

ISWS Miscellaneous Publication 73

**LONG TERM ECOLOGICAL RESEARCH  
ILLINOIS RIVER AND UPPER MISSISSIPPI RIVER  
(LARGE RIVERS)  
SITE REPORT**

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Prepared in part with support  
from National Science Foundation Grant DEB-8114563,  
Ecological Structure and Function of Major Rivers in Illinois,  
as part of the "Large Rivers" Long Term Ecological Research (LTER) Program

Champaign, Illinois  
March 1983

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## CONTENTS

|  | Page |
|--|------|
| General Site Information   |      |
| Site Name  | 1    |
| Institutional Affiliation  | 1    |
| LTER Research Topics   | 1    |
| Principal Biome  | 1    |
| Main Communities   | 1    |
| Locations of Research Sites  | 1    |
| Staff and Areas of Research  | 2    |
| Investigators  | 2    |
| Climate Synopsis   | 2    |
| Narrative Description  | 3    |
| Data Management  | 3    |
| Goals -Objectives  | 3    |
| Geographic Information System - ILLIMAP                                    | 4    |
| LTER Data Indexing   | 6    |
| Data Management within Components  | 6    |
| Large Rivers LTER Data Sets  | 7    |
| Internal Existing Data Sets  | 8    |
| External Existing Data Sets  | 8    |
| Quality Assurance  | 8    |
| Archiving  | 9    |
| Data Access  | 10   |
| Data Request Procedures  | 10   |
| Data Acknowledgment and Disclaimers  | 10   |
| Overview of Data Management  | 11   |
| Research Facilities  | 11   |
| Laboratories and Offices   | 11   |
| Available Computer Hardware Facilities                                     | 12   |
| Available Computer Software Support  | 14   |
| Large Rivers Internal Computer Facilities                                  | 15   |
| Appendices   |      |
| Large Rivers Institutional Affiliation<br>Addresses and Telephones Numbers | 17   |
| Large Rivers LTER Data Set Abstracts                                       | 18   |

## GENERAL SITE INFORMATION

### Site Name

Illinois River and Upper Mississippi River (Large Rivers)

### Institutional Affiliation

Illinois Department of Energy and Natural Resources

- Natural History Survey Division(NHS)
- Water Survey Division(SWS)
- Geological Survey Division(SGS)
- Illinois State Museum(ISM)

Western Illinois University(WIU)

- Department of Biological Science

### LTER Research Topics

Succession and perturbation  
Water and sediment budgets  
Hydrological studies  
Ecosystem biotic structure  
Ecosystem function

### Principal Biome

Temperate deciduous forest

### Main Communities

Riverine marsh  
Northern floodplain forest  
Off-shore and mud-bottom benthos  
Aquatic plant beds  
Phytoplankton, zooplankton  
Firm substrate community in swift current

### Locations of Research Sites

|                            |            |                             |
|----------------------------|------------|-----------------------------|
| Pool 19, Mississippi River | Latitude:  | 40 degrees 30 minutes North |
|                            | Longitude: | 91 degrees 21 minutes West  |
|                            | Elevation: | 163 meters                  |

|  |            |                             |
|--|------------|-----------------------------|
| Pool 26, Mississippi and Illinois Rivers | Latitude:  | 38 degrees 59 minutes North |
|  | Longitude: | 90 degrees 30 minutes West  |
|  | Elevation: | 127 meters                  |



## Narrative Description

The Large Rivers LTER has four components which include: (1) succession and perturbation in the Illinois and Upper Mississippi Rivers; (2) water and sediment budgets, and hydrological studies; (3) ecosystem biotic structure; and (4) ecosystem function. Succession and perturbation studies reconstruct the past, while hydrological studies determine present sediment and water budgets for the study sites, in support of the biological studies of the ecosystem structure and function.

In succession and perturbation studies of the rivers, sediment cores and tree ring cores will be analyzed to determine patterns and frequency of natural and man-induced disturbances to the sites. Studies on ecosystem biotic structure will begin by examining spatial and temporal distribution of populations representing different trophic levels in the remarkably productive Keokuk Pool and in the tailwaters below Keokuk Dam, where much of the organic material produced or processed in the Pool is probably utilized by both low-level and high-level consumers.

When new Pool 26 is formed in 1987-88, its structure (both biotic and physical) and function will be compared to those of Keokuk Pool, and the rate and pattern of change determined.

Studies from all four components of the Large Rivers LTER will also be conducted on Peoria Lake (a mainstem lake) on the Illinois River, a highly perturbed system, where important structural components have been eliminated.

## DATA MANAGEMENT

### Goals - Objectives

The Large Rivers LTER data management goals are as follows:

1. To be a repository for all the Large Rivers LTER project's data and information.
2. To establish and maintain indexes of the data and information at both the local and national level.
3. To structure the data and information so they can be integrated.

4. To coordinate our data management efforts with those at other LTER sites for increased compatibility and greater knowledge of problems and solutions involving LTER data and information.
5. To make the Large Rivers LTER data and information available to external users.
6. To aid site researchers in finding other sources of data.

#### Geographic Information System - ILLIMAP

In a research project of this size and duration, accurate and diverse location information is very important. The State Geological Survey's GIS ILLIMAP system has been expanded and will be used on this project.

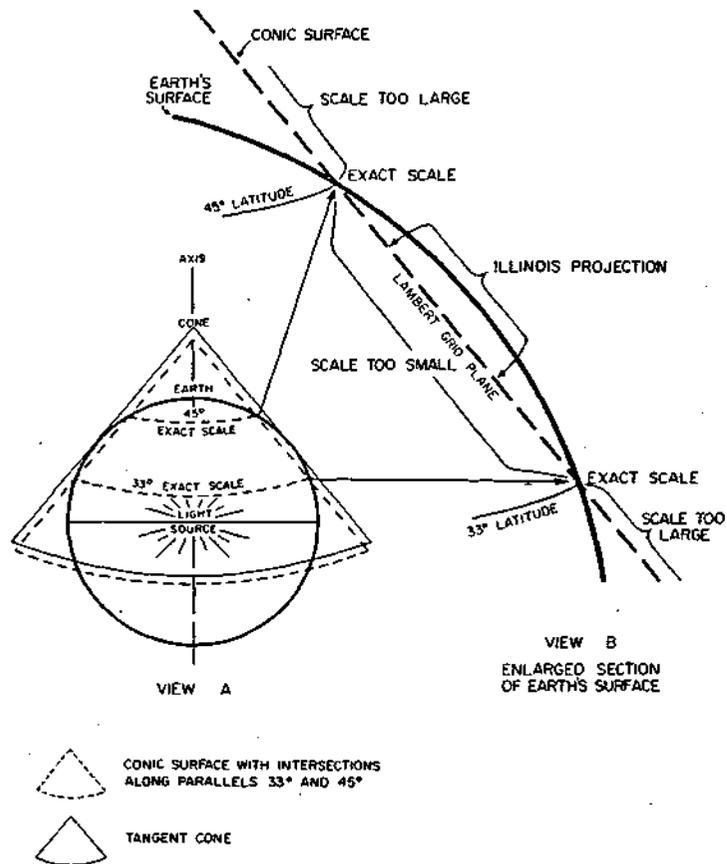
The central feature of the ILLIMAP system is a catalog of the Lambert conformal coordinates of all section corners in the state and the coordinate values of the state boundary and all county boundaries. This file now consists of more than 100,000 coordinate values. It also includes imaginary corners needed to complete partial sections cut off by the state line, by rivers, or by Indian treaty boundaries. Section corners that lie on state, county, or township boundaries are identified separately in the system, as are the imaginary corners.

The main objective of this work is to enable the researcher to locate his or her sampling sites on a topographic map in the field while collecting the data. Later these maps will be digitized and the sampling site coordinates will be determined by a computer program. The coordinates will be in Lambert conformal x,y values, State Plane x,y (transverse Mercator) units, latitude and longitude, and township range section and quarter section.

Computer programs have been written to convert ILLIMAP coordinates into those of the Illinois East and Illinois West systems or into latitude and longitude. If coordinates are converted to latitude and longitude first, conversion into any other projection is possible.

ILLIMAP is being expanded into Iowa and Missouri to handle Pool 19 and Pool 26 respectively. We are digitizing the following features:

1. Section, township, and range corners for all of the floodplain, which means adding the Iowa side of the



Lambert Conformal Conic Projection,

Mississippi River to the existing ILLIMAP base for the Illinois side. We will work to the western edge of the floodplain.

2. The boundaries of the main river channel, with that line identified as river boundary.

3. The boundaries of islands, with that line identified as islands.
4. The boundaries of lakes and backwater areas, with that line identified as lakes.
5. The boundaries of the floodplain.

Pool 19 is presently being worked on. As soon as the work is completed on Pool 19 we will turn our efforts to Pool 26.

We will be doing similar work for Peoria Lake on the Illinois River but the exact area of the research site has not yet been selected.

This arrangement will help do away with the errors associated with manual determinations of sampling sites. This should also make it more convenient to the researcher to correctly locate his or her sampling sites.

#### LTER Data Indexing

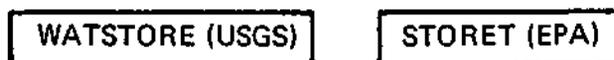
The LTER data and information will be indexed into the Natural Water Data Exchange system (NAWDEX) of the United States Geological Survey and also the Illinois River Data Index (ILRIDI).

### LARGE RIVERS LTER

#### INDEXING



#### DATA BASE COMPATIBILITY



The Data Base will be compatible with the USGS's WATSTORE and US EPA's STORET system. The Rivers LTER data management data base will utilize both machine readable as well as non-machine readable technology. All paper documents have two flow paths.

#### Data Management within Components

##### Component 1: Site History

Sediment chemistry data are in machine readable form when they come from the chemistry laboratory. A software interface is being written to move the data to the LTER data base.

##### Component 2: Hydrology

The fluvial geomorphology and sediment transport data management parts of Component 2 have been developed to a high degree for non-LTER research projects and will not require much modification. The data formats and necessary software are in place and will serve the needs of Component 2.

##### Components 3 and 4: Ecosystem Structure and Function

The data for these two components will be entered into machine readable form on an Apple Microcomputer with floppy disk drives or onto a Tektronix 4051 microcomputer with a built-in tape drive at the field laboratories and transferred to the University of Illinois CYBER 175 by data communications where the data for Components 3 and 4 will be structured and integrated into the Data Base.

##### Large Rivers LTER Data Sets

The Large Rivers data sets are described in the appendices of this report. These LTER data set abstracts, along with all of the other LTER sites' data set abstracts, are being put into a central computer file system by Walt Conley of the Jornada LTER site.

### Internal Existing Data Sets

A survey of Principal Investigators identified the following types of data sets. A considerable number of these, particularly the surveys and censuses, extend over 20 years. These have often provided the only information available in Illinois by which to access long term changes in populations and habitats. Some of the types of data sets that are being considered are:

Hydrology, weather, and water quality

"Benchmark" data from 1900 on fishes, plankton, and benthos from the Illinois River

Annual surveys of fishes and waterfowl

Commercial fishing statistics

Surveys of benthos and both aquatic and floodplain vegetation

Sediment characteristics and sedimentation rate

### External Existing Data Sets

There is a wealth (some people's view) of other data sets that have been collected and are available but their exact state and disposition are being looked into at this time.

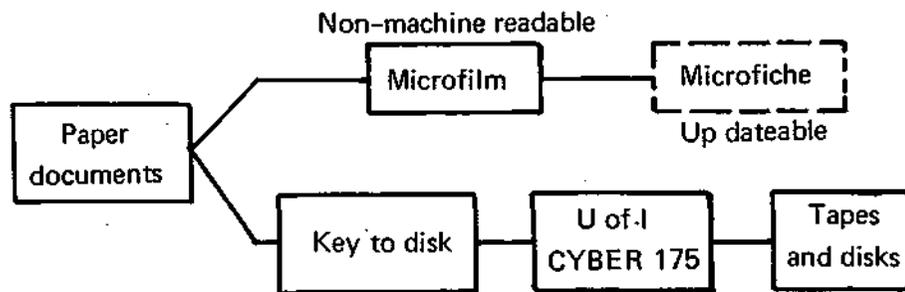
### Quality Assurance

The data managers will be responsible only for accurate transcription of the "data" they receive. The quality assurance of the data received is NOT the data manager's responsibility. It is the responsibility of each F.I. to make sure that the data are correctly collected and truly represent the phenomena being studied. Quality assurance at the Principal Investigator level includes such things as the use of accepted or established methodology, and proper recording and verification of the accuracy of the data. The data managers are not responsible for the soundness of the statistical design or the integrity of the scientific enquiry. They are, however, responsible for the accurate transmission and transcription of the data, their sustained accessibility, and the maintenance of their integrity.

## Archiving

The Rivers LTER data management data base will utilize both machine readable and non-machine readable technology. All paper documents have two flow paths.

### LARGE RIVERS LTER DATA AND INFORMATION



The data will be put into machine readable form (MRF). The paper documents and field notes will be microfilmed. We are looking at the possibility of also producing a microfiche computer generated output of the machine readable data. This decision will be made when it is determined what the cost will be. We are also thinking about publishing the LTER data sets on an annual basis. There would be very few copies printed initially (25-30 at most) but if there was a request for additional copies with the present capability to produce documents at a low cost in small quantities it would be easy to do.

The raw data will be stored in original form for a period of one to two years. The term "raw data" would include such storage forms as microfiche, microfilm, or other such means of recording raw data in untranscribed form. (The meaning of "raw data" varies with different investigators, and rather than specifically describe the meaning it was felt that raw data should mean any form of data as collected or minimally reduced by the site investigator. Common sense generally determines the meaning of the term.)

## Data Access

As far as any set protocol for data exchange via microcomputers we have not yet become familiar enough with the capabilities of the other LTER sites to determine if there is sufficient equipment commonality so that a uniform set of data exchange media can be established.

Until the microcomputer industry comes to some standard or the various LTER sites become familiar enough with one another the best machine readable data exchange medium we have is magnetic computer tape. Please see the section "Available Computer Hardware Facilities" for a description of the various magnetic computer tape specifications that are available from our site. The one that we find most popular and with which we have the most success is: .

- 9 track
- 1600 bpi
- No internal label on the tape"
- 80 bytes per record
- A block size of 800 or 8000 bytes
- An EBCDIC (IBM character code)

Generally the LTER data sets will be publicly available within constraints set by specific P.I.'s and the lead P.I. who collected the particular data set. It is not the database manager's responsibility to decide on such matters, only to help in the transfer of data once agreed upon by the researcher who is responsible for the data and the person making the request.

## Data Request Procedures

A request for specific Large Rivers LTER data sets should be directed to the investigator (see data set abstracts in the appendix) who was responsible for collecting the data. At which time the investigator could either fill the request himself/herself or forward the request to the site data manager for action.

## Data Acknowledgment and Disclaimers

The following phrases should be inserted in all Large Rivers LTER publications and reports. Also if any other sites or research

facilities should use our data, the following acknowledgments and disclaimers should be inserted into their reports:

"The research data used in this report were collected with support from the National Science Foundation Grant No. DEB-8114563, Ecological Structure and Function of Major Rivers in Illinois, as part of the Long Term Ecological Research (LTER) Program."

"The Large Rivers Long Term Ecological Research Program has been sponsored, in part, by the Upper Mississippi River Basin Association. The findings, conclusions, recommendations, and views in this effort are those of the researchers and should not be considered as the official position of the Upper Mississippi River Basin Association."

#### OVERVIEW OF DATA MANAGEMENT

We are in our infancy in terms of data management. We have made good strides at understanding the need to organize data within a single base, and have incorporated a system for quality control as data are entered into our systems. Our biggest failures have involved: (1) turning over large data sets to computer programmers who have not understood our goals or the limitations of the data; (2) working with highly sophisticated customized programs which can't be adapted to run on new equipment or as a part of a broader program; and (3) failing to plan on having the ability to merge data sets. Probably in no other field is planning so important as it is in data management. The most difficult aspects of data management for us have been to first visualize how we want to be able to use the data in 5, 10, or 20 years and then to discipline ourselves to organize our data sets so that they will be compatible with each other. These problems seem at this stage to be much more difficult than deciding on which computer or software package to purchase.

#### RESEARCH FACILITIES

##### Laboratories and Offices

Limited laboratory and office space are available at the two river research laboratories, located at Havana and Grafton, Illinois, on the Illinois River. The Alice Kibbe Life Science

Station is located near Warsaw, Illinois, on Pool 20 of the Mississippi River. Laboratory and office space is limited during the 8-week summer teaching session, but can be made available at other times of the year.

#### Available Computer Hardware Facilities

The University of Illinois Computing Services Office (CSO) provides access to four major computers, all linked by communications lines and served by a common RJE (Remote Job Entry) network. A brief sketch of the systems is given below.

CSO operates a Control Data Corporation CYBER 170/175 computer running version 1.4 of the Network Operating System (NOS), which supports both batch and timesharing usage. This system is devoted primarily to graduate and faculty research. Major hardware includes:

256k words of central memory

512k words of ECS (Extended Core Storage)

Communications support for 200 simultaneously active text and graphics terminals at speeds of 10, 30, or 120 characters per second

Ten online disk drives with a total capacity of six billion bytes

Mass storage subsystem with an online storage capacity of 20 billion bytes

Five tape drives, including three 6250/1600 bpi drives, one nine-track 1600/800 bpi drive, and one seven-track 200/556/800 bpi drive

Terminals for the Cyber 170/175 system are placed in public areas across campus, and remote access via phone is also possible. Card-oriented users may submit batch jobs at eleven RJE sites across campus.

CSO operates a Control Data Corporation CYBER 170/174 computer running version 1.4 of the Network Operating System (NOS) which supports both batch and timesharing usage. This machine shares all files in common with the CYBER 170/175 and is devoted primarily to instructional use. Major hardware includes:

132k words of central memory

Communications support for 100 simultaneously active text and graphics terminals at 10, 30, or 120 characters per second

Shared access to the ten online disk drives mentioned above in regard to the CYBER 170/175

Terminals for the CYBER 170/175 system are placed in public areas across campus, and remote access via phone is also possible.

CSO also operates two IBM 4341's running the CMS and HASP-OS/MVT operating systems supporting batch users. Major hardware includes:

Eight million bytes of fast memory plus virtual memory capabilities

Twelve online disk drives with a total capacity of 2.4 billion characters

Two nine-track 1600/800 bpi tape drives

Two nine-track 1600/6250 bpi tape drives

In addition to access through the RJE sites on campus, users of the CYBER 170/175 can submit jobs to the 4341 via commands which utilize the communications link joining the two machines.

CSO's users have access on a time available basis to the IBM 370/158 situated at the Chicago Circle Campus of the University of Illinois. This system utilizes the MVS operating system and provides up to twelve million bytes of virtual memory to each job. Batch service only is provided to CSO's users. In addition to access through the RJE sites on campus, users of the CYBER 170/175 may submit jobs to the IBM 170/158 via commands which utilize the communications links joining the CYBER 170/175, the IBM 4341, and the IBM 370/158.

CSO also operates a VAX-11/780 and a PDP 11/50, each running the UNIX operating system. Access to these systems is provided on an as needed basis so long as the use is consistent with the available resources and the terms of the licenses governing use of the operating system. "

Finally, a local telenet node facilitates access of remote computing facilities as well as access to CSO's cyber system from remote sites .

A total of 63 keypunches, 95 CRT terminals, and 27 Decwriters are provided at various RJE sites. The following special purpose equipment is also available:

Drum plotter capable of producing pen plots either 9 or 29 inches wide.

A total of 28 Tektronix terminals grouped into three clusters, each centered around a slaved Versatec Electrostatic Printer. Tektronix terminal models represented include 4006, 4010, 4014 (19 inch screen), and 4027 (color graphics terminal). Five CRT terminals with a graphics capability identical to a Tektronix 4006 are also available.

Diablo "Daisy Wheel" printer for high quality printer ready output.

An assortment of representative microcomputers.

A photo composition typesetting unit which produces camera ready output suitable for publication.

#### Available Computer Software Support

Cyber 170/175

##### Language Processors

BASIC  
COBOL  
COMPASS  
FORTRAN (ANSI-66)  
FORTRAN (ANSI-77)  
LISP  
PASCAL  
SPITBOL

##### Statistical Software

BMDP  
COFAMM  
LISREL IV  
MULTIQ  
MULTIV  
SOUPAC  
SPSS  
STAT

##### Mathematical Software

ACSL  
EISPACK  
EZLP  
IMSL

##### Plotting and Graphics

EZGRAPH  
GCS  
NCAR  
PLOT10

SLAM  
UOILIB

ZETA (CALCOMP)  
ZETAVU

Text Editing/Formatting

ICE  
RNF  
ARCHIVE

Data Management Packages

SIR  
RIM

Language Processors

ALGOLW  
ASSEMBLER  
FORTRAN G  
FORTRAN H  
LISP  
PL/I  
SPITBOL  
WATFIV

IBM 4341

Statistical Software

BMDP  
SAS  
SOUPAC  
SPSS

Mathematical Software

CSMP  
FORMAC  
FORTUOI  
IMSL

Plotting and Graphing

ZETA  
SAS GRAPH

Data Management Packages

SPIRES

Large Rivers Internal Computer Facilities

The Large Rivers research facilities have several types of microcomputer systems available internally for use for data entry, data analyses, data management, etc. These include Apples, Commodores, IBM PC's, and a Tektronix 4051 with a built-in tape drive with a plotter and a hard copy device. They are all equipped with 5-1/4 inch floppy disk drives and telecommunications capabilities. Microprocessing equipment is being acquired so rapidly and with so many new enhancements that it is impossible to keep current with the developments and changes. If anyone has any questions about the computer equipment available for site data exchange, a telephone call or letter to the data manager would probably be in order.

APPENDICES

Large Rivers LTER Institutional Affiliation

Addresses and Telephone Numbers

Illinois State Geological' Survey (SGS)  
Natural Resources Building  
615 E. Peabody Drive . . .  
Champaign, Illinois 61820  
(217) 344-1481

Illinois State Museum (ISM)  
Spring and Edwards Sts.  
Springfield, Illinois 62706  
(217) 785-0571

Illinois State Natural History Survey (NHS)  
Natural Resources Building  
607 E. Peabody Drive  
Champaign, Illinois 61820  
(217) 333-6880

Western Illinois University (WIU)  
Biological Sciences  
Waggoner Hall  
Macomb, Illinois 61455  
(309) 298-1553  
(309) 836-6536

Illinois State Water Survey (SWS)  
605 E. Springfield Street  
Champaign, Illinois 61820  
(217) 333-2211

LTFR Data Set Abstract

Title: Sediment Samples from Pool 19 of the Mississippi River

Site: Mississippi River

Investigator: David L. Gross

Address: Illinois State Geological Survey  
Natural Resources Building  
615 East Peabody Drive  
Champaign, Illinois 61820  
(217) 344-1481

Geographic Coverage: Most of the water area of Pool 19 (Keokuk Pool),  
a total of 312 sampling sites

Date of Collection: Summer of 1982

Data Type: Paper record of field descriptions. By early 1983  
will be available also on microfilm.

Geographic Referencing System: Points of 7 1/2' topographic maps.  
By early 1983 will be digitized on the  
ILLIMAP system into Lambert conformal  
conic projection, and thus available in  
latitude-longitude, State Plane  
Coordinate, and UTM.

Key Words: SEDIMENT, MISSISSIPPI RIVER, POOL 19,  
GEOLOGY

Text: This set of sediment samples was collected in the summer of 1982 in order to produce a geologic map of the water portion of Pool 19 of the Mississippi River. A grab sample of the upper 5 cm of sediment was collected at each of the 312 sampling stations. Short cores of sediment (typically 0.5 - 1.0 meter in length) were collected at about half of the sampling stations. The cores were subsampled into 3 to 10 samples at various depths in the sediment. A complete verbal geologic description was prepared for each sample, including texture, color, sedimentological features, plant fragments, and shells. The sample network includes three to eight station cross sections of the river at 1.5 km intervals throughout the 70 km length of the pool, and additional sampling stations at selected locations. Splits of the samples are being analyzed at the Illinois State Geological Survey and additional material from each sample is stored in the sample library of the Survey. Additional sediment material could be made available to a few additional investigators.

LTFR Data Set Abstract

Title: Sediment Grain-Size Analyses from Pool 19 of the Mississippi River

Site: Mississippi River Pool 19

Investigator: David L. Gross

Address: Illinois State Geological Survey  
Natural Resources Building  
615 East Peabody Drive  
Champaign, Illinois 61820  
(217) 344-1481

Geographic coverage: Most of the water area of Pool 19 (Keokuk Pool)  
of the Mississippi River

Date of Collection: Summer of 1982  
Samples collected in summer of 1982  
Laboratory analyses in winter of 1982-83

Data Type: Paper record.  
By early 1983 will be in machine readable-form

Geographic Referencing System: Points of 7 1/2' topographic maps.  
By early 1983 will be digitized on the  
ILLIMAP system into Lambert Conformal  
conic projection, and thus available in  
latitude-longitude, State Plane Coordinate,  
and UTM.

Key Words: SEDIMENT, GRAIN-SIZE, MISSISSIPPI RIVER,  
POOL 19

Text: Detailed grain-size analyses are being performed on a large set of  
bottom sediment grab samples and sediment cores from Pool 19 of the Mississippi  
River. One split of each sediment sample is being analyzed and another split  
is stored in the sample library of the Illinois State Geological Survey.  
Laboratory work is underway in the winter of 1982-83. The work is designed  
to produce a sediment map and a sedimentological history of the pool. To  
date, 223 samples have been analyzed. River current velocity data are  
available for 134 of these locations.

Analyses include continuous cumulative curve for the fraction less than  
0.0525 mm by sedigraph, and sand percentages by sieve for the following  
fractions:

Greater than 4.0 mm

0.35 - 0.50 mm

2.83 - 4.0 mm  
2.00 - 2.83 mm  
1.41 - 2.00 mm  
1.00 - 1.41 mm  
0.71 - 1.00 mm  
0.50 - 0.71 mm

0.25 - 0.35 mm  
0.177 - 0.25 mm  
0.125 - 0.177 mm  
0.088 - 0.125 mm  
0.625 - 0.088 mm

## Data Set Abstract

Title: Sediment Geochemical Results from Pool 19 of the Mississippi River

Site: Mississippi River

Investigator: R. Cahill

Address: Illinois State Geological Survey  
322 Natural Resources Building  
615 East Peabody Drive  
Champaign, Illinois 61820  
(217) 344-1481, ext. 229

Coverage: 4 cores collected at 4 locations on Pool 19 during summer season 1982

Data Type: Paper document, Cyber file

Geographic Referencing System: Point of 7 1/2' topographic maps.  
By early 1983 will be digitized on the ILLIMAP system into Lambert conformal conic projection, and thus available in latitude-longitude, State Plane Coordinate, and UTM.

Key Words: GEOCHEMISTRY, TRACE METALS, MISSISSIPPI RIVER, SEDIMENTS, LEAD, MERCURY, COPPER

Text: This data file will consist of chemical measurements made on sediment cores collected on Pool 19, Mississippi River. The four cores were subdivided into 22 subsamples which were submitted for the following measurements by technique:

SRF: Fe, K, Ca, P, Si, Al, Ti  
AA: Fe, Pb, Cd, Zn, Cu, Ni, Mg  
XES: Ba, Sr, Zr  
INAA: As, Br, Ga, La, Mn, Na, Sb, Sm, W, Co, Cr  
AA: Hg

Gravimetric: Organic carbon

All values will be in percent or parts per million.

The data will be available on paper copy and on computer file.

LTER DATA SET ABSTRACT  
LARGE RIVER LTER

Title: Nutrients

Sites: Mississippi River - Pool 19 (Keokuk, IA), Pool 26 (Grafton, IL),  
and their major tributaries  
Illinois River - Peoria Lake (Peoria, IL), Pool 26 (Grafton, IL),  
and major tributaries.

Address: Richard E. Sparks  
River Research Lab  
Illinois Natural History Survey  
Box 599  
Havana, IL 62264  
Telephone: (309) 543-3105  
(309) 543-3950

Geographic Coverage: See "Sites" above

Frequency of Collection: Approximately weekly. (See text for  
further explanation)

Period of Record: 1982 - current date

Data Type: Present - Paper documents  
Future - Magnetic tape (to date the format has not been  
developed)

Key Words: NUTRIENTS, ORGANIC MATTER, NITROGEN, CARBON, PHOSPHORUS,  
PARTICULATE ORGANIC MATTER, DISSOLVED ORGANIC MATTER,  
TOTAL ORGANIC MATTER, TOTAL INORGANIC CARBON, HARDNESS,  
PH, WATER TEMPERATURE.

Text: There are 13 chemical parameters in mg/liter, plus pH, temperature,  
and gauge height. The factors are listed below with their STORET codes.

| Factor  | STORET CODE |
|---|-------------|
| pH  | 00400       |
| Nitrogen, total   | 00600       |
| Nitrogen, dissolved (passed through fiberglass filter)    | 00602       |
| Nitrogen, ammonia, total                                  | 00610       |
| Nitrogen, nitrite, total                                  | 00615       |
| Nitrogen, nitrate, total                                  | 00620       |
| Nitrogen, Kjeldahl, total *                               | 00625       |
| Phosphorus, dissolved, orthophosphate (fiberglass filter) | 00671       |
| Carbon, organic, total (TOC)                              | 00680       |
| Carbon, organic, dissolved (DOM) (fiberglass filter)      | 00681       |

|                                     |       |
|-------------------------------------|-------|
| Carbon, inorganic, total            | 00685 |
| Hardness, total                     | 00900 |
| Carbon, organic, particulate (POC)  | 80102 |
| Temperature, water, degrees Celsius | 00010 |
| Gage height                         | 00065 |

The concentrations and discharge data (collected by the Illinois State Water Survey) are used to compute nutrient fluxes in the three navigation pools under study. Samples are taken approximately once a month from tributaries and from below the dams on the upstream and downstream ends of a pool. More frequent sampling (once per day) on selected tributaries and reaches is triggered by various short term events, such as a flood. Only one of three pools is sampled monthly in a given year, after which monthly sampling rotates to the next pool.

| Location  | Sampling Schedule                 |
|---|-----------------------------------|
| Pool 19, Mississippi River                            | 1982, every third year thereafter |
| Pool 26, Mississippi and Illinois Rivers (confluence) | 1983, every third year thereafter |
| Peoria Pool, Illinois River                           | 1984, every third year thereafter |

Low level, maintenance sampling (once in the spring, once in late summer) is conducted on pools not being intensively sampled in a given year. Samples are also taken daily or more frequently as part of intensive 48-hour studies of particular compartments (aquatic plant beds, main channel borders, tailwaters, etc.) within pools (see abstract titled Productivity).

LTER DATA SET ABSTRACT  
LARGE RIVER LTER

Title: Productivity

Sites: Mississippi River - Pool 19 (Keokuk, IA) and Pool 26 (Grafton, IL)  
Illinois River - Peoria Lake (Peoria, IL) and Pool 26 (Grafton, IL)

Address: Richard E. Sparks  
River Research Lab  
Illinois Natural History Survey  
Box 599  
Havana, IL 62264  
Telephone: (309) 543-3105  
(309) 543-3950

Geographic Coverage: See "Sites" above

Frequency of Collection: Six (6) times per year (tentative)

Period of Collection: 1982 (One (1) collection) - to current date

Data Type: Present - Paper documents  
Future - Magnetic tape (to date the format has not been developed)

Key Words: PRIMARY PRODUCTION, SECONDARY PRODUCTION, RESPIRATION,  
METABOLISM, PHOTOSYNTHESIS

Text: File consists of temperature (Celsius) and dissolved oxygen concentrations (mg/l) at 0.5-meter intervals from the surface to the bottom. Measurements are made either in the water column or in light and dark bottles suspended in the water column for a specified incubation period. Samples are taken frequently during 48-hour periods, in parallel with other types of samples, such as plankton (see other data abstracts, Large Rivers LTER). Data are used to compute gross and net photosynthesis and respiration. Plans are to measure photosynthesis available radiation (PAR), but the units of measurement are still under review, and currently available equipment limits the depth of measurement to 30 cm.

LTER DATA SET ABSTRACT

Title: Minnow Seine STATION data, 1982, Large Rivers LTER

Site: Illinois and Mississippi Rivers and. selected tributaries

Investigator: Kenneth S. Lubinski, Scott Jackson

Address: Illinois Natural History Survey  
Pool 26 River Research Lab  
R.R. 1, Box 221  
Grafton, IL 62037  
(618) 786-3317

Geographic Coverage: Pool 6 (Peoria) of the Illinois River and  
Pools 19, 26, and 27 of the Mississippi River

Frequency of Collection: Each station sampled annually

Period of Record: 1982

Data Type: Field data sheets and 5.5 inch floppy disks, single head,  
single side, soft sector, single density  
(for use with Apple II Plus microcomputer)

Geographic Referencing System (Location Variables): By river mile.  
The confluence of the Ohio and Mississippi Rivers is used as  
a reference point to begin numbering the river miles of the  
Upper Mississippi River. This point, at Cairo, IL, is river  
mile 0 and the numbers progress upstream.

The Illinois River miles begin at the confluence of the  
Illinois and Mississippi Rivers at Mississippi River mile 218.  
This point, at Grafton, IL, is river mile 0 and the numbers  
again progress upstream.

Key Words: ILLINOIS RIVER, MISSISSIPPI RIVER, FLOODPLAIN RIVERS,  
FISH HABITAT, WATER QUALITY

Text: This data file is composed of a variety of location, habitat,  
and water quality measurements collected at LTER minnow seining  
stations on the Illinois and Mississippi Rivers in 1982. Information  
is collected on the following parameters: date and time (military Central  
Standard Time) of sample collections; seining method used; location of  
sampling stations; length(m), width(m), depths(m), volume sampled (m cubed)  
and surface area sampled (m squared) of each seine haul; habitat type;  
substrate type (% of each component); and type of cover (presence or  
absence). Information was also collected on four physical

water quality parameters:

temperature (degrees C); dissolved oxygen (ppm); secchi disk visibility (cm); and velocity (m/s).

In addition to the Apple II Plus data disks, these data are being stored in the SIR data management system on the CYBER computer at the University of Illinois.

LTER DATA SET ABSTRACT

Title: Minnow Seine FISH data, 1982, Large Rivers LTER

Site: Illinois and Mississippi River and selected tributaries

Investigators: Kenneth S. Lubinski, Scott Jackson

Address: Illinois Natural History Survey  
Pool 26 River Research Lab  
R. R. 1, Box 221  
Grafton, IL 62037  
(618) 786-3317

Geographic Coverage: Pool 6 (Peoria) of the Illinois River and  
Pools 19, 26, and 27 of the Mississippi River

Frequency of Collection: Each station sampled annually

Period of Record: 1982

Data Type: Field data sheets and 5.5 inch floppy disks, single  
head, single side, soft sector, single density  
(for use with Apple II Plus microcomputer).

Geographic Referencing System (Location Variables): By river mile.  
The confluence of the Ohio and Mississippi Rivers is used  
as a reference point to begin numbering the river miles of the Upper  
Mississippi River. This point, at Cairo, IL, is river mile 0 and the  
numbers progress upstream.

The Illinois River miles begin at the confluence of the Illinois and  
Mississippi Rivers at Mississippi River mile 218. This point, at  
Grafton, IL, is river mile 0 and the numbers again progress upstream.

Key Words: ILLINOIS RIVER, MISSISSIPPI RIVER, FLOODPLAIN RIVERS,  
FISH COMMUNITY, FISH RELATIVE ABUNDANCE

Text: This data file is composed of fish measurements and observations  
collected at LTER minnow seining stations on the Illinois and Mississippi  
Rivers in 1982. The total length (cm) was recorded for each fish  
collected. A four letter species code was developed for each species  
collected along with a four digit comment code identifying a condition  
and its body location. These codes were recorded for each fish as  
necessary.

In addition to the Apple II Plus data disks, these data are being  
stored in the SIR data management system on the CYBER computer at  
the University of Illinois.

LTER DATA SET ABSTRACT

Title: Electrofishing STATION data, 1982, Large Rivers LTER

Site: Illinois and Mississippi Rivers and selected tributaries

Investigators: Kenneth S. Lubinski, Scott Jackson

Address: Illinois Natural History Survey  
Pool 26 River Research Lab  
R. R. 1, Box 221  
Grafton, IL 62037  
(618) 786-3317

Geographic Coverage: Pools 3 through 8 (Dresden through Alton) of the Illinois River and Pools 19, 20, 26, and 27 of the Mississippi River

Frequency of Collection: Each station sampled annually except main channel border stations on Pool 19 of the Mississippi River which were sampled biannually

Period of Record: 1982

Data Type: Field data sheets and 5.5 inch floppy disks, single head, single side, soft sector, single density (for use with Apple II Plus microcomputer)

Geographic Referencing System (Location Variables): By river mile. The confluence of the Ohio and Mississippi Rivers is used as a reference point to begin numbering the river miles of the Upper Mississippi River. This point, at Cairo, IL, is river mile 0 and the numbers progress upstream.

The Illinois River miles begin at the confluence of the Illinois and Mississippi Rivers at Mississippi River mile 218. This point, at Grafton, IL, is river mile 0 and the numbers again progress upstream.

Key Words: ILLINOIS RIVER, MISSISSIPPI RIVER, FLOODPLAIN RIVERS, FISH HABITAT, WATER QUALITY

Text: This data file is composed of a variety of location, habitat, and water quality measurements collected at LTER electrofishing stations on the Illinois and Mississippi Rivers in 1982. The parameters collected include: date and time (military Central Standard Time) of sample collection; number of minutes of electrofishing; electrofishing method used; location of sampling station; length (m), width(m),

depths(m), volume sampled(m cubed), and surface area sampled(m squared) for each run; habitat type; and type of cover (presence or absence). Three physical water quality parameters were also collected: temperature (degrees C); dissolved oxygen (ppm); and secchi disk visibility (cm).

In addition to the Apple II Plus data disks, these data are being stored in the SIR data management system on the CYBER computer at the University of Illinois.

LTER DATA SET ABSTRACT

Title: Electrofishing FISH data, 1982, Large Rivers LTER

Site: Illinois and Mississippi Rivers and selected tributaries

Investigators: Kenneth S. Lubinski, Scott Jackson

Address: Illinois Natural History Survey  
Pool 26 River Research Lab  
R. R. 1, Box 221  
Grafton, IL 62037  
(618) 786-3317

Geographic Coverage: Pools 3 through 8 (Dresden through Alton) of the Illinois River and Pools 19, 20, 26, and 27 of the Mississippi River

Frequency of Collection: Each station sampled annually except main channel border stations on Pool 19 of the Mississippi River which were sampled biannually

Period of Record: 1982

Data Type: Field data sheets and 5.5 inch floppy disks, single head, single side, soft sector, single density (for use with Apple II Plus microcomputer)

Geographic Referencing System (Location Variables): By river mile.

The confluence of the Ohio and Mississippi Rivers is used as a reference point to begin numbering the river miles of the Upper Mississippi River. This point, at Cairo, IL, is river mile 0 and the numbers progress upstream.

The Illinois River miles begin at the confluence of the Illinois and Mississippi Rivers at Mississippi River mile 218. This point, at Grafton, IL, is river mile 0 and the numbers again progress upstream.

Key Words: ILLINOIS RIVER, MISSISSIPPI RIVER, FLOODPLAIN RIVERS, FISH COMMUNITY, FISH RELATIVE ABUNDANCE

Text: This data file is composed of fish measurements and observations collected at LTER electrofishing stations on the Illinois and Mississippi Rivers in 1982. A four letter species code was developed for each species collected along with a four digit comment code identifying a condition and its body location. These codes were recorded for each fish as necessary. The total length (cm) and weight (lbs) of each fish was

also recorded. In addition, the depth (cm) of each carp collected was noted. Scales were taken from largemouth bass and carp for aging purposes and this too was noted.

In addition to the Apple II Plus data disks, these data are being stored in the SIR data management system at the University of Illinois.

LTER DATA SET ABSTRACT

Title: Fish names and codes, Large Rivers LTER

Site: N/A

Investigators: Kenneth S. Lubinski, Scott Jackson

Address: Illinois Natural History Survey  
Pool 26 River Research Lab  
R. R. 1, Box 221  
Grafton, IL 62037  
(618) 786-3317

Geographic Coverage: The State of Illinois

Period of Record: N/A

Data Type: 5.5 inch floppy disk, single head, single side,  
soft sector, single density (for use with Apple II  
Plus microcomputer)

Geographic Referencing System (Location Variables): N/A

Key Words: FISH NAMES, FISH CODES

Text: This data file is composed of the scientific and common names of all of the fish species recorded for Illinois. In addition, a nine digit Illinois Natural History Survey code, an eleven digit Biostoret code and a four letter species code are present for most species.

In addition to the Apple II Plus data disks, these data are being stored in the SIR data management system on the CYBER computer at the University of Illinois.

Notes: All variables except the Biostoret code are being stored on the CYBER computer at the University of Illinois.

LTER DATA SET ABSTRACT

Title: Decomposition of Sago Pondweed Pool 19, Mississippi River

Site: Pool 19, Mississippi River

Investigators: Stephanie J. Swecker, Kenneth S. Lubinski

Address: Illinois Natural History Survey  
Pool 26 River Research Lab  
Grafton, Illinois 62037  
(618) 786-3317

Geographic Coverage: Mississippi River, Pool 19

Frequency of Collection: Duration of 2.3 months. Samples collected  
on 2nd, 4th, 12th, 21st, 32nd, and 68th days.

Period of Record: September 9 - November 12, 1982

Data Type: Data sheets and 5.5 inch floppy disks, single head,  
single side, soft sector, single density (for use with  
Apple II Plus microcomputer)

Geographic Referencing System (Location Variables): Mississippi  
River Mile 379.6

Key Words: DECOMPOSITION, MISSISSIPPI RIVER, POOL 19, SAGO PONDWEED,  
LITTERBAGS, PLANT LITTER

Text: This data file is composed of weight measurements on decomposed samples of Sago Pondweed (*Potamogeton pectinatus*). Thirty-six litter bags of Sago (18 just below the surface, 18 just above the river bottom) were submerged in the Mississippi River. Six bags were collected per sampling day on days 2, 4, 12, 21, 32, 68. Weight measurements recorded in grams were: original fresh weight of sample (before submergence in river), fresh weight 12 hours after removal from river, dry weight, subsample dry weight, subsample ash weight, subsample ash-free weight, ash-free weight of the original sample, % fresh weight loss, % daily fresh weight loss.

In addition to the Apple II Plus data disks, these data are being stored in the SIR data management system on the Cyber computer at the University of Illinois.

LTER DATA SET ABSTRACT

Title: Float Study of Water Currents at Montrose Flats

Site: Mississippi River Mile 374.0 to 375.5

Investigator: J. Rodger Adams

Address: Illinois State Water Survey  
Box 5050, Station A  
Champaign, IL 61820  
Phone: (217) 333-4728

Geographic coverage: Mississippi River between Nauvoo, Illinois and  
Montrose, IA

Frequency of Collection: One-time study

Period of Record: October 5 and 6, 1982

Data Type: Paper notes, location map, disk file

Geographic Reference:

Arbitrary coordinates from "Montrose Harbor" survey site which has coordinates 10000 feet North and 10000 feet East. That survey site is 5150 feet East, 1250 feet South of the NW corner section 10, R5W, T66N, Lee County, Iowa. Latitude 40° 32' 02"N, longitude 91° 24' 52" W.

Key Words: MISSISSIPPI RIVER, WATER VELOCITY, CIRCULATION PATTERNS

Text:

Shoreline coordinates for the Iowa and Illinois shores are given in a separate file. Four series with 5 to 9 data points for each of the 3 or 4 floats were run. The raw data are in polar coordinates from one survey station. Reduced data are presented in x-y or east-west coordinates with the survey site on the Iowa shore at Montrose Harbor given the arbitrary coordinates of 10000 feet east, 10000 feet north. All angles were measured clockwise from the baseline between the survey sites, at Montrose Harbor and Nauvoo Point. All distances and x-y coordinates are in feet.

LTER DATA SET ABSTRACT

Title: Suspended Sediment Concentration Data

Site: Pool 19, Mississippi River

Investigator: J. Rodger Adams

Address: Illinois State Water Survey  
Box 5050, Station A  
Champaign, IL 61820  
Phone: (217) 333-4728

Geographic Coverage: Mississippi River from L&D 19 to L&D 18  
and tributary drainage area in Illinois and Iowa

Frequency of Collection: Weekly, monthly

Period of Record: March 1982 to present

Data Type: Paper notes and worksheets, disk files

Geographic Referencing System: For each site:  
County, state, township, range, section, distances  
from specified section corner, and latitude and longitude.

Key Words: SUSPENDED SEDIMENTS, SEDIMENT LOAD, CONCENTRATION,  
SEDIMENT TRANSPORT, MISSISSIPPI RIVER

Text:

Suspended sediment samples are collected weekly from tributaries to Pool 19, Mississippi River. A total of 27 streams have been sampled at least once. Many small tributaries are frequently too shallow for sampling or related velocity measurements. Such conditions are noted in the field logs which are part of the paper documentation. No more than 7 of these will be sampled weekly throughout the project. The remainder will be sampled only during years of intensive sampling on Pool 19.

About once per month several samples are collected across the stream channel and the discharge is also measured. The results are given as suspended sediment concentration in parts per million (ppm) by weight. Velocity is in feet per second and discharge is in cubic feet per second. Both of these are in paper form.

During the intensive sampling years (1982, 1985, etc.) suspended sediment samples are also collected monthly below Lock and Dam 18 and 19. There are always several samples across the channel and the concentration data are presented in the same way as for the tributaries.

LTER DATA SET ABSTRACT

Title: Benthos - Rock Basket Data, 1981, Large River LTER

Site: Mississippi River (Pools 19 and 26) and Illinois River (Peoria Lake)

Investigator: Richard V. Anderson

Address: Department of Biological Sciences  
Western Illinois University  
Macomb, IL 61455  
(309) 298-1553

Geographic Coverage: Mississippi River from Lock and Dam 19 (Mississippi River mile 364.5) to just below Lock and Dam 18 (Mississippi River mile 410.5).

Period of Record: Summer and fall 1982

Data Type: Field data sheets and 5.5 inch floppy disks, single head, single side, soft sector, single density (for use with Apple II Plus microcomputer)

Geographic Referencing System (Location Variables): By river mile. The confluence of the Ohio and Mississippi Rivers is used as a reference point to begin numbering the river miles of the Upper Mississippi River. This point, at Cairo, IL, is river mile 0 and the numbers progress upstream.

Key Words: MISSISSIPPI RIVER; POOL 19; ROCK BASKETS; MACROINVERTEBRATE DENSITY

Text: This data file is composed of macroinvertebrate densities collected from sampling stations used during LTER artificial substrate sampling on the Mississippi River. Higher taxonomic levels are indicated by a 2 letter code for each taxonomic level. Genus species, when identified to that level, is written out. For each species the number collected in the sample is listed. When determined, weight (g) and head capsule or total length (mm) are also listed. Samples were obtained using conical baskets with from 6 to 10 geodes with a total surface area of approximately 0.20 m<sup>2</sup>. An experiment code is also listed and associated habitat and sampling data are contained in the sample station data files arranged by experiment.

In addition to the Apple II Plus data disks, these data are being stored in the SIR data management system on the CYBER computer at the University of Illinois.

LTER DATA SET ABSTRACT

Title: Benthos - Ponar Data, 1982, Large River LTER

Site: Mississippi River (Pools 19 and 26) and Illinois River (Peoria Lake)

Investigator: Richard V. Anderson, David Day, David Pillard, James Engman

Address: Department of Biological Sciences  
Western Illinois University  
Macomb, IL 61455  
(309) 298-1553

Geographic Coverage: Mississippi River from just below Lock and Dam 19 (Mississippi River mile 363) to just above Lock and Dam 18 (Mississippi River mile 411) and from just below old Lock and Dam 26 (Mississippi River mile 202) to Lock and Dam 25 (Mississippi River mile 241.5) and to LaGrange Lock and Dam (Illinois River mile 80.2). Illinois River, Peoria Lake from Peoria Lock and Dam (Illinois River mile 157.8) to Starved Rock Lock and Dam (Illinois River mile 231).

Period of Record: Spring, summer, fall 1982 and winter 1983

Data Type: Field data sheets and 5.5 inch floppy disks, single head, single side, soft sector, single density (for use with Apple II Plus microcomputer)

Geographic Referencing System (Location Variables): By river mile. The confluence of the Ohio and Mississippi Rivers is used as a reference point to begin numbering the river miles of the Upper Mississippi River. This point, at Cairo, IL, is river mile 0 and the numbers progress upstream.

The Illinois River miles begin at the confluence of the Illinois and Mississippi Rivers at Mississippi River miles 218. This point, at Grafton, IL, is river mile 0 and the numbers again progress upstream.

Key Words: MISSISSIPPI RIVER; ILLINOIS RIVER; BENTHIC MACROINVERTEBRATE DENSITY; MEIOFAUNA DENSITY

Text: This data file is composed of macroinvertebrate and meiofauna densities collected from sampling stations used during LTER intense samples, maintenance samples and intensive sampling on the Mississippi and Illinois Rivers. Higher taxonomic levels are indicated by 2 letter code for each taxonomic level. Genus species, when identified to that level, is written out. For each species the number collected in the sample is listed. When determined, weight (g) and head capsule or total length (mm) are also

listed. Samples were obtained with a 0.09 m<sup>2</sup> ponar dredge. An experiment code is also listed and associated habitat and sampling data is contained in the sample station data files arranged by experiment.

In addition to the Apple II Plus data disks, these data are being stored in the SIR data management system on the CYBER computer at the University of Illinois.

LTER DATA SET ABSTRACT

Title: Algal Names and Codes, Large River LTER

Site: N/A

Investigator: James Engman, Richard V. Anderson

Address: Department of Biological Sciences  
Western Illinois University  
Macomb, IL 61455  
(309) 298-1553

Geographic Coverage: Illinois and Upper Mississippi Rivers

Period of Record: N/A

Data Type: 5.5 inch floppy disk, single head, single side, soft sector,  
single density (for use with Apple II Plus microcomputer)

Geographic Referencing System (Location Variables): N/A

Key Words: ALGAL NAMES; ALGAL CODES

Text: This data file is composed of the scientific names for the higher taxonomic levels in phycology and the two letter code used for each. In addition, a running list of the full genus species name for algae collected in the Illinois and Mississippi Rivers with river mile locations of collections is recorded.

In addition to the Apple II Plus data disks, these data are being stored in the SIR data management system on the CYBER computer at the University of Illinois.

LTER DATA SET ABSTRACT

Title: Non-vertebrate Maintenance Sampling, 1982, Large River LTER  
Site: Mississippi River (Pool 19 and 26) and Illinois River (Peoria Lake)  
Investigator: Richard V. Anderson, David Day, David Pillard, James Engman  
Address: Department of Biological Sciences  
Western Illinois University  
Macomb, IL 61455  
(309) 298-1553

Geographic Coverage: Pool 19, Mississippi River from Lock and Dam 19 (Keokuk, Iowa) to Lock and Dam 18 (approximately 7 river miles above Burlington, Iowa). Pool 26, Mississippi River, from the new Lock and Dam 26 construction site upstream to Lock and Dam 24 on the Mississippi River and the LaGrange Lock and Dam on the Illinois River. Peoria Lake on the Illinois River including the entire pool.

Frequency of Collection: Each station sampled seasonally

Period of Record: 1982

Data Type: Field data sheets and 5.5 inch floppy disks, single head, single side, soft sector, single density (for use with Apple II Plus microcomputer)

Geographic Referencing System (Location Variables): By river mile. The confluence of the Ohio and Mississippi Rivers is used as a reference point to begin numbering river miles of the Upper Mississippi River. This point, at Cairo, IL, is river mile 0 and the numbers progress upstream. The Illinois River miles begin at the confluence of the Illinois and Mississippi River mile 218. This point, at Grafton, IL, is river mile 0 and the numbers again progress upstream.

Key Words: MISSISSIPPI RIVER; ILLINOIS RIVER; POOL 19; POOL 26;  
PEORIA LAKE; NON-VERTEBRATE HABITAT

Text: This data file is composed of all the sampling location, habitat and water quality measurements collected at each sampling station at each sampling date and time. The data set is from the annual maintenance sampling done at each of the studied navigation pools: Pool 19 and 26, Mississippi River, and Peoria Lake, Illinois River, during spring, summer and fall 1982. The parameters include: date and time (military central standard time) of sample collections; sample methods used (type of organism collected and sample device); location of sample stations

(river mile, distance from landmarks or shore); description of sampling stations (water depth (cm), habitat type, current velocity, bottom substrate, water temperature °C, dissolved oxygen ppm, pH, turbidity NTU).

In addition to the Apple II Plus data disks, these data are being stored in the SIR data management system on the CYBER computer at the University of Illinois.

LTER DATA SET ABSTRACT

Title: Intensive Sampling Stations, 1982-1985, Upper Mississippi River,  
Large River LTER

Site: Mississippi River, Pool 19 and 26; Illinois River, Peoria Lake

Investigator: Richard V. Anderson, David Day, David Pillard, James Engman

Address: Department of Biological Sciences  
Western Illinois University  
Macomb, IL 61455  
(309) 298-1553

Geographic Coverage: Pool 19, Mississippi River from Lock and Dam 19  
(Keokuk, Iowa) to Lock and Dam 18 (approximately 7  
river miles above Burlington, Iowa). Pool 26,  
Mississippi River from the new Lock and Dam 26  
construction site upstream to Lock and Dam 24 on the  
Mississippi River and the LaGrange Lock and Dam on  
the Illinois River including the entire navigation pool.

Frequency of Collection: Seasonal to annual sampling at selected locations

Period of Record: 1982 - 1985

Data Type: Field data sheets and 5.5 inch floppy disks, single head,  
single side, soft sector, single density (for use with  
Apple II Plus microcomputer)

Geographic Referencing System (Location Variables): By river mile. The  
confluence of the Ohio and Mississippi Rivers is used as a reference  
point to begin numbering river miles of the Upper Mississippi River.  
This point, at Cairo, IL, is river mile 0 and the numbers progress  
upstream. The Illinois River miles begin at the confluence of the  
Illinois and Mississippi River mile 218. This point, at Grafton, IL,  
is river mile 0 and the numbers again progress upstream.

Key Words: MISSISSIPPI RIVER; POOL 19; POOL 26; PEORIA LAKE

Text: This data file is composed of all the sampling locations and habitat  
measurements collected at each sampling station on each sampling date and  
time. The data set is from intensive sampling of functional components  
of the aquatic ecosystem on Pools 19 and 26, Mississippi River and Peoria  
Lake, Illinois River. Sampling dates depend on events (flooding, drought,  
density of plankton). The parameters include: date and time (military  
central standard time) of sample collections; sampling methods used; type  
of biological or chemical data collected; and location of sampling stations

(river mile, distance from landmarks or shore).

In addition to the Apple II Plus data disks, these data are being stored in the SIR data management system on the CYBER computer at the University of Illinois.

LTER DATA SET ABSTRACT

Title: Benthic Community Shift Sampling Stations, Pool 19, Mississippi River, 1982, Large River LTER

Site: Mississippi River, Pool 19

Investigator: Richard V. Anderson, James Engman

Address: Department of Biological Sciences  
Western Illinois University  
Macomb, IL 61455  
(309) 298-1553

Geographic Coverage: Pool 19, Mississippi River from Lock and Dam 19 (Keokuk, Iowa) to Lock and Dam 18 (approximately 7 river miles above Burlington, Iowa)

Frequency of Collection: Each station sampled annually

Period of Record: 1982

Data Type: Field data sheets and 5.5 inch floppy disks, single head, single side, soft sector, single density (for use with Apple II Plus microcomputer)

Geographic Referencing System (Location Variables): By river mile. The confluence of the Ohio and Mississippi Rivers is used as a reference point to begin numbering river miles of the Upper Mississippi River. This point, at Cairo, IL, is river mile 0 and the numbers progress upstream. Pool 19 starts at river mile 364.5.

Key Words: MISSISSIPPI RIVER; POOL 19: BENTHIC COMMUNITY

Text: This data file is composed of all the sampling locations and habitat descriptions for each sampling station at each sampling date and time. The data set is from the artificial substrate samples used to evaluate changes in benthic community composition in Pool 19, Mississippi River during the summer 1982. The parameters include: date and time (military central standard time) of sample collections; sampling methods used including type of organisms collected and sampling device; location of sampling station (river mile, distance from landmarks or shore); description of sample station in terms of habitat type, depth (cm), and current velocity.

In addition to the Apple II Plus data disks, these data are being stored in the SIR data management system on the CYBER computer at the University of Illinois.

LTER DATA SET ABSTRACT

Title: Clam Distribution Sampling Stations, Pool 19, 1982, Large River LTER

Site: Mississippi River, Pool 19

Investigator: Richard V. Anderson, David Day

Address: Department of Biological Sciences  
Western Illinois University  
Macomb, IL 61455  
(309) 298-1553

Geographic Coverage: Pool 19, Mississippi River from Lock and Dam 19 (Keokuk, Iowa) to Lock and Dam 18 (approximately 7 river miles above Burlington, Iowa)

Frequency of Collection: 4 sample periods in summer as water level permits

Period of Record: 1982

Data Type: Field data sheets and 5.5 inch floppy disks, single head, single side, soft sector, single density (for use with Apple II Plus microcomputer)

Geographic Referencing System (Location Variables): By river mile. The confluence of the Ohio and Mississippi Rivers is used as a reference point to begin numbering river miles of the Upper Mississippi River. This point, at Cairo, IL, is river mile 0 and the numbers progress upstream. Pool 19 starts at river mile 364.5.

Key Words: MISSISSIPPI RIVER; POOL 19; MOLLUSKS; DISTRIBUTION

Text: This data file is composed of all the sampling locations and habitat descriptions for each sampling station at each sampling date and time. The data set is from a study of clam distribution or dispersion in shallow channel border areas of Pool 19, Mississippi River. Samples were collected at two locations during the summer of 1982. The parameters include: date and time (military central standard time) of sample collections; sample method used; location of sample stations (river mile, distance from landmarks or shore) and habitat description of sampling station.

In addition to the Apple II Plus data disks, these data are being stored in the SIR data management system on the CYBER computer at the University of Illinois.

LTER DATA SET ABSTRACT

Title: Zooplankton-Drift Filter-Feeder Effect Stations, 1982, Large River LTER

Site: Mississippi River, Lock and Dam 19, Lock and Dam 18

Investigator: David Pillard, Richard V. Anderson

Address: Department of Biological Sciences  
Western Illinois University  
Macomb, IL 61455  
(309) 298-1553

Geographic Coverage: Mississippi River above and below Lock and Dam 19 (Keokuk, Iowa) and Lock and Dam 18 (approximately 7 river miles above Burlington, Iowa)

Frequency of Collection: Two dates in 1982 during low flow periods

Period of Record: 1982

Data Type: Field data sheets and 5.5 inch floppy disks, single head, single side, soft sector, single density (for use with Apple II Plus microcomputer)

Geographic Referencing System (Location Variables): By river mile. The confluence of the Ohio and Mississippi Rivers is used as a reference point to begin numbering river miles of the Upper Mississippi River. This point, at Cairo, IL, is river mile 0 and the numbers progress upstream. Pool 19 starts at river mile 364.5.

Key Words: MISSISSIPPI RIVER; LOCK AND DAM 19; LOCK AND DAM 18; ZOOPLANKTON; DRIFT; GRAZER EFFECTS

Text: This data file is composed of all the sampling locations and habitat measurements collected at each sampling station on each sampling date and time. The data set is from the experiment to test the effects of filtering collectors on zooplankton and drift populations. Sample stations were above and below Lock and Dam 18 and 19 with samples taken on 2 dates in late summer and early fall during low flow periods. The parameter listed include: date and time (military central standard time) of sample collections; sample method used (type of drift nets and flow meters); location of sampling stations (river mile, distance from landmark or shore); water and sample depth (cm); and current velocity.

In addition to the Apple II Plus data disks, these data are being stored in the SIR data management system on the CYBER computer at the University of Illinois.

LTER DATA SET ABSTRACT

Title: Pool 19 Intense Sampling data, 1982, Non-vertebrates Large River LTER

Site: Mississippi River, Pool 19

Investigator: Richard V. Anderson, David Day, David Pillard, James Engman

Address: Department of Biological Sciences  
Western Illinois University  
Macomb, IL 61455  
(309) 298-1553

Geographic Coverage: Pool 19, Mississippi River from Lock and Dam 19  
(Keokuk, Iowa) to Lock and Dam 18 (approximately 7  
river miles above Burlington, Iowa).

Frequency of Collection: Monthly when possible but not less than quarterly

Period of Record: 1982

Data Type: Field data sheets and 5.5 inch floppy disks, single head,  
single side, soft sector, single density (for use with  
Apple II Plus microcomputer)

Geographic Referencing System (Location Variables): By river mile. The  
confluence of the Ohio and Mississippi Rivers is used as a reference  
point to begin numbering river miles of the Upper Mississippi River.  
This point, at Cairo, IL, is river mile 0 and the numbers progress  
upstream. Pool 19 starts at river mile 364.5.

Key Words: MISSISSIPPI RIVER; POOL 19; NON-VERTEBRATE HABITAT

Text: This data file is composed of all the sampling locations, habitat  
and water quality measurements collected at each sampling station at  
each sampling date and time. The data set is from the intense sampling  
effort on Pool 19, Mississippi River during spring, summer, fall 1982 and  
winter 1983. The parameters include: date and time (military central  
standard time) of sample collections; sample methods used (type organism,  
collect and sample device); location of sampling stations (river mile,  
distance from landmarks or shore); description of sampling stations  
(water depth cm, habitat type, current velocity, bottom substrate,  
water temperature 0C, dissolved oxygen ppm, pH, turbidity NTU).

In addition to the Apple II Plus data disks, these data are being  
stored in the SIR data management system on the CYBER computer at the  
University of Illinois.

LTER DATA SET ABSTRACT

Title: Bongo Net Zooplankton-Drift Pump Data, 1982, Large River LTER

Site: Mississippi River (Pools 19 and 26) and Illinois River (Peoria Lake)

Investigator: David Pillard, Richard V. Anderson, David Day, James Engman

Address: Department of Biological Sciences  
Western Illinois University  
Macomb, IL 61455  
(309)298-1553

Geographic Coverage: Mississippi River from just below Lock and Dam 19 (Mississippi River mile 363) to just above Lock and Dam 18 (Mississippi River mile 411) and from just below old Lock and Dam 26 (Mississippi River mile 202) to Lock and Dam 25 (Mississippi River mile 241.5) and to LaGrange Lock and Dam (Illinois River mile 80.2). Illinois River, Peoria Lake from Peoria Lock and Dam (Illinois River mile 157.8) to Starved Rock Lock and Dam (Illinois River mile 231).

Period of Record: Spring, summer, fall 1982 and winter 1983

Data Type: Field data sheets and 5.5 inch floppy disks, single head, single side, soft sector, single density (for use with Apple II Plus microcomputer)

Geographic Referencing System (Location Variables): By river mile. The confluence of the Ohio and Mississippi Rivers is used as a reference point to begin numbering the river miles of the Upper Mississippi River. This point, at Cairo, IL, is river mile 0 and the numbers progress upstream.

The Illinois River miles begin at the confluence of the Illinois and Mississippi Rivers at Mississippi River mile 218. This point, at Grafton, IL, is river mile 0 and the numbers again progress upstream.

Key Words: MISSISSIPPI RIVER; ILLINOIS RIVER; ZOOPLANKTON DENSITY;  
DRIFT DENSITY

Text: This data file is composed of zooplankton and drift macroinvertebrate densities collected from sampling stations used during LTER intense samples, maintenance samples, filter feeder effects and intensive sampling on the Mississippi and Illinois Rivers. Higher taxonomic levels are indicated by a 2 letter code for each taxonomic level. Genus species, when identified to that level, is written out. For each species the number collected in the sample is listed. When determined, weight (g) and head capsule or total length (mm) are also listed. Samples were taken in shallow areas with

little current and obtained by pumping water through the nets. An experiment code is also listed and associated habitat and sampling data are contained in the sample station data files arranged by experiment.

In addition to the Apple II Plus data disks, these data are being stored in the SIR data management system on the CYBER computer at the University of Illinois.

LTER DATA SET ABSTRACT

Title: Bongo Net Zooplankton-Drift Data, 1982, Large River LTER

Site: Mississippi River (Pools 19 and 26) and Illinois River (Peoria Lake)

Investigators: David Pillard, Richard V. Anderson, David Day, James Engman

Address: Department of Biological Sciences  
Western Illinois University  
Macomb, IL, 61455  
(309) 298-1553

Geographic Coverage: Mississippi River from just below Lock and Dam 19 (Mississippi River mile 363) to just above Lock and Dam 18 (Mississippi River mile 411) and from just below old Lock and Dam 26 (Mississippi River mile 202) to Lock and Dam 25 (Mississippi River mile 241.5) and to LaGrange Lock and Dam (Illinois River mile 80.2). Illinois, Peoria Lake from Peoria Lock and Dam (Illinois River mile 157.8) to Starved Rock Lock and Dam (Illinois River mile 231).

Period of Record: Spring, summer, fall 1982 and winter 1983

Data Type: Field data sheets and 5.5 inch floppy disks, single head, single side, soft sector, single density (for use with Apple II Plus microcomputer)

Geographic Referencing System (Location Variables): By river mile. The confluence of the Ohio and Mississippi Rivers is used as a reference point to begin numbering the river miles of the Upper Mississippi River. This point, at Cairo, IL, is river mile 0 and the numbers progress upstream.

The Illinois River miles begin at the confluence of the Illinois and Mississippi Rivers at Mississippi River mile 218. This point, at Grafton, IL, is river mile 0 and the numbers again progress upstream.

Key Words: MISSISSIPPI RIVER; ILLINOIS RIVER; ZOOPLANKTON DENSITY;  
DRIFT DENSITY

Text: This data file is composed of zooplankton and drift macroinvertebrate densities collected from sampling stations used during LTER samples, maintenance samples and filter feeder effects on the Mississippi and Illinois Rivers. Higher taxonomic levels are indicated by a 2 letter code for each taxonomic level. Genus species, when identified to that level, is written out. For each species the number collected in the sample is listed. When determined, weight (g) and head capsule or total length (mm)

are also listed. Stationary samples were taken with the bongo nets in the current. An experiment code is also listed and associated habitat and sampling data are contained in the sample station data files arranged by experiment.

In addition to the Apple II Plus data disks, these data are being stored in the SIR data management system on the CYBER computer at the University of Illinois.

LTER DATA SET ABSTRACT

Title: Invertebrate Names and Codes, Large River LTER

Site: N/A

Investigator: Richard V. Anderson

Address: Department of Biological Sciences  
Western Illinois University  
Macomb, IL 61455  
(309) 298-1553

Geographic Coverage: Illinois and Upper Mississippi Rivers

Period of Record: N/A

Data Type: 5.5 inch floppy disk, single head, single side, soft sector,  
single density (for use with Apple II Plus microcomputer)

Geographic Referencing System (Location Variables): N/A

Key Words: INVERTEBRATE NAMES; INVERTEBRATE CODES

Text: This data file is composed of the scientific names for the higher taxonomic levels in invertebrates and the two letter code used for each. In addition, a running list of the full genus species names for invertebrates collected in the Illinois and Mississippi Rivers with river mile locations of collection is recorded.

In addition to the Apple II Plus data disks, these data are being stored in the SIR data management system on the CYBER computer at the University of Illinois.

LTER DATA SET ABSTRACT

Title: Bongo Net Zooplankton-Drift Towed Data, 1982, Large River LTER

Site: Mississippi River (Pools 19 and 26) and Illinois River (Peoria Lake)

Investigator: David Pillard, Richard V. Anderson, David Day, James Engman

Address: Department of Biological Sciences  
Western Illinois University  
Macomb, IL 61455  
(309) 298-1553

Geographic Coverage: Mississippi River from just below Lock and Dam 19 (Mississippi River mile 363) to just above Lock and Dam 18 (Mississippi River mile 411) and from just below old Lock and Dam 26 (Mississippi River mile 202) to Lock and Dam 25 (Mississippi River mile 241.5) and to LaGrange Lock and Dam (Illinois River mile 80.2). Illinois River, Peoria Lake from Peoria Lock and Dam (Illinois River mile 157.8) to Starved Rock Lock and Dam (Illinois River mile 231).

Period of Record: Spring, summer, fall 1982 and winter 1983

Data Type: Field data sheets and 5.5 inch floppy disks, single head, single side, soft sector, single density (for use with Apple II Plus microcomputer)

Geographic Referencing System (Location Variables): By river mile. The confluence of the Ohio and Mississippi Rivers is used as a reference point to begin numbering the river miles of the Upper Mississippi River. This point, at Cairo, IL, is river mile 0 and the numbers progress upstream.

The Illinois River miles begin at the confluence of the Illinois and Mississippi Rivers at Mississippi River mile 218. This point, at Grafton, IL, is river mile 0 and the numbers again progress upstream.

Key Words: MISSISSIPPI RIVER; ILLINOIS RIVER; ZOOPLANKTON DENSITY;  
DRIFT DENSITY

Text: This data file is composed of zooplankton and drift macroinvertebrate densities collected from sampling stations used during LTER intense samples, maintenance samples and filter feeder effects on the Mississippi and Illinois Rivers. Higher taxonomic levels are indicated by a 2 letter code for each taxonomic level. Genus species, when identified to that level, is written out. For each species the number collected in the sample is listed. When determined, weight (g) and head capsule or total length (mm) are also

listed. Samples were taken in areas of little water and were obtained by towing the net with a boat. An experiment code is also listed and associated habitat and sampling data is contained in the sample station data files arranged by experiment.

In addition to the Apple II Plus data disks, these data are being stored in the SIR data management system on the CYBER computer at the University of Illinois.

LTER DATA SET ABSTRACT

Title: Van Dorn Bottle Horizontal Phytoplankton Data, 1982, Large River LTER

Site: Mississippi River (Pools 19 and 26) and Illinois River (Peoria Lake)

Investigator: James Engman, Richard V. Anderson, David Day, David Pillard

Address: Department of Biological Sciences  
Western Illinois University  
Macomb, IL 61455  
(309) 298-1553

Geographic Coverage: Mississippi River from just below Lock and Dam 19 (Mississippi River mile 363) to just above Lock and Dam 18 (Mississippi River mile 411) and from just below old Lock and Dam 26 (Mississippi River mile 202) to Lock and Dam 25 (Mississippi River mile 241.5) and to LaGrange Lock and Dam (Illinois River mile 80.2). Illinois River, Peoria Lake from Peoria Lock and Dam (Illinois River mile 157.8) to Starved Rock Lock and Dam (Illinois River mile 231).

Period of Record: Spring, summer, fall 1982 and winter 1983

Data Type: Field data sheets and 5.5 inch floppy disks, single head, single side, soft sector, single density (for use with Apple II Plus microcomputer)

Geographic Referencing System (Location Variables): By river mile. The confluence of the Ohio and Mississippi Rivers is used as a reference point to begin numbering the river miles of the Upper Mississippi River. This point, at Cairo, IL, is river mile 0 and the numbers progress upstream.

The Illinois River miles begin at the confluence of the Illinois and Mississippi Rivers at Mississippi River mile 218. This point, at Grafton, IL, is river mile 0 and the numbers again progress upstream.

Key Words: MISSISSIPPI RIVER; ILLINOIS RIVER; PHYTOPLANKTON DENSITY

Text: This data file is composed of phytoplankton densities collected from sampling stations used during LTER intense samples, maintenance samples and intensive sampling on the Mississippi and Illinois Rivers. Higher taxonomic levels are indicated by a 2 letter code for each taxonomic level. Genus species, when identified to that level, is written out. For each species the number collected in the sample is listed. When determined, weight (g) and head capsule or total length (mm) are also listed. Samples were obtained with a Van Dorn bottle held horizontally in the water column.

An experiment code is also listed and associated habitat and sampling data are contained in the sample station data files arranged by experiment.

In addition to the Apple II Plus data disks, these data are being stored in the SIR data management system on the CYBER computer at the University of Illinois.

LTER DATA SET ABSTRACT

Title: Van Dorn Bottle Vertical Phytoplankton Data, 1982, Large River LTER

Site: Mississippi River (Pools 19 and 26) and Illinois River (Peoria Lake)

Investigator: James Engman, Richard V. Anderson, David Day, David Pillard

Address: Department of Biological Sciences  
Western Illinois University  
Macomb, IL 61455  
(309) 298-1553

Geographic Coverage: Mississippi River from just below Lock and Dam 19 (Mississippi River mile 363) to just above Lock and Dam 18 (Mississippi River mile 411) and from just below old Lock and Dam 26 (Mississippi River mile 202) to Lock and Dam 25 (Mississippi River mile 241.5) and to LaGrange Lock and Dam (Illinois River mile 80.2). Illinois River, Peoria Lake from Peoria Lock and Dam (Illinois River mile 157.8) to Starved Rock Lock and Dam (Illinois River mile 231).

Period of Record: Spring, summer, fall 1982 and winter 1983

Data Type: Field data sheets and 5.5 inch floppy disks, single head, single side, soft sector, single density (for use with Apple II Plus microcomputer)

Geographic Referencing System (Location Variables): By river mile. The confluence of the Ohio and Mississippi Rivers is used as a reference point to begin numbering the river miles of the Upper Mississippi River. This point, at Cairo, IL, is river mile 0 and the numbers progress upstream.

The Illinois River miles begin at the confluence of the Illinois and Mississippi Rivers at Mississippi River mile 218. This point, at Grafton, IL, is river mile 0 and the numbers again progress upstream.

Key Words: MISSISSIPPI RIVER; ILLINOIS RIVER; PHYTOPLANKTON DENSITY

Text: This data file is composed of phytoplankton densities collected from sampling stations used during LTER intense samples, maintenance samples and intensive sampling on the Mississippi and Illinois Rivers. Higher taxonomic levels are indicated by a 2 letter code for each taxonomic level. Genus species, when identified to that level, is written out. For each species the number collected in the sample is listed. When determined, weight (g) and head capsule or total length (mm) are also listed. Samples were obtained with a Van Dorn sampling bottle held vertically in the water column.

An experiment code is also listed and associated habitat and sampling data are contained in the sample station data files arranged by experiment.

In addition to the Apple II Plus data disks, these data are being stored in the SIR data management system on the CYBER computer at the University of Illinois.

LTER DATA SET ABSTRACT

Title: Glass Slide - Periphyton Data, 1982, Large River LTER

Site: Mississippi River (Pools 19 and 26) and Illinois River (Peoria Lake)

Investigator: James Engman, Richard V. Anderson, David Day, David Pillard

Address: Department of Biological Sciences  
Western Illinois University  
Macomb, IL 61455  
(309) 298-1553

Geographic Coverage: Mississippi River from Lock and Dam 19 (Mississippi River mile 364.5) to just below Lock and Dam 18 (Mississippi River mile 410.5)

Period of Record: Summer and fall 1982

Data Type: Field data sheets and 5.5 inch floppy disks, single head, single side, soft sector, single density (for use with Apple II Plus microcomputer)

Geographic Referencing System (Location Variables): By river mile. The confluence of the Ohio and Mississippi Rivers is used as a reference point to begin numbering the river miles of the Upper Mississippi River. This point, at Cairo, IL, is river mile 0 and the numbers progress upstream.

Key Words: MISSISSIPPI RIVER; POOL 19; PERIPHYTON DENSITY

Text: This data file is composed of periphyton densities collected from sampling stations used during LTER artificial substrate sampling on the Mississippi River. Higher taxonomic levels are indicated by a 2 letter code for each taxonomic level. Genus species, when identified to that level, is written out. For each species the number collected in the sample is listed. When determined, weight (g) and head capsule or total length (mm) are also listed. Samples were obtained from glass slides held at the surface of the water column. An experiment code is also listed and associated habitat and sampling data were contained in the sample station data files arranged by experiment.

In addition to the Apple II Plus data disks, these data are being stored in the SIR data management system on the CYBER computer at the University of Illinois.

LTER DATA SET ABSTRACT

Title: Benthos - Multiplate Data, 1982, Large River LTER

Site: Mississippi River (Pools 19 and 26) and Illinois River (Peoria Lake)

Investigator: Richard V. Anderson

Address: Department of Biological Sciences  
Western Illinois University  
Macomb, IL 61455  
(309) 298-1553

Geographic Coverage: Mississippi River from Lock and Dam 19 (Mississippi River mile 364.5) to just below Lock and Dam 18 (Mississippi River mile 410.5)

Period of Record: Summer and fall 1982

Data Type: Field data sheets and 5.5 inch floppy disks, single head, single side, soft sector, single density (for use with Apple II Plus microcomputer)

Geographic Referencing System (Location Variables): By river mile. The confluence of the Ohio and Mississippi Rivers is used as a reference point to begin numbering the river miles of the Upper Mississippi River. This point, at Cairo, IL, is river mile 0 and the numbers progress upstream.

Key Words: MISSISSIPPI RIVER; POOL 19; MULTIPLATE SAMPLES; MACROINVERTEBRATE DENSITY

Text: This data file is composed of macroinvertebrate densities collected from sampling stations used during LTER artificial substrate sampling on the Mississippi River. Higher taxonomic levels are indicated by a 2 letter code for each taxonomic level. Genus species, when identified to that level, is written out. For each species the number collected in the sample is listed. When determined, weight (g) and head capsule or total length (mm) are also listed. Samples were obtained using 10 plate multiplate samples with a total area of 0.25 m<sup>2</sup>. An experiment code is also listed and associated habitat and sampling data are contained in the sample station data files arranged by experiment.

In addition to the Apple II Plus data disks, these data are being stored in the SIR data management system on the CYBER computer at the University of Illinois.

LTER DATA SET ABSTRACT

Title: Benthos - Peterson Data, 1982, Large River LTER

Site: Mississippi River (Pools 19 and 26) and Illinois River (Peoria Lake)

Investigator: Richard V. Anderson, David Day, David Pillard, James Engman

Address: Department of Biological Sciences  
Western Illinois University  
Macomb, IL 61455  
(309) 298-1553

Geographic Coverage: Mississippi River from just below Lock and Dam 19 (Mississippi River mile 363) to just above Lock and Dam 18 (Mississippi River mile 411) and from just below old Lock and Dam 16 (Mississippi River mile 202) to Lock and Dam 25 (Mississippi River mile 241.5) and to LaGrange Lock and Dam (Illinois River mile 80.2). Illinois River, Peoria Lake from Peoria Lock and Dam (Illinois River mile 157.8) to Starved Rock Lock and Dam (Illinois River mile 231).

Period of Record: Spring, summer, fall 1982 and winter 1983

Data Type: Field data sheets and 5.5 inch floppy disks, single head, single side, soft sector, single density (for use with Apple II Plus microcomputer)

Geographic Referencing System (Location Variables): By river mile. The confluence of the Ohio and Mississippi Rivers is used as a reference point to begin numbering the river miles of the Upper Mississippi River. This point, at Cairo, IL, is river mile 0 and the numbers progress upstream.

The Illinois River miles begin at the confluence of the Illinois and Mississippi Rivers at Mississippi River mile 218. This point, at Grafton, IL, is river mile 0 and the numbers again progress upstream.

Key Words: MISSISSIPPI RIVER; ILLINOIS RIVER; BENTHIC MACROINVERTEBRATE DENSITY; MEIOFAUNAL DENSITY

Text: This data file is composed of macroinvertebrate and meiofaunal densities collected from sampling stations used during LTER intense samples, maintenance samples and intensive sampling on the Mississippi and Illinois Rivers. Higher taxonomic levels are indicated by a 2 letter code for each taxonomic level. Genus species, when identified to that level, is written out. For each species the number collected in the sample is listed. When determined, weight (g) and head capsule or total length (mm) are also

listed. Samples were obtained with a 0.10 m<sup>2</sup> Peterson dredge. An experiment code is also listed and associated habitat and sampling data are contained in the sample station data files arranged by experiment.

In addition to the Apple II Plus data disks, these data are being stored in the SIR data management system on the CYBER computer at the University of Illinois.

LTER DATA SET ABSTRACT

Title: Quadrats - Clam Distribution Data, 1982, Large River LTER  
Site: Mississippi River (Pools 19 and 26) and Illinois River (Peoria Lake)  
Investigator: David Pillard, Richard V. Anderson, David Day, James Engman  
Address: Department of Biological Sciences  
Western Illinois University  
Macomb, IL 61455  
(309) 298-1553

Geographic Coverage: Mississippi River, Pool 19 at river miles 365 and 378

Period of Record: Summer 1982

Data Type: Field data sheets and 5.5 inch floppy disks, single head,  
single side, soft sector, single density (for use with  
Apple II Plus microcomputer)

Geographic Referencing System (Location Variables): By river mile. The  
confluence of the Ohio and Mississippi Rivers is used as a  
reference point to begin numbering the river miles of the Upper  
Mississippi River. This point, at Cairo, IL, is river mile 0 and  
the numbers progress upstream.

Key Words: MISSISSIPPI RIVER; ILLINOIS RIVER; CLAM DISPERSION

Text: This data file is composed of mollusk densities and dispersion  
patterns collected from sampling stations used during LTER clam sampling  
on the Mississippi River. Higher taxonomic levels are indicated by a 2  
letter code for each taxonomic level. Genus species, when identified to  
that level, is written out. For each species the number collected in the  
sample is listed. Samples were obtained using a quadrat sampling  
method in shallow channel border areas of the river. When determined,  
weight (g), width (mm), height (mm), shell thickness (mm) and total  
length (mm) are also listed. An experiment code is also listed and  
associated habitat and sampling data are contained in the sample station  
data files arranged by experiment.

In addition to the Apple II Plus data disks, these data are being  
stored in the SIR data management system on the CYBER computer at the  
University of Illinois,

LTER DATA SET ABSTRACT

Title: Benthos - Natural Substrate Data, 1982, Large River LTER

Site: Mississippi River (Pools 19 and 26) and Illinois River (Peoria Lake)

Investigator: Richard V. Anderson

Address: Department of Biological Sciences  
Western Illinois University  
Macomb, IL 61455  
(309) 298-1553

Geographic Coverage: Mississippi River from Lock and Dam 19 (Mississippi River mile 364.5) to just below Lock and Dam 18 (Mississippi River mile 410.5).

Period of Record: Summer and fall 1982

Data Type: Field data sheets and 5.5 inch floppy disks, single head, single side, soft sector, single density (for use with Apple II Plus microcomputer)

Geographic Referencing System (Location Variables): By river mile. The confluence of the Ohio and Mississippi Rivers is used as a reference point to begin numbering the river miles of the Upper Mississippi River. This point, at Cairo, IL, is river mile 0 and the numbers progress upstream.

Key Words: MISSISSIPPI RIVER; POOL 19; MACROINVERTEBRATES

Text: This data file is composed of macroinvertebrate densities collected from sampling stations used during LTER artificial substrate sampling on the Mississippi River. Higher taxonomic levels are indicated by a 2 letter code for each taxonomic level. Genus species, when identified to that level, is written out. For each species the number collected in the sample is listed. When determined, weight (g) and head capsule or total length (mm) are also listed. Samples were obtained from rocks on wingdams. Surface area of the rocks was measured and are listed with the data. An experiment code is also listed and associated habitat and sampling data are contained in the sample station data files arranged by experiment.

In addition to the Apple II Plus data disks, these data are being stored in the SIR data management system on the CYBER computer at the University of Illinois.