

ILLINOIS NATURAL HISTORY SURVEY

Development of a Geographic Information System for Natural
Resources and Recreational Facilities

Annual Report to
Illinois Department of Conservation

Center for Aquatic Ecology

Diane L. Szafoni, Diane Greer, Katherine Hunter,
Peter B. Bayley, and Mark G. Joselyn

Illinois Natural History Survey
607 E. Peabody
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DEVELOPMENT OF A GEOGRAPHIC INFORMATION SYSTEM
FOR NATURAL RESOURCES AND RECREATIONAL FACILITIES

ANNUAL REPORT

APRIL 16, 1993 TO JUNE 30, 1994

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INTRODUCTION

The Illinois Department of Conservation (IDOC) currently possesses a fish and wildlife database, the Illinois Fish and Wildlife Information System (IFWIS) and a streams database, the Illinois Streams Information System (ISIS). These databases needed to be incorporated into a GIS format to facilitate their utilization. Additionally, IDOC, Engineers needed digitized maps of state owned recreational facilities. This project was designed to address these needs for managers, planners and engineers in the IDOC who require the development of computerized maps and links to natural resource data.

Data acquisition for the Illinois Streams Information System (ISIS) was begun in 1981 to meet the policy analysis and management needs of the IDOC Planning Division. It was developed and maintained through a contract with the IDOC and the Departments of Landscape Architecture and Urban and Regional Planning at the University of Illinois. ISIS was created specifically for stream inventory and classification, permit review, and development of stream management policies. It contains a wealth of information on the State's surface water, which is of potential use to managers and researchers alike.

The ISIS database is a relational database organized by river and river mile index (RMI) (Hinrichs, M.A. and L. D. Hopkins, 1991). The streams in ISIS were grouped into ten river basins (Figure 1) and all streams were given numerical, 32 digit codes. Data for the streams were then measured to 0.1 mile accuracy, starting from the mouth of each stream. At present ISIS has both a narrative and a graphical component tied to the RMI for each stream reach with a drainage area greater than 10 square miles.

The narrative component of the ISIS data exists in tabular form and represents information for each stream on locational, physical, biological, chemical, cultural, recreational, and developmental characteristics. All of the information for each of these streams are stored in a topologically structured relational database (i.e. upstream/downstream and left bank/right bank relationships are preserved).

An Autocad file (a suite of programs used primarily for computer-aided drafting) of a 1:700,000 scale representation of the streams of the state was used for graphical display. However, this graphic representation was inadequate for GIS work and an alternative was needed. In particular, the graphic capabilities were too limited and cartographically inaccurate to be complimentary with other state environmental data bases that exist or are being developed on the Illinois Geographic Information System (IGIS).

The focus of this project was to use GIS technology to create an accurate hydrologic coverage and 'tie' the tabular data points in ISIS to the coverage. The resulting coverage can then be used to integrate the data contained in the ISIS and IFWIS databases. Integration, as defined here, is to establish a mechanism by which both databases can be linked graphically via GIS concepts.

Linkage of these databases to a cartographic base will increase the utility of the databases and provide a common topographic framework for the integration of additional IDOC data. The creation of a Recreational Facilities database will compliment the linkage of the ISIS and IFWIS databases, providing an additional data layer to be used in GIS analysis. The conceptual design that establishes this linkage and the resultant geocoded stream network will better meet the management and planning needs of the Illinois Department of Conservation and the State of Illinois

ILLINOIS STREAMS INFORMATION SYSTEM COMPONENT

OUTSIDE DATA REQUESTS HANDLED BY DIANE SZAFONI

There have been numerous requests for data from ISIS this past year. Most of this was the result of the publication of an article on the ISIS database by Morin and Szafoni.

Erik Johnson, Community Planner of the County of Kane, Development Department, Planning and Project Division requested information on Tyler Creek in northwest Kane County. They planned on using the information to draft a position on a facility planning area amendment presented to the Northeastern Illinois Planning Commission in July of 1993.

Robert Lonsdorf, Associate Greenways Director for the Openlands Project in Chicago, Illinois requested all available information on the Kiskwaukee River, Rush Creek, Piscasaw Creek, and the north and south branches of Kishwaukee River in McHenry County; Squaw Creek, Indian Creek, and Buffalo Creek in Lake and Cook Counties; and Spring Creek in Will and Cook Counties.

Lance Perry, a GIS specialist with the Wisconsin DNR called seeking information on how ISIS was designed. Wisconsin is in the process of setting up a similar type of database, using 1:24,000 (7.5 minute) quad maps as their base maps. They will be working with USGS to obtain this data in a digital form. He was sent the ISIS Data Descriptions Manual, Samples of data from the ISIS database and additional articles on ISIS published in previous years.

Peter Thum, a private consultant from Madison Wisconsin, hired to design a database for Lake County (and possibly also DuPage County) requested information on how ISIS was designed. He was sent the ISIS Data Descriptions Manual, samples of data from the ISIS database and additional articles on ISIS published in previous years.

Phil Smith, a school teacher from Peoria, Illinois, called requested the names of all rivers in the state. The ISIS database was used to product a list of the rivers and creeks in the state.

Jacqueline Krzyzak Stickney, a GIS technician from Lake County Stormwater Management Commission, Libertyville, Illinois was referred to me from Peter Thum (see above). She requested all the information in ISIS on the Fox River, Mutton Creek, Flint Creek and Flint Creek Tributary. She was sent ASCII files on a floppy disk of the requested data.

Betsy Braun, a graduate student at the University of Chicago requested information on ISIS for possible use in her dissertation on environmental legal history. She plans to the interaction between law and environment regarding industrial uses of wetlands in Cook County before 1920. She was sent information about the type and scope of data in ISIS.

ONGOING WORK ON ISIS

Work has continued on creating arc coverages based on the US Geological Survey (USGS) digital line graph (DLG) data. These data were produced from 1:100,000 scale photographically-reduced composites of the hydrography layer from the 1:24,000 USGS base-map series.

The data pertinent to the Embarras/Vermilion, Kaskaskia and Sangamon River Basins were extracted from the statewide DLG files and modified for use in this project last year. The Kankakee/Vermilion/Mackinaw, Little Wabash and Big Muddy River basins were completed this year (Figures 2-7). This leaves the Fox/DesPlaines, Rock, Spoon and LaMoine river basins and the large rivers (Mississippi, Illinois and Wabash rivers) to be completed.

The entire ISIS database was transferred to the Paradox for DOS 4.5 database. The Paradox database is able to export files into a dBASE format which can be used directly by ARC/INFO with their database management system (DBMS). Paradox report files were created to duplicate the basic report files available in the former Rbase version. The more complicated reports can be created at a later date as required.

The Illinois Natural History Survey was a beta test site for ARCVIEW version 2 this year. Copies of both the workstation and PC versions of the software were available. We used both platform types of the software to test the usefulness of the ARCVIEW in displaying ISIS information. Several "views" were created of the ISIS coverage and various statewide coverages available from the IGIS. ARCVIEW version 2 handles dynamic segmentation's route systems and events nicely. We were unable to test the potential of using event data directly from Paradox with either the workstation or PC version of the software as the database management system component was not operational in the beta version. Documentation will be finalized as the coverages become available for IDOC staff. A computer demonstration was developed for ARC/INFO to show IDOC personnel how the new coverages can be used to display ISIS data. Figure 8 shows how one of the items in the ISIS database can be displayed using dynamic segmentation.

Illinois Fish and Wildlife Information System (IFWIS) Component

We have been working with Celine D'Onofrio of IDOC, Division of Natural Heritage to assess their needs and interests regarding IFWIS. The desirability and feasibility of moving data from IFWIS to another database management system (Paradox or Advanced Revelations) needs to be evaluated. The loss of mapping capabilities and the reprogramming

for data retrieval would be necessary if this option is pursued. The Division of Natural Heritage staff are very interested in retaining the cartographic display and analysis potential of the GIS.

The task of evaluating the actual species data files was suspended in January, 1994. Continuation of this task is pending a decision by IDOC, Division of Natural Heritage regarding how they would like this component to proceed.

Evaluation of INFO/AML Programs

Two of the original programs were not operational due to missing files required by those programs. We may be able to determine the contents of these files in the IFWIS documentation. A diagram showing how the programs are related has been prepared and is shown in Figure 9. An attempt was made to create a matrix file showing the relationships between programs and files. This effort was abandoned due to the multipurpose nature of the files. Three AML programs are functional on the Sun Microsystems OS system. The reprogramming was done for a GIS demo at the 1992 meeting of the American Society of Ichthyologists and Herpetologists. A menu-driven interface was created which allowed the user to select a species and create an on-screen map of the Illinois distribution of that species. This program can also be used to create and print black and white maps (e.g. Figure 10), and a booklet for each selected species.

Evaluation of Species Distribution Files (Appendix 1)

Amphibians/Reptiles - Ed Moll at Eastern Illinois University and Chris Phillips at INHS were consulted to clarify the status of these files. They found errors in the data sources which affected the mapping status. This has been corrected. Corrections were also made in the nomenclature. An atlas of herp species was created and distributed to both experts to check for questionable records.

The Herp files still need to be brought up to date. In particular, the early Phil Smith museum records must be checked and locational information added. The map produced 1986 is very coarse. The location points should be re-entered at a larger scale to produce a more accurate map.

Mollusks - INHS staff are compiling county collecting locations, encoding them and entering the points into the GIS to allow collection records to be mapped. This information could be added to IFWIS.

Birds - These data are the most accurate and up-to-date. However, data have never been incorporated from the IDOT records, USFWS bird banding records, the spring and Christmas bird counts, or the breeding bird atlas data.

Mammals - The IFWIS mammal files contain only records from Hoffmeister. These entries have no dates. Additional data sets that could be added to IFWIS would be the mammal records for Illinois from recent IDOT surveys.

Fish, Invertebrates, Insects - These files were not evaluated.

Threatened and Endangered Species Data

In June, the current Element of Occurrence (EOR) file from IDOC, Division of Natural Heritage was imported into INFO to create point locations for the threatened and endangered species records. This has allowed IDOT field biologist at INHS to search their project areas for T&E locations. The graphic display of point locations has also enabled IDOC, Division of Natural Heritage staff to check the accuracy of the latitude/longitude information in their database. We reported about 100 records with questionable locational information to them. We are working on resolving these discrepancies. This has proven to be a valuable use of GIS capabilities. This work has resulted in discussions regarding coordination of efforts between the IDOC, Division of Natural Heritage and INHS in the reporting of species data. We feel that it would be beneficial to include INHS, IDOC, Division of Natural Heritage, INHS/IDOT biologists and Illinois State Museum staff in further discussions on this topic.

Inventory of Manuals and Other Documentation

The manuals discovered to date include: Codes, Programs, Users, (via menu driven programs), data files, file structures, translations and data entry. There are several file cabinets and boxes at INHS containing original data entry sheets for the species workbook, the original dot maps to be digitized for herps and mammals, several large folders with Spring, Fall, Winter and Christmas bird count maps (no Summer), breeding birds censuses from IDOT projects, bibliographies on Illinois bird, and miscellaneous IDOC reports.

Recommendations for Future Activities

We have reached a turning point in the project where a decision on the status of IFWIS is required. IDOC staff has expressed interest in an on-line demo of a search routine and graphics display routine. Redesign of the basic search program with GIS capabilities is required for it to run on a workstation. However, for the database to accurately represent species distribution in Illinois, it needs to be updated and improved. This can only be achieved by completing the evaluation of the distribution files and by working on a framework for expanding those files to include new data.

IDOC must also decide if it will manage the IFWIS data using GIS software. There are several additional data layers available on GIS which could be utilized to enhance the species data. A new land cover map created from satellite imagery (TM data with 30-meter resolution) is anticipated early next year. There are also three additional DOC databases --

the natural areas and nature preserves, the state parks, and wetlands, which are of high quality and resolution, which already are amenable to GIS analysis.

Illinois Recreational Facilities Component

Work has begun on the Recreational Facilities database. Digital files of fifteen IDOC sites were completed and plotted this year. Eight sites (Giant City, Jubilee College, Illinois Beach State Park, DesPlaines Conservation Area, Silver Springs State Park, and Shabbona Lake State Park, Massasauga Prairie Preserve, Elton Fauks Eagle Refuge) were digitized and fully processed by the Illinois Natural History Survey (INHS). The park boundaries for the remaining seven sites (Carlyle Lake, Rend Lake, Lake Shelbyville, Kankakee River, Middle Fork River, Pere Marquette, and Site M) were digitized by the Illinois State Museum (ISM) in Springfield and digitally transferred to INHS. A DXF file of the IDOC title block used for AUTOCAD drawing was provided by the IDOC, Office of Planning and Development, Engineering section. Plots of all fifteen sites were created. Data sets used in the plots include wetlands, natural areas, nature preserves, threatened and endangered species, U.S. Public Land Survey Information (Township, Range, and Section lines), county boundaries, towns, utilities, railroads, roads, waterbodies and streams within the park (see Appendix B). These data were obtained from the Illinois Geographic Information System (IGIS) at INHS.

At the January 3, 1994 meeting with IDOC staff, Bob Roads asked for additional information on more data sets developed by other companies or government agencies. The results of our inquiries are listed below.

Jim Walker of Walker and Associates was contacted about the "air photo topo" program they are doing for IDOC. AUTOCAD software has been used since 1989. The sites his company have in digital form are: Mermet, Game Farm near Mt. Vernon, Dog Island, Illinois Beach State Park, Moraine Hills State Park, Siloam Springs State Park, Sangchris Lake State Park, and two sites at Horseshoe Lake. All of these projects had aerial photographs flown and topographic maps prepared. He can provide more information on specific sites if needed.

Tom D'Avello at the Soil Conservation Service State office in Champaign was contacted concerning the status of automatic soil map generation. Champaign county is the only county with a digital soils map completed and released for use. The Survey has a copy of it. Jo Daviess and Lake counties are complete and will probably be released shortly. Additional counties with soils maps in progress are McHenry, Adams, St. Clair, Bureau, and Franklin counties. SCSS does not begin working on a digital soils map for a county unless there is local government interest and funding, so a complete schedule of future digitizing efforts is not available. They are available for project work if soils maps are needed before the county is scheduled to be digitized. (Call Tom at (217)398-5293 for further information.)

We obtained a copy of the Metadata Catalog of Spatial Data for the Upper Mississippi river system, long term resource monitoring program (93-P009) at the National Biological Survey, Environmental Management Technical Center, 575 Lester Ave., Onalaska Wisconsin

54650-8552. Robert L. Delaney at (608)783-7550 is the contact person for additional copies.

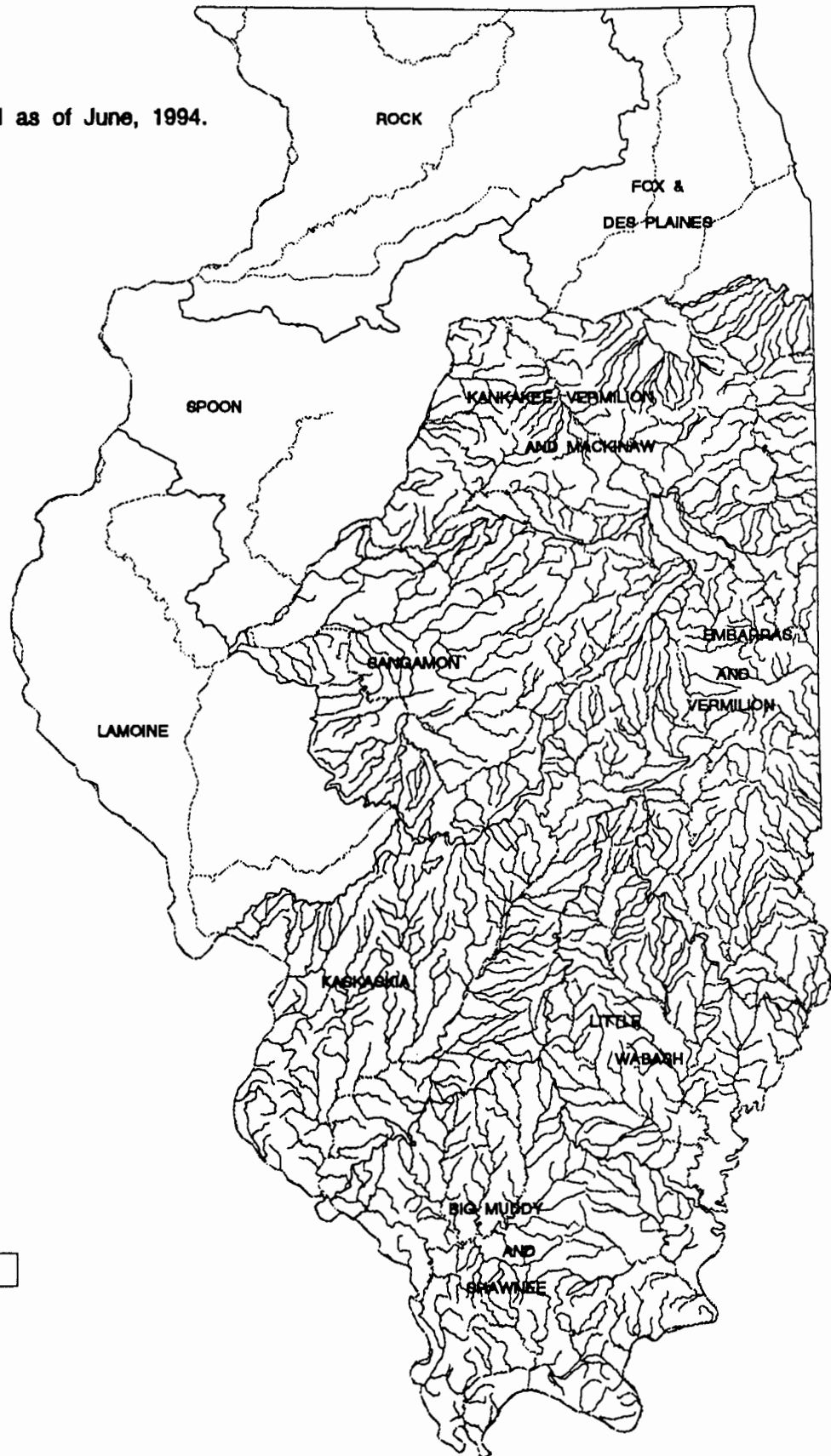
We checked with our database manager about the use of air photos for GIS work. They are only useful as a backdrop for other data layers, and cannot be used for analysis. Mike Chrzastowski at the Illinois Geological Survey was contacted on March 3, 1994 about the work done for USGS at North Point Marina, Illinois Beach State Park. It was a 5-year study started in 1987 and ending in 1992. All work was done offshore, monitoring bottom changes and shoreline changes. A list of the digitized covers was to be sent. It has not been received to date.

References

Hinrichs, M.A. and L.D. Hopkins, 1991. Illinois Streams Information System: ISIS data descriptions manual. Illinois Dept. of Conservation, Springfield, University of Illinois at Urbana-Champaign, Dept. of Landscape Architecture and Dept. of Urban and Regional Planning. 135pp.

Morin, M.d. and D.L. Szafoni, 1993. Using GIS to integrate a statewide streams database. Illinois GIS and Mapnotes. 11(2):43-45.

Figure 1.
Basins completed as of June, 1994.



Scale 1:2,700,000

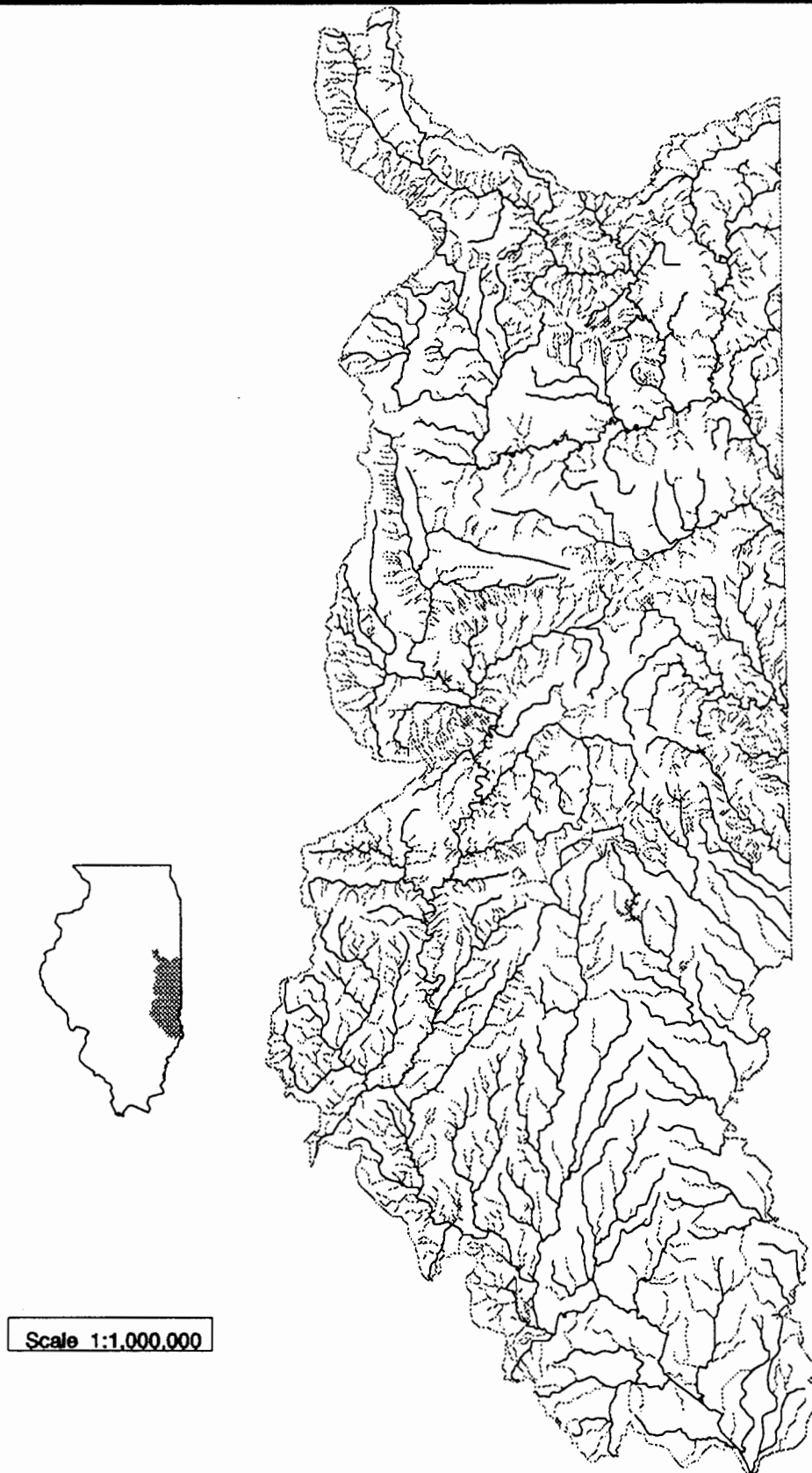


Figure 2. The Embarras and Vermilion River Basins. Dark lines represent ISIS streams.



Figure 3. The Kaskaskia River Basin. Dark lines represent ISIS streams.

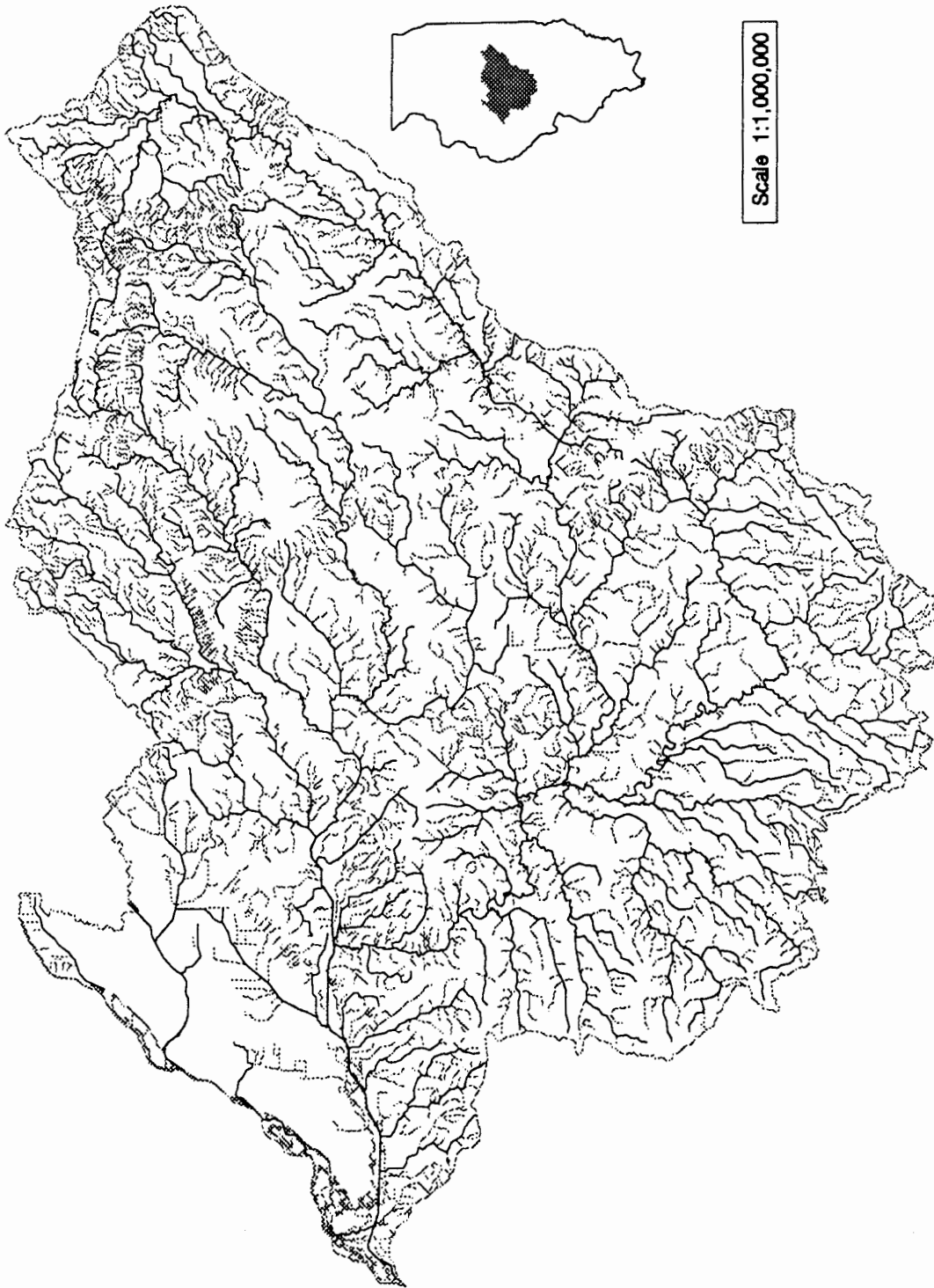


Figure 4. The Sangamon River Basin. Dark lines represent ISIS streams.

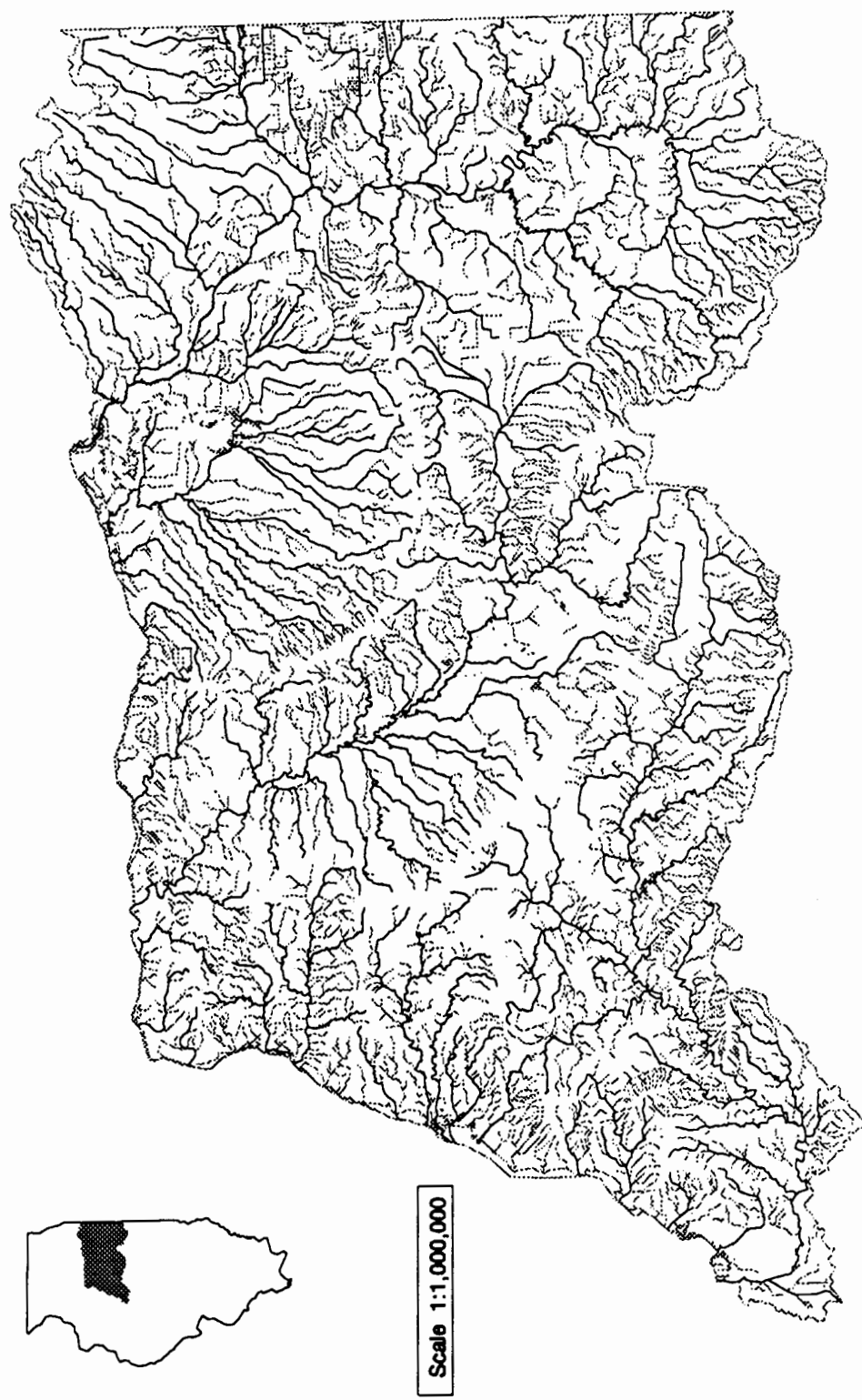


Figure 5. The Kankakee River Basin. Dark lines represent ISIS streams.

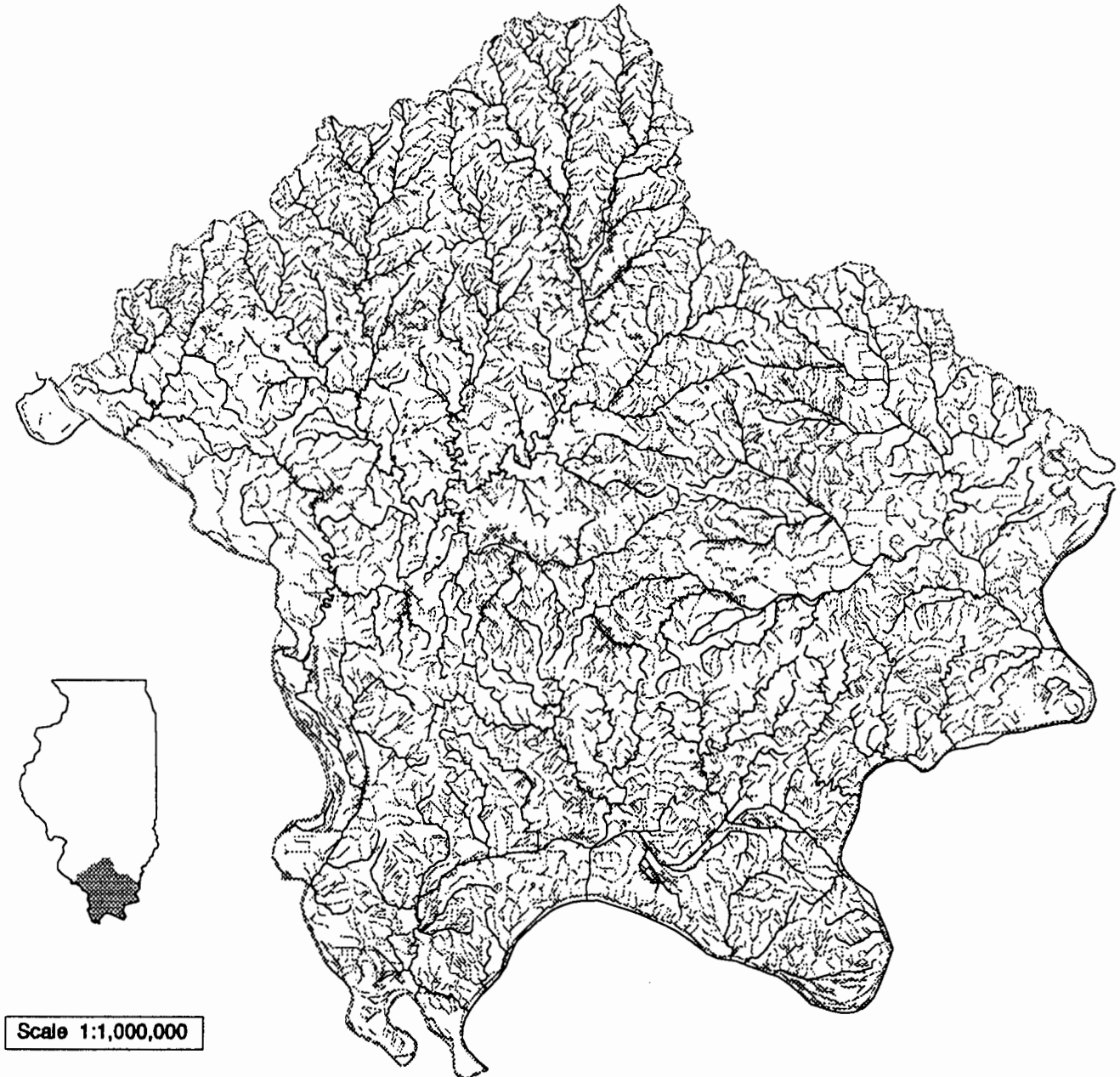


Figure 6. The Big Muddy River Basin. Dark lines represent ISIS streams.

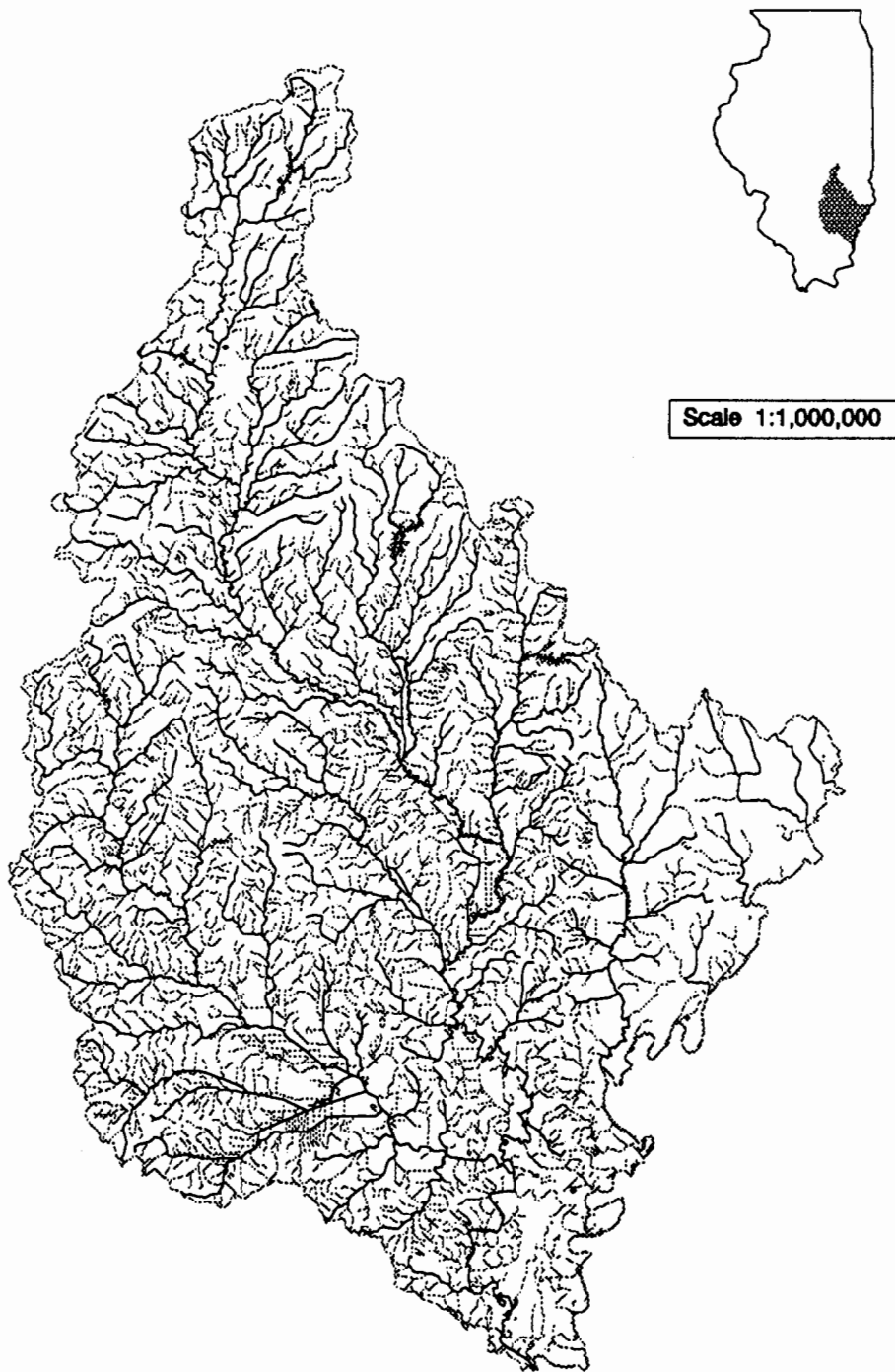


Figure 7. The Little Wabash River Basin. Dark lines represent ISIS streams.

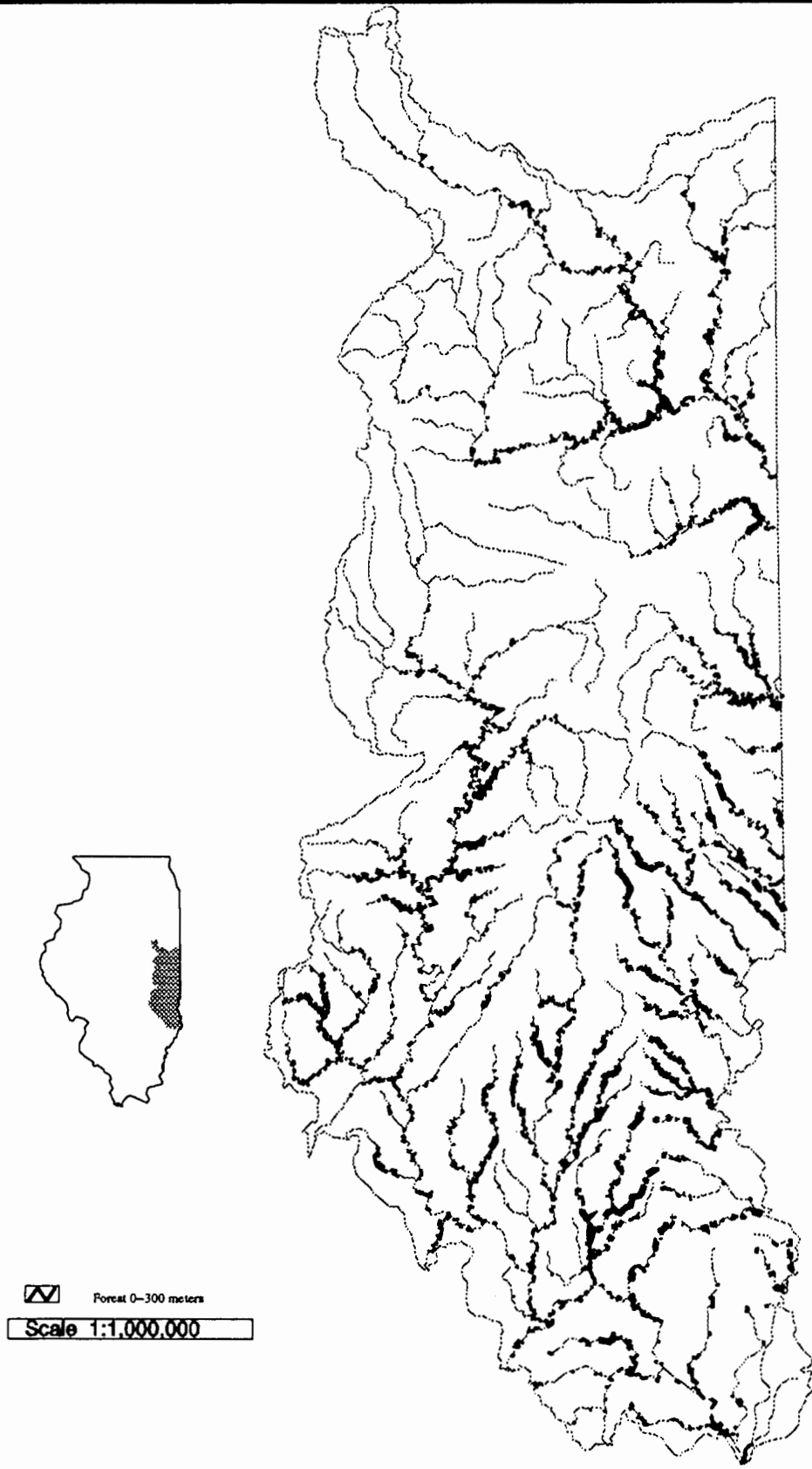
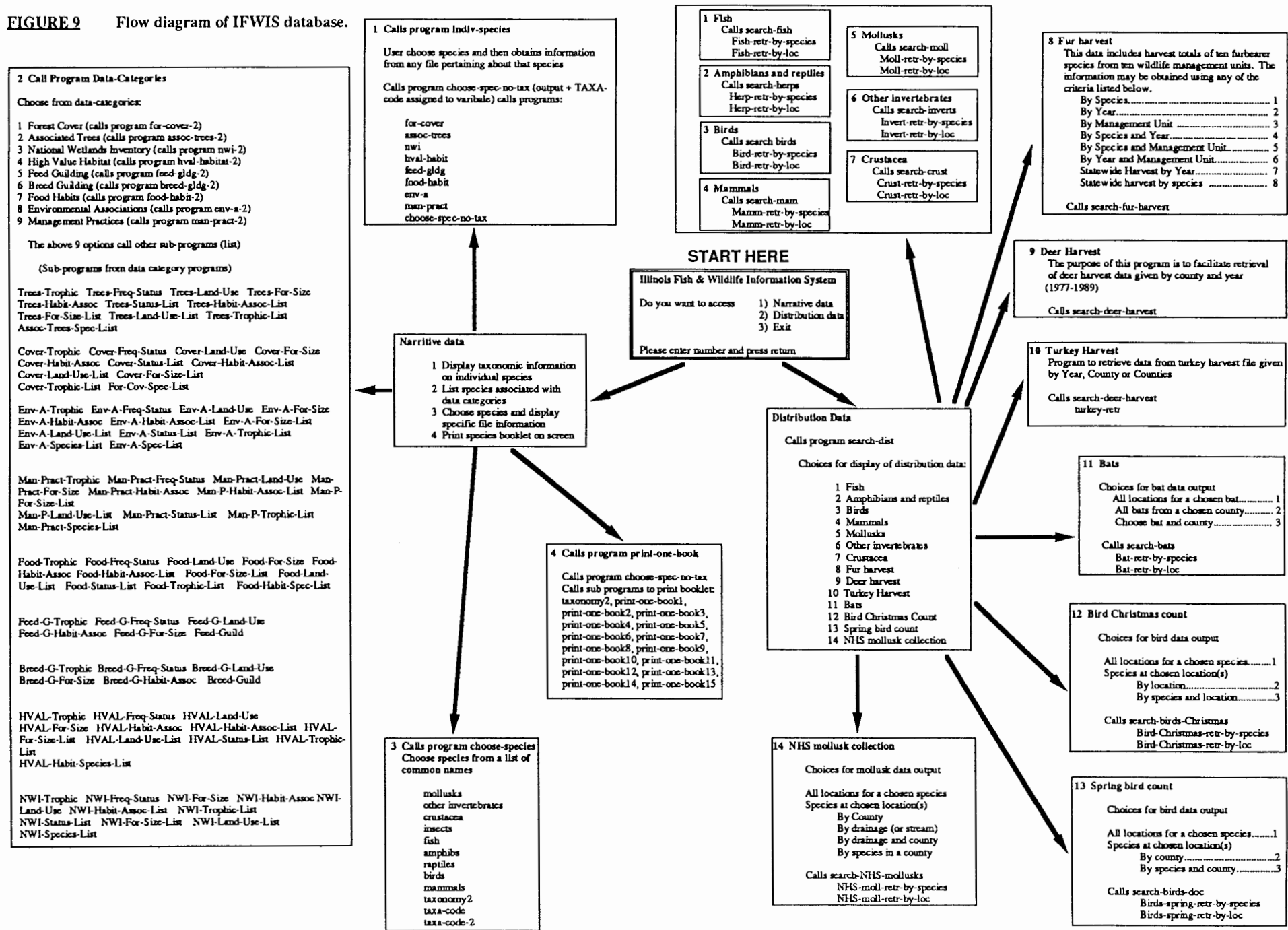


Figure 8. Forest vegetation in the Embarras and Vermilion River Basins.

FIGURE 9 Flow diagram of IFWIS database.



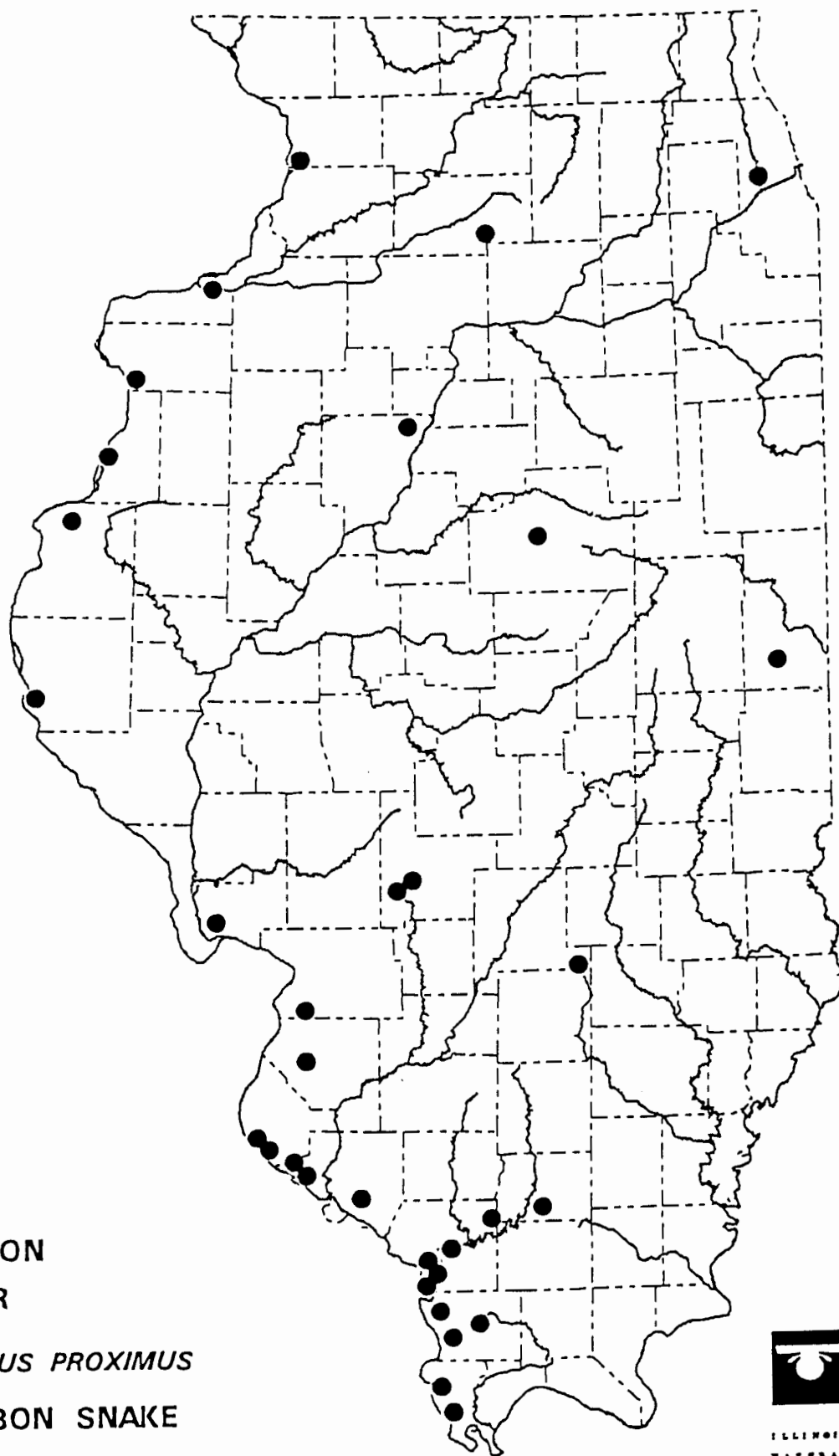


Figure 10

ILLINOIS COLLECTION
LOCATIONS FOR

THAMNOPHIS PROXIMUS PROXIMUS
WESTERN RIBBON SNAKE



ILLINOIS
NATURAL
HISTORY
SURVEY

Appendix A

DATAFILE: FISH-SPEC-DIST

THIS FILE CONTAINS SPECIES DATA FOR FISH. ITEMS INCLUDE A NUMBER FOR THE LOCATION, A NUMBER FOR THE COLLECTION AT A GIVEN LOCATION, SPECIES, IF THE SPECIES IS A HYBRID, THE NUMBER OF SPECIMENS, IF THE SPECIES IS IN THE ILLINOIS NATURAL HISTORY SURVEY (INHS) COLLECTION, JAR SIZE IN THE INHS COLLECTION, INHS CATALOG NUMBER, AND INHS SPECIES CODE.

*ITEMS

DATAFILE NAME: FISH-SPEC-DIST

[CONTAINS 29,604 RECORDS]

COL	ITEM NAME	WDTH	OPUT	TYP	DESCRIPTION
16	ITEMS: STARTING IN POSITION		1		
1	LOCATION-CODE	6	6	I	NUMBER OF LOCATION
7	COLLECTION-CODE	6	6	I	NUMBER OF COLLECTION
13	KINGDOM	1	1	I	-
14	PHYLUM	2	2	I	-
16	CLASS	2	2	I	-
18	ORDER	2	2	I	-
20	FAMILY	3	3	I	-
23	GENUS	3	3	I	-
26	SPECIES	3	3	I	-
29	SUB-SPECIES	2	2	I	-
31	HYBRID	1	1	C	IF SPECIES IS A HYBRID (1=YES)
32	NUM-SPEC	3	3	I	NUMBER OF SPECIMENS
35	NHS-COLL	1	1	I	IF PART OF INHS COLLECTION (1=YES)
36	JARSIZE	1	1	I	SIZE OF INHS JAR
37	CATALOG#	7	7	I	INHS CATALOG NUMBER
44	NHS-CODE	9	9	C	INHS SPECIES CODE

DATAFILE: FISH-LOC-COLL-DIST

THIS FILE CONTAINS LOCATION AND COLLECTION DATA FOR FISH. ITEMS INCLUDE A NUMBER FOR THE LOCATION, A NUMBER FOR THE COLLECTION AT A GIVEN LOCATION, STATE, COUNTY, NUMBER OF THE COLLECTION IN THE COUNTY, LOCATION BASED ON LATITUDE AND LONGITUDE (MERIDIAN, TOWNSHIP, RANGE AND SECTION), LOCATION BASED ON DISTANCE AND DIRECTION FROM A LOCATION, SPECIAL HABITAT CODE, STREAM, COLLECTORS, DATE OF COLLECTION (MONTH, DAY, AND YEAR), NUMBER OF SPECIMENS IN THE GIVEN COLLECTION, AND LOCATION WITHIN VARIOUS ADMINISTRATIVE AND NATURAL CATEGORIES (REFER TO ITEMS DESCRIPTION BELOW).

*ITEMS

DATAFILE NAME: FISH-LOC-COLL-DIST

[CONTAINS 3791 RECORDS FROM THE YEARS 1908 - 1991]

COL	ITEM NAME	WDTH	OPUT	TYP	DESCRIPTION
44	ITEMS: STARTING IN POSITION		1		
1	LOCATION-CODE	6	6	I	CODE FOR LOCATION
7	COLLECTION-CODE	6	6	I	CODE FOR COLLECTION
13	ST-FIPS	2	2	I	FIPS CODE FOR STATE
15	CO-FIPS	3	3	I	FIPS CODES FOR COUNTY

18	COLLECT#	3	3	I	NO. OF COLLECTION IN COUNTY
21	MERIDIAN	1	1	I	MERIDIAN OF LONGITUDE
22	TOWNSHIP	2	2	I	TOWNSHIP
24	TDIR	1	1	C	TOWNSHIP DIRECTION
25	RANGE	2	2	I	RANGE
27	RDIR	1	1	C	RANGE DIRECTION
28	SECTION	2	2	I	SECTION
30	DISTANCE	4	4	N	DISTANCE FROM A LOCATION
34	UNIT	2	2	C	DISTANCE IN MILES OR KM
36	DIRECTION	4	4	C	DIRECTION FROM A LOCATION
40	LOCATION	16	16	C	LOCATION
56	SPECIAL-CODE	2	2	I	SPECIAL HABITAT CODE
58	STREAM-CODE	17	17	C	STREAM
75	COLLECTOR1	3	3	I	COLLECTOR OF SPECIMENS
78	COLLECTOR2	3	3	I	COLLECTOR OF SPECIMENS
81	COLLECTOR3	3	3	I	COLLECTOR OF SPECIMENS
84	YEAR	4	4	I	YEAR OF COLLECTION
88	MONTH	2	2	I	MONTH OF COLLECTION
90	DAY	2	2	I	DAY OF COLLECTION
92	NUM-SPP	2	2	I	NUMBER OF SPECIES COLLECTED
94	DOC-REG	1	1	I	ILL DEPT OF CONSERVATION REGIONS
95	FOREST	2	2	I	FORESTRY DISTRICTS
97	F&W	2	2	I	FISH & WILDLIFE DISTRICTS
99	WILD	2	2	I	WILDLIFE MANAGEMENT DISTRICTS
101	FUR	1	1	I	FURBEARER MANAGEMENT ZONES
102	BIRD	2	2	I	BIRD MIGRATION DISTRICTS
104	IDOT-BASIN	2	2	C	ILL DEPT TRANSPORTATION DRAINAGE BASINS
106	USGS1	9	8	I	US GEOLOGICAL SURVEY HYDRO- LOGIC UNITS
115	VEG-CODE	3	3	I	POTENTIAL NATURAL VEGETATION
118	NAT-DIV	4	5	I	NATURAL DIVISIONS
122	ECO	4	4	I	ECOREGIONS
126	IEPA	2	2	I	ILL ENVIRONMENTAL PROTECTION AGENCY UNITS
128	NAT-WILD-REF	4	4	I	NATIONAL WILDLIFE REFUGES
132	ARMY-CORPS	1	1	I	US ARMY CORPS OF ENGINEER DISTRICTS
133	RANGER-DIST	2	2	I	US FOREST SERVICE RANGER DISTRICTS
135	SCS	1	1	I	SOIL CONSERVATION SERVICE AREAS
136	GEOG	8	8	I	LATITUDE & LONGITUDE
144	RIVER-MI	4	4	I	RIVER MILES
148	RIVER-POOL	3	3	I	RIVER POOL
151	QUAD75	4	5	B	7.5 MINUTE QUADRANGLE

DATAFILE NAME: FISH-SPEC-SIU

[CONTAINS 2907 RECORDS FROM THE SIU COLLECTIONS? - NO DATES]

COL	ITEM NAME	WDTH	OPUT	TYP	N.DEC	ALTERNATE NAME
17	ITEMS: STARTING IN POSITION				1	
1	LOCATION-CODE	6	6	I	-	
7	COLLECTION-CODE	6	6	I	-	
13	KINGDOM	1	1	I	-	
14	PHYLUM	2	2	I	-	
16	CLASS	2	2	I	-	
18	ORDER	2	2	I	-	
20	FAMILY	3	3	I	-	
23	GENUS	3	3	I	-	
26	SPECIES	3	3	I	-	
29	SUB-SPECIES	2	2	I	-	

31	HYBRID	1	1	C	-
32	NUM-SPEC	3	3	I	-
35	NHS-COLL	1	1	C	-
36	JARSIZE	1	1	I	-
37	CATALOG#	7	7	I	-
44	NHS-CODE	9	9	C	-
53	FLAG	1	1	I	-

DATAFILE: BIRD-DIST

THIS FILES CONTAINS DISTRIBUTION INFORMATION PERTAINING TO BIRDS. ITEMS INCLUDE SPECIES, COUNTY, LOCATION, NUMBER OF INDIVIDUALS, DATE OF SITING (YEAR, MONTH, DAY), ASSOCIATED COMMENTS, BREEDING CATEGORY, SEASON, AND SOURCE OF DATA.

*ITEMS

DATAFILE NAME: BIRD-DIST

[ITEM 'LOCATION' IS VERY BRIEF AND GENERAL - IS NOT FILLED FOR MOST RECORDS
ITEM SOURCE-CODE IS NOT FILLED]

19 ITEMS: STARTING IN POSITION 1					
COL	ITEM NAME	WDTH	OPUT	TYP	DESCRIPTION
1	KINGDOM	1	1	I	-
2	PHYLUM	2	2	I	-
4	CLASS	2	2	I	-
6	ORDER	2	2	I	-
8	FAMILY	3	3	I	-
11	GENUS	3	3	I	-
14	SPECIES	3	3	I	-
17	SUB-SPECIES	2	2	I	-
19	CO-FIPS	3	3	I	FIPS CODE FOR COUNTY
22	LOCATION	30	30	C	LOCATION
52	NUM	3	3	I	NUMBER OF INDIVIDUALS
55	YEAR1	4	4	I	YEAR OF SITING (FIRST YEAR OF WINTER SEASON)
59	YEAR2	4	4	I	SECOND YEAR OF WINTER SEASON
63	MONTH	2	2	I	MONTH
65	DAY	2	2	I	DAY
67	COMMENT	30	30	C	ASSOCIATED COMMENT
97	BREED-CAT	6	6	C	BREEDING CATEGORY
103	SEASON	1	1	C	SEASON
104	SOURCE-CODE	2	2	I	SOURCE OF DATA

*MAIN RELATED FILES

FILE:	RELATE ITEM:
CODES OR COMMON-NAMES	TAXA-CODE
COUNTY-NAMES	CO-FIPS
SEASON-KEY	SEASON
DIST-SOURCE-KEY	-

*ADDITIONAL BIRD FILES

DATAFILE NAME: BIRD-LOC-COLL-DIST

[THIS APPEARS TO BE A FILE FROM EAGLE CREEK AND WOLF CREEK
STATE PARKS? THE YEAR IS 1985, THERE ARE 285 RECORDS]

12 ITEMS: STARTING IN POSITION 1						
COL	ITEM NAME	WDTH	OPUT	TYP	N.DEC	ALTERNATE NAME
1	LOCATION-CODE	6	6	I	-	
7	COLLECTION-CODE	6	6	I	-	
13	MONTH	2	2	I	-	
15	DAY	2	2	I	-	
17	YEAR	4	4	I	-	
21	COMMENTS	40	40	C	-	
61	COLLECTOR	30	30	C	-	
91	LOCATION	40	40	C	-	
131	EASTING	6	6	I	-	

137	NORTHING	7	7	I	-
144	ECO-CODE	6	6	C	-
150	FLAG	1	1	I	-
	** REDEFINED ITEMS **				
1	ALL	149	149	C	-
1	LC	12	12	I	-
13	NOT-LC	78	78	C	-

DATAFILE NAME: BIRDS-DOC

[THERE ARE 132,529 RECORDS FROM THE YEARS 1979 - 1991]

5 ITEMS: STARTING IN POSITION 1						
COL	ITEM NAME	WIDTH	OPUT	TYP	N.DEC	ALTERNATE NAME
1	TAXA-CODE	18	18	C	-	
19	YEAR	4	4	I	-	
23	CO-FIPS	3	3	I	-	
26	NUM-SPEC	6	6	I	-	
32	FLAG	1	1	I	-	
	** REDEFINED ITEMS **					
1	ALL	31	31	C	-	

DATAFILE NAME: CHRISTMAS-COUNT

[THERE ARE 30,024 RECORDS FROM THE YEARS 1981 - 1990
THE ITEM SOURCE-CODE IS NOT FILLED]

18 ITEMS: STARTING IN POSITION 1						
COL	ITEM NAME	WIDTH	OPUT	TYP	N.DEC	ALTERNATE NAME
1	KINGDOM	1	1	I	-	
2	PHYLUM	2	2	I	-	
4	CLASS	2	2	I	-	
6	ORDER	2	2	I	-	
8	FAMILY	3	3	I	-	
11	GENUS	3	3	I	-	
14	SPECIES	3	3	I	-	
17	SUB-SPECIES	2	2	I	-	
19	CO-FIPS	3	3	I	-	
22	CO-FIPS2	3	3	I	-	
25	CO-FIPS3	3	3	I	-	
28	LOCATION-ID	2	2	C	-	
30	NUM	6	6	I	-	
36	YEAR	4	4	I	-	
40	COMMENT	30	30	C	-	
70	BREED-CAT	6	6	C	-	
76	SOURCE-CODE	2	2	I	-	
78	FLAG	1	1	I	-	

DATAFILE NAME: BIRD-BANDING-SUMMARY

[CONTAINS 240286 RECORDS FROM THE YEARS 1922 - 1990]

15 ITEMS: STARTING IN POSITION 1

COL	ITEM NAME	WDTH	OPUT	TYP	N.DEC	ALTERNATE NAME
1	AOU	4	4	C	-	
5	REGION-BANDED	3	3	C	-	
8	YEAR-BANDED	2	2	C	-	
10	PERMIT#	5	5	C	-	
15	MONTH-BANDED	2	2	C	-	
17	DAY-BANDED	1	1	C	-	
18	STATUS	4	4	C	-	
22	AGE	2	2	C	-	
24	SEX	1	1	C	-	
25	LAT-BANDED	3	3	C	-	
28	LONG-BANDED	4	4	C	-	
32	DIR-BANDED	1	1	C	-	
33	BAND-TYPE	2	2	C	-	
35	BANDING-INFO	5	5	C	-	
40	TOTAL-BIRDS	5	5	C	-	

DATAFILE NAME: BIRD-BANDING-RECOVERY

[CONTAINS 146017 RECORDS]

30 ITEMS: STARTING IN POSITION 1

COL	ITEM NAME	WDTH	OPUT	TYP	N.DEC	ALTERNATE NAME
1	BAND#	9	9	C	-	
10	REPLACED-BAND	1	1	C	-	
11	DATE-RECOVERED	6	6	C	-	
17	HOW-OBTAINED	2	2	C	-	
19	WHO-REPORTED	2	2	C	-	
21	PRESENT-COND	2	2	C	-	
23	WHY-REPORTED	2	2	C	-	
25	BATCH-NUMBER	5	5	C	-	
30	FLY	1	1	C	-	
31	ST	2	2	C	-	
33	LAT	3	3	C	-	
36	LONG	4	4	C	-	
40	DIR	1	1	C	-	
41	PERMIT-NUMBER	5	5	C	-	
46	AOU	4	4	C	-	
50	STATUS	4	4	C	-	
54	AGE	2	2	C	-	
56	SEX	1	1	C	-	
57	FLY-BANDED	1	1	C	-	
58	ST-BANDED	2	2	C	-	
MORE?						
60	LAT-BANDED	3	3	C	-	
63	LONG-BANDED	4	4	C	-	
67	DIR-BANDED	1	1	C	-	
68	MONTH-BANDED	2	2	C	-	
70	DAY-BANDED	2	2	C	-	
72	YEAR-BANDED	2	2	C	-	
74	BAND-TYPE	2	2	C	-	
76	MONTH-PROCESSED	2	2	C	-	
78	YEAR-PROCESSED	2	2	C	-	
80	HUNT-SEAS-SURV	3	3	C	-	

DATAFILE: MAMMAL-SPEC-DIST

THIS FILE CONTAINS SPECIES DATA FOR MAMMALS. ITEMS INCLUDE A SPECIES CODE, A NUMBER FOR THE LOCATION, A NUMBER FOR THE COLLECTION AT A GIVEN LOCATION, NUMBER OF SPECIMENS EXAMINED, REPOSITORY FOR THE SPECIMENS, AND A CODE INDICATING THE SOURCE OF THE DATA.

*ITEMS

DATAFILE NAME: MAMMAL-SPEC-DIST

[THIS FILE CONTAINS 4297 RECORDS, OF WHICH 4175 HAVE NO YEAR - I AM ASSUMING THAT THESE ARE THE HOFFMEISTER RECORDS. THE REMAINING 122 RECORDS HAVE DATES RANGING FROM 1909 TO 1979]

COL	ITEM NAME	WIDTH	OPUT	TYP	N.DEC	ALTERNATE NAME
14	ITEMS: STARTING IN POSITION		1			
1	KINGDOM	1	1	I	-	
2	PHYLUM	2	2	I	-	
4	CLASS	2	2	I	-	
6	ORDER	2	2	I	-	
8	FAMILY	3	3	I	-	
11	GENUS	3	3	I	-	
14	SPECIES	3	3	I	-	
17	SUB-SPECIES	2	2	I	-	
19	LOCATION-CODE	6	6	I		CODE FOR LOCATION
25	COLLECTION-CODE	6	6	I		CODE FOR COLLECTION
31	NUM-EXAM	3	3	I		NUMBER OF SPECIMENS EXAMINED
34	REP	5	5	C		REPOSITORY FOR SPECIMENS
39	SOURCE-CODE	2	2	I		CODE FOR DATA SOURCE

DATAFILE: MAMMAL-LOC-COLL-DIST

THIS FILE CONTAINS LOCATION AND COLLECTION INFORMATION FOR MAMMALS. ITEMS INCLUDE A NUMBER FOR THE LOCATION, A NUMBER FOR THE COLLECTION AT A GIVEN LOCATION, COUNTY, LOCATION BASED ON DISTANCE AND DIRECTION FROM A LOCATION, DATE OF COLLECTION, AND LOCATION WITHIN SEVERAL ADMINISTRATIVE, GEOGRAPHIC, AND NATURAL UNITS (SEE ITEMS DESCRIPTIONS BELOW).

*ITEMS

DATAFILE NAME: MAMMAL-LOC-COLL-DIST

COL	ITEM NAME	WIDTH	OPUT	TYP	N.DEC	ALTERNATE NAME
30	ITEMS: STARTING IN POSITION		1			
1	LOCATION-CODE	6	6	I	-	
7	COLLECTION-CODE	6	6	I	-	
13	CO-FIPS	3	3	I	-	
16	DIST-MI	5	5	N	2	
21	DIRECTION	3	3	C	-	
24	LOCATION	40	40	C	-	
64	YEAR	4	4	I	-	
68	MON/DAY	4	4	I	-	
72	DOC-REG	1	1	I		ILL DEPT OF CONSERVATION REGIONS
73	FOREST	2	2	I		FORESTRY DISTRICTS
75	F&W	2	2	I		FISH & WILDLIFE DISTRICTS
77	WILD	2	2	I		WILDLIFE MANAGEMENT DISTRICTS

79	FUR	1	1	I	FURBEARER MANAGEMENT ZONES
80	BIRD	2	2	I	BIRD MIGRATION DISTRICTS
82	IDOT-BASIN	2	2	C	ILL DEPT TRANSPORTATION DRAINAGE BASINS
84	USGS1	9	8	I	US GEOLOGICAL SURVEY HYDRO- LOGIC UNITS
93	VEG-CODE	3	3	I	POTENTIAL NATURAL VEGETATION
96	NAT-DIV	4	5	I	NATURAL DIVISIONS
100	ECO	4	4	I	ECOREGIONS
104	IEPA	2	2	I	ILL ENVIRONMENTAL PROTECTION AGENCY UNITS
106	NAT-WILD-REF	4	4	I	NATIONAL WILDLIFE REFUGES
110	ARMY-CORPS	1	1	I	US ARMY CORPS OF ENGINEER DISTRICTS
111	RANGER-DIST	2	2	I	US FOREST SERVICE RANGER DISTRICTS
113	SCS	1	1	I	SOIL CONSERVATION SERVICE AREAS
114	GEOG	8	8	I	LATITUDE & LONGITUDE
122	RIVER-MI	4	4	I	RIVER MILES
126	RIVER-POOL	3	3	I	RIVER POOL
129	TOWNSHIP	3	3	C	TOWNSHIP
132	RANGE	3	3	C	RANGE
135	QUAD75	4	5	B	7.5 MINUTE QUADRANGLE

DATAFILE NAME: MAMM-INHS-COLL

[CONTAINS 617 RECORDS FROM THE 1900'S THRU 1960, WITH A COUPLE OF STRAYS
FROM 1985]

COL	ITEM NAME	WIDTH	OPUT	TYP	N.DEC	ALTERNATE NAME
20	ITEMS: STARTING IN POSITION				1	
1	CAT#	3	3	I	-	
4	SPECIES	34	34	C	-	
38	FAMILY	16	16	C	-	
54	STATE	11	11	C	-	
65	COUNTY	12	12	C	-	
77	LOCATION	50	50	C	-	
127	DAY	5	5	C	-	
132	MONTH	20	20	C	-	
152	LONG-YEAR	9	9	C	-	
161	COLLECTOR	40	40	C	-	
201	SKIN	1	1	C	-	
202	SKULL	1	1	C	-	
203	REMARKS	25	25	C	-	
228	NUMBER	10	10	C	-	
238	TAXA-CODE	18	18	C	-	
256	CO-FIPS	3	3	I	-	
259	COLL-CODE1	3	3	I	-	
262	COLL-CODE2	3	3	I	-	
265	COLL-CODE3	3	3	I	-	
268	FLAG	1	1	I	-	

DATAFILE: CRUST-SPEC-DIST

THIS FILE CONTAINS DISTRIBUTION INFORMATION FOR CRUSTACEAN. ITEMS INCLUDE SPECIES, LOCATION CODE, COLLECTION CODE, CATALOG NUMBER IN ILLINOIS NATURAL HISTORY SURVEY COLLECTION, THE JAR SIZE IN THE INHS COLLECTION, THE NUMBER OF INDIVIDUALS COLLECTED (IMMATURE MALES, MALES, FEMALES AND TOTAL NUMBER), THE INHS COLLECTION NUMBER AND A CODE INDICATING THE SOURCE OF THE DATA.

*ITEMS

DATAFILE NAME: CRUST-SPEC-DIST

[CONTAINS 3511 RECORDS]

19 ITEMS: STARTING IN POSITION 1					
COL	ITEM NAME	WIDTH	OPUT	TYP	DESCRIPTION
1	KINGDOM	1	1	I	-
2	PHYLUM	2	2	I	-
4	CLASS	2	2	I	-
6	ORDER	2	2	I	-
8	FAMILY	3	3	I	-
11	GENUS	3	3	I	-
14	SPECIES	3	3	I	-
17	SUB-SPECIES	2	2	I	-
19	LOCATION-CODE	6	6	I	CODE FOR LOCATION
25	COLLECTION-CODE	6	6	I	CODE FOR COLLECTION
31	CATALOG#	7	7	I	INHS CATALOG NUMBER
38	JAR SIZE	1	1	C	SIZE OF JAR
39	NUM-IMALES	3	3	I	NUMBER OF IMMATURE MALES
42	NUM-MALES	3	3	I	NUMBER OF MALES
45	NUM-FEMALES	3	3	I	NUMBER OF FEMALES
48	NUM-TOTAL	3	3	I	TOTAL NUMBER
51	NHS-COLL	1	1	C	IF PART OF INHS COLLECTION (1=YES)
52	SOURCE-CODE	2	2	I	SOURCE OF DATA

DATAFILE: HERP-SPEC-DIST

THIS FILE CONTAINS SPECIES DATA FOR AMPHIBIAN AND REPTILE DISTRIBUTIONS. ITEMS INCLUDE SPECIES CODE, CATALOG NUMBER IN ILLINOIS NATURAL HISTORY SURVEY COLLECTION, A CODE FOR THE LOCATION, A CODE FOR THE COLLECTION AT A LOCATION, NUMBER OF SPECIMENS, AND A CODE FOR THE SOURCE OF THE DATA.

*ITEMS

DATAFILE NAME: HERP-SPEC-DIST

13 ITEMS: STARTING IN POSITION 1

COL	ITEM NAME	WDTH	OPUT	TYP	DESCRIPTION
1	KINGDOM	1	1	I	-
2	PHYLUM	2	2	I	-
4	CLASS	2	2	I	-
6	ORDER	2	2	I	-
8	FAMILY	3	3	I	-
11	GENUS	3	3	I	-
14	SPECIES	3	3	I	-
17	SUB-SPECIES	2	2	I	-
19	CATALOG#	6	6	I	INHS CATALOG NUMBER
25	LOCATION-CODE	6	6	I	NUMBER OF LOCATION
31	COLLECTION-CODE	6	6	I	NUMBER OF COLLECTION
37	NUM-SPEC	3	3	I	NUMBER OF SPECIMENS
40	SOURCE-CODE	2	2	I	SOURCE OF DATA

THIS FILE CONTAINS LOCATION AND COLLECTION DATA FOR AMPHIBIANS AND REPTILES (COLLECTIVELY KNOWN AS HERPS). ITEMS INCLUDE A NUMBER FOR THE LOCATION, A NUMBER FOR THE COLLECTION AT A GIVEN LOCATION, COUNTY, DISTANCE AND DIRECTION FROM A LOCATION, STREAM (IF ANY), COLLECTORS, AND DATE OF COLLECTION.

*ITEMS

DATAFILE NAME: HERP-LOC-COLL-DIST

13 ITEMS: STARTING IN POSITION 1

COL	ITEM NAME	WDTH	OPUT	TYP	DESCRIPTION
1	LOCATION-CODE	6	6	I	CODE FOR LOCATION
7	COLLECTION-CODE	6	6	I	CODE FOR COLLECTION
13	CO-FIPS	3	3	I	FIPS CODE FOR COUNTY
16	DIST-MI	5	5	N	DISTANCE IN MILES FROM LOCATION ITEM BELOW
21	DIRECTION	3	3	C	DIRECTION FROM LOCATION ITEM BELOW
24	LOCATION	20	20	C	COMMON LOCATION
44	STREAM-NAME	23	23	C	STREAM NAME, IF ANY
67	COLLECTOR1	4	4	I	COLLECTOR OF SPECIMENS
71	COLLECTOR2	4	4	I	COLLECTOR OF SPECIMENS
75	COLLECTOR3	4	4	I	COLLECTOR OF SPECIMENS
79	YEAR	4	4	I	YEAR OF COLLECTION
83	MONTH	2	2	I	MONTH OF COLLECTION
85	DAY	2	2	I	DAY OF COLLECTION

DATAFILE: HERP2-SPEC-DIST

[THIS DATA FILE NO LONGER EXISTS - I BELIEVE IT HAS BEEN MERGED WITH HERP-SPEC-DIST THE SAME APPLIES TO A FILE FORMERLY CALLED HERP2-LOC-COLL-DIST]

THIS FILES CONTAINS SPECIES DATA FOR AMPHIBIANS AND REPTILES (E.G. HERPS) OBTAINED FROM MAPS PROVIDED BY DR. MICHAEL MORRIS.

SOUTHERN ILLINOIS UNIVERSITY. ITEMS INCLUDE A SPECIES CODE,
A NUMBER IDENTIFYING THE LOCATION, AND A CODE FOR THE SOURCE.

*ITEMS

DATAFILE NAME: HERP2-SPEC-DIST

10 ITEMS: STARTING IN POSITION 1

COL	ITEM NAME	WDTH	OPUT	TYP	DESCRIPTION
1	KINGDOM	1	1	I	-
2	PHYLUM	2	2	I	-
4	CLASS	2	2	I	-
6	ORDER	2	2	I	-
8	FAMILY	3	3	I	-
11	GENUS	3	3	I	-
14	SPECIES	3	3	I	-
17	SUB-SPECIES	2	2	I	-
19	LOCATION-CODE	6	6	I	CODE FOR LOCATION
25	SOURCE-CODE	2	2	I	CODE OF SOURCE OF DATA

DATAFILE: INVERT-DIST

THIS FILE CONTAINS DISTRIBUTION INFORMATION FOR INVERTEBRATES OTHER THAN MOLLUSKS. ITEMS INCLUDE SPECIES, COUNTY, OCCURRENCE CODE (KNOWN = 1 OR POSSIBLE = 2), AND SOURCE OF THE DATA.

*ITEMS

DATAFILE NAME: INVERT-DIST

[THIS FILE CONTAINS 9,874 RECORDS]

11 ITEMS: STARTING IN POSITION						1
COL	ITEM NAME	WDTH	OPUT	TYP	N.DEC	ALTERNATE NAME
1	KINGDOM	1	1	I	-	
2	PHYLUM	2	2	I	-	
4	CLASS	2	2	I	-	
6	ORDER	2	2	I	-	
8	FAMILY	3	3	I	-	
11	GENUS	3	3	I	-	
14	SPECIES	3	3	I	-	
17	SUBSPECIES	2	2	I	-	
19	CO-FIPS	3	3	I		FIPS CODE FOR COUNTY
22	OCCUR	1	1	I		OCCURRENCE
23	SOURCE-CODE	2	2	I		SOURCE OF DATA

DATAFILE: MOLL-SPEC-DIST

THIS FILE CONTAINS SPECIES DATA FOR MOLLUSKS. ITEMS INCLUDE A SPECIES CODE, A NUMBER FOR THE LOCATION, A NUMBER FOR THE COLLECTION AT A GIVEN LOCATION, CATALOG NUMBER FOR MUSEUM SPECIMENS, A CODE INDICATING THE SOURCE OF THE DATA, NUMBER OF SPECIMENS COLLECTED LIVE AND DEAD AND THE NUMBER VOUCHERED INTO A COLLECTION.

*ITEMS

DATAFILE NAME: MOLL-SPEC-DIST

[CONTAINS 3395 RECORDS FROM THE YEAR 1949 - 1979]

COL	ITEM NAME	WDTH	OPUT	TYP	N.DEC	ALTERNATE NAME
16	ITEMS: STARTING IN POSITION		1			
1	KINGDOM	1	1	I	-	
2	PHYLUM	2	2	I	-	
4	CLASS	2	2	I	-	
6	ORDER	2	2	I	-	
8	FAMILY	3	3	I	-	
11	GENUS	3	3	I	-	
14	SPECIES	3	3	I	-	
17	SUB-SPECIES	2	2	I	-	
19	LOCATION-CODE	3	3	I		CODE FOR LOCATION
22	COLLECTION-CODE	3	3	I		CODE FOR COLLECTION
25	CATALOG#	5	5	I		CATALOG NUMBER
30	SOURCE-CODE	2	2	I		CODE FOR DATA SOURCE
32	NUM-LIVE	6	6	N		NUMBER COLLECTED LIVE
38	NUM-DEAD	6	6	N		NUMBER COLLECTED DEAD
44	NUM-VOUCH	6	6	N		NUMBER VOUCHERED

DATAFILE: MOLL-LOC-COLL-DIST

THIS FILE CONTAINS LOCATION AND COLLECTION DATA FOR MOLLUSKS. ITEMS INCLUDE A NUMBER FOR THE LOCATION, A NUMBER FOR THE COLLECTION AT A GIVEN LOCATION, STATE, COUNTY, STREAM, LOCATION BASED ON TOWNSHIP-RANGE-SECTION, LOCATION BASED ON DISTANCE AND DIRECTION FROM A LOCATION, LOCATION BASED ON A RANGE OF RIVER MILES AND LEFT OR RIGHT BANK, COLLECTOR(S), DATE OF COLLECTION, NUMBER OF SPECIES COLLECTED, AND LOCATION WITHIN VARIOUS ADMINISTRATIVE, GEOGRAPHIC, AND NATURAL UNITS (REFER TO ITEMS DESCRIPTION BELOW).

*ITEMS

DATAFILE NAME: MOLL-LOC-COLL-DIST

COL	ITEM NAME	WDTH	OPUT	TYP	DESCRIPTION
43	ITEMS: STARTING IN POSITION		1		
1	LOCATION-CODE	3	3	I	CODE FOR LOCATION
4	COLLECTION-CODE	3	3	I	CODE FOR COLLECTION
7	ST-FIPS	2	2	I	FIPS CODE FOR STATE
9	CO-FIPS	3	3	I	FIPS CODE FOR COUNTY
12	STREAM-CODE	17	17	C	STREAM
29	TOWNSHIP	2	2	I	TOWNSHIP
31	TDIR	1	1	C	TOWNSHIP DIRECTION
32	RANGE	2	2	I	RANGE
34	RDIR	1	1	C	RANGE DIRECTION
35	SECTION	2	2	I	SECTION
37	DISTANCE	4	4	N	DISTANCE FROM LOCATION
41	DIRECTION	3	3	C	DIRECTION FROM LOCATION

44	LOCATION	40	40	C	LOCATION
84	RM1	5	5	N	UPSTREAM RIVER MILE
89	RM2	5	5	N	DOWNSTREAM RIVER MILE
94	BANK	1	1	C	LEFT OR RIGHT BANK
95	COLLECTOR1	3	3	I	COLLECTOR
98	COLLECTOR2	3	3	I	COLLECTOR
101	COLLECTOR3	3	3	I	COLLECTOR
104	YEAR	4	4	I	YEAR OF COLLECTION
108	MONTH	2	2	I	MONTH OF COLLECTION
110	DAY	2	2	I	DAY OF COLLECTION
112	NUM-SPP	2	2	I	NUMBER OF SPECIES COLLECTED
114	DOC-REG	1	1	I	ILL DEPT OF CONSERVATION REGIONS
115	FOREST	2	2	I	FORESTRY DISTRICTS
117	F&W	2	2	I	FISH & WILDLIFE DISTRICTS
119	WILD	2	2	I	WILDLIFE MANAGEMENT DISTRICTS
119	FUR	1	1	I	FURBEARER MANAGEMENT ZONES
122	BIRD	2	2	I	BIRD MIGRATION DISTRICTS
124	IDOT-BASIN	2	2	C	ILL DEPT TRANSPORTATION DRAINAGE BASINS
126	USGS1	9	8	I	US GEOLOGICAL SURVEY HYDRO- LOGIC UNITS
135	VEG-CODE	3	3	I	POTENTIAL NATURAL VEGETATION
138	NAT-DIV	4	5	I	NATURAL DIVISIONS
142	ECO	4	4	I	ECOREGIONS
146	IEPA	2	2	I	ILL ENVIRONMENTAL PROTECTION AGENCY UNITS
148	NAT-WILD-REF	4	4	I	NATIONAL WILDLIFE REFUGES
152	ARMY-CORPS	1	1	I	US ARMY CORPS OF ENGINEER DISTRICTS
153	RANGER-DIST	2	2	I	US FOREST SERVICE RANGER DISTRICTS
155	SCS	1	1	I	SOIL CONSERVATION SERVICE AREAS
156	GEOG	8	8	I	LATITUDE & LONGITUDE
164	RIVER-MI	4	4	I	RIVER MILES
168	RIVER-POOL	3	3	I	RIVER POOL
171	QUAD75	4	5	B	7.5 MINUTE QUADRANGLE

DATAFILE NAME: MOLLUSK-FROM-MUSEUMS

01/04/1994

[CONTAINS 9184 RECORDS - I HAVE NOT FOUND THE CODE TRANSLATIONS FOR THE MUSEUMS]

COL	ITEM NAME	WIDTH	OPUT	TYP	N.DEC	ALTERNATE NAME
8	ITEMS: STARTING IN POSITION				1	
1	MUSEUM	7	7	C	-	
8	CAT#	10	10	C	-	
18	SPECIES	60	60	C	-	
78	STREAM	50	50	C	-	
128	LOCATION	80	80	C	-	
208	VOUCHED	10	10	C	-	
218	TAXA-CODE	18	18	C	-	
236	FLAG	1	1	I	-	
	** REDEFINED ITEMS **					
1	MUSCAT	17	17	C	-	
1	ALL	207	200	C	-	
18	TAXA-NAME	60	60	C	-	

Appendix B

Carlyle Lake State Fish & Wildlife Areas

<u>DATA LAYER</u>	<u>MAP SCALE</u>	<u>SOURCE</u>
Boundary	1:24,000	ISM, 7.5 min quads
Hydrology (streams)	1:100,000	USGS, DLG data layer
Hydrology (lakes,ponds)	1:100,000	USGS, DLG data layer
Lake Shoreline	1:24,000	INHS, 7.5 min quads
Wetlands	1:24,000	IDOC, USFWS-NWI
Natural Areas	None	
Nature Preserves	None	
T & E Data	within 2000'	IDOC,
Roads	1:100,000	USGS, DLG data layer
Utility Lines	1:100,000	USGS, DLG data layer
Rail Road Lines	1:100,000	USGS, DLG data layer
Section Lines	1:24,000	ISGS, 7.5 min quads
Towns (names)	1:500,000	, USGS maps
County Lines	1:24,000 1:62,500	ISGS, 7.5 & 15 min quads
Contour Lines	1:24,000	ISM, 7.5 min quads

includes:

Carlyle Lake State Fish & Wildlife Area

Eldon Hazlet State Park

South Shore State Park

Des Plaines Conservation Area

<u>DATA LAYER</u>	<u>MAP SCALE</u>	<u>SOURCE</u>
Boundary	1:24,000	INHS, 7.5 min quads
Hydrology (streams)	1:100,000	USGS, DLG data layer
Hydrology (lakes,ponds)	1:100,000	USGS, DLG data layer
Lake Shoreline	none	
Wetlands	1:24,000	IDOC, USFWS-NWI
Natural Areas	1:24,000 1:4,800	INHS, IDOC maps
Nature Preserves	1:24,000	INHS, IDOC maps
T & E Data	within 2000'	IDOC,
Roads	1:100,000	USGS, DLG data layer
Utility Lines	1:100,000	USGS, DLG data layer
Rail Road Lines	1:100,000	USGS, DLG data layer
Section Lines	1:24,000	ISGS, 7.5 min quads
Towns (names)	1:500,000	, USGS maps
County Lines	1:24,000 1:62,500	ISGS, 7.5 & 15 min quads
Contour Lines	1:24,000	INHS, 7.5 min quads

includes:

Elton Fauks Eagle Refuge

<u>DATA LAYER</u>	<u>MAP SCALE</u>	<u>SOURCE</u>
Boundary	1:200	INHS, engineering map
Hydrology (streams)	1:100,000	USGS, DLG data layer
Hydrology (lakes,ponds)	none	
Lake Shoreline	none	
Wetlands	1:24,000	IDOC, USFWS-NWI
Natural Areas	1:24,000 1:4,800	INHS, IDOC maps
Nature Preserves	1:24,000	INHS, IDOC maps
T & E Data	none	
Roads	1:100,000	USGS, DLG data layer
Utility Lines	none	
Rail Road Lines	1:100,000	USGS, DLG data layer
Section Lines	1:24,000	ISGS, 7.5 min quads
Towns (names)	none	
County Lines	none	
Contour Lines	n.a.	

includes:

Giant City State Park

<u>DATA LAYER</u>	<u>MAP SCALE</u>	<u>SOURCE</u>
Boundary	1:24,000	INHS, 7.5 min quads
Hydrology (streams)	1:100,000	USGS, DLG data layer
Hydrology (lakes,ponds)	1:100,000	USGS, DLG data layer
Lake Shoreline	1:100,000	USGS, DLG data layer
Wetlands	1:24,000	IDOC, USFWS-NWI
Natural Areas	1:24,000 1:4,800	INHS, IDOC maps
Nature Preserves	1:24,000	INHS, IDOC maps
T & E Data	within 2000'	IDOC,
Roads	1:100,000	USGS, DLG data layer
Utility Lines	none	
Rail Road Lines	1:100,000	USGS, DLG data layer
Section Lines	1:24,000	ISGS, 7.5 min quads
Towns (names)	none	
County Lines	1:24,000 1:62,500	ISGS, 7.5 & 15 min quads
Contour Lines	1:24,000	INHS, 7.5 min quads

includes:

Illinois Beach State Park

<u>DATA LAYER</u>	<u>MAP SCALE</u>	<u>SOURCE</u>
Boundary	1:24,000	INHS, 7.5 min quads
Hydrology (streams)	1:100,000	USGS, DLG data layer
Hydrology (lakes,ponds)	1:100,000	USGS, DLG data layer
Lake Shoreline	1:100,000	USGS, DLG data layer
Wetlands	1:24,000	IDOC, USFWS-NWI
Natural Areas	1:24,000 1:4,800	INHS, IDOC maps
Nature Preserves	1:24,000	INHS, IDOC maps
T & E Data	within 2000'	IDOC,
Roads	1:100,000	USGS, DLG data layer
Utility Lines	none	
Rail Road Lines	1:100,000	USGS, DLG data layer
Section Lines	1:24,000	ISGS, 7.5 min quads
Towns (names)	1:500,000	, USGS maps
County Lines	none	
Contour Lines	n.a.	

includes:

Jubilee College State Park

<u>DATA LAYER</u>	<u>MAP SCALE</u>	<u>SOURCE</u>
Boundary	1:24,000	INHS, 7.5 min quads
Hydrology (streams)	1:100,000	USGS, DLG data layer
Hydrology (lakes,ponds)	1:100,000	USGS, DLG data layer
Lake Shoreline	none	
Wetlands	1:24,000	IDOC, USFWS-NWI
Natural Areas	1:24,000 1:4,800	INHS, IDOC maps
Nature Preserves	1:24,000	INHS, IDOC maps
T & E Data	none	
Roads	1:100,000	USGS, DLG data layer
Utility Lines	none	
Rail Road Lines	none	
Section Lines	1:24,000	ISGS, 7.5 min quads
Towns (names)	none	
County Lines	none	
Contour Lines	1:24,000	INHS, 7.5 min quads

includes:

Kankakee River State Park

<u>DATA LAYER</u>	<u>MAP SCALE</u>	<u>SOURCE</u>
Boundary	unknown	ISM, engineering map
Hydrology (streams)	1:100,000	USGS, DLG data layer
Hydrology (lakes,ponds)	1:100,000	USGS, DLG data layer
Lake Shoreline	none	
Wetlands	1:24,000	IDOC, USFWS-NWI
Natural Areas	1:24,000 1:4,800	INHS, IDOC maps
Nature Preserves	1:24,000	INHS, IDOC maps
T & E Data	within 2000'	IDOC,
Roads	1:100,000	USGS, DLG data layer
Utility Lines	1:100,000	USGS, DLG data layer
Rail Road Lines	1:100,000	USGS, DLG data layer
Section Lines	1:24,000	ISGS, 7.5 min quads
Towns (names)	1:500,000	, USGS maps
County Lines	1:24,000 1:62,500	ISGS, 7.5 & 15 min quads
Contour Lines	1:24,000	ISM, 7.5 min quads

includes:

Massasauga Prairie Preserve

<u>DATA LAYER</u>	<u>MAP SCALE</u>	<u>SOURCE</u>
Boundary	1:100	INHS, engineering map
Hydrology (streams)	1:100,000	USGS, DLG data layer
Hydrology (lakes,ponds)	none	
Lake Shoreline	none	
Wetlands	none	
Natural Areas	1:24,000 1:4,800	INHS, IDOC maps
Nature Preserves	1:24,000	INHS, IDOC maps
T & E Data	none	
Roads	none	
Utility Lines	none	
Rail Road Lines	none	
Section Lines	1:24,000	ISGS, 7.5 min quads
Towns (names)	none	
County Lines	none	
Contour Lines	n.a.	

includes:

Middle Fork State Fish & Wildlife Area

<u>DATA LAYER</u>	<u>MAP SCALE</u>	<u>SOURCE</u>
Boundary	1:24,000	ISM, 7.5 min quads
Hydrology (streams)	1:100,000	USGS, DLG data layer
Hydrology (lakes,ponds)	1:100,000	USGS, DLG data layer
Lake Shoreline	none	
Wetlands	1:24,000	IDOC, USFWS-NWI
Natural Areas	1:24,000 1:4,800	INHS, IDOC maps
Nature Preserves	1:24,000	INHS, IDOC maps
T & E Data	within 2000'	IDOC,
Roads	1:100,000	USGS, DLG data layer
Utility Lines	1:100,000	USGS, DLG data layer
Rail Road Lines	1:100,000	USGS, DLG data layer
Section Lines	1:24,000	ISGS, 7.5 min quads
Towns (names)	none	
County Lines	none	
Contour Lines	1:24,000	ISM, 7.5 min quads

includes:

Pere Marquette State Park

<u>DATA LAYER</u>	<u>MAP SCALE</u>	<u>SOURCE</u>
Boundary	1:24,000	ISM, 7.5 min quads
Hydrology (streams)	1:100,000	USGS, DLG data layer
Hydrology (lakes,ponds)	1:100,000	USGS, DLG data layer
Lake Shoreline	none	
Wetlands	1:24,000	IDOC, USFWS-NWI
Natural Areas	1:24,000 1:4,800	INHS, IDOC maps
Nature Preserves	1:24,000	INHS, IDOC maps
T & E Data	within 2000'	IDOC,
Roads	1:100,000	USGS, DLG data layer
Utility Lines	none	
Rail Road Lines	none	
Section Lines	1:24,000	ISGS, 7.5 min quads
Towns (names)	none	
County Lines	none	
Contour Lines	1:24,000	ISM, 7.5 min quads

includes:

Rend Lake State Fish & Wildlife Area

<u>DATA LAYER</u>	<u>MAP SCALE</u>	<u>SOURCE</u>
Boundary	1:24,000	ISM, 7.5 min quads
Hydrology (streams)	1:100,000	USGS, DLG data layer
Hydrology (lakes,ponds)	1:100,000	USGS, DLG data layer
Lake Shoreline	1:100,000	USGS, DLG data layer
Wetlands	1:24,000	IDOC, USFWS-NWI
Natural Areas	1:24,000 1:4,800	INHS, IDOC maps
Nature Preserves	none	
T & E Data	within 2000'	IDOC,
Roads	1:100,000	USGS, DLG data layer
Utility Lines	1:100,000	USGS, DLG data layer
Rail Road Lines	1:100,000	USGS, DLG data layer
Section Lines	1:24,000	ISGS, 7.5 min quads
Towns (names)	1:500,000	, USGS maps
County Lines	1:24,000 1:62,500	ISGS, 7.5 & 15 min quads
Contour Lines	1:24,000	ISM, 7.5 min quads

includes:

Rend Lake State Fish & Wildlife Area

Wayne Fitzgerrell State Park

Shabbona Lake State Recreation Area

<u>DATA LAYER</u>	<u>MAP SCALE</u>	<u>SOURCE</u>
Boundary	1:24,000	INHS, 7.5 min quads
Hydrology (streams)	1:100,000	USGS, DLG data layer
Hydrology (lakes,ponds)	none	
Lake Shoreline	1:24,000	INHS, 7.5 min quads
Wetlands	1:24,000	IDOC, USFWS-NWI
Natural Areas	none	
Nature Preserves	none	
T & E Data	none	
Roads	1:100,000	USGS, DLG data layer
Utility Lines	none	
Rail Road Lines	1:100,000	USGS, DLG data layer
Section Lines	1:24,000	ISGS, 7.5 min quads
Towns (names)	1:500,000	, USGS maps
County Lines	none	
Contour Lines	1:24,000	INHS, 7.5 min quads

includes:

Shelbyville Lake State Areas

<u>DATA LAYER</u>	<u>MAP SCALE</u>	<u>SOURCE</u>
Boundary	1:24,000	ISM, 7.5 min quads
Hydrology (streams)	1:100,000	USGS, DLG data layer
Hydrology (lakes,ponds)	1:100,000	USGS, DLG data layer
Lake Shoreline	1:100,000	USGS, DLG data layer
Wetlands	1:24,000	IDOC, USFWS-NWI
Natural Areas	1:24,000 1:4,800	INHS, IDOC maps
Nature Preserves	none	
T & E Data	none	
Roads	1:100,000	USGS, DLG data layer
Utility Lines	1:100,000	USGS, DLG data layer
Rail Road Lines	1:100,000	USGS, DLG data layer
Section Lines	1:24,000	ISGS, 7.5 min quads
Towns (names)	1:500,000	, USGS maps
County Lines	1:24,000 1:62,500	ISGS, 7.5 & 15 min quads
Contour Lines	1:24,000	ISM, 7.5 min quads

includes:

Shelbyville State Fish & Wildlife Area

Eagle Creek State Park

Wolf Creek State Park

Silver Springs State Park

<u>DATA LAYER</u>	<u>MAP SCALE</u>	<u>SOURCE</u>
Boundary	1:24,000	INHS, 7.5 min quads
Hydrology (streams)	1:100,000	USGS, DLG data layer
Hydrology (lakes,ponds)	1:100,000	USGS, DLG data layer
Lake Shoreline	none	
Wetlands	1:24,000	IDOC, USFWS-NWI
Natural Areas	1:24,000 1:4,800	INHS, IDOC maps
Nature Preserves	1:24,000	INHS, IDOC maps
T & E Data	within 2000'	IDOC,
Roads	1:100,000	USGS, DLG data layer
Utility Lines	1:100,000	USGS, DLG data layer
Rail Road Lines	1:100,000	USGS, DLG data layer
Section Lines	1:24,000	ISGS, 7.5 min quads
Towns (names)	none	
County Lines	none	
Contour Lines	1:24,000	INHS, 7.5 min quads

includes:

Site M

<u>DATA LAYER</u>	<u>MAP SCALE</u>	<u>SOURCE</u>
Boundary	1:24,000	INHS, 7.5 min quads
Hydrology (streams)	1:100,000	USGS, DLG data layer
Hydrology (lakes,ponds)	1:100,000	USGS, DLG data layer
Lake Shoreline	none	
Wetlands	1:24,000	IDOC, USFWS-NWI
Natural Areas	1:24,000 1:4,800	INHS, IDOC maps
Nature Preserves	none	
T & E Data	within 2000'	IDOC,
Roads	1:100,000	USGS, DLG data layer
Utility Lines	none	
Rail Road Lines	none	
Section Lines	1:24,000	ISGS, 7.5 min quads
Towns (names)	1:500,000	, USGS maps
County Lines	1:24,000 1:62,500	ISGS, 7.5 & 15 min quads
Contour Lines	1:24,000	ISM, 7.5 min quads

includes: