

**ILLINOIS RIVER BASIN RESTORATION  
COMPREHENSIVE PLAN  
WITH INTEGRATED ENVIRONMENTAL ASSESSMENT**

**PUBLIC REVIEW DRAFT**

## **1. INTRODUCTION**

### **A. STUDY AUTHORITY**

Prior to initiating Federal involvement in addressing water resources problems, the U.S. Army Corps of Engineers (Corps) must have authority to investigate the problem. In the case of the Illinois River Basin, the Corps is partnering with the Illinois Department of Natural Resources (DNR) on two similar and complementary studies of the resources in the Basin.

This post authorization change report represents a final response to the Comprehensive Plan portion of the Illinois River Basin Restoration authority provided in Section 519 of the Water Resources Development Act (WRDA) 2000 and to the Illinois River Ecosystem Restoration Feasibility Study conducted under Section 216 of the 1970 Flood Control Act as a review of the completed 9-Foot Channel Navigation Project. The complementary nature of the Illinois River Ecosystem Restoration efforts and the Illinois River Basin Restoration Comprehensive Plan (Comprehensive Plan) effort led to the decision to present the findings in a joint Comprehensive Plan document. The Section 519 authorization also provides ongoing authority to evaluate and implement critical restoration projects.

Study efforts in the basin were first initiated through the Illinois River Ecosystem Restoration Study as part of the Corps' General Investigations (GI) Program. The study was initiated pursuant to the provision of funds in the Energy and Water Development Appropriations Act, 1998. The study reviewing the 9-Foot Channel Navigation Project was authorized by Section 216 of the 1970 Flood Control Act, which reads:

*The Secretary of the Army, acting through the Chief of Engineers, is authorized to review the operation of projects the construction of which has been completed and which were constructed by the Corps of Engineers in the interest of navigation, flood control, water supply, and related purposes, when found advisable due to significant changed physical or economic conditions, and to report thereon to Congress with recommendations on the advisability of modifying the structures or their operation, and for improving the quality of the environment in the overall public interest.*

Congress provided an authority to more specifically address Illinois River Basin Restoration in Section 519 of the Water Resources Development Act (WRDA) of 2000. This authority calls for the completion of a comprehensive plan and critical restoration projects. Efforts under Section 519 were initiated following the provision of funds in the Energy and Water Development Appropriations Act of 2002. The authority states:

*SEC. 519 (WRDA 2000). ILLINOIS RIVER BASIN RESTORATION.*

*(a) ILLINOIS RIVER BASIN DEFINED- In this section, the term 'Illinois River basin' means the Illinois River, Illinois, its backwaters, its side channels, and all tributaries, including their watersheds, draining into the Illinois River.*

(b) *COMPREHENSIVE PLAN-*

- (1) *DEVELOPMENT-* The Secretary shall develop, as expeditiously as practicable, a proposed comprehensive plan for the purpose of restoring, preserving, and protecting the Illinois River basin.
- (2) *TECHNOLOGIES AND INNOVATIVE APPROACHES-* The comprehensive plan shall provide for the development of new technologies and innovative approaches--
  - (A) to enhance the Illinois River as a vital transportation corridor;
  - (B) to improve water quality within the entire Illinois River basin;
  - (C) to restore, enhance, and preserve habitat for plants and wildlife; and
  - (D) to increase economic opportunity for agriculture and business communities.
- (3) *SPECIFIC COMPONENTS-* The comprehensive plan shall include such features as are necessary to provide for—
  - (A) the development and implementation of a program for sediment removal technology, sediment characterization, sediment transport, and beneficial uses of sediment;
  - (B) the development and implementation of a program for the planning, conservation, evaluation, and construction of measures for fish and wildlife habitat conservation and rehabilitation, and stabilization and enhancement of land and water resources in the basin;
  - (C) the development and implementation of a long-term resource monitoring program; and
  - (D) the development and implementation of a computerized inventory and analysis system.
- (4) *CONSULTATION-* The comprehensive plan shall be developed by the Secretary in consultation with appropriate Federal agencies, the State of Illinois, and the Illinois River Coordinating Council.
- (5) *REPORT TO CONGRESS-* Not later than 2 years after the date of enactment of this Act, the Secretary shall transmit to Congress a report containing the comprehensive plan.
- (6) *ADDITIONAL STUDIES AND ANALYSES-* After transmission of a report under paragraph (5), the Secretary shall continue to conduct such studies and analyses related to the comprehensive plan as are necessary, consistent with this subsection.

(c) *CRITICAL RESTORATION PROJECTS-*

- (1) *IN GENERAL-* If the Secretary, in cooperation with appropriate Federal agencies and the State of Illinois, determines that a restoration project for the Illinois River basin will produce independent, immediate, and substantial restoration, preservation, and protection benefits, the Secretary shall proceed expeditiously with the implementation of the project.
- (2) *AUTHORIZATION OF APPROPRIATIONS-* There is authorized to be appropriated to carry out projects under this subsection \$100,000,000 for fiscal years 2001 through 2004.
- (3) *FEDERAL SHARE-* The Federal share of the cost of carrying out any project under this subsection shall not exceed \$5,000,000.

*(d) GENERAL PROVISIONS-*

*(1) WATER QUALITY- In carrying out projects and activities under this section, the Secretary shall take into account the protection of water quality by considering applicable State water quality standards.*

*(2) PUBLIC PARTICIPATION- In developing the comprehensive plan under subsection (b) and carrying out projects under subsection (c), the Secretary shall implement procedures to facilitate public participation, including providing advance notice of meetings, providing adequate opportunity for public input and comment, maintaining appropriate records, and making a record of the proceedings of meetings available for public inspection.*

*(e) COORDINATION- The Secretary shall integrate and coordinate projects and activities carried out under this section with ongoing Federal and State programs, projects, and activities, including the following:*

*(1) Upper Mississippi River System-Environmental Management Program authorized under Section 1103 of the Water Resources Development Act of 1986 (33 U.S.C. 652).*

*(2) Upper Mississippi River Illinois Waterway System Study.*

*(3) Kankakee River Basin General Investigation.*

*(4) Peoria Riverfront Development General Investigation.*

*(5) Illinois River Ecosystem Restoration General Investigation.*

*(6) Conservation Reserve Program (and other farm programs of the Department of Agriculture).*

*(7) Conservation Reserve Enhancement Program (State) and Conservation 2000 Ecosystem Program of the Illinois Department of Natural Resources.*

*(8) Conservation 2000 Conservation Practices Program and the Livestock Management Facilities Act administered by the Illinois Department of Agriculture.*

*(9) National Buffer Initiative of the Natural Resources Conservation Service.*

*(10) Nonpoint source grant program administered by the Illinois Environmental Protection Agency.*

*(f) JUSTIFICATION-*

*(1) IN GENERAL- Notwithstanding Section 209 of the Flood Control Act of 1970 (42 U.S.C. 1962-2) or any other provision of law, in carrying out activities to restore, preserve, and protect the Illinois River basin under this section, the Secretary may determine that the activities--*

(A) are justified by the environmental benefits derived by the Illinois River basin; and  
(B) shall not need further economic justification if the Secretary determines that the activities are cost-effective.

(2) *APPLICABILITY*- Paragraph (1) shall not apply to any separable element intended to produce benefits that are predominantly unrelated to the restoration, preservation, and protection of the Illinois River basin.

(g) *COST SHARING*-

(1) *IN GENERAL*- The non-Federal share of the cost of projects and activities carried out under this section shall be 35 percent.

(2) *OPERATION, MAINTENANCE, REHABILITATION, AND REPLACEMENT*- The operation, maintenance, rehabilitation, and replacement of projects carried out under this section shall be a non-Federal responsibility.

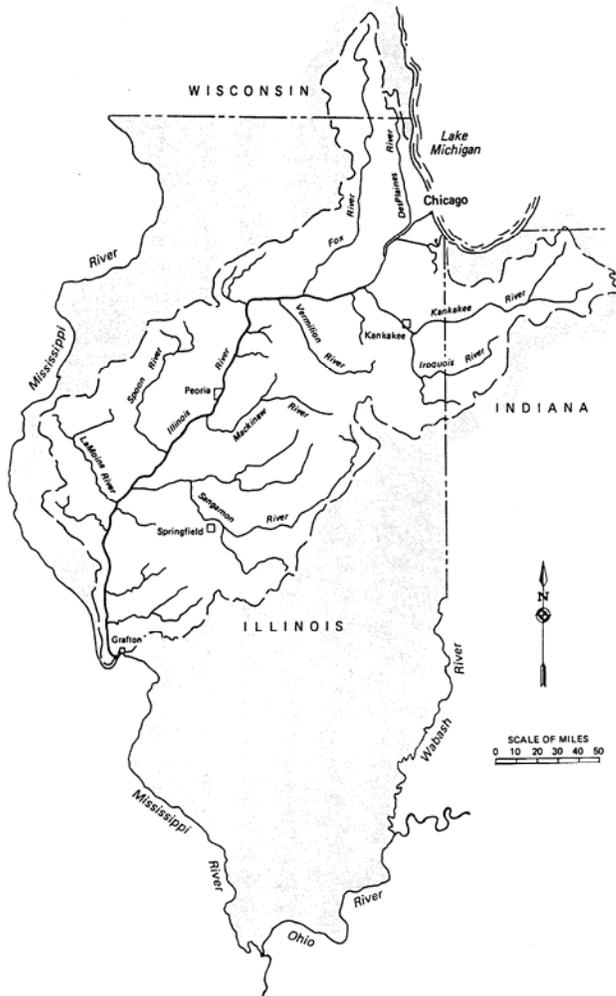
(3) *IN-KIND SERVICES*- The Secretary may credit the value of in-kind services provided by the non-Federal interest for a project or activity carried out under this section toward not more than 80 percent of the non-Federal share of the cost of the project or activity. In-kind services shall include all State funds expended on programs and projects that accomplish the goals of this section, as determined by the Secretary. The programs and projects may include the Illinois River Conservation Reserve Program, the Illinois Conservation 2000 Program, the Open Lands Trust Fund, and other appropriate programs carried out in the Illinois River basin.

(4) *CREDIT*-

(A) *VALUE OF LANDS*- If the Secretary determines that lands or interests in land acquired by a non-Federal interest, regardless of the date of acquisition, are integral to a project or activity carried out under this section, the Secretary may credit the value of the lands or interests in land toward the non-Federal share of the cost of the project or activity. Such value shall be determined by the Secretary.

(B) *WORK*- If the Secretary determines that any work completed by a non-Federal interest, regardless of the date of completion, is integral to a project or activity carried out under this section, the Secretary may credit the value of the work toward the non-Federal share of the cost of the project or activity. Such value shall be determined by the Secretary.

## B. DESCRIPTION OF THE STUDY AREA



**Figure 1-1.** Location of the Illinois River Basin

The entire Illinois River Basin encompasses approximately 30,000 square miles (19.2 million acres), covering 44 percent (16.5 million acres) of the land area of the State of Illinois and including more than a dozen tributaries of the main river. About 1,000 square miles of the watershed, the upper portions of the Fox and Des Plaines Rivers, extend into Wisconsin. The Kankakee and Iroquois Rivers extend 3,200 square miles into Indiana. The Illinois River Basin includes 46 percent of Illinois' agricultural land, 28 percent of its forests, 37 percent of its surface waters and streams, and 95 percent of its urban areas.

The Illinois River begins at the point where the Des Plaines, and Kankakee Rivers converge near the Will and Grundy County lines. The river flows for a distance of 273 miles, ultimately entering the Mississippi at Grafton, IL, about 40 miles north of St. Louis. The Illinois River is the largest tributary to the Mississippi River above the mouth of the Missouri River. Major tributaries to the Illinois include the Des Plaines, Kankakee, Fox, Vermilion, Mackinaw, Spoon, Sangamon, and La Moine Rivers. The Illinois Environmental Protection Agency (IEPA) 305(b) report (2002), states that nearly 11,000 miles of perennial streams occur in the Illinois River Basin, with an estimated 20,000-25,000 additional miles of ephemeral streams. The study area encompasses the entire Illinois River Basin, the extents of which are shown in Figure 1-1.

The Illinois Waterway (figure 1-2) refers to the river and the navigation system that connects it to Lake Michigan through the Des Plaines and Chicago Rivers and man-made navigation channels. With this added length, the Illinois Waterway spans 327 miles from Lake Michigan to its confluence with the Mississippi River. A series of eight lock and dam facilities maintain conditions suitable for navigation.

The entire Illinois River Basin encompasses approximately 30,000 square

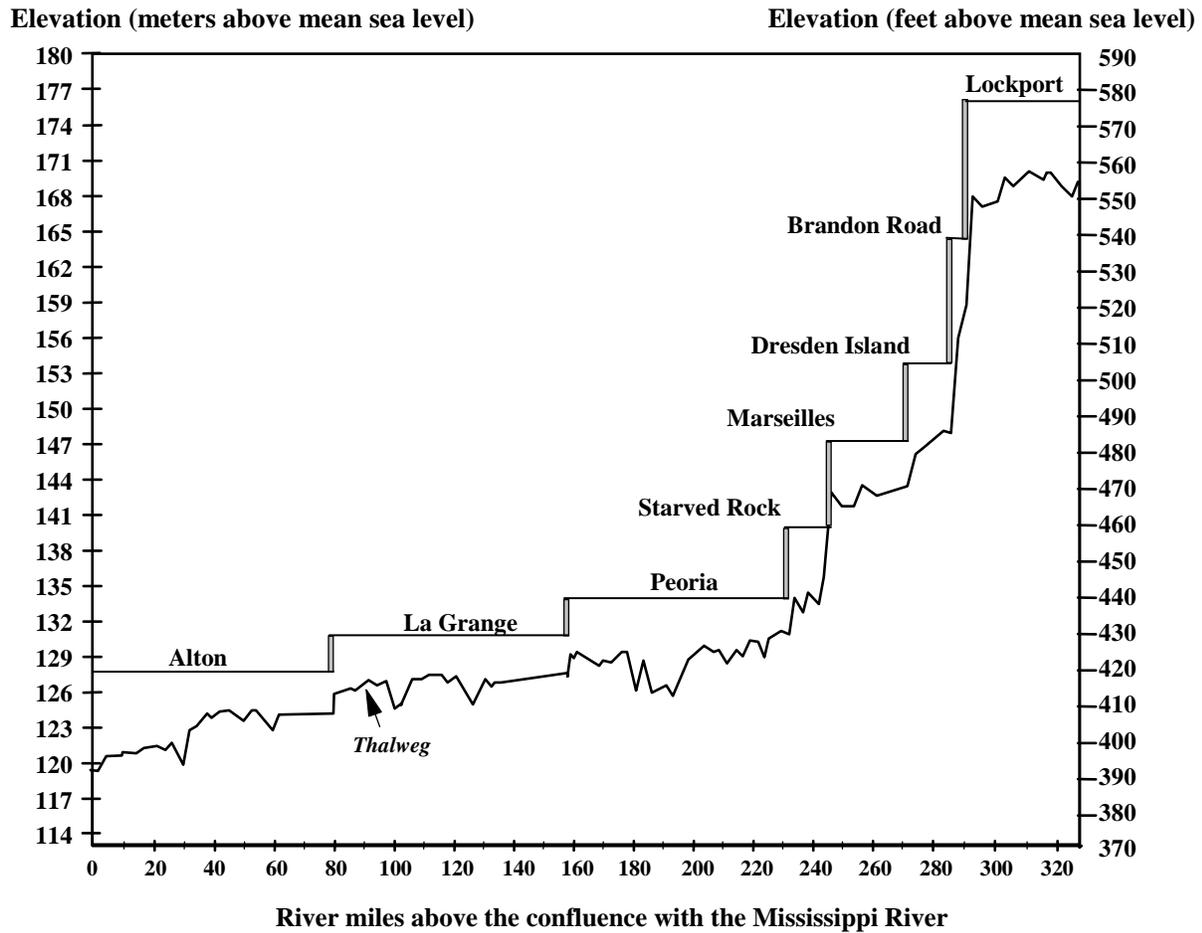


Figure 1-2. A Longitudinal Profile of the Illinois Waterway Lock and Dam System

The original efforts for this program focused on the Illinois portion of the basin. If and when future projects associated with this comprehensive plan are proposed for areas outside Illinois, individual coordination with appropriate Federal and State agencies would be required during project planning for compliance with National Environmental Policy Act (NEPA) and other Federal laws and policies applicable to all plans recommended for implementation.

The Congressional Districts located at least partially within the Illinois River Basin include Rush IL-1, Jackson IL-2, Lipinski IL-3, Gutierrez IL-4, Emanuel IL-5, Hyde IL-6, Davis IL-7, Bean IL-8, Schakowsky IL-9, Kirk IL-10, Weller IL-11, Biggert IL-13, Hastert IL-14, Johnson IL-15, Manzullo IL-16, Evans IL-17, LaHood IL-18, Shimkus IL-19, Visclosky IN-1, Chocoma IN-2, Ryan WI-1, and Sensenbrenner WI-5.

### C. STUDY PURPOSE AND SCOPE

The Rock Island, St. Louis, Chicago, and Detroit Districts of the Corps of Engineers and the Illinois DNR (non-Federal sponsor) collaborated to produce the Comprehensive Plan in response to two

similar and complementary authorities to investigate the Federal and State interest in ecosystem restoration within the Illinois River Ecosystem. An Illinois River Basin Restoration Reconnaissance Study identifying a Federal interest in restoration under Section 216 was completed in February of 1999, with feasibility efforts initiated in 2000. Authorization of this Comprehensive Plan was provided in Section 519 of WRDA 2000 as described earlier in this Section. Following Corps Headquarters' approval of an Initial Assessment for the Section 519 authority in June 2002, the study team has progressed toward the completion of this Comprehensive Plan that presents the joint findings of investigations undertaken as part of both studies.

**1. Study Purpose.** At the broadest level, the Comprehensive Plan seeks to develop, evaluate, and implement a collaborative and sustainable watershed-based approach to ecosystem restoration. While a number of existing programs within the Corps of Engineers and other Federal agencies are designed to plan and implement ecosystem restoration or environmental quality improvements at specific locations in the basin, no program was in place that allowed for watershed-wide evaluation, problem identification, project selection, and implementation within one authority. Existing programs are limited in geographic extent or by available resources. The Illinois River Basin Restoration program meets that need by allowing for a comprehensive and collaborative watershed-based approach to solving the basin's problems and maximizing opportunities.

The Comprehensive Plan is being carried out in a manner consistent with the Corps' Environmental Operating Principles. The principles are consistent with NEPA; the Army's Environmental Strategy with its four pillars of prevention, compliance, restoration and conservation; and other environmental statutes and WRDAs that govern Corps activities. The Environmental Operating Principles are as follows:

- Strive to achieve environmental sustainability. An environment maintained in a healthy, diverse, and sustainable condition is necessary to support life.
- Recognize the interdependence of life and the physical environment. Proactively consider environmental consequences of Corps programs and act accordingly in all appropriate circumstances.
- Seek balance and synergy among human development activities and natural systems by designing economic and environmental solutions that support and reinforce one another.
- Continue to accept corporate responsibility and accountability under the law for activities and decisions under our control that impact human health and welfare and the continued viability of natural systems.
- Seek ways and means to assess and mitigate cumulative impacts to the environment; bring systems approaches to the full life cycle of our processes and work.
- Build and share an integrated scientific, economic, and social knowledge base that supports a greater understanding of the environment and impacts of our work.
- Respect the views of individuals and groups interested in Corps activities, listen to them actively, and learn from their perspective in the search to find innovative win-win solutions to the nation's problems that also protect and enhance the environment.

The proposed project was formulated according to the Environmental Operating Principles, especially in terms of maximizing the sustainability of ecological features. The project includes a watershed approach that seeks to address the water resources needs holistically. The goal of this project is to build on existing knowledge and share lessons learned on the restoration of this significant natural resource through the use of monitoring, adaptive management, and innovative technologies and approaches. The implementation framework proposed as part of this system study seeks to work collaboratively, fully engaging individuals, agencies, and local groups in the identification, planning, and implementation of restoration efforts.

**2. Study Scope.** This report assesses the total basin restoration needs and makes specific recommendations regarding modification of the existing Section 519 authority to improve implementation. The Corps and Illinois DNR (non-federal sponsor) worked together in coordination with numerous other State and Federal agencies on the Comprehensive Plan. The Illinois River Ecosystem Restoration Feasibility Study was initiated in 2000 to evaluate the need for and plan restoration at the watershed scale. Since the Illinois River Basin Ecosystem Restoration Feasibility Study was ongoing and already provided a general analysis of the basin's restoration needs. The focus of Section 519 activities was on addressing the four components identified in Sec 519 (b)(3). Less effort and focus was placed on (b)(2). The Comprehensive plan activities address the four areas of technologies and innovative approaches identified in Sec 519 (b)(2) and the four components identified in Sec 519 (b)(3), as described below.”

*(b) COMPREHENSIVE PLAN-*

- (2) TECHNOLOGIES AND INNOVATIVE APPROACHES- The comprehensive plan shall provide for the development of new technologies and innovative approaches--*
- (A) to enhance the Illinois River as a vital transportation corridor; Activities related to enhancing transportation are being addressed through the Upper Mississippi River – Illinois Waterway System Navigation Study and subsequent Planning, Engineering, and Design efforts, duplication of this effort was not necessary since the Navigation Study covers navigation needs in the entire Illinois River Basin.*
  - (B) to improve water quality within the entire Illinois River basin; The comprehensive plan includes a goal ( Goal 6) – that addresses water and sediment quality. The proposed restoration activities if implemented will address water quality on a watershed basis through a wide range of potential measures.*
  - (C) to restore, enhance, and preserve habitat for plants and wildlife; The major focus of the Comprehensive report and the measures and alternatives address this item. and*
  - (D) to increase economic opportunity for agriculture and business communities Activities related to economic opportunity are being addressed through the Upper Mississippi River – Illinois Waterway System Navigation Study and Upper Mississippi River Comprehensive Plan, duplication of these effort was not necessary as part of this effort..*
- (3) SPECIFIC COMPONENTS- The comprehensive plan shall include such features as are necessary to provide for—*
- (A) the development and implementation of a program for sediment removal technology, sediment characterization, sediment transport, and beneficial uses of sediment; This component is planned for inclusion as part of the Technologies and Innovative Components element of this Comprehensive Plan.*

- (B) *the development and implementation of a program for the planning, conservation, evaluation, and construction of measures for fish and wildlife habitat conservation and rehabilitation, and stabilization and enhancement of land and water resources in the basin; The major focus of this report, restoration measures, system alternatives, and the recommendations address this item.*
- (C) *the development and implementation of a long-term resource monitoring program; This component is planned for inclusion as part of the Technologies and Innovative Components element of this Comprehensive Plan.*
- (D) *the development and implementation of a computerized inventory and analysis system. This component is planned for inclusion as part of the Technologies and Innovative Components element of this Comprehensive Plan.*

**a. Comprehensive Plan.** The purpose of the Comprehensive Plan is to meet Federal planning requirements and congressional authority in identifying restoration needs within the basin. The Illinois River Ecosystem Restoration Feasibility Study effort identified problems and opportunities, defined existing and future conditions in the basin, developed a consensus-based desired future condition and restoration needs, documented resource significance, and formulated at the system level to determine Federal interest and level of effort required. Related to these efforts was the development of a restoration program and prioritization process. In addition, Section 519 funding was used to address Comprehensive Plan requirements from that legislation including: (1) the development and implementation of a program for sediment removal technology, sediment characterization, sediment transport, and beneficial uses of sediment; (2) the development and implementation of a program for the planning, conservation, evaluation, and construction of measures for fish and wildlife habitat conservation and rehabilitation, and stabilization and enhancement of land and water resources in the basin; (3) the development and implementation of a long-term resource monitoring program; and (4) the development and implementation of a computerized inventory and analysis system. The study area is the entire Illinois River Basin. However, study and restoration initiatives placed particular focus on the rivers, streams, floodplain, and adjacent riparian corridors.

The following descriptions detail the major study investigations conducted under the Illinois River Ecosystem Restoration Study (Section 216) and Illinois River Basin Restoration (Section 519) efforts, respectively. These combined efforts resulted in an integrated Comprehensive Plan for the Illinois River Basin that satisfies both authorities for restoration of the Illinois River Basin Ecosystem.

**b. Illinois River Ecosystem Restoration Study Major Investigations.** Study activities being undertaken as part of the Illinois River Ecosystem Restoration study, Section 216, were cost shared 50/50 between the Federal Government and Illinois DNR and include:

- **Develop Goals and Objectives.** System level goals and objectives were developed under the Ecosystem Study and are presented in Section 3.
- **System Restoration Needs Assessment (RNA).** The RNA aspect of the study was designed to evaluate existing data availability; compile existing data in a Geographic Information Systems (GIS) application; describe physiographic characteristics of the basin; evaluate stream channel dynamics; evaluate rapid watershed assessment techniques; evaluate existing, predicted, and desired future conditions; and compile a list of information needs.

The RNA provided information that significantly contributed to the development of the Comprehensive Plan and monitoring program and will aid in the selection of future Critical Restoration Projects called for in Section 519 legislation. Specific items are summarized in Appendices B, *System Ecology*; C, *Hydraulics and Hydrology*; and D, *Sediment Analysis*. The following text highlights some of the major efforts:

1. Sediment Budget. An updated sediment budget for the basin was completed.
  2. Summary of Illinois River Basin Landform and Physiographic Regions. The physiographic regions of the Illinois River Basin were updated and were used to provide part of the physical context necessary to evaluate restoration opportunities.
  3. Illinois River Restoration Needs Assessment GIS. A GIS tool has been developed to allow for the evaluation of readily available data on basin characteristics including land use/land cover, water quality, etc.
  4. Water Level Analysis. An evaluation of the causes of rapid water level fluctuations was completed. The results set the context for what types of management and restoration activities are required to improve the hydraulic regime of the Illinois River Basin.
  5. Basin Hydrologic Model. A coarse grid model of the basin was developed. This model was used to assess the potential for various types of restoration approaches to affect basin hydrology and sediment movements and identify the order of magnitude of restoration actions necessary to have an effect.
- **System NEPA and Coordination.** The NEPA documentation and required coordination for this systemic project was addressed through an integrated programmatic Environmental Assessment (EA) within this report. Subsequent NEPA documentation and coordination will be represented by individual, site-specific EAs and will be compiled for all future ecosystem restoration/critical restoration projects after they have been identified.

**c. Illinois River Basin Restoration Major Investigations.** Major investigations undertaken as part of the Illinois River Basin Restoration (Section 519) authority are cost shared 65/35 between the Federal Government and the State of Illinois, address the legislation, and include:

- **Development and implementation of a program for sediment removal technology, sediment characterization, sediment transport, and beneficial uses of sediment.** This task focused on the review, evaluation, and determination of applicability for existing sediment removal technology, sediment characterization, sediment transport, and beneficial use of sediment within the Illinois River Basin. Two field demonstrations of innovative sediment removal methods and technologies took place in the fall of 2002. These included the testing of the viability of various technologies (concrete pump and boom and mobile conveyor belt system) to move Illinois River sediments, and the viability of transporting sediments to the City of Chicago to add topsoil to brownfield sites. The product of this task is a concise summary of the various sediment removal, transport, and beneficial use options, their advantages and disadvantages, and appropriate application recommendations for the basin.

- **Development and implementation of a program for the planning, conservation, evaluation, and construction of measures for fish and wildlife habitat conservation and rehabilitation, and stabilization and enhancement of land and water resources in the basin.** The development of this program was the major outcome of the plan formulation efforts of the Comprehensive Plan. Based on the system level understanding gained through the various information gathering and analysis tasks, a proposed implementation framework has been developed and is presented in Section 6I, *Plan Formulation*.

- **Development and implementation of a long-term resource monitoring program.** Using contracts and interagency coordination, recommendations regarding system biological and physical monitoring as well as site-specific pre- and post-project monitoring recommendations have been developed. A program for long-term resource monitoring of the basin was documented, along with recommendations for implementation. The recommended program will help to better understand the system, identify changes, and provide a measure by which the cumulative effects of the implementation of critical restoration projects can be assessed.

- **Development and implementation of a computerized inventory and analysis system.** As part of efforts to develop a long-term resource monitoring program recommendations were developed for computerized inventory, analysis, and dissemination of information collected to interested parties.

**d. Assumptions and Exceptions.** The following assumptions provided the basis for development of the Comprehensive Plan:

- The without-project condition of the Illinois River Basin includes continued decline in ecological integrity due to sedimentation of backwaters and side channels, degradation of tributary streams, continued water level fluctuations, loss of floodplain and tributary connectivity, habitat loss and fragmentation, and other adverse impacts caused by human activities.

- The Comprehensive Plan was developed as a post authorization change report addressing Section 519 of WRDA 2000, and serves as a response to the complementary Illinois River Ecosystem Restoration Feasibility Study authority as well. Illinois River Ecosystem Restoration Study efforts will meet NEPA, U.S. Fish and Wildlife Service (USFWS) coordination, and programmatic cultural compliance, etc. for the system investigations. A separate feasibility level Project Implementation Report will be prepared for each Critical Restoration Project. These documents will provide the basis for individual project approvals and will address Federal and State environmental and cultural requirements.

- The Comprehensive Plan developed recommendations consistent with the Upper Mississippi River - Illinois Waterway System Navigation Feasibility Study and the Upper Mississippi River Comprehensive Plan projects, but did not include efforts and investigations regarding transportation and flood protection needs, since these areas are comprehensively addressed by these aforementioned Corps studies.

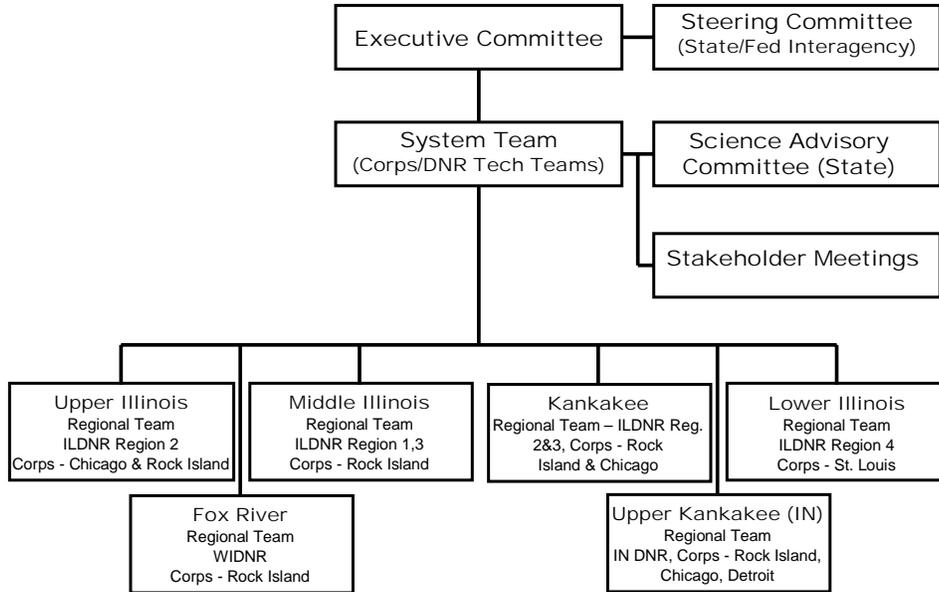
- Future implementation of currently unauthorized projects—Upper Mississippi River - Illinois Waterway System Navigation Feasibility Study; the Upper Mississippi River Comprehensive Plan; and Kankakee River Basin Study—is uncertain. As a result, the implementation framework in Section 6, *Plan Implementation*, describes how the relationship with other Corps programs would be addressed, but exact funding levels are not described. In regards to Navigation Study and follow-on efforts, Section 519 evaluated restoration alternatives throughout the entire watershed, while the Navigation Study ecosystem restoration components limit activities to areas along the Mainstem Illinois River. The mainstem restoration recommendations do overlap, but if both are authorized the Navigation Study follow-on funding would be used for the majority of mainstem restoration efforts. In addition, provisions were made to closely coordinate future restoration efforts to maximize effectiveness and avoid any duplication.

**e. Critical Restoration Projects.** In addition to the work on the Comprehensive Plan, Section 519 also authorized the identification and implementation of projects within the watershed and along the course of the river that repair past and ongoing ecological damage so that a more highly functioning, self-regulating ecosystem can develop within the existing basin context. Critical restoration projects would produce immediate habitat and sediment reduction benefits; will help evaluate the effectiveness of various restoration methods before application system wide; and make best use of the current strong local and State interest in ecosystem restoration within the basin. The Corps of Engineers will implement these critical restoration projects in collaboration with the non-Federal sponsor and with other Federal and local agencies. Section 6, *Plan Implementation*, contains additional information on potential project types and eight critical restoration projects initiated at the time of the writing of this report.

## **D. STUDY ORGANIZATION**

### **1. Study Organizational Structure**

The system study and further restoration and monitoring activities will be conducted under the following organizational structure:



**Figure 1-3.** Study Organizational Structure

**a. Executive Committee.** The Committee will have representatives from both Regional Headquarters (i.e., Mississippi Valley Division (MVD) and Great Lakes and Ohio River Division), the Corps Districts (i.e., Rock Island, St. Louis, Chicago, and Detroit), and the non-Federal sponsors (i.e., Illinois Department of Natural Resources (DNR) and representatives from the states of Indiana and Wisconsin). The Executive Committee will be chaired by the MVD. It will be responsible for oversight on the management and implementation of the project, including decisions on project funding. The Executive Committee will meet approximately twice a year, with meeting schedules timed to synchronize receipt or provision of input from other committee meetings as needed.

**b. Steering Committee.** The Steering Committee will be the interagency group responsible for coordinating the Illinois River Basin and Ecosystem Restoration efforts. It will be co-chaired by the Corps of Engineers and the Illinois DNR, and will be composed of state and Federal agency representatives. This Committee will meet approximately twice a year to exchange views, information, and advice to ensure coordination among various agency programs.

**c. System Team.** The System Team will be composed of the multi-disciplinary technical staff primarily from the Corps of Engineers and State DNRs. Additional team members may be selected. This team will have primary responsibilities for overall project delivery and system evaluations. The team will incorporate the expertise of scientists and technical staff as necessary.

**d. Regional Teams.** Organizing efforts by geographic region allows for more efficient accomplishment of project activities. Four regions established for the basin are Upper Illinois, Middle Illinois, Kankakee, and Lower Illinois. The regional teams, made up of Corps of Engineers and State DNR staff, will have primary responsibilities for the evaluation and implementation of critical restoration projects. Two additional teams (Fox River and Upper Kankakee) may be added in the

future if Wisconsin and Indiana choose to participate. Regional team meetings will provide a forum for groups—with detailed information on resource concerns—to exchange views and information regarding areas in need of assessment and potential critical restoration projects, evaluate the proposed site-specific projects, and facilitate the detailed study of these projects. Invited attendees include the Illinois Environmental Protection Agency, Illinois Department of Agriculture, representatives from the States of Indiana and Wisconsin, USDA Natural Resources Conservation Service and Farm Service Administration, U.S. Fish and Wildlife Service, U.S. Environmental Protection Agency, U.S. Geological Survey, Ecosystem Partnership Groups, Soil and Water Conservation Districts, Non-Governmental Organizations, Levee and Drainage Districts, and Local Governments.

**e. Stakeholders Meetings.** Stakeholders meetings will provide a forum to present study status and information on implementation and management to all interested Federal, State, and local agencies, as well as non-governmental organizations. Stakeholders meetings will be held approximately once a year in each of the four regions or as interim products are completed. Their primary focus will be public involvement, information sharing, and dialog among all groups and interests.

**f. Science Advisory Committee.** The State of Illinois Science Advisory Committee, a sub-committee of the Illinois River Coordination Council, will provide input to the System Team.

## **2. U.S. Army Corps of Engineers Division of Responsibilities**

The following structure is similar to that of the existing Upper Mississippi River - Environmental Management Program (UMR-EMP) and is proposed as a means of defining responsibilities throughout the Corps of Engineers in relation to Section 519 implementation. These responsibilities include, but are not limited to, the following:

**a. Assistant Secretary of the Army (Civil Works) [ASA(CW)].** Final approval authority for products and critical restoration projects remains with ASA(CW) unless otherwise delegated.

**b. Headquarters Level.** The Corps of Engineers Headquarters (HQUSACE) maintains responsibility for the overall Section 519 Illinois River Basin Restoration Program, its budget, and approval authority for individual Critical Restoration Projects and coordination with ASA(CW).

**c. Regional Headquarters Level.** The Corps of Engineers' Mississippi Valley Division (MVD) will be responsible for overall execution direction and management of the Section 519 Illinois River Basin Restoration Program and coordination with the Great Lakes and Ohio River Division (LRD). Both MVD and LRD will serve on the Executive Committee, chaired by MVD.

**d. Program Level.** The Corps of Engineers' Rock Island District will administer regional project management responsibilities, including the following:

- i. Serve as the primary point of contact for Illinois River Basin Restoration activities
- ii. Report the program financial execution to MVD and others on a quarterly basis
- iii. Coordinate the activities of the Executive Committee, Steering Committee, Stakeholders Group, and System Team
- iv. Coordinate, consolidate, and forward to MVD all upward reporting requirements, such as budgetary information, fact sheets, and issue papers that require input from more than one district

- v. Lead the comprehensive system study efforts
- vi. Serve as lead responsible party for system monitoring efforts

**e. Project Level.** Each district shall carry out assigned tasks, participate in committees, and communicate funding and schedule information with the Rock Island District for consolidation and regional coordination. The responsibility for planning, design, construction, monitoring, and evaluation of Critical Restoration Projects will be assigned to the districts (Rock Island, St. Louis, Chicago and Detroit) based on their jurisdictional boundaries. The districts will be responsible for staffing, scheduling, and communicating funding needs for the efforts of individual Product Delivery Teams (PDTs) operating within their district boundaries. The assignment of projects that cross district boundaries will be determined by the Executive Committee, as necessary.

## **E. RELATIONSHIP AMONG CORPS, FEDERAL, AND STATE ACTIVITIES**

Several ongoing activities involve collaborative efforts among Federal, State, and local agencies to address water and related land resources within the Illinois River Basin. The most significant Federal and state actions are briefly summarized below with additional detail on the activities and their relationship to this program described in greater detail in Section 6, *Plan Implementation*.

### **1. U.S. Army Corps of Engineers Efforts**

The U.S. Army Corps of Engineers is currently conducting a wide range of study and implementation activities ranging from other ecosystem restoration activities to navigation and flood damage reduction. Specific ongoing activities in the basin include:

**a. Peoria Riverfront Development (Ecosystem Restoration) Study, Illinois.** The project is located within Peoria and Tazewell Counties, Illinois, between Illinois River Miles 162-167. The feasibility study was conducted by the Corps of Engineers and Illinois DNR (non-Federal sponsor) to investigate Federal and state interest in ecosystem restoration within Peoria Lake and the Farm Creek Watershed. The feasibility study, completed in 2003, recommended dredging and island creation. In 2004, approval was given to initiate dredging and construct the first of three islands as a Critical Restoration Project under Section 519 authority.

**b. Upper Mississippi River System - Environmental Management Program.** The Environmental Management Program (EMP) for the Upper Mississippi River System was established by WRDA 1986. Currently, the EMP is comprised of two elements—Habitat Rehabilitation and Enhancement Projects (HREPs) and the Long Term Resource Monitoring Program (LTRMP). This ongoing system program provides a combination of monitoring and habitat restoration activities.

**c. Upper Mississippi River - Illinois Waterway System Navigation Study and the follow on Navigation and Ecosystem Sustainability Program (NESP).** The study was completed in September 2004 and calls for navigation improvements and ecosystem restoration on the Upper Mississippi River and Illinois Waterway System. The study area includes 854 miles of the Upper Mississippi River, with 29 locks and dams, between Minneapolis/St. Paul and the mouth of the Ohio River, and 327 miles of the Illinois Waterway, with eight locks and dams. The study area lies within portions of Illinois, Iowa, Minnesota, Missouri, and Wisconsin. The navigation system's principal

problems are delays to commercial traffic due to limited lockage capacity and increasing traffic and the continued degradation of environmental resources. While no authorization for construction has been provided, follow-on study and design efforts were initiated in 2005 for a number of navigation and ecosystem restoration components.

**d. Upper Mississippi River (UMR) Comprehensive Plan.** The Comprehensive Plan Study was authorized by Section 459 of WRDA 1999 to “develop a plan to address water resource and related land resource problems and opportunities in the Upper Mississippi and Illinois River basins from Cairo, Illinois, to the headwaters of the Mississippi River, in the interest of the systemic flood damage reduction . . .”. This study focuses primarily on the 500-year floodplains of the reach of the UMR between Anoka, Minnesota, and Thebes, Illinois, and the reach of the Illinois River between its confluence with the Mississippi and the confluence of the Kankakee and Des Plaines Rivers. The report will be completed in Fiscal Year 2006, with subsequent submission to Congress.

**e. Kankakee River Basin Feasibility Study.** The Kankakee River Basin, a major tributary to the Illinois River, drains an area of approximately 5,200 square miles in Illinois and Indiana. A study by the Chicago District of the U.S. Army Corps of Engineers is investigating opportunities within the basin for flood damage reduction, sediment reduction, and ecosystem restoration. The study is currently on hold due to funding.

## 2. Ongoing Federal Efforts

Other Federal Agencies that perform numerous restoration and monitoring programs and activities in the basin include the: U.S. Department of Agriculture, U.S. Environmental Protection Agency, U.S. Fish and Wildlife Service, and U.S. Geological Survey. More specifics on each agency’s programs, authorities, and potential role in implementation are provided in Section 6, *Plan Implementation*.

## 3. Ongoing Efforts by the State of Illinois

The State of Illinois has focused a great deal of resources on the Illinois River Basin. These efforts include:

**a. Watershed Management Committee (WMC).** The WMC was formed by the directors of eight Illinois State agencies to address and coordinate issues among the state’s natural resource and environmental agencies. The WMC has the following mission:

*To serve in an ongoing capacity to coordinate watershed-based activities and programs among Illinois’ natural resource and environmental agencies. The Committee will also serve a liaison function to provide for the coordination of Federal and local involvement in watershed activities.*

In 1998, the WMC was expanded to include additional State and Federal agencies, as well as several non-governmental organizations in order to both expedite the development of watershed approaches for resource planning and to promote greater coordination between State agencies and Federal counterparts. In an effort to restore and protect watersheds within the state, the WMC published *Unified Watershed Assessment and Watershed Restoration Priorities for Illinois*. This report and the associated action plan lists priority watersheds in the State of Illinois and calls for coordination of

activities and resources to help protect and restore water resources. The Illinois River Watershed and many of its tributary watersheds are listed as priority watersheds.

**b. The Integrated Management Plan for the Illinois River Watershed.** This document was the culmination of several years of effort by local and state governments in Illinois to build a consensus-based partnership with citizens and interest groups to address the issues that face the Illinois River Basin. Conservation, environmental, industry, Federal, State, regional, and local governments all participated in shaping a vision for the future of the basin. The plan has also given policy direction to numerous independent state conservation programs in the pursuit of a unified approach to address the problems present in the basin.

**c. Illinois River Watershed Restoration Act.** In July 1997, the State of Illinois enacted the Illinois River Watershed Restoration Act. The legislative purposes of the Act were to: (1) create a group of leaders representing agriculture, business, conservation, and the environment to encourage the implementation of efforts to restore the Illinois River Watershed in accordance with the recommendations of the *Integrated Management Plan for the Illinois River Watershed Technical Report*; (2) work with local communities to develop projects and regional strategies; and (3) make recommendations to appropriate State and Federal agencies, or local programs.

**d. Illinois River Coordinating Council IRCC.** The IRCC was created by the Illinois River Watershed Restoration Act as described in (1) above, chaired by the Lieutenant Governor. The IRCC consists of a diverse group of citizens, grassroots and not-for-profit organizations, state and federal agencies, and river enthusiasts. The Agency members of the Council shall include the Director (or designee) of each of the following agencies: the Department of Agriculture; the Department of Commerce and Community Affairs; the Illinois Environmental Protection Agency; the Department of Natural Resources; and the Department of Transportation. In addition, the Council shall include one member representing Soil and Water Conservation Districts located within the Watershed of the Illinois River and its tributaries and 6 members representing local communities, not-for-profit organizations working to protect the Illinois River Watershed, business, agriculture, recreation, conservation, and the environment. The Governor may, at his or her discretion, appoint individuals representing federal agencies. The IRCC coordinates all private and public funding for river restoration in the sprawling Illinois River Watershed. Over the past four years, the IRCC has been involved in the commitment and expenditure of nearly \$500 million to restore the Illinois River Basin.

**e. Conservation Reserve Enhancement Program (CREP).** More than \$450 million has been targeted at the State and Federal level to improve the Illinois River through the CREP, which uses state funding to enhance existing USDA CRP activities. The CREP initiative if fully implemented will help preserve up to 232,000 acres of sensitive land surrounding the Illinois River and its tributaries, including upland areas. Illinois leads the nation in the number of acres currently enrolled at 110,000 in the Federal program, and the most acres permanently protected, 92 percent of the 73,000 acres enrolled in the State portion of the program.

**f. Illinois Rivers 2020.** This is an initiative of the State of Illinois that proposes to establish a \$2.5 billion, 20-year State/Federal partnership to restore the basin. It seeks to build upon the success of the Illinois River Conservation Reserve Enhancement Program (CREP). It is a voluntary, incentive-based approach, broader and more inclusive than CREP and applies to the entire Illinois River and its tributaries. It addresses all the threats to the economic and environmental sustainability of Illinois' vitally important waterways. Illinois Rivers 2020 utilizes existing agencies, programs, and delivery mechanisms in the Farm Bill programs and the CWA Section 319 and seeks special consideration under the WRDA. The State of Illinois views the Illinois River Basin Restoration

Authority as the mechanism for the Corps of Engineers' to further develop a comprehensive plan and to initiate restoration activities. Further support for implementation of Illinois Rivers 2020 is very broad, including hundreds of individuals, elected officials, organizations, and businesses that officially support this effort.

**g. Other State Programs:** A number of programs administered by the Illinois DNR, Illinois Department of Agriculture, and Illinois Environmental Protection Agency (EPA) are helping to restore the basin and are described in Section 6, *Plan Implementation*.

**h. Illinois Department of Natural Resources (DNR) – Conservation Lands.** The Illinois DNR currently manages approximately 100,000 acres for conservation purposes in the basin. Twelve State of Illinois conservation areas totaling 26,568 acres can be found along with two state forests of 3,673 acres. Also, State Fish and Wildlife Areas can be found at 12 locations totaling 18,138 acres. Finally, the Illinois DNR operates 25 state parks within the Basin, with 42,138 acres dedicated to conservation and recreation.

## **F. CONCISE DISCUSSION OF STUDIES, REPORTS, AND EXISTING WATER PROJECTS**

A number of documents were reviewed, including studies prepared by the U.S. Army Corps of Engineers, the Illinois DNR, the Illinois State Water Survey, the Illinois Natural History Survey, the Tri-County Regional Planning Commission, the University of Illinois, The Nature Conservancy, the Heartland Water Resources Council, and the Office of the Lt. Governor of the State of Illinois. Some of the most notable studies and actions are as follows:

*The Fate of Lakes in the Illinois River Valley*, Bellrose, Frank C., et al., Illinois Natural History Survey, 1983.

This document uses historical sedimentation rates for Illinois River backwater lakes to develop mathematical models of the life expectancy of Illinois River backwater lakes. Most backwaters filled dramatically with sediment at an average annual rate of 0.10 to 0.74 inches since the 1930's. System-wide, backwater lakes have lost an average of 70 percent of their volume since 1903.

*Sediment Yield of Streams in Northern and Central Illinois*, Adams, J. Roger, et al., Illinois State Water Survey, December 1984.

This report developed mathematical models to estimate sediment yields for streams in the Illinois River Basin based on sediment monitoring data.

*Peoria Lake Sediment Investigation*, prepared for the U.S. Army Corps of Engineers by the Illinois Department of Energy and Natural Resources, State Water Survey Division, January 1986.

This report summarizes the impacts of human activities on sedimentation using data from bathymetric profiles and core samples. It concludes that controlling sedimentation in Peoria Lake would require some combination of controlling sediment input, managing in-lake sediment, drawing down Peoria Lake, creating artificial islands, selective dredging, and creating marshy areas.

*Illinois River from Henry to Naples, Illinois, Peoria Lake and La Grange Pool, Illinois River Basin*, U.S. Army Corps of Engineers Reconnaissance Study, March 1987.

This study, authorized in Section 109 of Section 1304 of the Supplemental Appropriations Act, investigates the advisability of the preservation, enhancement, and rehabilitation of Peoria Lake near Peoria, Illinois.

*Hydraulic Investigation for the Construction of Artificial Islands in Peoria Lake*, Illinois Department of Energy and Natural Resources, State Water Survey Division, Champaign, Illinois, July 1988.

This investigation identifies alternative locations for building islands in Upper and Lower Peoria Lakes. Hydraulic modeling was used to determine the effects of islands upon water surface elevations, sedimentation patterns, and current velocities.

*Upper Mississippi River System-Environmental Management Program, Peoria Lake Habitat Rehabilitation and Enhancement Project Definite Project Report*, U.S. Army Corps of Engineers, July 1990.

This technical publication, complete with NEPA documentation and engineering plans, was the authorizing document by which a 16-acre barrier island was created in Upper Peoria Lake. This project enhanced migratory waterfowl, fish, and aquatic habitat. Project monitoring indicates an increase in absolute numbers and diversity of water bird and fish species at the project site.

*The Illinois River: Working for Our State*, Talkington, Laurie McCarthy, Illinois State Water Survey, January 1991.

This document summarizes information on the past, current, and projected future conditions of the Illinois River.

*Erosion and Sedimentation in the Illinois River Basin*, Demissie, Misganaw, et al., Illinois State Water Survey, June 1992. This report estimates a sediment budget for the Illinois River Valley.

The report also discusses the effect of changed crop practices upon sediment loads.

*Source Monitoring and Evaluation of Sediment Inputs for Peoria Lake*, Bhowmik, Nani G., et al., Illinois State Water Survey, February 1993.

The objectives of this study were to identify the sediment sources to Peoria Lake and to evaluate sediment loads from local tributaries. This study evaluated the sources of sediment in Peoria Lake and estimated that a large percentage of sediment in the lake comes from local tributaries.

*Section 216 Initial Appraisal, Illinois Waterway System Ecosystem Restoration and Sedimentation, Illinois*, U.S. Army Corps of Engineers, Rock Island District, August 1996.

This document recommends further study of the Illinois Waterway ecosystem in light of changed physical and economic conditions since the 9-foot navigation channel was constructed.

*Illinois River Characterization for Restoration and Beneficial Use of Sediment*, Marlin, John C., Illinois Department of Natural Resources Waste Management and Research Center, April 1997. Proposal to U.S. Department of Agriculture.

*Strategic Renewal of Large Floodplain Rivers*, University of Illinois, Water Resources Center.

This ongoing research effort at the University of Illinois, Urbana, Illinois, aims to develop a combined hydrologic, ecological, and economic restoration model for the La Grange Pool of the Illinois River.

*Restoration of Large River Ecosystems: Hydrologic and Hydraulic Analyses of La Grange Pool of the Illinois River*, Xia, R. and M. Demissie, 1997. Hydrology Division, Illinois State Water Survey, Champaign.

This report documents the hydrologic and hydraulic analysis of the La Grange Pool conducted for the Strategic Renewal of Large Floodplain Rivers research effort.

*Integrated Management Plan for the Illinois River Watershed*, January 1997. This plan was prepared by the Illinois River Strategy Team in cooperation with nearly 150 participants, chaired by Lt. Governor Bob Kustra.

The plan contains 34 recommendations divided into six sections: In the Corridor, Soil and Water Movement, Agricultural Practices, Economic Development, Local Action, and Education.

*Ecological Status and Trends of the Upper Mississippi River System, 1998: A report of the Long Term Resource Monitoring Program*. U.S. Geological Survey, Upper Midwest Environmental Sciences Center, La Crosse, WI. 1998

This is the first report since the inception of the Environmental Management Program and beginning of data collection under LTRMP in which the monitoring data are summarized into one report, alongside historical observation and other scientific findings. This report also serves as background material for the U.S. Army Corps of Engineers' Report to Congress that provided recommendations for future environmental management of the UMRS. In addition, this report provides a timely assessment of river conditions.

*Mackinaw River Watershed Management Plan*, The Nature Conservancy, June 1998.

This document provides a long-range plan for the 1,138-square-mile watershed of this tributary of the Illinois River that recommends the establishment or restoration of 22,500 acres of wetlands.

*Illinois River Site Conservation Plan*, The Nature Conservancy, December 1998.

This document presents a plan for the implementation of conservation measures in the Illinois River Basin.

*The Classification of Aquatic Communities in the Illinois River Watershed and Their Use in Conservation Planning*, The Nature Conservancy, December 1998.

This report focuses on the aquatic conservation planning process, beginning with a description of the aquatic community classification system and the rationale for its development. The abiotic classification of stream and lake habitats is outlined, followed by a description of the biotic classification of fish alliances. The use of this classification system in conservation planning is discussed, followed by conclusions drawn from this work.

*Threats to the Illinois River Ecosystem*, The Nature Conservancy, December 1998.

The document summarizes the results of the threat assessment, which concludes that altered hydrology, habitat loss, sedimentation, and altered water quality are the four most critical stresses to the system.

*Unified Watershed Assessment and Watershed Restoration Priorities for Illinois*, Watershed Management Committee, 1998.

This report and the associated action plan list priority watersheds in the State of Illinois and call for coordination of activities and resources to help protect and/or restore water resources. The Illinois River Watershed and many of its tributary watersheds are listed as priority watersheds.

*General Investigation Reconnaissance Study, Illinois River, Peoria Riverfront Development (Environmental/Ecosystem Restoration)*, U.S. Army Corps of Engineers, Rock Island District, May 1998.

This study determined the Federal interest in: (1) reducing sedimentation impacts in the Illinois River at Peoria Lake, (2) restoring fish and wildlife habitat, and/or (3) providing flood damage reduction measures as related to riverfront development near Peoria. This reconnaissance effort led to the *Peoria Riverfront Development, Illinois (Ecosystem Restoration) Feasibility Study with Integrated Environmental Assessment* described below.

*General Investigation Reconnaissance Study, Illinois River, Ecosystem Restoration, Section 905(b) Reconnaissance Analysis*, U.S. Army Corps of Engineers, Rock Island District, January 1999.

This report concluded that ecosystem restoration in the Illinois River Basin is within the Federal interest and that Corps of Engineers involvement is appropriate. Further, measures to address the loss of backwaters, changed hydrologic regimes and water fluctuations, and other impacts upon the system were identified and found to have no anticipated negative environmental impacts. The resulting Project Study Plan and Cost Sharing Agreements with the Illinois DNR have resulted in the initiation of the Illinois River Ecosystem Restoration Feasibility Study.

*Critical Trends in Illinois Ecosystems*. Critical Trends Assessment Program (CTAP), Illinois Department of Natural Resources, Springfield, IL. 2001.

This report provides an overview of each of the 16 CTAP projects. The report summarizes the findings of each project, describes land cover, and provides initial ecosystem monitoring results and results of regional assessments, including resource rich areas.

*Initial Assessment, Illinois River Basin Restoration, Section 519 of the Water Resources Development Act (WRDA) of 2000*, U.S. Army Corps of Engineers, Rock Island District, May 2002.

The initial assessment served as a reconnaissance-level report outlining the Federal interest, work for future phases, relationship to the Illinois River Ecosystem Restoration Study, and summary of proposed Critical Restoration Projects and Long-Term Resource Monitoring.

*Peoria Riverfront Development, Illinois (Ecosystem Restoration) Feasibility Study with Integrated Environmental Assessment*, U.S. Army Corps of Engineers, Rock Island District, March 2003.

This Feasibility Study was conducted by the Corps of Engineers and the Illinois DNR (non-Federal sponsor) to investigate the Federal and State interest in ecosystem restoration within Peoria Lake and the Farm Creek Watershed. The recommended plan includes dredging approximately 200 acres within Lower Peoria Lake to create deepwater habitats and constructing three islands with a total area of 75 acres.

*Conservation Priorities for Freshwater Biodiversity in the Upper Mississippi River Basin*, R. Weitzell, E. McKhoury, P. Gagnon, B. Schreurs, D. Grossman, and J. Higgins, Nature Serve and The Nature Conservancy, July 2003.

This study evaluates the components and patterns for the freshwater biodiversity of the UMRB and identifies the most significant places to focus conservation opportunities to maintain it.

*2004 Report to Congress, Upper Mississippi River System Environmental Management Program*. U.S. Army Corps of Engineers (USACE), Rock Island District, Rock Island, IL.

*Illinois River Basin Restoration  
Comprehensive Plan  
With Integrated Environmental Assessment*

*Draft*

This Report to Congress is the second formal evaluation of the Environmental Management Program (EMP). This report evaluates the EMP; describes its accomplishments, including development of a systemic habitat needs assessment; and identifies certain program adjustments.

*Upper Mississippi River-Illinois Waterway System Navigation Feasibility Study, Feasibility Report 2004.* U.S. Army Corps of Engineers (USACE), Rock Island District, St. Paul District, and St. Louis District.

This feasibility study examines multiple navigation and environmental restoration alternatives, and contains the preferred integrated plan as a framework for modifications and operational changes to the Upper Mississippi River and Illinois Waterway System to provide for navigation efficiency and environmental sustainability.