

Long Term Resource Monitoring Program

Program Report

95-P003

Guide for Preparation of Reports

for the Upper Mississippi River System
Long Term Resource Monitoring Program

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March 1995

**Guide for Preparation of Reports
for the Upper Mississippi River System
Long Term Resource Monitoring Program**

by

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March 1995

The Environmental Management Technical Center issues LTRMP Program Reports to provide Long Term Resource Monitoring Program partners with programmatic documentation, procedures manuals, training manuals, and geospatial applications.

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*The National Biological Service . . . gathering, analyzing,
and sharing the biological information necessary to support the wise
stewardship of the Nation's natural resources.*

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Preface

The Long Term Resource Monitoring Program (LTRMP) was authorized under the Water Resources Development Act of 1986 (Public Law 99-662) as an element of the U.S. Army Corps of Engineers' Environmental Management Program. The LTRMP is being implemented by the Environmental Management Technical Center, an office of the National Biological Service, in cooperation with the five Upper Mississippi River System (UMRS) States of Illinois, Iowa, Minnesota, Missouri, and Wisconsin, with guidance and Program responsibility provided by the U.S. Army Corps of Engineers. The UMRS encompasses the commercially navigable reaches of the Upper Mississippi River, as well as the Illinois River and navigable portions of the Kaskaskia, Black, St. Croix, and Minnesota Rivers.

The mission of the LTRMP is to provide decision makers with information to maintain the UMRS as a sustainable large river ecosystem given its multiple-use character. The long-term goals of the Program are to understand the system, determine resource trends and impacts, develop management alternatives, manage information, and develop useful products.

This guide was prepared under Strategy 4.4.1, *Develop an Information Sharing Process*, Task 4.4.1.1, *Develop, Edit, Publish, and Distribute Long Term Resource Monitoring Program Information*, as specified in Goal 4 of the LTRMP Operating Plan (USFWS 1992).

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Guide for Preparation of Reports for the Upper Mississippi River System Long Term Resource Monitoring Program

By Terry D'Erchia and Mi Ae H. F. Lipe

Introduction

The purpose of this guide is to assist authors in preparing reports for the Upper Mississippi River System Long Term Resource Monitoring Program (LTRMP). Four series of reports are produced for the LTRMP: Technical, Special, Program, and Reprints. Technical Reports have an EMTC staff member as the first author. Reports authored by contract or field station staff are published as LTRMP Special Reports. Programmatic reports (Annual Work Plan, Operating Plan), Annual Status Reports, Geospatial Applications, User's Manuals, and Procedures Manuals are designated as Program Reports. To provide LTRMP participants with easy access to documentation of LTRMP-related studies, reports previously published in other professional outlets are reprinted in the LTRMP Reprint series.

Procedures for Review

Submit one hardcopy and a disk copy of your report to the Environmental Management Technical Center (EMTC) Project Leader. Technical and subject review by EMTC staff and specialists outside the EMTC will follow.

All LTRMP reports are reviewed by the Center Director, the Science Advisor, the Information and Technology Services Division Director, the Project Leader, and the Report Editor.

All Program Reports which deal with programmatic issues (e.g., Operating Plan, Annual Work Plan) are reviewed by the Analysis Team prior to publication. User's Manuals and Geospatial Applications are reviewed externally at the Project Leader's discretion.

All Special Reports are reviewed externally at the Project Leader's discretion.

All Technical Reports are reviewed by a minimum of two external reviewers, as specified by the Project Leader.

Your edited manuscript will be returned with reviewer comments and instructions for revision. Questions regarding these instructions should be addressed to the Project Leader. The proofreading marks used by EMTC technical editors are included as Appendix A.

The final report is routed to the author, the Project Leader, the Information and Technology Services Division Director, the Science Advisor, and the Center Director for publication approval and distribution instructions.

Draft Format Conventions

If possible, use WordPerfect (5.0 or later). Double-space entire document except tables. Italics are preferred over underlining for scientific names, second- and fourth-order headings, and variables and lettered constants in mathematics and statistics. Never use full caps, except for acronyms. Avoid beginning a sentence with an acronym, abbreviation, symbol, or number.

Graphics

If your text includes graphics created with software other than WordPerfect, please provide the graphics files (PostScript preferred) on a separate disk and indicate the software used to create the graphics.

Authors are not required to convert graphics to WordPerfect. Please submit a hardcopy of all graphics and an electronic copy for the file. The hardcopy will be the printer's copy. If graphics are on stand-alone pages, they may be inserted in the text after first mention or grouped at the end of the report, according to the author's preference. If there are many graphics, we recommend that they be grouped at the end of the report; it can be distracting to page through several graphics before returning to text. However, the author's preference is the deciding factor for graphics placement.

Organization and Content of LTRMP Reports

A report consists of three major sections: the *front matter*, the *main text*, and the *back matter*. Each of these major sections should be comprised of subsections in the following order (some subsections will be unnecessary in some reports):

Front Matter

Title Page

The title page (Appendix B) includes the report title (length should be kept to a dozen words or less), author(s), name and address of performing organization(s), EMTC address, and date of publication.

Preface

The preface (Appendix C) is provided by the Project Leader. The preface provides the authorization and mission statements of the LTRMP and links your report to the Program. A suggested citation for the report is also given in the Preface.

Contents

The Contents section lists the exact headings and page numbers of all front matter, all first-, second-, and third-order headings in the text, and all back matter.

A list of tables and a list of figures, including the number, the title as it appears in the report, and the page number where the table or figure appears is included in the Contents section.

Main Text

A one-paragraph abstract (up to 200 words) must be provided by the author, as well as five key words or phrases. The main text typically consists of the following first-order headings: Introduction, Materials and Methods, Results and Discussion, and Recommendations. Other headings may be more

suitable for your report. Appropriate subheadings (second-, third-, and fourth-order headings) may be used.

Back Matter

Back matter includes the acknowledgments, references, glossary, appendixes, and report documentation page.

Tables and figures, if considered disruptive to the flow of text, may be included as back matter, before the appendixes (if any).

Acknowledgments (optional)

Acknowledge only those who directly contributed to the project, research, or the manuscript's quality. Do not acknowledge Information Transfer and Media Services group members.

References

References should be listed in alphabetical order. Do not number references.

List only published works actually cited in the text. See Appendix D for reference format. Personal communications and unpublished data should be cited parenthetically in the text, noting initials, surname, and affiliation (**R. L. Delaney, National Biological Service, Onalaska, Wisconsin, personal communication**) but should not be included in the references.

Citing sources in the text. Two formats are acceptable:

Gritters (1992) found fish in the water. Fish have been found in the water (Gritters 1992).

When using the latter style, do not place a comma after the source's name; place the period after the citation.

When there are two authors, cite both (**Blodgett and Spink 1994**). When there are three or more authors, cite only the first one listed plus *et al.* (**Popp et al. 1993**).

When citing multiple papers by the same author, list them chronologically and use a comma to separate the years (**Theiling 1992, 1993, 1994**).

When citing multiple papers by the same author in the same year, differentiate among them by adding a lowercase letter after the date (**Conaway 1991a, 1991b, 1991c**).

When citing more than one reference, list them chronologically, separated by semicolons (**Rogers 1991; Langrehr 1992**).

Glossary (optional)

Use a glossary to provide an easy reference for acronyms and/or to explain technical terms.

Tables (optional)

Tables may be inserted in the text if desired. Number all tables and mention them sequentially in the text. The table title should appear above the table, in bold type. Capitalize only the first word of the table title. Do not use a period after the table title unless it is a complete sentence. Each table should stand alone; provide a key explaining all nonstandard symbols and abbreviations.

For portrait tables, the left, right, top, and bottom margins should be 1 inch, the same as for text.

For landscape tables, left and right margins should be 1-1/2 inches; top and bottom margins should be 1 inch.

Labels for tables should be in boldface, and the first letter of the first word should be capitalized. When using numerals, use a comma to separate numbers greater than 1,000. See Appendix E for sample table.

Figures (optional)

Figures may be inserted in the text if desired. Number all figures and mention them sequentially in the text. The figure caption should appear below the figure, in bold type. Capitalize only the first word of the caption and proper nouns or adjectives. Do not use a

period after the figure caption unless it is a complete sentence. Each figure should stand alone; provide a key explaining all nonstandard symbols and abbreviations.

For portrait figures, the left, right, top, and bottom margins should be 1 inch, the same as for text.

For landscape figures, left and right margins should be 1-1/2 inches; top and bottom margins should be 1 inch.

Labels for figures should be in boldface, and the first letter of the first word should be capitalized. When using numerals, use a comma to separate numbers greater than 1,000. See Appendix F for sample figure.

Appendixes (optional)

Appendixes are designated by capital letters (Appendix A, Appendix B). Tables and/or figures within appendixes are designated with the appendix letter and a hyphen preceding the number (Table A-1, Table A-2; Figure A-1, Figure A-2). Appendix page numbers follow the same format (A-1, A-2, B-1, B-2).

Report Documentation Page (Abstract)

All LTRMP reports are registered with the National Technical Information Service (NTIS). Your abstract (200 words or less) and five key words will appear on the NTIS documentation form.

Text Conventions

Headings

Each section of your report should be preceded by a heading. Leave two blank lines before first-, second-, and third-order headings. Use the following heading styles (after Opler 1991). The Information Transfer and Media Services group will convert your text to these fonts and styles.

First-Order Heading (Initial Caps, Centered, Bold)

Second-Order Heading

(Initial Caps, Centered, Italics)

Third-Order Heading

(Initial Caps, Flush Left, Bold)

Fourth-order heading. (*Upper- and lower-case, tabbed in three spaces, italics*) Punctuate with a period and continue text.

Punctuation

The following is not meant to be a comprehensive guide to punctuation; some of the more common problems, examples, solutions, and exceptions for writers are listed here. For more complete information, please refer to *The Chicago Manual of Style* (1993) or other style guides as appropriate (see Appendix G for a listing of useful style guides).

Periods

Vertical series lists. In an enumerated vertical series list, do not use periods if the series items are not complete sentences:

The principal functions of the District Water Control Centers are as follows:

- 1. Hydrologic data collection**
- 2. Inter- and intra-agency data exchange**
- 3. Water control decision making and project regulation for authorized purposes**

But do use periods if the series items are individual, complete sentences:

The following processing steps were taken to make the photo-interpreted data compatible with the Landsat data:

- 1. The Landsat data were subset to create ERDAS files which covered the same areas as the high-resolution data.**
- 2. The Landsat data were then converted to a GRID format file using the ARC command ERDASGRID.**
- 3. The boundary coordinate values of the Landsat GRID file were used during**

rasterization of the photo-interpreted data to ensure that the two files have the same pixel size.

If the listing contains a combination of fragments and complete sentences, use a period after each item.

With units of measure. Periods are not used after abbreviated units of measure (**ft, yr, mi**).

They are used after some Latin abbreviations (**e.g., i.e., ibid.**).

And they are used after abbreviated Latin genus names (***P. nigromaculatus for Pomoxis nigromaculatus***).

Commas

In addresses. Use commas to set off individual elements in addresses:

The Upper Mississippi River System includes the Mississippi River upstream of the mouth of the Ohio River at Cairo, Illinois, to Minneapolis, Minnesota.

In a series. Use a comma before the conjunction connecting the last two elements in a series of three or more:

Each structure has a unique set of hydrologic, legal, engineering, and administrative conditions which impose constraints on river regulation.

Semicolons

In a series. A semicolon may be used to separate items in a series if commas exist within these items or if other punctuation is present that might otherwise make the use of commas confusing.

The discharges range, control point location, and water level for the three ranges are as follows: 0 to 91,000 cfs, Dam 15 headwater, river mile 483.0, elevation 561.0 ft; 91,000 to 97,000 cfs, Dam 14 tailwater, river mile 493.2, elevation 564.8 ft; 97,000 to 131,000 cfs, Dam 15 headwater, river mile 483.0, elevation 560.5 ft; and 131,000 to 138,000 cfs, Dam 14 tailwater, river mile 493.2, elevation 566.7 ft.

Parentheses

Reference citations. Use parentheses to enclose citations of references, tables, and figures in text:

Young fish extensively use aquatic macrophytes in swamps (Paller 1987), lakes (Conrow et al. 1990), and rivers (Scott and Nielsen 1989).

Freshwater drum were incompletely sampled at stations in Pools 8 and 14 during 1989 (Fig. 9); therefore, the size range of larvae used in estimation of length-based growth and mortality was restricted to reduce the error associated with this bias (Table 5).

In numbering items in lists. Use parentheses in pairs when numbering items in lists within running text:

These procedures include (1) mosaicking, (2) projection, and (3) atmospheric correction.

The process of assigning map coordinates to a digital image is accomplished in three steps: (1) locating ground control points, (2) computing the transformation matrix, and (3) creating an output image file in the new coordinate system.

Punctuation with parentheses. Place punctuation outside the parentheses if the enclosed material is not the entire sentence itself:

Samples were collected every 3 weeks from late May through mid-August (five sampling dates).

When the tailwater at Lock and Dam 8 is at 623 ft (corresponding to a river discharge of 30,000 cfs), there are approximately 97,000 cfs days or 962,000 acre-feet of water in the pool.

Complete, stand-alone sentences may be styled as follows:

The backwater elevations shown in Figure 4 are water surface elevations for the main channel. (Water surface elevations in off-channel areas can be different than in the adjacent main channel.)

The backwater elevations shown in Figure 4 are water surface elevations for the main channel

(water surface elevations in off-channel areas can be different than in the adjacent main channel).

Brackets

Used within parentheses, brackets show secondary parenthetical information:

(Along with inflow to Pool 9, the stage at the control point [primary or secondary] must be considered by the regulating engineer.)

Apostrophes

The possessive of a plural noun ending in *s* is indicated by adding an apostrophe alone: **the systems' hydraulic characteristics.**

The possessive of closely linked proper names is indicated by adding an *apostrophe* and *s* to the last name only: **Einsten and Planck's law.**

According to *The Chicago Manual of Style* (1993), when forming the possessive of a name that ends with a *z* sound, treat it as a plural: **Williams', Hopkins', Dickens'**. However, the possessive of a name ending in an *s* sound is treated as a singular: **Harris's, Thomas's, Travis's.**

Quotation Marks

With quoted matter. Quotation marks are used to set off direct quotes not by the author, both spoken and written. Note that the period goes inside the end quotation marks in the following sentence:

As noted in para. 21, subpara. c of this manual, even in single-purpose projects, operations "must be tuned to produce the benefits for environmental and social power."

A question mark goes outside the end quotation mark if it is not part of the quote. Colons and semicolons always go outside the quotation marks.

Using double and single quotation marks. Double quotation marks enclose primary quotations and single quotation marks enclose quoted matter within a quotation:

Wilcox noted in Engineering Manual 1110-2-3600, "even in single-purpose projects, operations 'must be tuned to produce the benefits for environmental and social power'."

Hyphens

With a unit modifier. Use a hyphen between a number and its unit of measure when it is used as a unit modifier: **15-g sample, 24-h period, 15-mm larvae.**

With **ly** adverb endings. Do not use a hyphen after an adverb ending in *ly*: **newly sown plot, previously known factors, carefully managed area.**

With a unit modifier longer than two words. Use a hyphen with multiple-word unit modifiers: **easy-to-learn software, up-to-date tracking experiment.**

With a unit modifier with a proper name. Do not use a hyphen in a unit modifier if one of the elements is a proper name: **Bayesian maximum likelihood classifier, Melvin Price Locks and Dam tainter gates.**

With a self-compound. Hyphenate all *self-* compounds: **self-consistent, self-discharge.**

Suspended hyphens. A suspended hyphen is used when a noun has two or more unit modifiers that are all linked by the same element: **10-, 20-, and 30-mm thick.**

Names and Terms

Capitalization

Federal. *Federal* should be capitalized when referring specifically to the U.S. Government and if used as a part of a proper name or as a proper adjective: **Federal Government, Federal levees, Federal employee.**

Global Positioning System. This term is a proper noun when it refers to the U.S. Government's constellation of satellites; it is then known as **the Global Positioning System (GPS).**

Plural proper nouns. Capitalize the plural form of a common noun which is capitalized as part of a proper noun:

Transect measurements were used to determine spatial dye dispersion in Lower Peterson and Schmoker's Lakes.

Directional names. Directional names (east, eastern, west, western, north, northern, south, southern) are capitalized if they are part of a definite region or locality: **West Coast, Middle East, Western Hemisphere.**

But they are not capitalized if they are merely describing or indicating a geographic region: **The west side of the pool is bordered by Allamakee County, Iowa.**

The same is true for *upper* and *lower*; capitalize when they are part of the area's proper name but not when they refer to a general area:

Dye concentrations dropped dramatically in the upper end of Lower Peterson Lake.

Geographical Names

United States. When *United States* is used as an adjective, abbreviate it with periods:

This project was funded by the U.S. Government.

When *United States* is used as a noun, spell it out:

This project was conducted in the United States.

Scientific Names

Capitalization. Common names of plants and animals are lowercased except when they include proper names, such as **Mississippi silvery minnow.**

Italicization. Genus and species names are italicized, both in lists and in running text: **larval *Lepomis* spp., *Pomoxis nigromaculatus*.**

Abbreviation. After its first use, a genus name may be abbreviated:

We combined larval *Lepomis* spp. (primarily *L. macrochirus*).

Trade Names

When it is necessary to use trade names, include the manufacturer, city, and state in parentheses after first mention.

Commonly used trade names:

General Oceanics flow meter (General Oceanics, Inc., Miami, FL)
Hach Model 16800 portable turbidmeter (Hach Company, Loveland, CO)
Hydrolab Model 4041 (Hydrolab Corporation, Austin, TX)
LI-1000 DataLogger (LI-COR, Inc., Lincoln, NE)
LI-190SA quantum sensor (LI-COR, Inc., Lincoln, NE)
LI-192SA underwater quantum sensor (LI-COR, Inc., Lincoln, NE)
Lowrance Depth Meter (Lowrance Electronics, Tulsa, OK)
Magellan Global Positioning System (Magellan Systems Corporation, Monrovia, CA)
Marsh-McBirney Model 210D current meter (Marsh-McBirney, Inc., Gaithersburg, MD)
Ponar Grab Dredge (Wildlife Supply Company, Saginaw, MI)
YSI model 57 dissolved oxygen meter (Yellow Springs Instrument Company, Inc., Yellow Springs, OH)

Numbers

The following guidelines for numeral usage are based on the *USGPO Style Manual* (1984).

Spell out one-digit numbers except where used with units of measure (six boats; 6 mm). Use numerals for numbers of two or more digits (4.5; 250). Spell out numbers that begin sentences.

Use numerals with standard units of measure (5 mm, 10 km), time (5 h, 12 yr, 5 min), dates (June 1956; June 23, 1963), money (\$3.50, 75 cents, \$5 million), page designations (page 568, page 6), decimals (0.25 cm, 3.6 g), percentage (25%, 12 percentage points), clock time (9 o'clock), mathematical expressions (a factor of 3, 25 divided by 5), proportions (ratio of 1 to 5, 1:10 scale),

abbreviations that are not units of measure (Vol. 1, Ch. 1), and age (7 years old, the 7-year-old, at age 2).

- Leave a space between the numeral and the unit of measure.
- Spell out units that follow a spelled-out number.
- Place a zero before the decimal point for fractions smaller than one (0.25).
- Use a comma with numerals larger than three digits (1,000; 736,000).
- Use the *number 1* key for *one*; do not use the *letter l* key.

Symbols and Abbreviations

Temperature and Time

When using the degree mark, bump to capital letters, not against figures (e.g., 20 °C). Spell out **month** and **week**. Abbreviate **a.m.** and **p.m.** using lower-case letters separated by periods.

hour	h
minute	min
year	yr

Dates

Date format. Include commas after the day and year in a sentence if the date is month-day-year sequence. Do not abbreviate month names.

Construction and subsequent operation of Lock and Dam 9 was authorized by Congress on July 3, 1930, as part of the Mississippi River 9-Foot Channel Project.

Temperatures were substantially lower in the northern bays than in the main body of Third Lake on September 6 and 20, 1991.

If the sequence is month-year, then no internal punctuation is used:

During ice formation from late October through November 1991, temperatures in Third Lake fluctuated.

Spell out *to* when the word *from* precedes the first of two related figures or expressions.

Spell out *and* when the word *between* precedes the first of two related figures or expressions.

Weights and Measures

Commonly used units are abbreviated below. Singular and plural are the same.

acre	(spell out)
acre-foot	(spell out)
centimeter	cm
cubic feet per second	cfs
foot	ft
gallon	gal
gram	g
hectare	(spell out)
inch	(spell out)
kilogram	kg
kilometer	km
kilowatt	kW
liter	L
meter	m
mile	mi
milliliter	mL
ounce	oz
pound	lb
quart	qt
ton	(spell out)
watt	W
yard	yd

Prefixes

centi	c
deci	d
kilo	k
mega	M
micro	μ
milli	m

Statistical Symbols (CBE 1983)

total number of individuals or variates	n, N
arithmetic mean of the sample	\bar{x}
mean of the population	μ
standard deviation of the sample	SD
standard deviation of the population	σ
sample variance	s^2
variance of the population	σ^2
coefficient of variation	$C.V.$

standard error of mean of sample	SE
statistical datum derived in Student's <i>t</i> test	t
statistical datum derived in the chi-square test	χ^2
probability of wrongfully rejecting the null hypothesis (level of significance)	P
regression coefficient of population	β
coefficient of correlation, sample	r
coefficient of multiple correlation	R
variance ratio	F

Problem Words and Phrases

Affect and Effect

One affects others and feels the effects of something. *Affect* is always a verb (except for one use as a noun in psychology). Its synonyms include, among others: sway, influence, impress, stir, and move. *Effect* is most often a noun. Its synonyms include consequence and result. As a verb, *effect* means to bring about.

Historic and Historical

Historic refers to something that is resolved, influential, or history-making (the historic space walk). *Historical* means concerned with or contained in history (the historical data on water quality).

Its and It's

Its is the possessive of *it*; *it's* is a contraction of *it is*.

One Word or Two?

chi-square	login
database	logon
dataset	offline
decision maker	online
download	riprap
floodplain	riverbank
groundtruth	threeridge
hoop net	watermilfoil
land cover	wing dam
land use	workstation
LI-COR Datalogger	wildcelery

Principal and Principle

Principle is only a noun (the principles of ecosystem management). *Principal* is an adjective and a noun, but is primarily used as an adjective (the principal species collected; the school principal).

Unusual Plurals (USGPO 1988)

addendum	addenda
analysis	analyses
appendix	appendixes
memorandum	memorandums
symposium	symposia

Use a small *s* to designate the plural form of acronyms; no apostrophe is needed: **HREPs**

Sexism

Do not use *man* as a generic term. Instead, use *people*, *someone*, *anyone*, *human being*, *person* (Miller and Swift 1988). *Mankind* is easily replaced with *humankind* or *humans*. Where *manned* is commonly used as a verb, use *staffed* (the site will be staffed by four biologists) or *operated* (the boat was operated by three DNR staff members). Manpower = staff ("They do not have enough staff."). Replace *man-hour* with *work-hour*. Man made = manufactured, constructed, synthetic, artificial (the artificial lake). *Chairman* is best replaced by *chair*.

For More Information

Contact one of the EMTC Report Editors (608/783-7550, extensions 65, 68, or 69) regarding editorial questions or problems not covered here. Call extension 66 if you have WordPerfect questions.

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Appendix A Proofreading Marks

○	Insert period
↗	Insert comma
⋮	Insert colon
;	Insert semicolon
↘ ↙	Insert apostrophe
" "	Insert quotation marks
#	Insert space
()	Parentheses
¶	Paragraph
~	Transpose (in text)
sp	Spell out (word circled in text)
—	Italics (or underline)
=	Bold
FC	Full caps (marginal notation)
≡	Caps
lc	Lower case (marginal notation)
/	Lower case
/	Delete
()	Close up
ster	Leave as is (marginal notation)
.....	Leave as is

**Appendix B
Sample Title Page**

**Summary of Water Quality Characteristics
at Selected Sites in Navigation Pool 4
of the Mississippi River
January through December 1993**

by

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Sample Reverse Side

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Appendix C Sample Preface

The Long Term Resource Monitoring Program (LTRMP) was authorized under the Water Resources Development Act of 1986 (Public Law 99-662) as an element of the U.S. Army Corps of Engineers' Environmental Management Program. The LTRMP is being implemented by the Environmental Management Technical Center, an office of the National Biological Service, in cooperation with the five Upper Mississippi River System (UMRS) States of Illinois, Iowa, Minnesota, Missouri, and Wisconsin, with guidance and Program responsibility provided by the U.S. Army Corps of Engineers. The UMRS encompasses the commercially navigable reaches of the Upper Mississippi River, as well as the Illinois River and navigable portions of the Kaskaskia, Black, St. Croix, and Minnesota Rivers.

The mission of the LTRMP is to provide decision makers with information to maintain the UMRS as a sustainable large river ecosystem given its multiple-use character. The long-term goals of the Program are to understand the system, determine resource trends and impacts, develop management alternatives, manage information, and develop useful products.

The strategy to produce a low-resolution systemic spatial land cover/land use data base is included in the LTRMP Operating Plan (USFWS 1992) as Strategy 2.2.4, *Monitor and Evaluate Aquatic and Terrestrial Vegetation*. This report was developed with funding provided by the Long Term Resource Monitoring Program.

Additional copies of this report may be obtained from the National Technical Information Service, 5285 Port Royal Road, Springfield, Virginia 22161 (800/553-6847).

This report should be cited as:

Lastrup, M. S., and C. D. Lowenberg. 1994. Land cover/land use for the Upper Mississippi River System derived from Landsat Thematic Mapper satellite data. National Biological Service, Environmental Management Technical Center, Onalaska, Wisconsin, February 1994. LTRMP 94-T001. 103 pp.

Appendix D

Reference Styles

Journal Article

James, W. F., W. D. Taylor, and J. W. Barko. 1992. Production and vertical migration of *Ceratium hirundinella* in relation to phosphorus availability in Eau Galle Reservoir, Wisconsin. *Canadian Journal of Fisheries and Aquatic Sciences* 49:694-700.

Gatto, L. W., and W. W. Doe III. 1987. Bank conditions and erosion along selected reservoirs. *Environmental Geology and Water Sciences* 9(3):143-154.

Pages in Book or Proceedings

Adams, J. R. 1992. Sediment concentration changes caused by barge tows. Pages 677-682 in M. Jennings and N. G. Bhowmik, editors. *Proceedings of the American Society of Civil Engineers' Hydraulic Engineering Sessions at Water Forum '92, Baltimore, Maryland, August 2-6, 1992.*

Gutreuter, S. 1987. Considerations for estimation and interpretation of annual growth rates. Pages 115-126 in R. C. Summerfelt and G. E. Hall, editors. *Age and growth of fish.* Iowa State University Press, Ames, Iowa.

Thesis

Rogers, S. 1987. The flora of Eau Claire County. M.S. Thesis, University of Wisconsin-Eau Claire. 120 pp.

Book

Eggers, S. D., and D. M. Reed. 1987. Wetland plants and plant communities of Minnesota and Wisconsin. U.S. Army Corps of Engineers, St. Paul District, St. Paul, Minnesota. 201 pp.

Green, R. H. 1979. Sampling design and statistical methods for environmental biologists. John Wiley and Sons, New York. 257 pp.

Reports/Other Publications

Knox, J. C., P. J. Bartlein, K. K. Hirschboek, and R. J. Muckenhirn. 1975. Response of floods and sediment yields to climatic variation and land use in the Upper Mississippi Valley. Institute for Environmental Studies, Report 52. University of Wisconsin-Madison. 76 pp.

Mason, C., W. Grogg, and S. Wheeler. 1983. Shoreline erosion study: Pleasure Island, Texas. U.S. Army Corps of Engineers, Galveston, Texas. A138653.

Agency as Author

U.S. Fish and Wildlife Service. 1992. Information management plan. Environmental Management Technical Center, Onalaska, Wisconsin. EMTC 91-08. 39 pp.

Unpublished References

Pitlo, J., A. Van Vooren, and J. Rasmussen. 1995. Distribution and abundance of Upper Mississippi River fishes. Upper Mississippi River Conservation Committee, Fish Technical Section. 27 pp. (in press)

Tucker, J. K., D. W. Soergel, and J. B. Hatcher. Flood associated activities of some reptiles and amphibians at Carlyle Lake, Fayette County, Illinois. Transactions of the Illinois State Academy of Science. (in press)

Other Media

Mississippi River Commission. 1895. Survey of the Mississippi River, 1:20,000-scale maps.

University of Minnesota, St. Anthony Falls Hydraulic Laboratory. 1961. Sedimentation due to waves and density flows. One 339-foot reel, 10 minutes, Kodachrome, silent.

U.S. Geological Survey. 1974. Red Wing, Minnesota, 7-1/2-minute quadrangle map.

Appendix E Sample Table

Table 1. Tree and sapling mortality rates in seven river reaches of the Upper Mississippi River System

River reach	Trees		Saplings	
	Mortality (%)	Sample size	Mortality (%)	Sample size
Pool 4	1.1	369	1.8	223
Pool 8	1.7	482	7.2	377
Pool 13	3.8	738	9.2	476
Pool 17	18.1	1,144	47.8	778
Pool 22	20.1	529	72.0	436
Pool 26	37.2	712	80.1	694
Open river	32.7	590	77.2	545

Appendix F Sample Figure

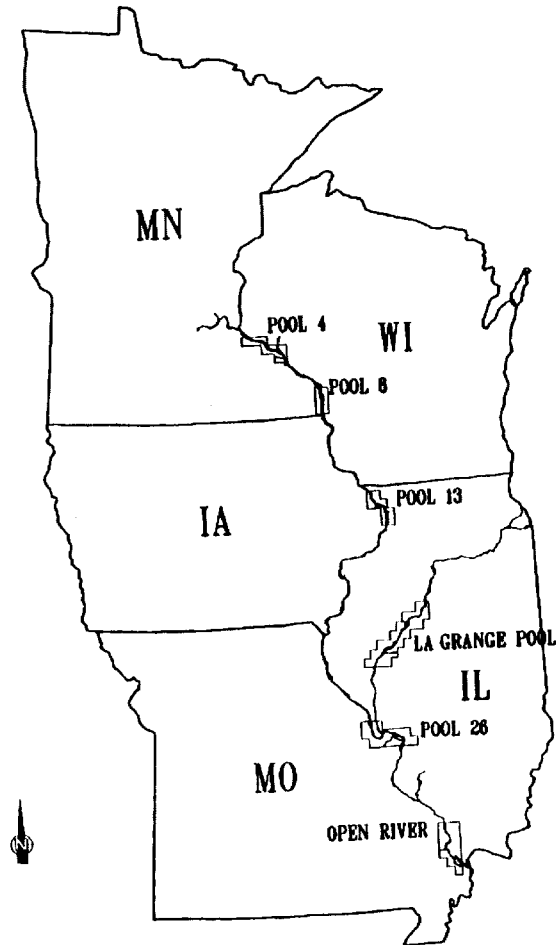


Figure 2. Long Term Resource Monitoring Program study reaches: Pools 4, 8, 13, and 26 of the Mississippi River and La Grange Pool of the Illinois River

Appendix G

Suggested Style Guides

- CBE Style Manual Committee. 1983. CBE style manual: A guide for authors, editors, and publishers in the biological sciences. Fifth edition, revised and expanded. Council of Biology Editors, Inc., Bethesda, Maryland. 324 pp.
- Eschmeyer, P. H. 1990. Usage and style in fishery manuscripts. Pages 1-25 *in* J. Hunter, editor. Writing for fishery journals. American Fisheries Society, Bethesda, Maryland.
- Miller, C., and K. Swift. 1988. The handbook of nonsexist writing. Second edition. Harper and Row, New York. 174 pp.
- Rubens, P. 1992. Science and technical writing: A manual of style. Henry Holt and Company, New York. 513 pp.
- Shaw, H. 1975. Dictionary of problem words and expressions. McGraw-Hill, Inc., New York. 262 pp.
- Strunk, W., Jr., and E. B. White. 1979. The elements of style. Third edition. Macmillan Publishing Company, Inc., New York. 92 pp.
- The Chicago Manual of Style. 1993. Fourteenth edition. The University of Chicago Press, Chicago and London. 921 pp.
- The New York Public Library Writer's Guide to Style and Usage. 1994. HarperCollins Publishers, Inc., New York. 838 pp.
- U.S. Government Printing Office (USGPO). 1984. United States Government Printing Office style manual. Washington, D.C. 479 pp.
- Webster's New Geographical Dictionary. 1988. Merriam-Webster Inc., Springfield, Massachusetts. 1,376 pp.

The Long Term Resource Monitoring Program (LTRMP) for the Upper Mississippi River System was authorized under the Water Resources Development Act of 1986 as an element of the Environmental Management Program. The mission of the LTRMP is to provide river managers with information to maintain the Upper Mississippi River System as a sustainable large river ecosystem given its multiple-use character. The LTRMP is a cooperative effort by the National Biological Service, the U.S. Army Corps of Engineers, and the States of Illinois, Iowa, Minnesota, Missouri, and Wisconsin.

