter SAS Name | Data Type | Len | Format | Parameter Label |
|----|--------------------|-----------|-----|--------|--|
| 11 | LAKETYPE | Num | 8 | 5. | Lake type (DIFW code) |
| 12 | STRAT | Num | 8 | 7. | Lake stratifies: Y=Yes, N=No |
| 13 | ELEVATN | Num | 8 | 10. | Elevation above sea level (ft) |
| 14 | AREA | Num | 8 | 12.2 | Drainage area (mi2) |
| 15 | LATITUDE | Char | 12 | \$12. | Latitude |
| 16 | LNGITUDE | Char | 12 | \$12. | Longitude (negative) |
| 17 | S | Char | 8 | \$8. | Source of LAT/LONG (code) |
| 18 | VOL_M3 | Num | 8 | 17.1 | Volume (m3; DEP Lake Inventory Report) |
| 19 | SA_HA | Num | 8 | 14.1 | Surface area (ha; DEP Lake Inventory Report) |
| 20 | WA_KM2 | Num | 8 | 12.2 | Watershed area (km2; DEP Lake Inventory Report) |
| 21 | RF | Num | 8 | 10.4 | Runoff factor (DEP Lake Inventory Report) |
| 22 | FLUSH | Num | 8 | 11.3 | Flushing rate (#/yr; DEP Lake Inventory Report) |
| 23 | DAM | Char | 6 | \$6. | ME Interior Fish and Wildlife impoundment class (code) |

7.1.6 Precision to which values are reported

Values are accurate to the decimals reported in Section 7.1.

7.1.7 Minimum value in data set

| Variable | Minimum |
|----------|---------|
| ACRES | 7 |
| MAXDEPTH | 5 |
| AVDEPTH | 3 |
| SHOREFT | 1584 |
| ELEVATN | 15 |
| AREA | 0.00 |
| VOL_M3 | 53338.4 |
| SA_HA | 3.0 |
| WA_KM2 | 0.21 |
| RF | 0.0593 |
| FLUSH | 0.052 |

7.1.8 Maximum value in data set

| Variable | Maximum |
|----------|----------------|
| ACRES | 14340 |
| MAXDEPTH | 158 |
| AVDEPTH | 69 |
| SHOREFT | 88735 |
| ELEVATN | 1700 |
| AREA | 762.00 |
| VOL_M3 | 100000000000.0 |
| SA_HA | 5834.0 |
| WA_KM2 | 1973.57 |
| RF | 0.7620 |
| FLUSH | 64.065 |

7.2 Data Record Example

7.2.1 Column Names for Example Records

MIDAS;LAKE;TOWN;COUNTY;ACRES;MAP;MAXDEPTH;MEATLAS;AVDEPTH;SHOREFT;LAKETYPE;STRAT;
ELEVATN;AREA;LAT;LONG;S;VOL_M3;SA_HA;WA_KM2;RF;FLUSH;DAM;

7.2.2 Example Data Records

MIDAS;LAKE;TOWN;COUNTY;ACRES;MAP;MAXDEPTH;MEATLAS;AVDEPTH;SHOREFT;LAKETYPE;STRAT;
ELEVATN;AREA;LAT;LONG;S;VOL_M3;SA_HA;WA_KM2;RF;FLUSH;DAM;

5572;BURNT MEADOW P;BROWNFIELD;OXFORD;63;BROWNFIELD;45;04;17;7920;2;1;374;4.00;
43 55 28;70 53 09;G;1380386.3;27.0;9.97;0.6223;4.495;1;
3124;BEAVER P;DENMARK;OXFORD;128;HIRAM;8;04;5;10154;3;2;397;2.00;43 59 47;
70 49 26;G;424673.7;32.0;5.52;0.6096;7.919;1;
3126;GRANGER P;DENMARK;OXFORD;126;HIRAM;28;04;12;15110;3;2;524;1.00;43 57 06;
70 46 50;G;1998206.3;51.0;3.13;0.6096;0.956;3;
3252;PLEASANT P;FRYEBURG;OXFORD;239;FRYEBURG;15;04;7;15231;3;2;362;14.00;
44 00 24;70 53 25;U;194929.2;9.0;3.73;0.0648;1.239;1;

8. GEOGRAPHIC AND SPATIAL INFORMATION

8.1 Minimum Longitude

-71 Degrees 00 Minutes 47 Decimal Seconds

8.2 Maximum Longitude

-67 Degrees 10 Minutes 30 Decimal Seconds

8.3 Minimum Latitude

43 Degrees 15 Minutes 21 Decimal Seconds

8.4 Maximum Latitude

47 Degrees 07 Minutes 11 Decimal Seconds

8.5 Name of area or region

EPA Region 1

Lakes for sampling were located in the state of Maine.

9. QUALITY CONTROL AND QUALITY ASSURANCE

9.1 Data Quality Objectives

Not Applicable

9.2 Data Quality Assurance Procedures

Unless otherwise noted, the source of these data is the DIFW surveyed lakes database. Note that lake area and watershed area each appear twice in the database. Lake area appears in the field ACRES which originates from IFW as well as in the field SA_HA, which originates from DEP's Inventory Report database. Likewise, watershed area is listed under the field AREA (originating from IFW) and WA_KM2 (originating from DEP's Lake Inventory Report database). The data contained in fields originating from DEP are probably more accurate, but may not be available for as many of the lakes.

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

Not applicable

10.3 Data Access Contact Persons

Linda C. Bacon
State of Maine Department of Environmental Protection
Bureau of Land and Water Quality
Division of Environmental Assessment
State House Station 17
Augusta, ME 04333
Linda.C.Bacon@state.me.us

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

10.4 Data Set Format

Data files are in ASCII semi-colon 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 Set

Data are not available on CD-ROM

11. REFERENCES

DiFranco et. al., 1995. Fish Tissue Contamination in Maine Lakes. Data Report. State of Maine Department of Environmental Protection, Bureau of Land and Water Quality, Division of Environmental Assessment. September 1995.

Maine Department of Environmental Protection et al. 1993. Project Work/Quality Assurance Plan, Fish Tissue Contamination in Maine Lakes. Maine Department of Environmental Protection, Maine Department of Inland Fisheries and Wildlife and USEPA Region 1 Environmental Services Division. September 20, 1993.

12. TABLE OF ACRONYMS

| ACRONYM | DESCRIPTION |
|---------|--|
| DEP | Maine Department of Environmental Protection |
| DIFW | Maine Department of Inland Fisheries and Wildlife |
| EMAP | Environmental Monitoring and Assessment Program |
| EPA | Environmental Protection Agency |
| HetL | Maine Department of Human Services Health and Environmental Testing Laboratory |
| MIDAS | Maine Information Display Analysis System - unique number assigned to each Maine lake |
| PCBs | polychlorinated biphenyls |
| QA | Quality Assurance |
| QA/QC | Quality Assurance/Quality Control |
| REMAP | Regional Environmental Monitoring and Assessment Program |
| UMO | National Biological Survey and Sawyer Environmental Chemistry Laboratories at the University of Maine at Orono |

13. PERSONNEL INFORMATION

Jeanne DiFranco
 Linda Bacon
 David Courtemanch
 Barry Mower
 State of Maine Department of Environmental Protection
 Bureau of Land and Water Quality
 Division of Environmental Assessment
 State House Station 17
 Augusta, ME 04333
 (207) 287-3901
 Barry.F.Mower@state.me.us
 Jeanne.L.Difranco@state.me.us
 Linda.C.Bacon@state.me.us
 Dave.L.Courtemanch@state.me.us

Melissa M. Hughes
 EMAP-Information Management
 OA0 Corp. c/o U.S. EPA NHEERL-AED
 27 Tarzwell Drive
 Narragansett, RI 02882-1197
 (401) 782-3184 (Tele)
 (401) 782-3030 (FAX)
 hughes.melissa@epa.gov

Ray Thompson
 U.S. EPA - Region 1
 Environmental Services Division
 60 Westview Street
 Lexington, MA 02173
 (781) 860-4300 (Tele)
 thompson.ray@epa.gov