Photo Courtesy of Farm Service Agency

Illinois

Conservation Reserve Enhancement Program

FINAL

Programmatic Environmental Assessment

June 3, 2004

U.S. Department of Agriculture, Farm Service Agency in partnership with the USDA Natural Resources Conservation Service, Illinois Department of Natural Resources, Illinois Department of Agriculture, Illinois Environmental Protection Agency, County Soil and Water Conservation Districts and Association of Illinois Soil and Water Conservation Districts

Contents

ABSTRACT

FEDERAL ACTION: The U.S. Department of Agriculture (USDA), Farm Service Agency (FSA), proposes to evaluate alternatives to and potential effects of a voluntary enrollment conservation program in the State of Illinois. The goals of this program are to control erosion, improve water quality and enhance wildlife habitat within the Illinois River Watershed. The Conservation Reserve Enhancement Program (CREP) is a component of the USDA Conservation Reserve Program (CRP), the largest and most comprehensive Federal conservation program.

LEAD AGENCIES: FSA, through funding provided by the Commodity Credit Corporation (CCC), is the lead Federal Agency for administering CREP. The Illinois Department of Natural Resources (IDNR), a partner with FSA, is the lead state agency. IDNR, Illinois Department of Agriculture (IDA) and Illinois Environmental Protection Agency (IEPA) are cooperating agencies that contribute to the monitoring and mapping occurring within the CREP area.

AUTHORITY: CREP is authorized pursuant to the provisions of the Food Security Act of 1985, as amended (16 U.S.C. 3830 *et seq.*), and promulgated in 7 CFR 1410.

DOCUMENT TYPE: Programmatic Environmental Assessment (PEA), prepared in accordance with the National Environmental Policy Act of 1969 (P.L. 91-190; 42 U.S.C. 4321-4347), as amended, 40 CFR 1500-1508, and FSA environmental regulations at **7** CFR Part 799.

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LIST OF ACRONYMS

AISWCDs	Association of Illinois Soil and Water Conservation District
BMPs	Best Management Practices
CCC	Commodity Credit Corporation
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CREP	Conservation Reserve Enhancement Program
CRP	Conservation Reserve Program
CSWCD	County Soil and Water Conservation District
CTAP	Critical Trends Assessment Project
EBI	Environmental Benefits Index
ECP	Emergency Conservation Program
EPA	U.S. Environmental Protection Agency
EQIP	Environmental Quality Incentives Program
EWPP	Emergency Watershed Protection Program
FIP	Forestry Incentive Program
FONSI	Finding of No Significant Impact
FSA	Farm Service Agency
FWP	Farmable Wetland Program
FWS	U.S. Fish & Wildlife Service
GIS	Geographic Information System
GRP	Grassland Reserve Program
IDA	Illinois Department of Agriculture
IDNR	Illinois Department of Natural Resources
IEPA	Illinois Environmental Protection Agency
IFB	Illinois Farm Bureau
IMPIRW	Integrated Management Plan for the Illinois River Watershed
INHS	Illinois Natural History Survey
MOA	Memorandum of Agreement
NEPA	National Environmental Policy Act of 1969
NRCS	Natural Resources Conservation Service
NWR	National Wildlife Refuge
PEA	Programmatic Environmental Assessment
PIP	Practice Incentive Payment
PRP	Pasture Recovery Program
ROD	Record of Decision
SIP	Stewardship Incentive Program
SSRP	Streambank Stabilization and Restoration Program
SWCDs	Soil and Water Conservation Districts
TAP	Tree Assistance Program
TMDL	Total Maximum Daily Load
U.S.C.	U.S. Code
USDA	U.S. Department of Agriculture
WHIP	Wildlife Habitat Incentives Program
WRP	Wetlands Reserve Program

CHAPTER 1.0 PURPOSE OF AND NEED FOR ACTION

1.1 History and Background

1.1.1 Conservation Reserve Program (CRP)

The Conservation Reserve Program (CRP) was initially authorized by Congress in Title XII of the Food Security Act of 1985, as amended (16 U.S.C. 3830 *et seq*.), and was reauthorized by the Farm Security and Rural Investment Act (2002 Farm Bill) through December 31, 2007. The program is administered by the U.S. Department of Agriculture's Farm Service Agency (FSA) through the Commodity Credit Corporation (CCC). Cooperators include the Natural Resources Conservation Service (NRCS); Cooperative State Research, Education and Extension Service; state forestry agencies; county Soil and Water Conservation Districts; and the Association of Illinois Soil and Water Conservation Districts (AISWCDs).

The purpose of CRP is to assist landowners and farm operators in conserving land by reducing soil erosion, improving water quality and enhancing wildlife resources. Today, CRP is a voluntary, long-term conservation program that offers farmers and landowners an annual, per-acre rent plus half the cost of establishing a permanent land cover, such as grass or trees. In exchange, the landowner agrees to retire highly erodible or environmentally sensitive cropland from production for 10 to 15 years.

CRP is the largest and most comprehensive voluntary conservation program ever undertaken by the Federal government. CRP is authorized to maintain a maximum enrollment of 36.4 million acres. The general eligibility criteria for CRP are—

1. the land must be cropland that has been cropped two of the previous five years or be marginal pastureland, and
2. no more than 25 percent of the cropland in a county may be enrolled in CRP. The 25-percent limitation also applies to the farmable wetland program (FWP).

Highly erodible and other environmentally sensitive land, formerly cropland, is retired from production and converted to a long term resource conservation cover, such as native grasses, trees and riparian buffers. Only the most environmentally sensitive land, yielding the greatest environmental benefits, is accepted into the program. An Environmental Benefits Index (EBI) was developed in 2002 to select areas and acreages offering the greatest environmental benefits. The EBI consists of the following factors:

- Wildlife habitat benefits
- Water quality benefits from reduced erosion, runoff and leacheate
- On-farm benefits of reduced erosion
- Long-term retention benefits
- Air quality benefits from reduced wind erosion

- Location in a Conservation Priority Area, if applicable[1]
- Cost of enrollment per acre

For certain high priority conservation practices yielding highly desirable environmental benefits, producers may sign up for the program at any time without waiting for an announced sign-up period. Continuous sign-up allows farmers flexibility in implementing certain conservation practices on their cropland. These practices are specially designed to achieve significant environmental benefits, giving program participants a chance to help protect and enhance wildlife habitat, improve air quality and improve the condition of water resources. These practices include filter strips, riparian buffers, shelter belts, grass waterways and shallow water areas for wildlife.

Of the total acres enrolled in CRP nationwide, 2.5 million have been planted to trees and 2 million acres have been converted to wildlife habitat and special shallow water areas. In addition, there are approximately 8,500 miles of CRP filter strips along waterbodies and 32.3 million acres in grass cover.[2]

In 2002, FSA prepared a programmatic environmental impact statement (PEIS) on the nationwide CRP, which was followed by a Record of Decision (ROD) issued in 2002. The PEIS and associated ROD addresses the environmental impacts of both CRP and CREP from a national programmatic level.

1.1.2 Conservation Reserve Enhancement Program (CREP)

The Conservation Reserve Enhancement Program (CREP) was established in 1997 as a supplementary program to CRP, and was developed to achieve specific environmental goals for water quality improvement and wildlife habitat. CREP is a joint Federal-state voluntary land retirement program that allows states to supplement CRP incentives by addressing more state-specific environmental goals.

The purpose of CREP is to improve water quality through the reduction of sediment and nutrient loads in adjacent water bodies within a specific geographical region while enhancing wildlife habitat for threatened and endangered species. CREP is a community based, results oriented program centered on local participation and leadership. Between 1997 and 2002, 24 states, including Illinois, have established CREP programs.

Like CRP, CREP is administered by FSA and funded by CCC. CREP offers incentives to landowners to develop conservation practices that protect environmentally sensitive land, decrease erosion, restore wildlife habitat and protect water resources. These incentives are used to encourage farmers to voluntarily enroll in multi-year contracts with states and convert cropland to native vegetation, and to establish riparian buffer zones, plant trees and restore wetlands.

[1] Conservation Priority Areas are regions targeted for enrollment, such as the Prairie Pothole region, an area adjacent to the Great Lakes, the Chesapeake Bay, and other valuable designated areas. In addition, the FSA may designate up to 10 percent of its remaining cropland in any given state as a Conservation Priority Area.

[2] "History of The CRP," http://www.fsa.usda.gov/dafp/cepd/12crplogo/history.htm

CREP differs from CRP in the following four ways:

1. CREP is targeted to specific geographic areas and is designed to focus conservation practices on specific environmental concerns of a high priority;
2. CREP is a joint undertaking among states, the federal government and other stakeholders who have an interest in addressing particular environmental issues;
3. CREP is results-oriented and requires states to establish measurable objectives and conduct annual monitoring to measure progress toward implementing those objectives; and
4. CREP is flexible, within existing legal constraints, and can be adapted to meet local conditions on the ground.

1.1.3 Illinois Conservation Reserve Enhancement Program (CREP)

The Illinois CREP agreement was originally created in March 1998 through a Memorandum of Agreement (MOA) between the CCC and the State of Illinois. Enrollment in the Illinois CREP agreement began on May 1, 1998. The focus of the Illinois CREP is to reduce sediment and nutrient content, improve water quality and enhance wildlife habitat for threatened and endangered species in the Illinois River Watershed. In December 2002, the MOA reauthorized up to 232,000 acres of eligible land for enrollment along the Illinois River and its tributaries, and as of January 1, 2003, the Illinois CREP area was expanded to include the entire Illinois River Watershed.

A total of 53 counties comprise the Illinois River Watershed. Within this area, up to 232,000 acres of cropland are eligible for CREP enrollment, although no more than 25 percent of cropland in a county may be enrolled. CREP is being implemented through a federal-state-local partnership in the eligible area. The agencies responsible for implementing the program are FSA and Illinois Department of Natural Resources (IDNR), the lead administering agencies, and Natural Resource Conservation Service (NRCS), Illinois Department of Agriculture (IDA), Illinois Environmental Protection Agency (IEPA), and the county Soil and Water Conservation Districts (SWCDs) and the Association of Illinois Soil and Water Conservation Districts (AISWCDs). Other agencies and organizations also provide guidance and assistance.

In addition to its joint lead responsibilities, IDNR determines if additional acreage is eligible for enrollment and offers landowners a 15- or 35-year supplemental contract or a permanent easement. IDNR funds the soil and water conservation districts for administering the program at the local level, and funds all legal fees for the easements. IDNR also pays part of the cost of establishing the land management practices and provides the easement payments to the landowners.[3] IDNR, IDA and IEPA contribute to monitoring and mapping projects in CREP. County SWCDs, along with AISWCDs provide program guidance and technical assistance through the CREP Advisory Committee.[4]

[3] Lisa Manning-Scott, FSA Conservation Specialist, email to Eileen Carlton, dated Nov. 14, 2003.
[4] Illinois CREP Reporting Period: Oct. 1, 2001-Sept. 30, 2002, p. 1.

1.2 Proposed Federal Action

FSA proposes to continue to implement land management practices in the Illinois River Basin to improve water quality and to reduce soil erosion and phosphorus and nitrogen loads caused primarily by agricultural practices. CREP land management practices will continue to improve the water quality of the river and its tributaries and enhance wildlife habitat, particularly for threatened and endangered species. These practices will conform to the programmatic goals set forth in the reauthorized CRP, the land management goals identified in CREP and the recommendations presented in the state's 1997 *Integrated Management Plan for the Illinois River Watershed.*

Landowners, who voluntarily enter into a contractual agreement with IDNR and take environmentally sensitive land out of agricultural production, receive financial and cost-share incentives and technical assistance for planting specific types of native vegetation and trees near rivers and streams. These payments average $164 per acre for eligible cropland. Landowners may choose to enroll in only a 14-15 year federal contract agreement or they may enroll in a federal contract with a state contract extension. A state contract may not be taken unless the landowner enrolls (or is currently enrolled) in a federal CREP contract. Landowners may choose from a permanent easement, 35-year contract extension or a 15 year contract extension at the state level.

To be eligible for enrollment into the Illinois CREP, the land—

- Must be located in the Illinois River Watershed;
- Must either be located within the 100-year floodplain, have highly erodible soils with an erodibility index of 12 or greater next to an existing riparian area, or be qualified as a wetland farmed under natural conditions or prior converted wetlands; and
- Must have been cropped two of the last five years or be considered marginal pastureland that meets the following provisions:
  i) The conservation practice must be use of riparian buffer
  ii) Indications that the land has been grazed or could be grazed (has fence surrounding property that could enclose domestic animals without major repairs, is currently being grazed or has been grazed in recent years)
  iii) Timber land or land with clusters of trees is not eligible

1.3 Purpose of Action

In 1997, CREP was initiated and funded through the CCC. CREP is a results-oriented, community-based conservation partnership program between the FSA and the State of Illinois, and was developed to address specific state and nationally significant water quality, soil erosion and wildlife habitat issues linked to agriculture.

The purpose of the Illinois CREP is to reduce sedimentation and runoff into the Illinois River and its tributaries and encourage the growth of local wildlife populations through habitat enhancement. The goals of the Illinois CREP are to—

- Reduce the total amount of silt and sediments entering the Illinois River by 20 percent;
- Reduce the amount of phosphorus and nitrogen in the Illinois River by 10 percent;

- Increase populations of waterfowl, shorebirds, nongame grassland birds and state and federally listed species within the project area by 15 percent; and
- Increase native fish and mussel stocks by 10 percent in the lower reaches of the Illinois River (Peoria, La Grange and Alton reaches)

1.4 Need for Action

The Illinois River Watershed, once abundant in waterfowl, commercial fisheries and mussels, has experienced declines in its wildlife and fisheries due to a wide range of effluents and pollutants, including sediments, phosphorus and nutrients. Within the watershed, more than 20 communities rely on the Illinois River as their source of drinking water. Demands on lands and waters in the watershed for agriculture, residential and industrial development, navigation and a variety of recreational activities, including fishing and hunting, have created a large and often conflicting demand on the watershed's resources.

Human impacts, such as stormwater runoff (agricultural, industrial and urban/suburban development), construction of levees, stream channelization, urbanized development and increased use of pesticides and lawn fertilizers have impaired the watershed and rivers by altering the natural stream flow and introducing excessive levels of nutrients, siltation, metals, suspended solids and organic enrichment to the waterways. Each year, an estimated 14 million tons of sediment are transported through the watershed. More than half of this sediment load is deposited in the Illinois River Valley and the balance is carried west to the Mississippi River.

Nearly half of Illinois' agricultural land is located within the Illinois River Watershed. In 1992, the National Research Council, part of the National Academy of Sciences, listed the Illinois River Watershed as a priority for restoration. The Illinois River Watershed was one of three river floodplain ecosystems that were included on this priority list. The Illinois River Basin contains 124 surface water segments and 71 lakes, of which more than 50 have been filled by sedimentation. The Illinois River is listed on the state's List of Impaired Waters and its watershed is one of 32 Unified Watershed Assessment Category I watersheds, which is impaired. Appendix A illustrates the impaired waters within the Middle Illinois Watershed and the Vermilion River Watershed.

The Illinois CREP will protect environmentally sensitive land along the Illinois River, as well as some of its tributaries, by encouraging landowners to plant trees and native vegetation in areas along rivers and streams and in areas where the soils are highly erodible. This program will reduce sedimentation, runoff, and water treatment costs and the need for dredging navigable waterways. CREP will also continue to restore the floodplains that are essential in reducing flooding, and to enhance wildlife habitat, thus enabling sustainable wildlife populations for the future.

1.5 Legislative Mandates

The Illinois CREP Programmatic Environmental Assessment is prepared pursuant to the National Environmental Policy Act (NEPA) of 1969, as amended (42 U.S.C. 4321-4347), the Council on Environmental Quality (CEQ) regulations (40 CFR Parts 1500-1508) and FSA environmental regulations (**7** CFR Part 799).

The Food Security Act of 1985 (16 U.S.C. 3830 *et seq.*), as amended by the Federal Agriculture Improvement and Reform Act of 1996, authorizes the CCC to perform all activities related to the CRP in Illinois, as specified in the Agreement between USDA, CCC and the State of Illinois, signed December 18, 2002 (2002 Agreement). The provisions of this Act are codified in 7 CFR Part 1410. The CCC is further authorized to enter into agreements with states to use the CRP in a cost effective manner to address specific conservation and environmental objectives of a state and the nation. Programmatic changes to the CRP in 2003 incorporated provisions from the 2002 Farm Bill into the CRP regulations.

The Watershed Protection and Flood Prevention Act of 1954 (P.L. 83-566; 16 U.S.C. 1001-1008), authorized the Watershed Protection and Flood Prevention Program. Before 1996, watershed planning activities and the cooperative river basin surveys and investigations were operated as separate programs. The 1996 Appropriations Act combined these activities into one program entitled the Watershed Surveys and Planning Program. Activities for both programs are continuing under this authority.

The Flood Control Act (P.L. 78-534), enacted December 22, 1944, authorized the Secretary of Agriculture to install watershed improvement measures to reduce flooding, sedimentation, and erosion damages, and to further the conservation, development, use and disposal of water and the proper utilization of land.

The State of Illinois has the statutory authority to perform activities specified in the 2002 CREP Agreement, pursuant to the Intergovernmental Cooperation Act (5 ILCS 220), the Soil and Water Conservation Districts Act (70 ILCS 405), the Fish and Aquatic Life Code (515 ILCS 5), the Wildlife Code (520 ILCS 5) and the Civil Administrative Code of Illinois (Part 13.5) (20 ILCS 805). Pursuant to 17 Ill. Adm. Code 1515, the Illinois Department of Natural Resources administers enrollments into the state's Conservation Reserve Enhancement Program. The rule states that the purpose of this program is to provide long-term environmental benefits by allowing 232,000 acres of certain environmentally sensitive lands in the Illinois River Watershed to be restored, enhanced or protected over a period of time from 15 years to perpetuity. The program is driven by locally led conservation efforts, and forges a partnership between landowners, governmental entities and nongovernmental organization in addressing watershed quality problems.

The Illinois River Watershed Restoration Act (20 ILCS 3967) was enacted in 1997 to create a group of leaders representing agriculture, business, conservation and the environment who would encourage the restoration of the Illinois River Watershed in accordance with the recommendations of the *Integrated Management Plan for the Illinois River Watershed Technical Report* (1997). This act enabled these leaders to work with local communities to develop projects and regional strategies, and to make recommendations to appropriate state and Federal agencies.

1.6 Other Programs and Partnerships

The Illinois CREP is a collaborative partnership involving several Federal, state and local agencies and nongovernmental organizations. Cooperating agencies involved in implementing CREP in Illinois include:

- Association of Illinois Soil and Water Conservation Districts
- Illinois Department of Agriculture
- Illinois Environmental Protection Agency
- Illinois Department of Natural Resources
- University of Illinois Extension
- Farm Service Agency
- Natural Resources Conservation Service

Several programs involving these groups have been initiated to focus on restoring the Illinois River Watershed, including *Conservation 2000*, a long-term, state-supported initiative to protect natural resources and enhance outdoor recreational opportunities in Illinois. *Conservation 2000*, which was initiated in 1995, implements strategies for maintaining the viability of Illinois' soil and water resources into the 21st century and beyond. Several state agencies share responsibility for administering *Conservation 2000* funds, including IDA, which oversees the program's agriculture-related components. *Conservation 2000* provides funding for the sustainable agriculture grants program, the conservation practices cost-share program, the streambank stabilization and restoration program and the soil and water conservation district grants program.

Other conservation programs that focus on the Illinois River Watershed include the U.S. Army Corps of Engineers' *Illinois River Ecosystem Restoration Study*, the FSA-State of Illinois CREP, the EPA-Illinois EPA Nonpoint Source Control Program, the CCC's Environmental Quality Incentives Program and the Illinois Wildlife Grants Program, which funds a comprehensive state wildlife conservation plan that will be published by 2005.

Most of these programs are coordinated through the actions of the *Integrated Management Plan for the Illinois River Watershed* (IMPIRW), which was developed in 1997. The objectives of IMPIRW include stream restoration, water quality improvement, habitat preservation and support and protection of the regional economy. The IMPIRW published recommendations that focused on channelization, streambank stabilization, runoff, erosion and sediment reduction, wetland construction and development of cost effective, voluntary best management practices (BMPs).

The IEPA sponsors programs that provide assistance to address surface water quality concerns. These programs are:

- the Nonpoint Source Pollution Control Grant (319) Program,
- the Illinois Clean Lakes Program, and
- the Priority Lake and Watershed Implementation Program

The Nature Conservancy also promotes conservation practices on agricultural lands in Illinois, and evaluates agricultural issues through a conservation plan for the Illinois River watershed. Some of the strategies in the conservation plan include restoration of large floodplain habitat, reduction in erosion of the Illinois River bluffs and reduction in run-off from agricultural and urban areas.

The State of Illinois is supporting "Illinois Rivers 2020," a proposed $2.5 billion, 20-year Federal and state initiative to restore the waterway and to improve its water quality. The program may include wetlands and backwater lake restoration, sediment load reduction, and other environmental protection initiatives.

In 2001, the University of Illinois-Extension, IDNR and IEPA developed a CREP information program for landowners and a consistent set of training materials for staff responsible for implementing CREP. Table 1-1 highlights other conservation programs related to the Illinois River Basin.

Table 1-1: Conservation Programs Related to the Illinois River Basin

Program	Sponsor
Conservation 2000—Conservation Practices Program and Ecosystems Program (C2000)	Illinois Dept. of Natural Resources
Sustainable Agriculture Grant Program	Illinois Dept. of Agriculture
Streambank Stabilization and Restoration Program (SSRP)	Illinois Dept. of Agriculture
Environmental Quality Incentives Program (EQIP)	NRCS
Wildlife Habitat Incentive Program (WHIP)	NRCS
Wetland Reserve Program (WRP)	NRCS
Emergency Conservation Program (ECP)	FSA
Emergency Wetland Reserve Program (EWRP)	NRCS
Emergency Watershed Protection Program (EWPP)	NRCS
Farmland Protection Program (FPP)	NRCS
Tree Assistance Program (TAP)	FSA
Pasture Recovery Program (PRP)	FSA
Grassland Recovery Program (GRP)	FSA
Noninsured Crop Disaster Assistance Program	FSA
Forestry Incentive Program (FIP)	Forest Service
Stewardship Incentive Program (SIP)	Forest Service

Source: *Emergency Conservation Program, Final Programmatic Environmental Impact Statement*, FSA, pp. 3-29 to 3-31.

1.7 Scoping

As administrator of CREP, FSA is required to comply with NEPA (42 U.S.C. 4321), the CEQ regulations (40 CFR 1500-1508) and other applicable Federal and state statutes and regulations. Through this Programmatic EA (PEA), FSA has evaluated the Federal action, considered programmatic alternatives to this action and assessed the potential effects of these alternatives on the human and natural environments. FSA will announce availability of the draft PEA for agency and public review. Subsequent to public review of the draft PEA, FSA will make a finding as to whether significant impacts result from the proposed action. If no significant impacts are determined, FSA will prepare a Finding of No Significant Impact (FONSI).

To comply with the requirements set forth in §1501.7 of CEQ's scoping requirements, FSA sent 70 letters to Federal, state and local agencies, universities and other organizations advising them that preparation of a PEA on the Illinois CREP had been initiated. The FSA scoping letter, dated October 10, 2003, identified the CREP area, program goals and alternatives under consideration, and outlined the provisions of CREP. A total of eight comments were received through

November 1, 2003, the close of the scoping comment period. These scoping comments are summarized in Table 1-2.

Table 1-2: Summary of Scoping Comments

Commenter	Date	Summary of Comments
Thomas C. Brooks, Illinois Dept. of Transportation, Division of Highways, Bureau of Design and Environment, Environmental Section	10/21/2003	CREP and CRP are great programs. No further comment.
Logan Lee, Prairie Supervisor, Midewin National Tallgrass Prairie	10/22/2003	• Protection of water quality and streamflow, native plant communities and wetlands protection, management of invasive and non-native plant species and protection of grassland bird habitat. • Protection or restoration of riparian areas and wetlands in the Illinois River basin can have important outcomes for the Midewin National Tallgrass Prairie by directly affecting the area's watersheds or by affecting the ecological context for management of Midewin's natural resources. • Requested that the CREP agreement allow priority consideration for watersheds within the Illinois River basin where high-quality aquatic resources occur, where existing resources are at risk of degradation, and where the resources may be improved by proposed restoration or improvements to CREP lands. Midewin's creeks, including Prairie Creek and Jackson Creek, both tributaries of the Illinois River, comprise important aquatic and riparian components of the prairie ecosystem and support a variety of native fish and mussels, as well as valuable human uses on Midewin. Midewin also provides habitat for a variety of birds that interact with surrounding lands and may benefit from improved habitat. • CREP may provide a valuable set of resources to provide watershed protection or restoration in upstream areas. Application of CREP resources in the watersheds of Midewin's creeks would help protect these important tributaries of the Illinois River, as well as meet the objectives stated for the Illinois River.

Commenter	Date	Summary of Comments
		• Requested that allowances be made for lands that can provide the necessary habitat for grassland bird species either through CREP or other state or Federal programs. A grazing regime may be necessary to provide the habitat conditions required by some species. Grassland bird populations in Illinois might receive greater benefit from CREP if the program is coordinated with efforts to protect grazing land or convert marginal or highly erodible cropland to pasture.
Jim McDonald, NEPA Coordinator, USDA Forest Service, Eastern Region	10/22/2003	No comment, but requested that further information be addressed directly to him. Referred letter to Midewin National Tallgrass Prairie for comment.
Gloria Budd, Assistant Director to Joel Brunsvold, Illinois Dept. of Natural Resources	10/23/2003	Requested an extension.
Tim Kelly, Illinois Environmental Protection Agency	10/24/2003	• Where nonpoint source pollution is concerned, CRP and CREP have done more to reduce soil erosion and sediment delivery to Illinois' surface water resources than any other program enacted since 1985. • IEPA's principal issue of concern involves the reduction of pollutant loads to the state's waterbodies. CREP reduces sediment and particle-attached pollutant loads to surface waters, which is the intent of the TMDL program. The expansion and protection of stream corridors through CREP is the most effective means to improve in-stream water quality. • IEPA's emphasis within the Illinois River watershed is on those water resources identified on the state's list (Section 303(d)) of impaired waters, which require development of a TMDL. IEPA's current list is available at http://www.epa.state.i.us/water/tmdl/303d-list.html. A new list will be available in 2004. • The following agency programs address surface water quality concerns and should be recognized when evaluating benefits and effects of the CREP program, the Nonpoint Source Pollution Control Grant (319) Program, the Illinois Clean Lakes Program and the Priority

Commenter	Date	Summary of Comments
		Lake and Watershed Implementation Program.
Charles "Chuck" Hartke, Director, Illinois Dept. of Agriculture	10/30/2003	• The primary focus of the IDA concerning CREP in Illinois is to continue voluntary incentive-based programs to landowners that reduce the effects of soil and streambank erosion on water quality. Financial resources must be targeted to high priority areas to achieve the water quality and wildlife enhancement goals established for the program. Within these targeted areas of treatment, continual assessment of BMPs and where best to locate them, are imperative to maintaining the positive trend this program is having on the ecosystem of the Illinois River Basin. • With respect to BMPs, the IDA would encourage the CREP to increase the priority for funding to treat eroding streambanks within the tributaries of the Illinois River. It is estimated that between 30 and 70 percent of the sediment load in Illinois' streams originates from eroding streambanks. Additional resources directed towards streambank stabilization would yield measurable benefits towards meeting the goal of reducing the silt and sedimentation entering the mainstream of the Illinois River. • Since 1995, IDA has administered the SSRP, which provides cost-share and technical assistance to landowners to install cost-efficient BMPs for treating unstable stream segments. To date, more than 200 projects have been completed within the Illinois River Watershed through the SSRP. • The IDA welcomes the opportunity to partner with Federal and other state agencies to increase the scope of the SSRP.
William J. Gradle State Conservationist, USDA-Natural Resources Conservation Service, Champaign, Illinois	11/17/2003	• A subcommittee of the Illinois State Technical Committee has met throughout the year to discuss needs of the Illinois CREP. This subcommittee was an outgrowth of the original CREP formation committee that worked on the original agreement between the State of Illinois and USDA. The subcommittee process works well, and issues and concerns among those stakeholders in the Illinois Basin are discussed and implemented as feasible.

Commenter	Date	Summary of Comments
		• The success of the current process is reflected in the Illinois CREP Annual Report.
Kenneth A. Barr, Chief Economic and Environmental Analysis Branch, Rock Island District Corps of Engineers	12/11/2003	• The Corps has an interest in acquiring lands along the Illinois Waterway for placement of dredged material to maintain the navigation channel and to construct or restore wetlands. The Corps would like to be contacted by the USDA and the Farm Service Agency Illinois State Office regarding future land acquisition. • The Corps is concerned about potential impacts to waters of the U.S., as permitted under Section 10 of the Rivers and Harbors Act of 1899 or under Section 404. Requested inclusion on the list of reviewers for the DPEA. • Requested that the FSA coordinate with the Illinois State Historic Preservation Office and the U.S. Fish & Wildlife Service, Rock Island Field Office.

Source: Compiled by Environmental Management Collaboration, Ltd., Nov. 2003.

CHAPTER 2.0 ALTERNATIVES

2.1 Introduction

The proposed action, as described in Chapter 1.0, is for FSA to continue implementing land management practices in the Illinois River Basin that reduce soil erosion and phosphorus and nitrogen loads caused by agriculture and thereby improve the water quality of the Illinois River and enhance wildlife habitat. This chapter evaluates two alternatives for consideration. Alternative 1-No Action presents the existing conditions and program under the initial CREP. Alternative 2-Continuous Enrollment Program describes the expanded CREP that targets acreage in the 2002 Memorandum of Agreement (MOA) and considers the effects of a continuous enrollment program.

Under both alternatives, a Federal-state-local partnership program would be implemented by FSA and NRCS from the Federal side, and the following state partners: IDNR, IDA, IDEP and the county SWCDs, along with the AISWCDs. A CREP Advisory Committee consisting of Federal, state and nongovernmental partners is established to provide guidance and input on program implementation.

2.2 Description of Alternatives

2.2.1 Alternative 1-No Action

In March 1998, USDA and the State of Illinois initiated the Illinois CREP through an MOA to reduce sediment and nutrient content while enhancing wildlife habitat for threatened and endangered species in the Illinois River Watershed. The original MOA granted state agencies the authority to enroll 100,000 acres into the program. In August 2001, permission was granted to enroll an additional 32,000 acres for a total of 132,000 acres.

Enrollment into this program began on May 1, 1998, in select regions of the watershed and extended until December 31, 2002. A total of 5,345 signed contracts, comprising 110,854 acres, are enrolled in CREP. This project area consists of the subwatersheds along the Middle Illinois and Peoria Lake sections of the Illinois River, as well as the following watersheds within the Illinois River Basin:

- Vermilion,
- Mackinaw,
- Spoon,
- Lower Fox,
- Lower Sangamon and
- Kankakee

Program Goals

The goals of the initial Illinois CREP were to—

1. Reduce the amount of silt and sedimentation entering the mainstem of the Illinois River by 20 percent.
2. Reduce the amount of phosphorus and nitrogen in the Illinois River by 10 percent.
3. Increase the populations of waterfowl, shorebirds and nongame grassland birds and protected species within the project area by 15 percent.
4. Increase the native fish and mussel stocks by 10 percent in the lower reaches of the Illinois River (Peoria, La Grange and Alton reaches).

Eligible Land

Land considered eligible for the program under this alternative must be cropland that has been cropped two out of five years, and can be physically and legally cropped. Marginal pastureland is also eligible provided that it is suitable for use as a riparian buffer in which trees can be planted. Landowners generally must have owned or operated the land for at least one year prior to enrollment into the program.

Initially, 85,000 acres of riparian buffers and 15,000 acres of Highly Erodible Lands immediately adjacent to these buffers were approved as eligible lands for enrolment into the program, but due to overwhelming demand for enrollment, a waiting list for the program was created in October 2001. Demand exceeded both the number of acres eligible for the program, as well as funds available for the contracts. Enrollment in this program began on May 1, 1998, in select regions of the Illinois River Watershed and will continue (as long as monetary appropriations are available) until December 31, 2002.[5] Although the Illinois CREP is authorized to continuously enroll up to 132,000 acres through the year 2002, enrollment of more than 100,000 acres is subject to further review and approval by the FSA and subject to availability of funds. In 2003, 110,854 acres were enrolled in the program. Appendix B presents a table representing the signed CREP agreement and their acreages by county throughout the Illinois CREP area.

Eligible Conservation Practices

The conservation practices that are eligible under this alternative for lands enrolled into the Illinois CREP are listed in Table 2-1:

Table 2-1: Illinois CREP Eligible Conservation Practices

Practice No.	CREP Eligible Practice
CP2	Establishment of Permanent Native Grasses
CP3	Tree Planting
CP3A	Hardwood Tree Planting
CP4D	Permanent Wildlife Habitat, Noneasement
CP12	Wildlife Food Plots
CP25	Rare and Declining Habitat (for prairie ecosystem restoration and tallgrass prairie/oak savanna ecosystem restoration)

[5] IDNR. http://www.ilcrep.org/whatisCREP.html

Practice No.	Eligible Practice for Riparian Buffers
CP9	Shallow Water Areas for Wildlife
CP12	Wildlife Food Plots
CP21	Filter Strips
CP22	Riparian Buffers
CP23	Wetland Restoration

Source: Illinois Dept. of Natural Resources, 2002; Amended at 25 Ill. Reg. 13600, effective Oct. 9, 2001.

Contract Periods

Under this alternative, eligible producers can enroll in 14 to 15 year CRP contracts or they may choose to enroll in a Federal contract with a state contract extension. A state contract may not be signed unless the landowner enrolls, or is currently enrolled, in a federal CREP agreement. Participating landowners may either voluntarily extend their contracts for another 15 or 35 years or place their land under a permanent easement with the state. Land must be cropland that has been cropped two out of the past five years and is physically and legally capable of being cropped. Marginal pastureland is also eligible provided it is suitable for use as a riparian buffer planted to trees. Applicants must generally have owned or operated the land for at least one year prior to enrollment.[6]

Payment Options

Four types of FSA payment options are available to participants under this alternative:

1. *Signing Incentive Payment (SIP)*—a one-time payment immediately payable after approval of the contract by FSA of up to $150 per acre for land enrolled in a riparian buffer zone, filter strip or grassed waterway.
2. *Practice Incentive Payment (PIP)*—payment equal to about 40 percent of the total cost for establishing the practice. This payment is in addition to the 50 percent cost share assistance that FSA offers.
3. *Annual Rental Payment*—this payment equals about 130 percent of the dryland cash rental rate for the county in which the land is located.
4. *Cost Share Assistance*—financial assistance is provided to the landowner for the cost of installing the conservation practices on retired land.

In addition to the Federal payment options, the State of Illinois would provide a bonus payment for all contract extensions beyond 15 years, up to 50 percent of the cost of installing conservation practices, annual monitoring and streambank stabilization.

Program Results

Since the program's inception in 1998 through the end of FY 2002, FSA has restored or protected a little more than 118,000 acres through CREP enrollments, and the state has protected about 67,110 acres. Of these lands, 91.8 percent, or 61,634 acres were enrolled in permanent easements, 4.9 percent were enrolled in 15-year contract extensions and 3.3 percent were enrolled in 35-year contract extensions.

[6] Stuart, Dann. FSA Online. "Questions and Answers—Expanded Illinois CREP," Release No. 1625.01. http://www.fsa.usda.gov/pas/printstory.asp?StoryID=320

CREP has helped to restore and protect large stretches of floodplain corridors both along the mainstem of the Illinois River, as well as along major tributaries. For example, in Hancock County, where land partially drains into the Illinois River and partially into the Mississippi River, a landowner enrolled a 735-acre parcel of land into CREP that included approximately 3 miles of riparian corridor along the La Moine River, a tributary to the Illinois River. The landowner offered the state 272 acres of uplands immediately adjacent to this parcel at the same rate as the CREP through the state's *Conservation 2000*-Conservation Practices Program, which enabled a contiguous riparian corridor that extended for several miles.[7]

CREP is restoring and protecting large stretches of floodplain corridors both on the mainstem of the Illinois River and along major tributaries. It is helping landowners, who have only been able to produce crops in the area once or twice in the past decade to retire these lands from agricultural production.

The success of CREP in Illinois is mainly credited to the voluntary nature of the initiative, the management of enrollments and holding of easements at the county level and the strong coalition of supporters from Federal, state and nongovernmental levels.

Program Costs

Based on the full implementation of the Illinois CREP, which projects enrollment of 132,000 acres, the projected combined financial Federal and state costs will be approximately $322 million, with $260 million contributed by the Federal government and $62 million contributed by the State of Illinois. This does not include costs that may be borne by producers. [8]

Total Federal and state expenditures for the program during fiscal year 2001 was $53.9 million, of which the State of Illinois funded nearly $13.5 million, the Federal cost share amounted to more than $3 million and discounted CRP payments total more than $37 million.

2.2.2 Alternative 2-Continued Enrollment of Targeted Acreage in 2002 Agreement (Preferred Alternative)

In December 2002, a Memorandum of Agreement (MOA) was signed between the CCC and the State of Illinois that reauthorized CREP and established a collaborative partnership to enhance water quality and critical habitat for threatened and endangered species in the Illinois River Watershed through the reduction of sediment and nutrients and other conservation practices. As of January 1, 2003, CREP acreage was expanded to include the entire Illinois River Watershed, bringing the total eligible CREP area to 232,000 acres within 53 counties.

Although the program goals essentially remained unchanged from those previously established, the project area was expanded to include the entire Illinois River Watershed, not just portions thereof. The CREP area is comprised of 53 counties along the mainstem of the Illinois River and its tributaries. CREP agreements require a 10-15-year commitment to keep lands out of

[7] *Illinois Conservation Reserve Enhancement Program (CREP), 2002.Annual Report for Reporting Period Oct. 2000 through Sept. 2001.*

[8] Stuart, Dann. FSA Online. "Questions and Answers—Expanded Illinois CREP," Release No. 1625.01. http://www.fsa.usda.gov/pas/printstory.asp?StoryID=320

agricultural production. A new EBI would be used to select areas and acreages offering the greatest environmental benefits. This index consists of the following factors:

- Wildlife habitat benefits
- Water quality benefits occurring from reduced erosion, runoff and leaching
- On-farm benefits of reduced erosion
- Long-term retention benefits
- Air quality benefits from reduced wind erosion
- Cost of enrollment per acre

Eligible Land

To be considered eligible, land must be owned or leased for at least one year prior to enrollment and must be physically and legally capable of being cropped in a normal manner. Land must also meet cropping history and other eligibility requirements. Voluntary enrollment can be on a continuous basis, permitting farmers to join the program at any time rather than waiting for specific sign-up periods.

Acres eligible for enrollment into the Illinois CREP must meet the following criteria:

1. Lands with a weighted average Erodibility Index (EI) $\geq$ 12 if a) such lands are adjacent to a stream corridor, b) the landowner agrees to enroll riparian areas in the stream corridor using the Enhancement Program or any other CRP enrollment opportunity and c) the land has become an uneconomic remnant as a result of establishing a riparian buffer or enrollment is required for effective functioning of a riparian buffer; and
2. Riparian areas that are either a) within the 100-year floodplain of the Illinois River and its tributaries, or b) are located within the watershed are used for wetland restoration purposes and are determined by NRCS to be farmed wetlands, prior converted wetlands or wetlands farmed under natural conditions.
3. Acreage beyond the 132,000 acres, approved in the previous MOA, as amended on July 12, 2002, will be limited to 20,000 acres per year, beginning on July 1, 2003 and extending through December 31, 2007. FSA will release 20,000 acres annually, provided that the state has sufficient funds for the State Incentive Program in that given year.

Eligible Conservation Practices

Conservation practices are designed to improve environmental benefits and prevent the degradation of the environment. These practices were specially designed to achieve significant environmental benefits, giving participants an opportunity to help protect and enhance wildlife habitat, improve air quality and improve water resources. Installation of conservation practices must be completed with 12 months of the Federal effective date of the CREP agreement. The eligible conservation practices are listed in Table 2-2.

Table 2-2: Eligible CREP Conservation Practices Based on Erosion

Practice No.	CREP Eligible Practices on the Basis of Erosion
CP2	Establishment of Permanent Native Grasses
CP3	Tree Planting
CP3A	Hardwood Tree Planting
CP4D	Permanent Wildlife Habitat, Noneasement
CP12	Wildlife Food Plots
CP25	Rare and Declining Habitat-for prairie ecosystem restoration and tallgrass prairie/oak savanna ecosystem restoration
Practice No.	**Eligible Practices for Riparian Areas**
CP3A	Hardwood Tree Planting
CP4D	Permanent Wildlife Habitat, Noneasement
CP9	Shallow Water Areas for Wildlife
CP12	Wildlife Food Plots
CP21	Filter Strips
CP22	Riparian Buffers
CP23	Wetland Restoration
CP25	Rare and Declining Habitat (for prairie ecosystem restoration and tallgrass prairie/oak savanna ecosystem restoration)

Source: 17 Ill. Adm. Code 1515, Title 17 Part 1515, section 1515.20: *Conservation Reserve Enhancement Program (CREP) 2001 Annual Report.* Illinois Dept. of Natural Resources, 2002; Amended at 25 Ill. Reg. 13600, effective Oct. 9, 2001.

Contract Periods

Landowners may choose to enroll in only a 14 to 15 year Federal contract or a Federal contract with a state contract extension. A state contract may not be awarded unless the landowner enrolls or is currently enrolled in a Federal CREP contract. Landowners may choose from a permanent easement, a 35 year contract extension or a 15 year contract extension at the state level. The following tabulation represents the various contract periods that are available under this alternative—

Federal Contact	State Option	Total Length
14-15 years	+ 15 years	=30 years
14-15 years	+ 35 years	=50 years
14-15 years	+ permanent easement	=Perpetuity

Source: Illinois Conservation Reserve Enhancement Program. http://www.ilcrep.org/enrolling.html

Payment Options

A Federal annual rental rate, including an FSA state committee determined maintenance incentive payment is offered, plus cost share of up to 50 percent of the eligible cost to install the approved conservation practice(s). Further, the program generally offers a sign-up incentive for participants to install specific conservation practices. FSA uses CRP funding to pay a percentage of the program's costs, while the state provides the balance of the funds.

The State of Illinois will contribute not less than 20 percent to the overall program costs each year by providing additional voluntary supplemental incentives to landowners who either sign a

supplemental contract or grant a permanent easement to the state. The state will also provide technical assistance to landowners and fund—

- streambank stabilization,
- costs associated with the state's annual monitoring program,
- conservation practices established on lands within the CREP or have costs for implementing these practices paid by a non-Federal partners, and
- permanent easements or fee simple acquisition of land within the CREP.

Program Results

During FY 2002, FSA approved 1,421 Federal agreements, enrolling 32,823.2 acres into CREP. The state approved 127 contracts enrolling 8,923.12 acres into the state side of the program. Of the state enrollment acreage, 92.5 percent were held as permanent easements. Another 2.3 percent is enrolled in supplemental 15-year contract extensions and 5.2 percent is enrolled in 35-year extensions. From July 2001 through September 2002, approximately 967 individual conservation projects were completed in the Illinois River Watershed, resulting in 49,186 acres being benefited by the program.[9]

As stated in the discussion of Alternative 1, the success of the program is its voluntary enrollment and its strong coalition of Federal, state, local and nongovernmental partners. For the landowner, CREP is not only a cost effective way to address rural environmental issues and meet regulatory requirements; it can also provide a viable option to supplement farm income.

This alternative supports continued and increased conservation practices, such as filter strips and forested buffer zones, to help protect streams, lakes and rivers from sedimentation and agricultural runoff. Further, this alternative helps landowners develop and restore wetlands through the planting of suitable groundcover. Restoring water regimes helps protect sensitive environments, drinking water sources and critical habitat for wildlife and protected species. These water regimes also filter pollutants, provide flood storage and absorb runoff caused by agricultural practices.

Other program results include:

- Lower water treatment costs
- Lower sediment removal costs
- Reduced flood damage
- Improved aquatic and riparian habitats
- Larger and more diverse populations of aquatic species
- Increased water-based recreational values
- Reduced maintenance costs for water navigation systems
- Reductions in eutrophication or stagnation caused by lower levels of nutrients and pesticides
- Enhanced terrestrial wildlife and aquatic habitat, including habitat enhancement for threatened and endangered species

[9] *Illinois Conservation Reserve Enhancement Program Reporting Period: October 1, 2001 through September 30, 2002*, p. 6.

Program Costs

The State of Illinois obligated $5.75 million for CREP expenditures to pay for the 127 state contracts totaling 8,923.12 acres. In addition, IDNR provided another $351,607 from its operations budget to provide for CREP administrative expenses, bringing the total the state has expended for CREP enrollments to $6.49 million.[10]

The total Federal annual rent payment for the 1,421 CREP contracts (32,823.2 acres is $5,378,757. The total annual incentive payment is $1,185,752. The total Federal annual rent plus incentive and maintenance over the life of the 15-year contract is $80,745,072. The estimated total Federal cost share is $5,003,695. The total Federal and state cost of the CREP for FY 2002 was $91.4 million. The state's share of the costs was about $6.5 million.

Using the 8 percent per annum discount rate provided in the MOA, the Federal share of the costs is nearly $48 million. The state has contributed more than $45 million, or 20.6 percent, of the total program costs, and has therefore met the 20 percent requirement for its financial participation in the program.[11]

[10] *Illinois Conservation Reserve Enhancement Program Reporting Period: Oct. 1, 2001-Sept. 30, 2002.*
[11] *Ibid*

CHAPTER 3.0 AFFECTED ENVIRONMENT

3.1 Overview of the Illinois River and its Watershed

A watershed or river basin is the sum of all the land whose surface area drains into a particular water body. The Illinois River Watershed comprises 15,645,932 acres and is the most important large river watershed in the State of Illinois. The river begins at the confluence of the Des Plaines and Kankakee Rivers, approximately 50 miles southwest of the city of Chicago, then flows 273 miles south-southwest until it merges with the Mississippi River, 31 miles northwest of St. Louis, Missouri. Its watershed drains 18.5 million acres and extends 327 miles from Lake Michigan to the southwest portion of the state. The watershed is bounded on the north by portions of McHenry and Lake Counties, on the east by Iroquois County, on the south by Calhoun and Jersey Counties and on the west by Hancock County.[12]

Throughout the history of the region, the uses that have been made of the Illinois River have caused both decline, as well as recovery in the river's health. The National Research Council listed the Illinois River as one of three river floodplain ecosystems in the nation that are priorities for restoration. During the past century, the decline in the river's health was precipitated by the region's population growth; expansion in the industrial and agricultural sectors; and changes in forestlands, prairies, rivers and streams, as well as extensive physical alterations and environmental degradation to the Illinois River itself.[13]

Climate throughout the Illinois River Basin is humid with cold, relatively dry winters and warm, wet summers. Between 1961 and 1990, the annual precipitation in the basin was 35 to 37 inches, the average low temperature was 39 F to 40 F, the average high was 59 F to 61 F, the average snowfall was from 22 to 28 inches and the growing season lasted 165 to 185 days between May and October. The climate of the Illinois River Basin encourages agricultural production and little additional irrigation is needed for optimal growth of crops.[14]

Approximately 82 percent (24,000 sq. mi.) of the Illinois River Watershed is either used for or affected by agriculture.[15] Approximately 15.6 million acres of cropland exist in the watershed, with McLean, Iroquois and Champaign Counties leading the counties in crop acreage.[16] Part of the adverse effects to the watershed is the nitrogen based, commercial fertilizers that are used in crop production. Although other nitrogen sources, such as soil mineralization, legumes and pasture, animal manure, atmospheric deposition and municipal and industrial point sources have remained fairly constant, commercial fertilizer usage has increased.[17]

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[12] *Natural History of the Illinois River Basin and the Hennepin Levee District.* *http://www.snre.umich.edu/emi/pubs/wetlands/hennepin/2.1.PDF*

[13] Critical Trends Assessment Project (CTAP) Summary Report, "The Illinois River." http://dnr.state.il.us/orep/ctap/

[14] *Natural History of the Illinois River Basin and the Hennepin Levee District.* *http://www.snre.umich.edu/emi/pubs/wetlands/hennepin/2.1.PDF*

[15] Hey, Donald. The Wetlands Initiative. "Nitrogen Farming: Harvesting a Different Crop." *Restoration Ecology.* The Journal of the Society for Ecological Restoration, Vol. 10, No. 1, March 2002) http://www.wetlands-initiative.org

[16] Cropland acreages prepared by FSA Conservation Specialist, Oct. 2003.

[17] Hey, Donald. The Wetlands Initiative. http://www.wetlands-initiative.org

As a result, nitrate-nitrogen concentrations in the Illinois River have also risen. This increase in nitrate-nitrogen usage in conjunction with increased phosphorus levels also closely correlates with the extensive loss of wetlands in the Illinois River Watershed. More than 90 percent of the wetlands in the basin have been drained and replaced with miles of clay, drainage tiles and impervious surfaces.[18]

By the late 1980s, these concentrations averaged more than 5 mg/L with peak concentrations occurring during the spring.[19] This seasonal usage supports the fact that landscape firms, lawn services and golf courses in the more urban and suburbanized portions of the watershed have also contributed to the increase levels of fertilizers, pesticides and phosphorus in the state's waterways. A century earlier, concentrations of nitrate-nitrogen in the Illinois River averaged less than 1.5 mg/L with peak concentrations occurring in the fall. Today, the Illinois River yields 126,000 tons of nitrogen a year, with 12 percent of the load reaching the Gulf of Mexico.[20]

3.1.1 Profile of Illinois Agriculture

Based on the 1997 Census of Agriculture, the State of Illinois ranked first in the nation in the value of the sale of feed corn, second in the sale of soybeans, and second in the crop area required to produce these two products. Illinois ranked second overall in the country for crop value. Of the 10 leading states in 1997, Illinois ranked second in the number of farms with crop sales of $100,000 or more, yet it ranked ninth in terms of the number of farms.

Between 1992 and 1997, the land in farms in Illinois declined slightly from 27.3 million acres to 27.2 million acres, and the number of farms dropped nearly 6 percent from 77,610 to 73,051 farms. A decade earlier, a total of 98,483 farms were thriving in Illinois. However, the average size of farm increased 6 percent from 351 acres in 1992 to 372 acres in 1997, and the overall market value of agricultural products sold rose 17 percent in 1997 from 1992. Crop sales accounted for 77 percent of the market value and livestock sales accounted for 23 percent.

In 1997, Illinois ranked first in the market value of agricultural products, with more than $8.5 million sold, a 17 percent increase from 1992. The average market value of agricultural products sold per farm rose 24 percent from $94,535 to $117,130. Appendix C profiles agriculture in Illinois, based on the 1997 Agricultural Census.

Commensurate with its lead as an agricultural producer, Illinois was also a leader in the use of commercial fertilizers (7.4 percent of U.S. total), agricultural chemicals (7.2 percent of U.S. total) and petroleum products (4.9 percent of U.S. total). This increase in fertilizer and pesticide usage explains why nitrogen and nitrates have been a major issue regarding the health of the Illinois River Basin.[21]

[18] *Ibid.*
[19] *Ibid.*
[20] The Wetlands Initiative. http://www.wetlands-initiative.org.
[21] *1997 Census of Agriculture*, Selected Characteristics for the United States and 10 Leading states, Table 1.

3.1.2 Illinois CREP Area

A total of 102 counties compose the State of Illinois, of which 53 counties comprise the Illinois CREP area within the Illinois River Watershed (15,645,932 acres). Table 3-1 lists the counties within the Illinois CREP and Figure 3-1 illustrates their location within the watershed. Illinois CREP is currently authorized to enroll up to a maximum of 232,000 acres, subject to availability of state funding. As of August 2003, a total of 5,345 CREP agreements had been signed, enrolling 110,854 acres into the program. Figure 3-2 shows the distribution of the Illinois CREP agreements as of November 2002.

Table 3-1: Illinois CREP Counties, 2003

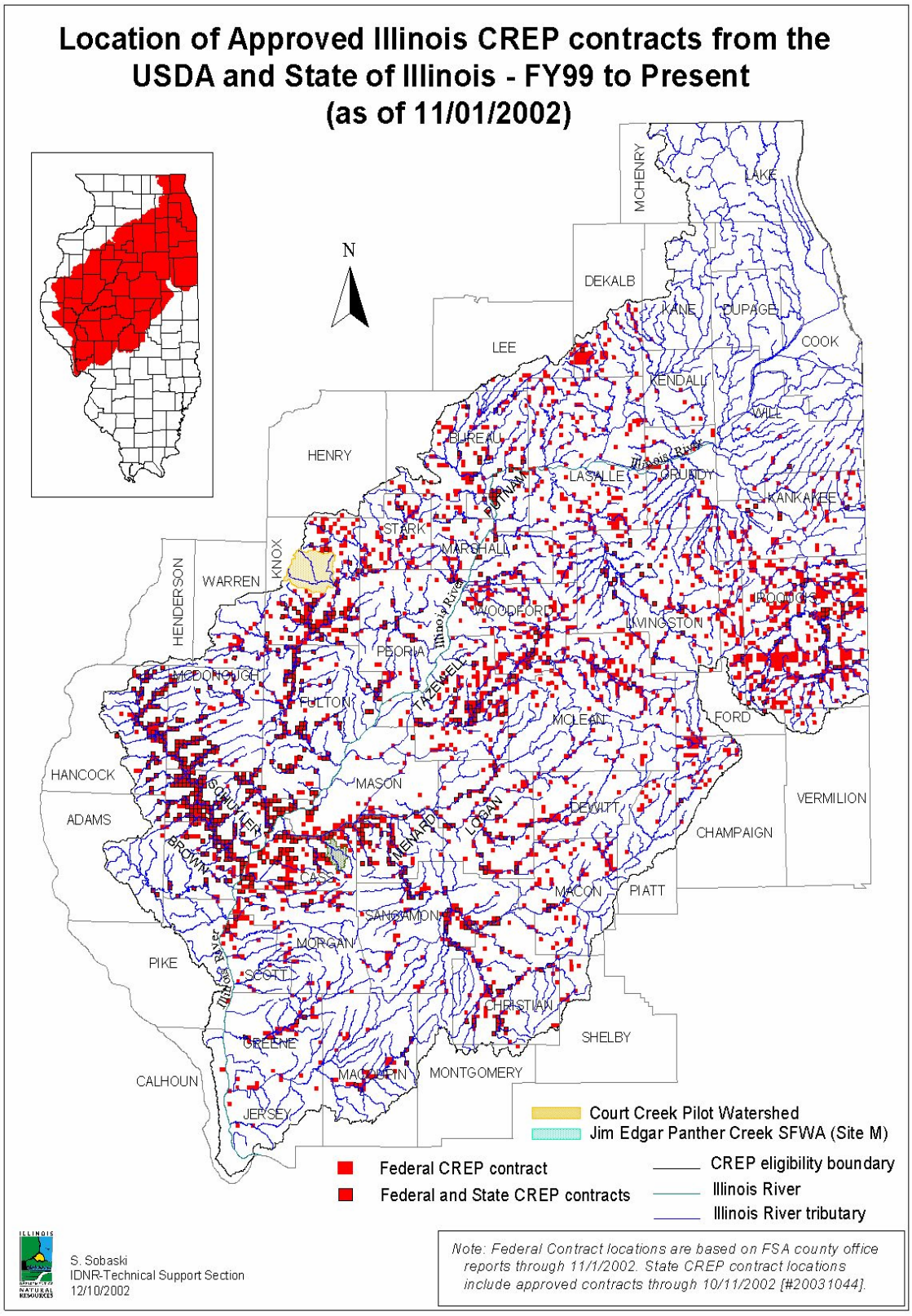
Adams	Ford	Kendall	Macoupin	Schuyler
Brown	Fulton	Knox	Marshall	Scott
Bureau	Greene	Lake	Mason	Shelby
Calhoun	Grundy	LaSalle	Menard	Stark
Cass	Hancock	Lee	Montgomery	Tazewell
Champaign	Henderson	Livingston	Morgan	Vermilion
Christian	Henry	Logan	Peoria	Warren
Cook	Iroquois	McDonough	Piatt	Will
DeKalb	Jersey	McHenry	Pike	Woodford
DeWitt	Kane	McLean	Putnam	
DuPage	Kankakee	Macon	Sangamon	

Source: Illinois Dept. of Natural Resources, 2003.

Figure 3-1: Illinois CREP Area, 2002

Source: Illinois Dept. of Natural Resources, 2003; http://www.ilcrep.org

Figure 3-2: Distribution of CREP Contracts throughout the State of Illinois, 2002



Source: IDNR, 2003.

The following are characteristics that distinguish some of the CREP counties, as reported in IDNR's Critical Trends Assessment Project (CTAP):[22]

- Adams County devotes more than half of its total area to cropland, and ranks first in acreage dedicated to wheat, oats and other small grains.
- Brown County is predominantly rural with 96 percent of its area covered by cropland, and ranks first in the percent of county covered by perennial streams.
- Calhoun County ranks first in acreage of open water and second in wetlands and bottomland forests.
- Cook County, the state's most heavily urbanized county, ranks first in all urban land cover categories. Cook contains the largest amount of urban grassland and open canopy woods in the state.
- DuPage County, the state's second most urbanized county, ranks second highest in percentage of open woods.
- Ford County ranks second in agriculture with nearly 85 percent of its land in cropland.
- Iroquois County ranks second in acreage in cropland, as row crops account for more than 78 percent of the county and row crop acreage ranks second in the state.
- Lake County, the third most urbanized county in the state, ranked first in deep marsh wetlands, second in shallow marsh/wet meadows and urban grasslands and third in shallow water wetlands.
- Logan County is dominated (93.9 percent) by cropland and grassland.
- McLean County, the largest county in terms of area in the state, has the most cropland and acres planted to row crops and ranks second in acres of perennial streams.
- Putnam County, the smallest county in the state, ranks second in percentage of land covered by open water.
- Stark County is predominantly cropland and rural grassland, but ranks last in wetland acreage and open water.
- Will County, the fourth most urbanized county, ranks second in grassland acreage, third in urban grassland and third with the most acreage in shallow marsh/wet meadows.
- Woodford County has the second largest number of acres covered by shallow water wetlands.

The CREP area includes sub-watersheds along the Middle Illinois and Peoria Lake sections of the Illinois River, as well as six tributaries to the Illinois River. These six tributaries are—

- Vermilion
- Mackinaw
- Spoon
- Lower Fox
- Lower Sangamon
- Kankakee

The eligible conservation practices that have been implemented through CREP agreements and their acreages are shown in Table 3-2. The total number of acres in which land is either classified

[22] Illinois Land Use Clearinghouse. http://www.farmlandinfo.org/fic/states/il/co/html.

as riparian and/or highly erodible is 26,339. The estimated acreage of existing habitat in the eligible CREP area has not yet been determined by IDNR.

Table 3-2: Eligible CREP Practices Implemented in Illinois through CREP Agreements and Acreages

CREP Practices Implemented	Land Category	Acres[(1)]
Additional acres (state enrollments only)	Erodible	2,991
CP3 (tree planting)	Erodible	100
Total acres in erodible lands		**3,091**
Additional acres (state enrollments only)	Riparian	19,051
CP11 (vegetative cover, trees already established)	Riparian	249
CP21 (filter strips)	Riparian	14,037
CP22 (riparian buffer)	Riparian	15,945
CP23 (Wetland restoration)	Riparian	31,295
CP9 (shallow water areas for wildlife)	Riparian	53
Total acres in riparian areas		**80,630**
CP2 (permanent native grass)	Riparian/Erodible	1,881
CP3A (hardwood tree planting)	Riparian/Erodible	2,302
CP4D (permanent wildlife habitat)	Riparian/Erodible	20,638.5
CP12 (Wildlife food plot)	Riparian/Erodible	334
CP25 (Rare and declining habitat)	Riparian/Erodible	1,183
Total area where practices implemented in either riparian and/or highly erodible areas		**26,339**

Source: IDNR, 2003.
(1) Note that habitat estimates are taken from the Illinois land cover analysis (IDNR 1996).

Consistent with the rural landscape that characterizes much of the Illinois CREP area, fish and wildlife habitats that support the hunting, fishing and wildlife watching activities provide important recreational activities and generate significant state and local economic benefits, as well. However, due to a number of factors that have occurred over time in the Illinois River Basin, wildlife habitat has experienced overall degradation and decline.

The Illinois Natural History Survey (INHS) reported that the state has lost 90 percent of its pre-settlement wetlands through drainage and development. The quality of many of the remaining wetlands has been affected by sedimentation and other anthropomorphic factors. Modeling conducted by the INHS of the Illinois River further showed that 70 percent of the fish and aquatic species were in jeopardy. Because of these changes, many native wildlife populations have declined over the years, and some have completely disappeared, while others have attempted to adapt to environmental change.[23]

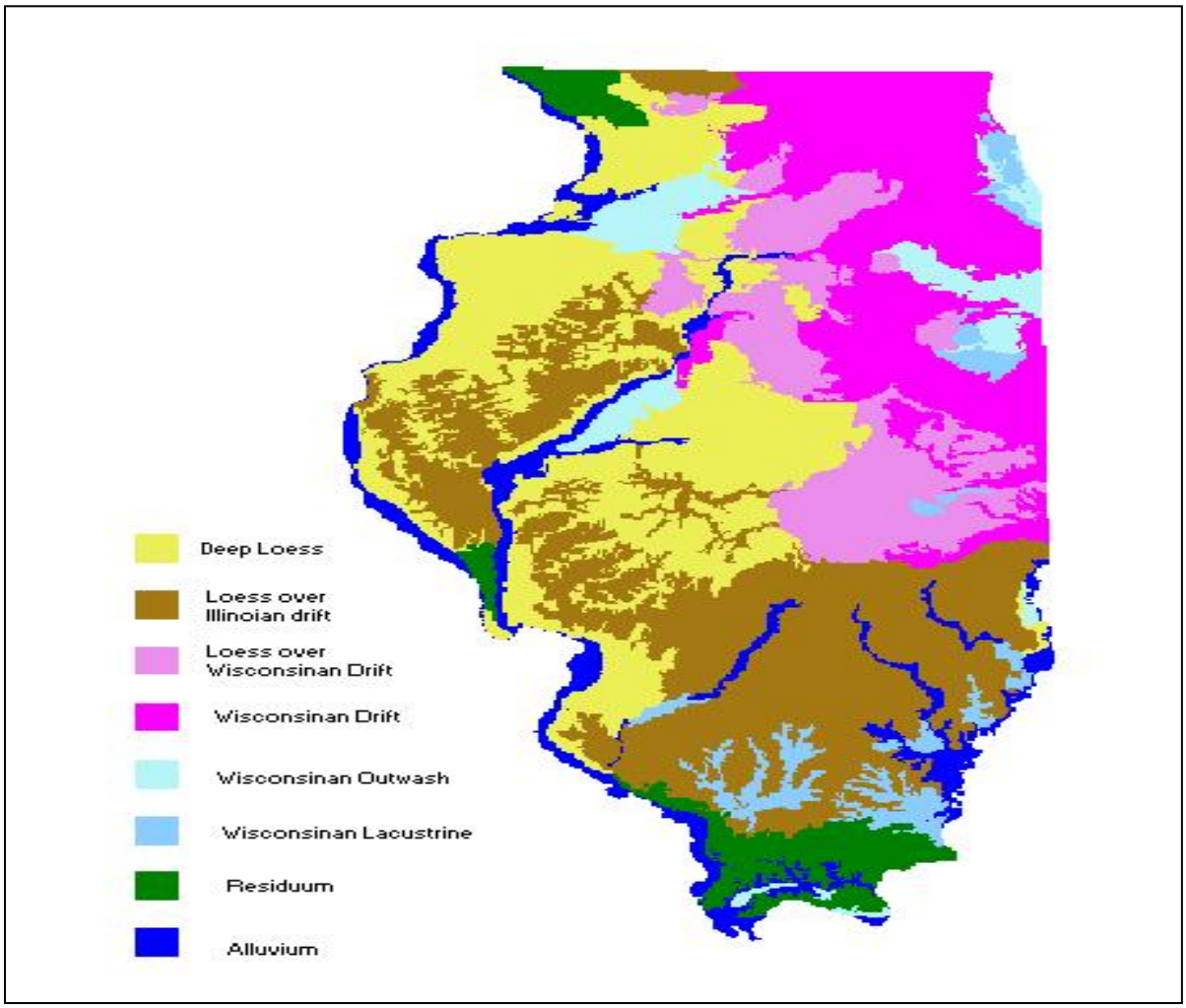
[23] Illinois Natural History Survey, http://www.inhs.uiuc.edu/chf/pub/an_report/98_99/f&w.html

3.2 Description of Resources

3.2.1 Soils

The Illinois River Basin is relatively flat with elevations ranging from 600 to 800 feet above sea level. The Illinois River Valley is the area of greatest topographic relief. Glacial features from the Pleistocene Epoch compose the major landforms in the Basin. Two glacial advances, the Kansan and the Illinois, covered central Illinois, and while the Wisconsian failed to reach the area, this glacial feature profoundly influenced the character of the region's river valleys. Because of these glacial influences, silt-loam and silty-clay are the dominant soil types on central Illinois floodplains and bottomland prairie.[24] Alluvium soils extend along banks of the Illinois River and other surface water banks. Figure 3-3 illustrates the eight major soil regions in Illinois and shows that Deep Loess and Loess predominantly cover the Illinois River Basin over Illinoian drift.

Figure 3-3: Illinois Soil Regions



Source: USDA-NRCS. http://www.il.nrcs.usda.gov/technical/soils/ 2003.

[24] USGS. 2001. The Lower Illinois River Basin information.

Since the mid-1970s, agricultural practices, such as conservation tillage, have been used to minimize use of the plow and to keep more of the productive soil in place. Regular conventional tillage provides a smooth, unridged soil surface that can induce serious runoff and erosion problems on sloping cropland.

Conservation tillage, on the other hand, is any tillage planting system that leaves at least 30 percent of the field surface covered with crop residue after planting is completed and involves reduced or minimum tillage. Conservation tillage is encouraged throughout the CREP area and involves less soil disturbance to plant and manage crops. In short, less plowing and more crop mulch and cover on fields are what make conservation tillage different from conventional farming. Three commonly used conservation tillage practices are 1) mulch till, no-till planting and ridge till.[25] In the Upper and Lower Illinois River Basins, more than 4.2 million acres of cropland are in conservation tillage systems.[26]

3.2.2 Water Resources

The Illinois River Watershed contains 11,061 miles of streams, flowing from nine smaller rivers, including the Chicago River. Waters feed into the Illinois River from Lake Michigan, the Chicago River and the following eight major tributaries:

- Des Plaines River
- Kankakee River
- Fox River
- Vermilion River
- Mackinaw River
- Spoon River
- Sangamon River
- La Moine River

The early uses of the Illinois River began with unlimited hunting and fishing, harvesting mussels for a booming button industry, and ice harvesting for refrigeration. Conflicts over landownership arose. Landowners built levees and drained their property. As the river was used for economic purposes and for industrial and residential waste deposits, its resources were diminished. By the 1930s, more than 100,000 acres of valuable floodplains had been separated from the river and converted to agricultural production.

By the 1950s, nearly all aquatic vegetation had vanished from the Illinois River and its backwater lakes due to the modified water levels, increased agricultural production, pollution, urban expansion and population growth. Without vegetation, sediment was no longer anchored to the bottom of the riverbed and lakes, but rather stirred up in the water by wind and boats. As a result of these factors, fish, wildlife and waterfowl populations declined drastically, as did other related life forms dependent on the river.

[25] Kelly, Dave. 1997. "Environment-Friendly Conservation Tillage a Growing Practice on America's Farms." American Farm Bureau Federation; and Monsanto Company. "Conservation Tillage." http://www.monsanto.com/monsanto/layout/products/conservationtillage/default.asp

[26] *Integrated Management Plan for the Illinois River Watershed Technical Report*, IDNR.

Illinois ranks third in domestic waterborne commerce among the 50 states. More than 60 million tons of commodities are shipped on the Illinois River each year, of which more than one-third of these commodities are agricultural products. More than half of the commercial traffic on the Mississippi River north of St. Louis comes from the Illinois Waterway.

As a result of the river's usage for commerce and shipping, modifications to the Illinois River were made to accommodate the growing navigation industry. Changes began with the construction of dams, and the Illinois Waterway, which provided a navigation channel through the Chicago River, Chicago Sanitary & Ship Canal, the Des Plaines River and through a lock and dam system on the Illinois River. In addition, the river was hampered by a succession of numerous ecological injuries, which included[27]:

- Drainage of wetlands and the channelization of tributaries that began in the late 1800s. These changes increased the rate at which water entered the Illinois River, enhancing its ability to carry off topsoil and pollutants from the land into the river.

- Diversion of Chicago sewage and factory waste.

- Dumping pollutants into the river beginning in 1900. Extra flows raised water levels, killing less tolerant trees in the floodplain; excessive nutrients degraded water quality. Draining wetlands and leveeing of half the floodplain from 1903 to 1926. Undertaken mainly for agriculture, these projects eliminated the most productive habitat and reduced the system's storage capacity.

- Construction and maintenance of a nine foot minimum navigation channel. Finished in the 1930s, the dam system permanently inundated parts of the floodplain accustomed to seasonal wetting and drying. Year-round sedimentation is primarily responsible for the conversion of floodplain lakes to shallow, featureless "deserts" of soft mud.

- More intensive, chemical-reliant farming, especially since the late 1940s. Industrial-style farming increased soil loss and contamination by farm chemicals, especially fertilizers.

The Illinois River's chemical water quality has somewhat improved over the past decade, although long lived pollutants such as heavy metals still linger in bottom sediments. The physical changes to the river over time, however, are responsible for the most long term damage to the river's resources. Boat traffic, made possible by the deeper channel, generates bank-eroding waves and keeps sediments suspended, clouding river water.

With regard to groundwater, a comparison of national and lower Illinois River Basin pesticide-sampling results also is similar. Nationally, detections of pesticides are less frequent and the concentrations are lower in wells than in streams. However, the detections of pesticides in groundwater in the Illinois River Basin are even less frequent than in well samples for other agricultural areas of the United States.

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[27] *Critical Trends Assessment Program Summary Report*, "The Illinois River." 1994. http://dnr.state.il.us/orep/ctap/sumrepo/chap3/ilriver.htm

3.2.3 Riparian Areas, Wetlands and Floodplains

All waterways from small creeks to major rivers, such as the Illinois River, have a riparian zone or floodplain. Floodplains are those riparian areas close to riverine channels that become inundated with water during flooding. These areas are periodically flooded and represent a transitional zone between terrestrial and aquatic habitats. The Illinois River Basin once contained about 1,813 square kilometers of flood storage areas, which annually flooded up to a depth of a few meters. Consequently, the intensive agriculture and massive development projects, such as the channelization of the river and construction of levees, drastically altered the hydrology of the Illinois River and its basin. About half of the original Illinois River Basin's 400,000 acres of floodplains are now behind levees and have been drained.[28] Approximately 315,000 acres of floodplain exist in the river basin.[29]

Wetland ecosystems were a vital part of the Illinois River Valley centuries ago, and still remain important for filtering pollutants, absorbing overflow during flooding and providing critical habitat to countless plants and animals and threatened and endangered species. The Illinois River Valley contains thousands of wetland and floodplain plant communities that support millions of waterfowl and other wildlife. Wetlands support a wide range of plants and animal life, as well as reduce flooding and improve water quality.

Floodplain wetlands occur from river flood pulses in conjunction with groundwater and precipitation inputs. The high water table interacts with the surface strata and often resulting in standing water, which saturates the soils and restricts certain types of vegetation while supporting other types. Wetland ecosystems were a vital part of the Illinois River Valley centuries ago, and they continue to remain critical to providing habitat with about 46 percent of all threatened and endangered species in the country.[30] Since the 1600s, more than 90 percent of the wetlands in the state have been lost or degraded. Settlers arrived through the Great Lakes and began to settle the land, cut down forests and plow prairies. Today, less than 99,000 acres of wetlands in the six northeastern counties of Illinois remain.[31]

Riparian forest buffers established next to streams, lakes, ponds, seeps or wetlands provide many benefits to immediate and downstream aquatic habitats. Properly functioning riparian areas are highly productive systems sustained by high inputs of leaf litter and periodic flooding. Juxtaposition of riparian areas between upland and aquatic habitats and structural diversity of vegetation caused by frequent disturbances further contribute to the high use of riparian habitats by both resident and nonresident wildlife and aquatic species. Properly designed and maintained riparian forest buffers may serve as breeding habitat, important travel or migration corridors for wildlife, shelter in winter and critical resting areas for migratory songbirds during spring and fall.[32]

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[28] *Natural History of the Illinois River Basin and the Hennepin Levee District.* http://www.snre.umich.edu/emi/pubs/wetlands/hennepin/2.1.PDF

[29] *Integrated Management Plan for the Illinois River Watershed Technical Report*, p. 2.

[30] "Wetland Restoration along the Illinois River," http://www2.ic.edu/beal/WetlandRestoration.html

[31] The Wetlands Initiative. http://www.wetlands-initiative .org

[32] "ÚSDA Riparian Forest Buffer," 391W. NRCS. July 2001.

In the Upper and Lower Illinois River Basins, more than 4.2 million acres of cropland are cultivated using conservation tillage methods, which rely on less soil disturbance to plant and manage crops. The Illinois River and its backwater areas occupy about one-third of the floodplain (105,000 acres), of which 47,000 acres are held in state and Federal ownership and 34,000 acres are owned by private sporting clubs.

3.2.4 Cropland, Forestlands and Grasslands

Throughout the State of Illinois, approximately 22 percent (701,900 acres) of pastureland was lost to development between 1982 and 1997, and in 1997, forestland covered only 10.5 percent, or 3.8 million acres of the total land area in the state.[33] Forests along the Middle and Lower Illinois River, north of the Shawnee National Forest, are among the largest remnant forest ecosystems in the state. In 1997, forestland covered 10.5 percent of 3.8 million acres of the state.[34] Of the more than 1.6 million acres of grassland shown in Table 3-3, the FSA has enrolled 1,696 acres of pastureland mostly in Schuyler County into the FSA Grassland Reserve Program (GRP) in FY 2003.[35]

Land cover types, derived for the Illinois River Basin from the Illinois Land Cover 2000 Project, are summarized in Table 3-3.

Table 3-3: Land Cover Types for Illinois River Basin Aggregated from Classifications Analyzed for the Illinois Land Cover 2000 Project

Land Cover Types[1]	Acres
Agricultural Land	10,468,901
Forest Cover	1,702,586
Grassland	1,654,417
Urban Lands	1,517,660
Open Water	229,405
Wetlands	112,468

[1]All classes combined.
Source: Charles W. Foors, IDNR, October 30, 2003. Compiled from Land Sat 7 Imagery based on 1999-2000 data.

The USDA-Forest Service and IDNR manage Midewin National Tallgrass Prairie, located on the former Joliet Arsenal site in Will County, comprises 19,165 acres. More than 99 percent of this biologically diverse landscape has been altered by agriculture and urbanization and only isolated patches of the prairie system remains. Many species of prairie plants and animals have either disappeared or are in rapid decline due to loss of habitat.

In 1997, nearly 90 percent of Illinois' cropland was planted to corm and soybeans. Within the 15.6 million acres CREP area, a total of 14.9 million acres of cropland existed in 2003. Refer to Appendix B for acreages of cropland by county within the CREP.

[33] USDA-NRCS, National Resources Inventory, Illinois Pasture Land, revised Dec. 2000.
[34] USDA-NRCS, National Resources Inventory, Illinois Forest Land, revised Dec. 2000.
[35] FSA. Grassland Reserve Program-FY'03 Funded Applications, 2003.

3.2.5 Wildlife Habitat

The river's watershed includes rural, urban, riparian and forest systems that are used primarily for fishing, recreation and wildlife habitat. Certain aspects of the watershed, such as its "flood pulse," or natural seasonal water level fluctuations, create optimal conditions for aquatic and terrestrial wildlife habitat. Cropland, particularly cornfields, provides habitat and food for many species, including a wide range of birds, geese, snakes, small mammals and rodents.

Countless organisms, including threatened and endangered species, depend on the Illinois River Basin for habitat. Using the data provided in Table 3-3, approximately 14.2 million acres of agricultural land, forests, grasslands, wetlands and open water exist in the Illinois River Basin. Urban lands, which comprised 1.5 million acres was not included in this estimate. However, habitat fragmentation and other physical changes caused by urbanization have surpassed conventional pollution as threats to ecosystem functioning. The splintering of the basin's wetlands, prairies and forests into fragments makes it harder for small, isolated populations of plants and animals to breed. It also leaves the species vulnerable to accidental eradication through fire or other disasters.[36]

Competition with invasive species for food and shelter often increases as well, since many non-native species from honeysuckle to cowbirds to zebra mussels thrive in the "edge" spaces caused when contiguous habitats are fragmented by human activities. As a result of the direct and indirect human influences on the Illinois River and the habitat it provides for wildlife, monitoring programs have been established by Federal and state agencies, universities, the INHS and conservation organizations. These monitoring efforts focus on the relationship between habitat quality and quantity and the influence human activities have on the life histories of species. Populations of waterfowl and other birds migrating through the Illinois River are monitored annually through aerial censuses. These data establish an index to waterfowl populations in the region and are useful indicators of wetland habitat quality and quantity remaining in the Illinois River system.

Habitat research on the ecology of large mammals and fish is also being conducted to determine the influence of humans on wildlife populations and habitat needs, and to monitor the river's conditions and affect on aquatic organisms and other wildlife that depend on this resource. Refer to the section describing Riparian Areas, Wetlands and Floodplains for more information on wildlife habitat.

3.2.6 Terrestrial and Aquatic Species

The Natural Heritage Biological and Conservation Database lists occurrences of 1,286 aquatic organisms and 744 terrestrial species in the watershed.[37] Hunting, fishing and viewing wildlife are not only important recreational activities, but are also major economic generators. Numerous grassland birds and songbirds thrive in the Illinois River Basin. Waterfowl, nonpasserine land birds, open country passerines and woodland passerines are abundant and thrive in open fields

[36] "The Changing Illinois Environment: Critical Trends." *Executive Summary of the Critical Trends Assessment Project*, Illinois Depts. of Energy and Natural Resources and The Nature of Illinois Foundation.
[37] "The Illinois River Watershed, Demonstrating Stream Restoration and Land Management," Clean Water Action Plan, http://www.cleanwater.gov/success/illinois.html

and cropland. Common species known to occur in the watershed include, but are not limited to, those shown in Table 3-4.

Table 3-4: Common Terrestrial and Aquatic Species in the Illinois River Basin

Common Birds of Streams and Rivers		
Canada goose	Cardinal	Crane
Wood duck	Egret	Great blue heron
Osprey	Owl	Trumpeter swan
Red-winged blackbird	Red-tailed hawk	Wild turkey
Eastern bluebird	Bobwhite quail	Lesser prairie chicken
American kestrel	Ring-necked pheasant	Long-billed curlew
Mammals of Streams and Rivers		
Big brown bat, hoary bat, little brown myotis	Beaver, muskrat	Plains pocket gopher, Woodchuck
Opossum	Raccoon	River otter
Mink	Whitetail deer	Eastern cottontail
Deer mouse, meadow jumping mouse, white-footed mouse, house mouse	Meadow vole, prairie vole, pine vole, short-tailed shrews and masked shrews, southern bog lemming	Thirteen-lined ground squirrel, southern flying squirrel, eastern fox squirrel
Norway rat	Coyote, red fox, gray fox	Striped skunk
Common Aquatic Species		
Salamander	Rainbow trout	Frog
Zebra mussel	Yellow perch	Carp

Source: Kildeer Countryside Wetlands website, 2003; U.S. Fish & Wildlife Service, *Illinois River* NWR, Feb. 2001.

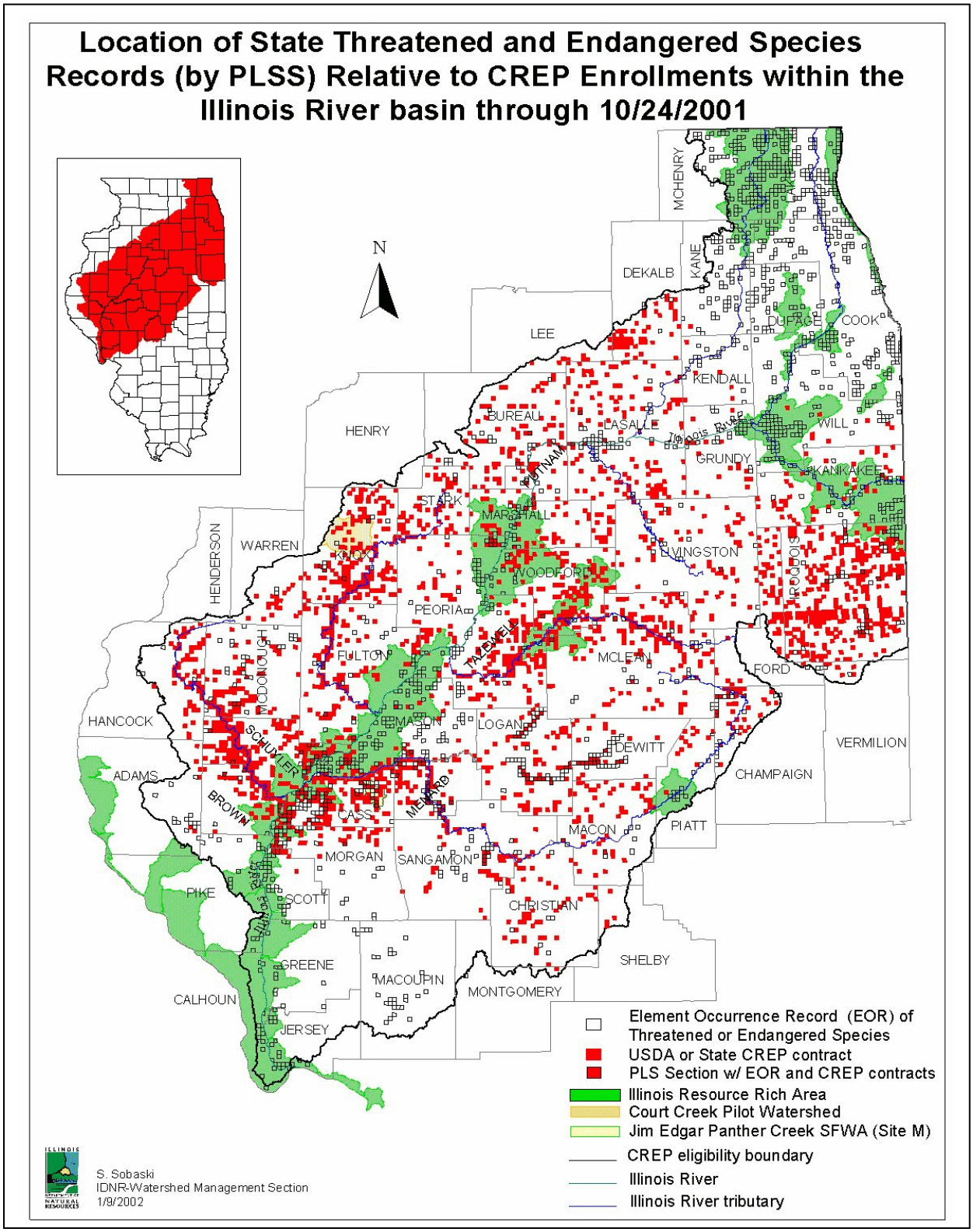
3.2.7 Threatened and Endangered Species

The IDNR reported that there are 75 threatened or endangered faunal species and 147 threatened or endangered plant species within the Illinois CREP boundary, of which 52 protected faunal and 111 floral species are within the 100-year floodplain.[38] Based on records received from the U.S. Fish and Wildlife Service (F&WS) in Rock Island and the IDNR, approximately 3,522 state listed threatened and endangered species sightings have been recorded in the Illinois River Basin. Of these, 249 occurred completely within a section of land that also contains a CREP easement and 705 occurred adjacent to the easement.

Figure 3-4 represents the distribution of these species throughout the CREP area and Appendix D lists state and federally protected species and recorded occurrences of protected flora and fauna throughout the watershed.

[38] *2001 Annual Report Illinois Conservation Reserve Enhancement Program*, IDNR, p. 60.

Figure 3-4: Location of State Threatened and Endangered Species and Illinois Resource Rich Areas within the Illinois River Basin, 2001



Source: Illinois Dept. of Natural Resources, Watershed Management Section, 2002.

3.2.8 Invasive Species

Scientists are warning that U.S. problems with invasive species are "getting worse" and have become "the No. 2 cause of death to endangered species - beating out pollution, overharvesting, disease and global warming." With an estimated 50,000 "exotic" plants, animals and microbes already in the U.S. and the number of invaders "likely to rise," the impacts on the environment are hard to predict but "the odds are good that some of these critters will be very, very, bad, even though the risk that a single species will become invasive may be low." [39]

The natural, agricultural and even urban environments continue to be altered by the encroachment of exotic and invasive species in the Illinois River Watershed. Invasive or exotic species are those which are not native to the United States, but have become "biologically established" to the detriment of local flora and fauna, as well as to the local and state economy. Invasive species cost the state economy millions of dollars annually in control measures and damage remediation.

Species known to affect crops in the Illinois River Watershed and CREP area include the Asian maize borer in corn, a complex of European weevils in alfalfa and the Asian longhorned beetle. More importantly, some of these exotic and invasive species may also adversely affect human health, displace native species and seriously degrade environmental quality, and economically impact the sport and commercial fisheries. Threats to human health are posed by the Asian tiger mosquito, which is capable of transmitting 26 viruses that cause disease in humans, as well as the parasite that causes heartworms in animals.[40]

Since the early 1970s, the exotic rusty crayfish has expanded its range across the northern half of the state, displacing native Illinois crayfishes and extirpating several local populations of at least two native species. Zebra mussels and the spiny water flea have been linked to serious declines in yellow perch populations, resulting in the imposition of significant restrictions on this popular sport and commercial fishery.

The round goby, an aggressive, highly competitive non-native fish species from the Black and Caspian Seas, has proliferated in the Great Lakes and has moved inland through the Illinois Waterway System. This species has been know to occur in tributary streams and waterways connected to the Great Lakes, particularly the Mississippi and Illinois River systems. Despite its relatively small size, averaging from 3 to 6 inches, the fish has a rapid reproduction rate and aggressive feeding behavior that threatens populations of sport and commercial fish.[41]
Asian carp and bighead carp are other aquatic invasive species that are also known to occur in the Illinois Waterway. Carp are in direct competition for food with paddlefish, bigmouth buffalo, gizzard shad, larval and juvenile fish and mussels.

Purple loosestrife, a perennial weed of European origin, has gradually dominated many of the remaining high quality wetlands in the northern half of Illinois. Garlic mustard has attacked

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[39] *Dallas Morning News*, Dec. 19, 2003.
[40] Helm, Charles G. and Robert N. Wiedenmann, 1999. Illinois Natural History Survey, "Invasive Species," http://www.inhs.uiuc.edu/chf/pub/an_report/98_99/Invspec.html
[41] U.S. Fish & Wildlife Service. *Potential Threats from Invasive Species Loom Big in the Future*, June 25, 2002; and American Rivers. *The River Monitor*, "Biologists Race Round Goby," November 1999.

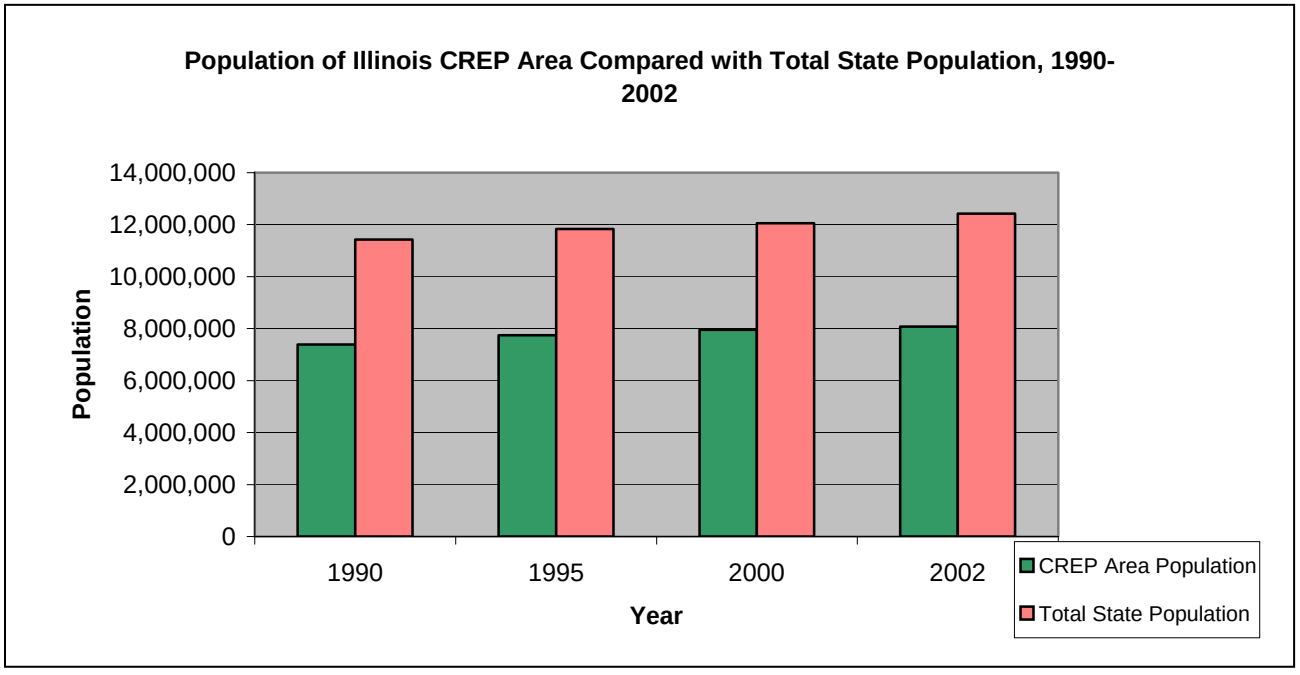
forests in northern and central Illinois and has also displaced native woodlands wildflowers. All of these species and other invasives occur within the Illinois CREP area.

3.2.9 Social and Economic Characteristics

Eighty percent of the Illinois River Watershed is located in the State of Illinois. About 74 percent of the state's population lives within the 53-county watershed area, mainly in the Chicago metropolitan area of Cook and Lake Counties, as well as DuPage and rapidly growing Will Counties.[42] Based on the 2000 Census, more than 12.4 million people live in the State of Illinois, of which about 8 million, excluding those in the city of Chicago, live in the CREP area. The overall population for the state has increased 8.6 percent between 1990 and 2000. Figure 3-5 compares the population within the Illinois CREP with the overall state population between 1990 and 2002.

In 2000, the state's population was predominantly white (73.5 percent), with slightly more than 15 percent composed of black or African-Americans, 12.3 percent composed of Hispanics or Latinos and 3.4 percent composed of Asians. Less than 1 percent was Native Americans.

Figure 3-5: Population Comparison of Illinois CREP Area with State, 1990-2002



Source: U.S. Bureau of Census, American Fact Finder.

More than 81 percent of state residents have received their high school diplomas and 26 percent have obtained higher education degrees. The median household income for the state was $46,590 and the per capita income was $42,074. Persons below poverty comprised nearly 11 percent of the state population. Within the 53-county CREP area, the average per capita income was $15,150.

[42] Thomas, David L. "Illinois River." Illinois Natural History Survey.

Most of the counties within the Illinois River Basin are predominantly rural, agricultural, wooded and/or covered by wetlands or open water. Based on 2000 Census population estimates, the most urbanized and populated counties, in descending order, are 1) Cook County (5,200,019 residents), 2) DuPage County (884,843 residents), 3) Lake County (607,799 residents), 4) Champaign County (178,579) and 5) Macon County (118,077 residents).

3.2.10 Historic and Cultural Resources

The National Register of Historic Places is part of a national program administered by the National Park Service to coordinate and support public and private efforts to identify, evaluate and protect significant historic and archeological resources. Properties listed in the National Register (NR) include historic districts, sites, buildings, structures and objects that are significant in American history, architecture, archeology, engineering and culture. National Historic Landmarks (NHLs) are designated by the Secretary of the Interior and are nationally significant historic places because of their exceptional value or quality in illustrating or interpreting the heritage of the United States.

A review of the state's historic and cultural resource database showed that there are 14 NHLs within the CREP area. These historic resources have been designated in Bureau (1), Champaign (2), Grundy (1), Jersey (1), Knox (1), Lake (2), McLean (1), Sangamon (4) and Tazewell (1) Counties.[43] The state's database also showed that there are 1,083 National Register (NR) sites within the Illinois River Watershed. Cook County led the CREP counties with 400 NR sites, most of which are located in the city of Chicago. Lake County followed with 78 NR sites.

3.2.11 Other Important Lands and Resources

National Natural Landmarks

National Natural Landmarks (NNLs) are nationally significant natural areas that have been designated by the Secretary of the Interior. To be nationally significant, a site must be one of the best examples of a type of biotic community or geologic feature in its natural region. Examples of this natural diversity include terrestrial and aquatic ecosystems, features, exposures, and landforms that record active geologic processes, as well as fossil evidence of biological evolution. There are seven designated NNLs within the following CREP counties.[44]

- Cook (2),
- Lake (3),
- McLean (1) and
- Piatt (1)

[43] Illinois Historic Preservation Agency website, http://www.state.il.us/HPA/ps/nhl.htm
[44] National Park Service; : http://www.nature.nps.gov/nnl/Registry/USA

Other Protected Lands

National Wildlife Refuges (NWRs) are managed by the U.S. Fish & Wildlife Service. These refuges provide habitat for wildlife, waterfowl, migratory birds and songbirds, aquatic species and many federally and state protected species. The Illinois River National Wildlife and Fish Refuges are composed of four areas, totaling 11,354 acres, located within the Illinois River floodplain:

- Chautauqua NWR (4,488 acres),
- Meredosia NWR (3,852 acres),
- Emiquon NWR (1,305 acres) and
- Cameron/Billsbach Unit (1,709 acres)

The Illinois River NWR stretches 124 river miles and has plans to protect, restore and or acquire a total of 32,000 acres of fish and wildlife habitat. Other NWRs within the CREP area are:

- Mark Twain NWR Complex
- Two Rivers NWR
- Crab Orchard NWR
- Cypress Creek NWR

The USDA-Forest Service and IDNR manage the state's first tallgrass prairie, which is located within the CREP area in Will County. The Midewin National Tallgrass Prairie, located on the former Joliet Arsenal site was established in 1996 when the U.S. Department of the Army transferred land to the Forest Service for conservation purposes. The prairie unit comprises 19,165 acres, most of which have been altered by agriculture and urbanization. Many species of prairie plants and animals have either disappeared or are in rapid decline due to loss of habitat.

IDNR manages 262 state parks and recreational sites located on more than 400,000 acres throughout the state, many of which are within the CREP area. IDNR and County Conservation Districts manage the state's 300 nature preserves, which comprise more than 39,000 acres throughout 78 counties. Of these resource areas, 211 nature preserves are located in 43 of the CREP counties, with Cook, Lake, and McHenry Counties supporting the most preserves.

CHAPTER 4.0 ENVIRONMENTAL CONSEQUENCES

Chapter 4 assesses the direct, indirect and cumulative effects of two alternatives designed to help reduce soil erosion and phosphorus and nitrogen loads caused by agricultural practices in the Illinois River Watershed. Two alternatives are under evaluation:

- Alternative 1-No Action, which evaluates existing conditions and programs under the initial CREP.
- Alternative 2-Continued Enrollment of Targeted Acreage in 2002 Agreement, which evaluates the expanded Illinois CREP identified in the 2002 MOA.

The programmatic effects of these alternatives will be evaluated. Specific resource categories that will be evaluated by alternative are:

- Soils
- Water Resources
- Riparian Areas, Wetlands and Floodplains
- Cropland, Forestlands and Grasslands
- Wildlife Habitat
- Terrestrial and Aquatic Species
- Threatened and Endangered Species
- Federally and state listed species
- Forestlands and Grasslands
- Socioeconomic Impacts
- Historic and Cultural Resources

The cumulative impacts of any past, present and reasonably foreseeable future actions will be summarized. These include contemplative future actions in the CREP area from any source.

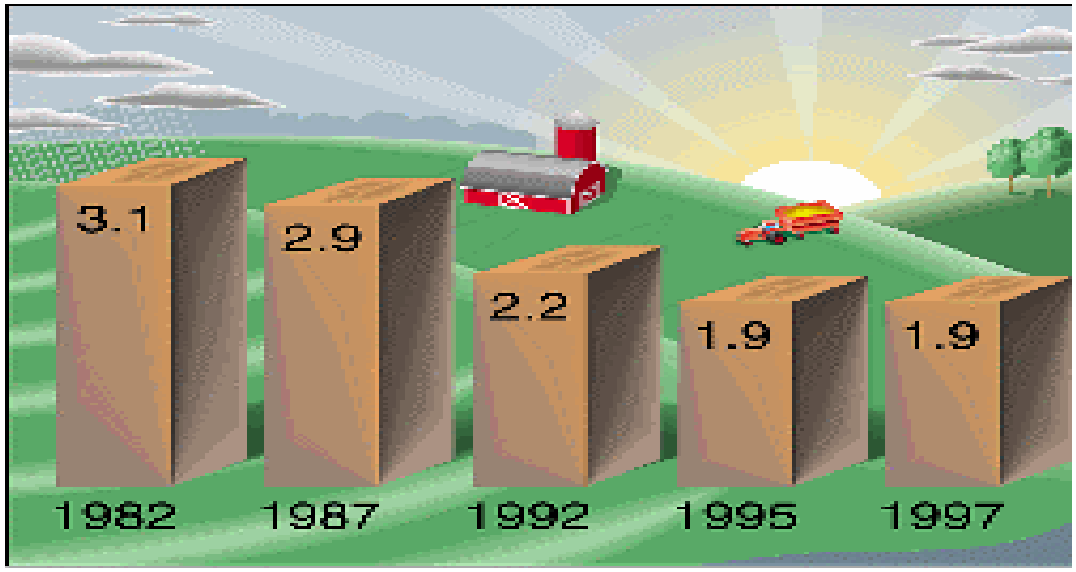
As the nature of this evaluation is programmatic and not site-specific, the analysis may not always be quantifiable. Information will be presented in a broad, programmatic manner to enable decisionmakers to understand the effects of the CREP on resources in the Illinois River Watershed and to determine the viability of each alternative. Each individual CREP agreement will require the completion of a site specific environmental evaluation to be completed by FSA.

4.1 Alternative 1-No Action

4.1.1 Soils

As shown in Figure 4-1, soil erosion declined about 1.2 percent nationwide between 1982 and 1997 on CRP lands, which is a decrease of about 450 million tons nationwide since the inception of CRP. Soil quality has increased due to the retention of more topsoil on the land resulting from an absence of conventional cultivation. Much of the decline in erosion has occurred because of implementation and monitoring of BMPs and because Federal and state farm programs have supported improved conservation tillage methods, erosion control and flood control measures.

Figure 4-1: Total Erosion on Cropland and CRP Lands Nationwide, 1982-1997



Source: NRCS, 2000.

Outside its major river valleys, Illinois has lost an estimated two to nine inches of topsoil over the last 150 years. Although Illinois has been a national leader in conservation tillage since the 1980s when soil conservation practices increased sharply,[45] research shows soil enriched by decomposting crop residues contains more natural microbes that also offer greater groundwater protection. Conservation tillage methods have been credited with reducing runoff from fields, as well as offering farmers a more economical way of growing crops. Such systems reduce the number of trips farmers have to make through the fields for planting and cultivation. The method saves farmers labor, time, fuel and machinery wear while building soil productivity.[46]

In terms of potential environmental consequences regarding the use of conservation tillage, the change from conventional tillage to a zero-till farming system can lead to drastic changes in the physical condition of the soil. A major consequence of conservation tillage is the increased usage of pesticides and nitrogen. Weed control is more difficult because of the lack of mechanical weeding. Colder and wetter soils result in slower nitrification, as well as increased denitrification. It is necessary to find ways of achieving soil conservation while reducing energy consumption. In corn production, fertilizers account for the largest part of consumed energy.[47]

As of 1995, more than three-fourths of the state's farmland was at "T."[48] Nearly half of the state's agricultural land is in the Illinois River Basin, where the rate of soil loss is below the state average. During the 10-year period between 1987 and 1997, the average annual soil loss on CRP land in Illinois declined from 4.3 tons/acre/year to 0.5 tons/acre/year, which resulted in a total

[45]"The Changing Illinois Environment: Critical Trends," Executive Summary of the Critical Trends Assessment Project. 1994.
[46] Kelly, Dave. American Farm Bureau Federation. "Environment-friendly Conservation Tillage a Growing Practice on America's Farms," 1997.
[47] Weill, Anne Dr. 1989. "Conservation Tillage: Problems and Solutions." *Sustainable Farming*
[48] The tolerable rate of soil loss where soil-building processes replace the amount of soil lost.

soil savings of 88 percent.[49] In the upper and lower Illinois River Basins, more than 4.2 million acres of cropland are cultivated using conservation tillage systems.[50]

Two sources of sediment to backwater lakes are the Illinois River and local tributaries. The relative significance of sediments from the Illinois River, as compared to local tributaries, depends on the flow pattern and frequency of overflow of Illinois River water into the backwater areas, the outlet geometry from the backwater lakes and the existence of local drainage into backwater lakes. Each year, 14 million tons of sediment is transported through the Illinois River Watershed. More than half of this sediment load is deposited in the Illinois River Valley and the balance is carried to the Mississippi River.

Erosion control is needed on 4.1 million acres of cropland in the Upper and Lower Illinois River Basins.[51] Improved monitoring of water and sediment of Illinois streams is also needed. The sediment, coupled with flooding, yield a river system less capable of managing its sediment through a natural pattern of deposition, drying and compaction. Operation and maintenance of the navigation system is increasingly difficult, due to accumulation of sediment in the channel and rapidly fluctuating water levels.

Through CREP, significant strides have been made toward curbing soil erosion and sedimentation in the Illinois River Watershed. The utility of buffers in trapping sediment depends on particle size, ability of the buffer vegetation to withstand or retard flow, the level of uniformity of flow, slope and soil type. In general, buffers typically reduce sediment transport by 40 to 100 percent, and much of the soils retention occurs within the first several meters of the buffer. In an analysis of establishing filter strips as a conservation practice (CP21), the mean width for riparian buffers in Schuyler County is 36.42 meters, well beyond the typical width where significant sediment retention occurs.[52]

The Illinois CREP has been highly successful in establishing riparian buffers (CP22) and filter strips (CP21) with a total of 29,982 acres in these practices which accounts for about 16 percent of all of these practices in Illinois over the history of the CRP.

4.1.2 Water Resources

About 82 percent (24,000 square miles) of the Illinois Watershed is used and needed for agricultural purposes. While net soil movement from erosion is lower overall, it remains sizable enough that sedimentation is one of Illinois' top water quality problems. Peoria Lake, the largest and deepest of the bottomland lakes on the Illinois River, lost 68 percent of its capacity between 1903 and 1985 due to sedimentation.

In addition to sedimentation and agricultural runoff, nitrogen based fertilizers used in the Mississippi River Basin has increased sixfold since the 1950s. The Illinois River watershed

[49] NRCS, National Resources Inventory, http://www.il.nrcs.usda.gov/technical/nri/
[50] *Integrated Management Plan for the Illinois River Watershed Technical Report*, p. 2.
[51] *Ibid.*
[52] Illinois Conservation Reserve Enhancement Program (CREP) 2002. *2001 Annual Report for reporting period October 2000 through September 2001*. Table 10, p. 49.

comprises only 2 percent of the Mississippi River Basin. Similarly, the Illinois River accounts for only 3 percent of the water discharged into the Gulf of Mexico from the Mississippi River.[53]

While other nitrogen sources, including soil mineralization, legumes and pasture, animal manure, atmospheric deposition and municipal and industrial point sources of pollution have remained fairly constant, fertilizer usage represents the largest percentage increase. As a result, nitrate-nitrogen concentrations in the Illinois River have also risen. By the late 1980s, the nitrate-nitrogen concentrations averaged more than 5 mg/L with peak concentrations in spring. This level compares with nitrate-nitrogen concentrations found in the Illinois River a century earlier when these levels averaged less than 1.5 mg/L with peak concentrations occurring in the fall.[54]

Between 1980 and 1996, the average nitrate load reaching the Gulf of Mexico was 0.95 million metric tons/year (1.05 short tons/year).[55] Of this amount, the Illinois River contributed 114,000 metric tons (126,000 tons) or 12 percent. Relative to its land area, the Illinois contributed a disproportionately large share.

The rise in nitrate-nitrogen concentration in the Illinois River also is closely related to the massive loss of wetlands in the watershed. Today, the Illinois River yields 126,000 tons/year of nitrogen, which is 12 percent of the load reaching the Gulf of Mexico. The Illinois River watershed accounts for only 2.3 percent of the Mississippi River basin's total area. Based on studies of the Illinois River nitrogen levels, removal of nitrates-nitrogen in the Illinois River Basin would affect the Mississippi River Delta: Decreased nitrogen loads could lead to a reduction in hypoxia—the condition in which dissolved oxygen is below the level necessary to sustain most animal life—in the Gulf of Mexico.

Other programs, such as EPA's 303d program and others included under the Clean Water Act, have established water quality standards for states and local governments and have enforced penalties if these standards are not met. Based on these programs, TMDL listed streams would decrease as cropland is enrolled, but the reduction would be limited and be based on the conservation practices installed on CREP land and whether these lands were targets of the impairments that created the 303(d) listings (refer to Appendix C).

Drinking water sources and groundwater would continue to improve from a reduction in pesticides and fertilizer use, as cropland is removed from production and enrolled in CREP. Concentrations of two pesticides—alachlor and cyanazine—have decreased in the Illinois River since 1991 because farmers have reduced application.[56]

Water quality has improved in the Illinois River Basin since the inception of the CREP program, as conversion of cropland to more natural land conditions has increased and as pesticide, fertilizer and nitrogen usage has declined slightly among farmers and landscape companies. However, because the amount of land that can be enrolled in CREP is limited to 132,000 acres,

[53] Hey, Don. The Wetlands Initiative. *Illinois River Watershed*.
[54] *Ibid*.
[55] Hey, Don. *Nitrogen Farming: Harvesting a Different Crop.*
[56] USGS. 2001. "Information supports water-resource decisions by communities and states" and "Concentrations of alachlor and cyanazine in the Illinois River decreased."

selection of this alternative provides limited and temporary benefits to the water resources within the Illinois River Watershed.

4.1.3 Riparian Areas, Wetlands and Floodplains

Riparian forest buffers established next to streams, lakes, ponds, seeps or wetlands potentially provide many benefits to immediate and downstream aquatic habitats. These improvements may improve water quality, cool water temperatures, reduce soil erosion, stabilize streambanks, improve floodplain function and recharge groundwater aquifers. Riparian buffers should be planted so that surface and subsurface runoff filter through them before runoff reaches the water source. Buffers can also be placed next to wetlands, such as marshy or swampy areas.

Eligible conservation practices allowed under Alternative 1 include establishment of riparian buffer zones, restoration of wetlands and shallow water areas for wildlife in riparian areas. Landowners should be further guided toward the following objectives for these resource areas, including:

- type of wildlife and agricultural uses of the riparian area,
- adjacent waterbody uses, such as recreation and fish habitat conditions
- upland conditions and practices affecting riparian functions
- soil qualities
- stream channel type in relation to floodplain
- connection to upstream and downstream habitat or to other nearby wildlife cover
- width of area and ability to accommodate desired wildlife species
- special wildlife needs (e.g., threatened and endangered)

Wetland ecosystems, once a vital part of the Illinois River Valley, still provide critical habitat for many threatened and endangered species, as well as other wildlife. The Illinois River Valley floodplains contain thousands of moist soil plant communities, which in turn support millions of waterfowl and other animals. Over time, much of the Illinois River floodplain has been leveed for agriculture, reducing the size of these plant communities to a fraction of their former area. The number of wildlife relying on the size of these communities has likewise decreased over the past century.[57]

All Federal agencies are required to comply with the requirements of Executive Order 11988 regarding floodplain management and Executive Order 11990, *Protection of Wetlands*. The executive order relating to floodplains requires Federal agencies to reduce the risk of flood loss, to minimize the impact of floods on human safety, health and welfare and to restore and preserve the natural and beneficial values served by floodplains. The wetlands order directs Federal agencies to avoid construction in wetlands unless there is no practicable alternative and that the Federal activity include all practicable measures to minimize harm to these resources.

Under Alternative 1, conservation easements have been placed on 88,426 acres in the Illinois River Basin. CREP has played a substantial role in the development of riparian buffers and filter strips. These practices have been important contributors to the total conservation activity,

[57] "Wetland Restoration along the Illinois River." http://www2.ic.edu/beal/WetlandRestoration.html

contributing between 10 and 25 percent of the conservation easements statewide and often constitutes a greater acreage than traditional CRP in high CREP counties, such as Cass, Fulton and Schuyler. However, through CREP, wetland restoration resulted in the largest contribution when compared to other programs. Out of 38,000 acres of wetlands created through CRP, more than 31,000 have been restored through CREP. Thus, CREP has been a significant boost to Illinois wetlands, where 85 percent of the pre-settlement wetlands have been lost to human development.[58] Table 4-1 summarizes the improvements resulting from the conservation practices that focused on restoring wetlands and installing filter strips and riparian buffers.

Table 4-1: Riparian, Floodplain and Wetland Acreage Improved by CREP Conservation Practice, 1998-2001

Program Year	CP21-Filter Strips	CP22-Riparian Buffers	CP 23 Wetland Restoration
	Acres		
1998	27,528.0	13,604.2	1,911.8
1999	22,656.4	11,734.7	9,909.7
2000	24,037.4	17,111.1	15,547.7
2001	23,244.1	20,622.3	10,985.1
State total for 1998-2001	111,766.7	67,902.7	38,051.3
Total CREP Acreage for 1992-2001	**14,037.0**	**15,945.0**	**31,295.0**

Source: Illinois Conservation Reserve Enhancement Program (CREP) 2002. *2001 Annual Report for reporting period October 2000 through September 2001*. Table 10, p. 49. State of Illinois, Department of Natural Resources. Springfield, IL.

The Federal CREP agreement will pay half of all eligible and standard costs of installing these conservation practices. Land qualifying as a riparian area increases the Federal annual per acre rental payment by 30 percent. Filter strips and riparian buffers qualify for a one-time Federal SIP of $10 per acre. Installation of filter strips, riparian buffers and shallow water areas for wildlife also qualify for a PIP equal to 40 percent of the total eligible cost of installation.

4.1.4 Cropland, Forestlands and Grasslands

The 1997 *Census of Agriculture* showed that total cropland in Illinois declined in 1997 to 23.9 million acres from 24.1 million in 1992, whereas harvested cropland increased to 22.3 million acres from 21.9 million acres in 1992. The top five counties enrolling the most acreage in CREP agreements were—

CREP County	No. of Signed Agreements	Acres
1. Schuyler	256	9,537.3
2. Iroquois	533	8,814.7
3. Knox	269	7,084.9
4. Cass	284	7,060.7
5. Sangamon	202	6,426.7

[58] *2001 Annual Report, Illinois Conservation Reserve Enhancement Program (CREP)*, p. 48.

Total cropland enrolled in CREP was 110,854 acres under 5,345 signed agreements. Under this alternative, no more than 25 percent of the cropland in a county may be enrolled in CRP or the Wetlands Reserve Program (WRP). Due to overwhelming enrollment requests, a waiting list was created in October 2001, as demand had exceeded the number of acres and money available for the program.

The Illinois Land Cover 2000 project showed that in 2000 approximately 10.5 million acres of agricultural land, 1.7 million acres of forestland and 1.6 million acres of grassland exist within the Illinois River Basin.

4.1.5 Wildlife Habitat

Approximately 110,854 acres of Illinois cropland have been enrolled in the CREP to date, and of this total, 20,638.5 acres have been developed for wildlife habitat under CREP through 2001 and 104,370.7 acres have been developed for this purpose by the state.[59] The goal of the conservation practices designed to enhance wildlife habitat is to increase the populations of waterfowl, shorebirds, nongame grassland birds and protected species within the Illinois River Watershed by 15 percent. Based on the preceding acreage figures, 18.6 percent of the CREP area has been enhanced for wildlife habitat.

The Illinois River Watershed serves as a major stopover for migratory bird and waterfowl populations during fall and spring migrations. Hundreds of thousands of waterfowl and shorebirds depend upon resting and feeding sites in Illinois, although most do not nest in the state.

The number of migrating waterfowl and shorebirds present in Illinois during the course of one migratory season broadly varies. For example, five year averages of peak fall migrations of all ducks in the Illinois River Basin range from 373,744 (1993-1996) to 1,520,569 migrations (1953-1957) (Havera 1999). The numbers of these migratory birds seen in Illinois each year are a result of the interaction between continental population sizes and the migration schedule and pattern in any given year. Both factors are influenced by other contributions, including breeding success at sites north of Illinois, food conditions on the wintering grounds south of Illinois, and weather conditions north and south of the state, as well as weather conditions in Illinois.[60]

The magnitude of continental population fluctuations, mainly due to factors external to Illinois, masks the contribution the state makes to the condition and status of migratory populations. Nevertheless, Illinois resources are important to the survival of these species. Given the complex nature of population and migration patterns in these birds, the most logistically feasible and biologically meaningful approach is to focus on available habitat through studies reported for CRP lands. CREP has the potential to significantly increase habitat in general and wetland habitat in particular, much of which could be important to migrating waterfowl and shorebirds.[61]

Initial and incomplete assessments of habitat created by the Illinois CREP, shown in Chapter 3, Table 3-2, indicate that wetland acreage may be increased by nearly 9 percent in this stage of the

[59] *Ibid*., Table 10, p. 49.
[60] *2001 Annual Report, Illinois Conservation Reserve Enhancement Program (CREP),* p. 58.
[61] *Ibid.*

program.[62] By quantifying changes in the amount, quality, and configuration of important migratory waterfowls and shorebird habitat within the Illinois River Basin, the program's impact on these populations can be better monitored.

4.1.6 Terrestrial and Aquatic Species

Implementation of Alternative 1 would allow areas devoted to permanent vegetation, wildlife habitat and wetlands to remain protected for 10 to 15 years, and in some cases longer or in perpetuity. Conservation practices that are targeted toward preservation of wildlife habitat enhancement would continue to provide for wildlife corridors between fragmented habitats. The benefits of recreational uses to the region would continue and the ability of nonprofit organization, such as Ducks Unlimited, would be encouraged. Wetland restoration would continue to benefit waterfowl and upland game species through habitat enhancement. The establishment of wetland buffers and riparian zones would continue to provide additional habitat, wildlife corridors and protection from human disturbance.

Based on comments received at the 2002 CREP Forum, Logan and Cass County producers commented that CREP had helped deter deer from farmable land, and these landowners reported that they had seen more wild turkeys, quail and other species.

The Midewin National Tallgrass Prairie has creeks extending through its area. Prairie Creek and Jackson Creek, both tributaries to the Illinois River, comprise important aquatic and riparian components of the prairie ecosystem and support a variety of native fish and mussels, as well as human activities on Midewin. Midewin also provides habitat for a variety of birds that interact with surrounding lands and may benefit from improved habitat. Application of CREP resources in the watersheds of Midewin's creeks would help protect these important tributaries of the Illinois River, as well as meet the objectives stated for the Illinois River.

Through enrollment of land into the CREP, aquatic species would benefit from the expected reduction in sediment transport rates. Maintenance of high dissolved oxygen levels and cool water temperatures for some aquatic organisms would continue as cropland is enrolled into the program and converted to riparian area and wetlands.

As a Federal agency, FSA must also comply with Executive Order 13112, *Invasive Species,* which prevents the introduction of invasive species and provides for their control. Consideration should be given to developing management practices and monitoring to ensure that invasive species do not continue to threaten the survival of native species.

4.1.7 Threatened and Endangered Species

An initial CREP goal is to enhance habitat for federally and state protected species by increasing populations of waterfowl, shorebirds and state and federally listed species by 15 percent within the CREP area. Enhancement of wildlife habitat through the conservation practices supported by the CREP would result in benefits to these species by meeting the habitat needs identified in Appendix D.

[62] *Ibid*., p. 58.

As mentioned in Chapter 3, a total of 52 threatened or endangered faunal species and 111 threatened or endangered plant species have been recorded by IDNR within the CREP 100-year floodplain. In the entire land area of the CREP boundary, there are 75 faunal species and 147 plant occurrences.[63] Over 90 percent of state contract acres enrolled in CREP are in the floodplain. As a result, CREP is focusing on species that have also been known to occur in these areas. Based on the faunal species in these areas, the habitat preferences suggest that an increase in wetland and/or wooded riparian habitat could have a positive impact on many of the species. These populations are small and often difficult to locate. Therefore, estimates of numbers of individuals do not exist, and it would be difficult to demonstrate a 15 percent increase in population. However, as with waterfowl, shorebirds and grassland birds, it is possible to evaluate an increase in potential preferred habitat for these species. Some of these listed species require wetlands of a certain minimum size.[64]

The ability to connect or link lands that have been converted to natural areas, whether in CREP or in other conservation programs, would benefits threatened and endangered species. Identifying species that could potentially exist in the area, recognizing their habitat needs and being able to accommodate these needs are necessary in supporting these species. Refer to Appendix A for more information on threatened and endangered species known to occur in the CREP area.

CREP complies with Section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531-1543), which requires that agencies consult with the U.S. Fish & Wildlife Service regarding potential impacts to federally protected species. The affected FWS field offices were consulted during scoping regarding this project. No comments were received. Consultation pursuant to Section 7 will continue.

4.1.8 Forestlands and Grasslands

Illinois has more forests today than it has had since the turn of the 20th century. Wooded has acreage increased by 41 percent since 1926. However the increase in forest acreage has not been matched by an increase in forest quality. Current forests are more likely to be populated by fast-growing, less commercially desirable species, such as maples and beeches, rather than oaks and hickories, which were once abundant in Illinois. Since 1962, acreage dominated by maples has increased 40 fold.[65]

Many nongame and game grassland birds have experienced population declines in the past due to habitat loss and fragmentation. CREP acres enrolled in practices that create grassland or grassland-type habitat benefit these species. As with the migratory species, it is difficult to measure direct grassland bird population to habitat changes, although these species depend on grassland habitat to survive.

FSA has approximately 1,696 acres of pastureland enrolled in the GRP as of FY 2003. These GRP lands are located in Iroquois, Greene, Schuyler, McDonough, Warren, Carroll and Marion

[63] *Ibid*., p. 60.
[64] *Ibid*.
[65] "The Changing Illinois Environment: Critical Treands." *Executive Summary of the Critical Trends Assessment Project*. http://dnr.state.il.us/orep/ctap/execsum.htm

Counties. Based on the Illinois CREP guidelines, haying and grazing are not allowed during the CRP contract period unless FSA permits these activities for emergency purposes under the standard CRP rules.

Most grassland conservation practices will be implemented on highly erodible land in the uplands, although some grass will be planted in filter strips and other practices in the floodplain. The upland acreage (highly erodible land) allowed under CREP is limited to 15,000 acres and enrollments in this category were very low, as of 2001. Grassland conservation practices will have the most positive impact on grassland bird species if they are placed near other grasslands and away from trees, creating a complex that can support a variety of species. The actual benefits to grassland birds will depend upon the volume of enrollment and location of these grassland conservation practices. If this alternative is selected, it will be difficult to predict any marked increase in grassland bird populations.[66]

The 19,165-acre Midewin National Tallgrass Prairie is located in Will County within the project area. The Prairie Supervisor has presented scoping comments that focus on several issues of concern. These issues are identified in Chapter 1, Scoping. In summary, protection of water quality and streamflow, native plant communities, wetlands and grasslands for bird habitat are important issues to the Prairie. Management of invasive and non-native plant species is also an important issue. Protection or restoration of riparian areas and wetlands in the Illinois River Basin can have important outcomes for the Prairie by directly affecting the area's watershed or by affecting the ecological context for management of Midewin's natural resources.

The Prairie Supervisor has requested that allowances be made for lands that can provide the necessary habitat for grassland bird species either through CREP or other state or Federal programs. A grazing regime may be necessary to provide the habitat conditions required by some species. Grassland bird populations in Illinois might receiver greater benefit from CREP if the program is coordinated with efforts to protect grazing land or convert marginal or highly erodible cropland to pasture.

4.1.9 Socioeconomic Impacts

Population growth and dispersion, human disturbance, incompatible land uses and development, and changes in the regulatory framework are the principal social factors that impact natural resources. Based on the 2000 Census, approximately 73 percent of the state's population resides within the Illinois River Watershed, of which 57 percent lives in the Chicago area. Growth in the state and in the watershed's population has increased 8.6 percent between 1990 and 2000. Figure 4-2 illustrates the projected growth trend in the Illinois River Basin between 1990 and 2025.

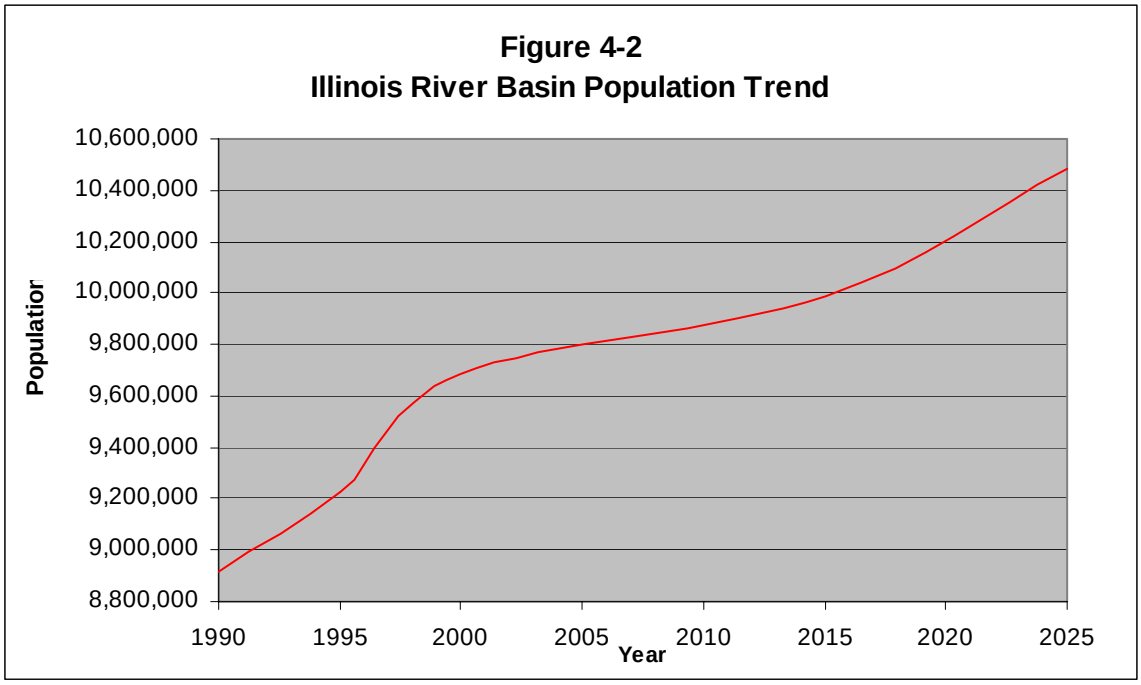
Total Federal and state costs of administering the CREP in FY 2002 was $91,356,254, of which the state share was $6,492,169. Table 4-1 details the total Federal and state expenditures on the CREP in FY 2002.

Determining the social and economic effects cannot result in a conclusive task, due to an absence of information on the impact categories. Many factors, at varying levels, must be considered. For

[66] *Ibid.*, p. 60.

example, landowners participating in CREP enroll partial fields, not entire farms in CREP. The program encourages landowners to consider enrolling only the most environmentally sensitive land, mainly land adjacent to rivers, streams and in floodplains where benefits to water quality and wildlife habitat can be achieved. Although most of the CREP land is partial fields or farms, enrollment of this land generally does not reduce the actual acreage of productive cropland that is suitable for cultivation.

Figure 4-2: Population Growth in the Illinois River Basin, 1990-2025



Source U.S. Bureau of Census figures and projections. Population estimates were based on 74 percent of state estimates.

Table 4-1: Total Federal and State Expenditures on Illinois CREP, FY 2002

CRP Payments [1]	$79,860,390	CRP Payments[2]	$47,985,831
Federal Cost-Share	$5,003,695	Federal Cost-Share	$5,003.695
State Payments for CREP Enrollments	$6,492,169	State Payments for CREP Enrollments	$6,492.169
Total Program Costs	$91,356,254	Total Program Costs	$59,481,695

[1]Before discount;
[2]Discounted 8 percent;
Source: Illinois CREP Annual Report, Oct. 1, 2001-Sept. 30, 2002

Landowners are compensated for retiring this environmentally sensitive land from cultivation. In addition to the money they receive from the program, they often gain further revenues from this land by opening it to hunters. CREP specifies conservation practices, such as establishing permanent native grasses, tree planting, shallow water areas for wildlife, filter strips and wetland restoration to be implemented on land that is retired from crop production and enrolled in CREP. FSA determines the eligibility to participate in the CRP portion of the Enhancement Program and pays the landowner 50 percent of the costs of CRP conservation practices. Landowners, in turn, receive rental payments for the 15 year CRP contract at normal CRP rates, plus several incentive payments. Landowners, for example, receive an additional 30 percent increase in the annual per

acre rental rate for enrolling cropland situation in riparian areas or for restoring wetlands. The corresponding incentive payment for enrolling erodible land is 20 percent.

Landowners enrolled in CREP also receive a one-time SIP of $10 per acre for establishing filter strips and riparian buffers and a PIP equal to 40 percent of installation costs for establishing filter strips, riparian buffers and shallow water areas for wildlife on enrolled land. The State provides additional incentives in the form of a lump sum bonus payment to enroll land for an addition 15 or 35 years or permanently and shares an additional 40 to 50 percent of the costs of implementing approved conservation practices.[67]

CREP acreage limit under this alternative is 132,000 acres. Since its inception in May 1998, 118,002 acres of land have been formally enrolled in CREP. Of this amount, about 67,000 acres have been enrolled for an additional 15 or 35 years or permanently in the CREP State options. Total discounted federal and state expenditures on the program since 1998 have been $220 million.[68]

The potential economic impacts related to agricultural suppliers of products and services, such as fertilizer, seed, mulch, equipment, fuel and transportation, are unknown. As land is removed from production, the indirect effects on the local and State economy has not been determined.

As stated earlier in Chapter 1.0, CRP/CREP limits the amount of land that can be enrolled in a county to 25 percent of its cropland. There is also a 10 percent limit on the number of easements that can be placed on land by state agencies as part of a CREP agreement.

For the future, it is recommended that an economic impact study of the CREP be conducted as part of the programmatic re-evaluation.

Program Specific Issues

The *2002 National CREP Forum Final Report* summarized financial and economic issues relating to CREP in Illinois.

- Tenant farmers may benefit when the least productive land is taken out of production by receiving a reduction in rent without a cut in area allowed to farm.
- Government is guaranteeing a rate of return on land taken out of production that should not be farmed.
- Initial thoughts were that land values under permanent easements would possibly decline as much 15 percent. There has been no evidence of this devaluation. Payments to private landowners for hunting rights are good, though specific information is not available.
- CREP works where dry land cash rental rate is closer to agricultural land values, which is a reason why people have been buying farmland and enrolling it into the CREP.
- In Illinois, each county tax assessor must determine where the land is considered agricultural or recreational.

[67] Khanna, Madhu, et al. "Environmental and Cost Effectiveness of Conservation in Illinois," *Illinois Rural Policy Digest*. Vol. 1, No. 4. Summer.
[68] *Ibid.*

- One local lender reported the CREP payments were a 30 to 40 percent premium. Another said CREP was definitely a premium but not quite that much, and a third lender said that on lower priced land, it might even be a little less than a cash payment. In other places, CREP payments are closer to cash payment.

As of August 2003, 5,345 agreements had been executed, totaling 110,854 acres, within the CREP program. This compares with 14,974,907 acres of cropland within the Illinois River Watershed.

In FY 2002, FSA paid an average rental rate of $164 per acre for 1,421 contracts, enrolling 32,823 acres. This rental included a $128 per acre average soil rental rate plus maintenance and an average $36 per acre incentive payment. During this period, approximately 92.5 percent of the State Options were enrolled in permanent easements, of which 2.3 percent were in 15-year contract extensions and 5.2 percent were in 35-year contract extensions. The average state incentive payment per acre for these enrollments was $515 per acre. The average cost to the state was $660 per acre, which included the incentive payment, cost share, administrative expenses, state technical assistance and legal expenses. IDNR provided about $351,607 from its operational funds to for technical assistance, program administration, GIS, contracting and training.

Contemplated Future Actions

Since the 1980s, the Illinois Department of Transportation has been planning for a major new supplemental airport to Chicago O'Hare International. Planning is continuing for this major project where the focus on the new site is Will County. The long-range land requirements may be as high as nearly 24,000 acres, though during the first 5 to 10 years after opening, initial and mid-term needs for the land would be much smaller.

In many cases, agriculture is a compatible land use with airport development and operations. Until needed for aviation operations, the land would most likely remain in agriculture use or open space. However, many species of wildlife, particularly deer, ducks and waterfowl are incompatible with aviation operations and would be discouraged from airport property. It is advised that FSA and IDNR maintain close consultation with the Federal Aviation Administration and the Illinois Department of Transportation regarding CREP, its expanding boundaries and the status of the supplemental airport.

Other contemplated future projects planned for portions of the state[69] include, but are not limited to, the following—

- Development of a high-speed rail corridor between Chicago and St. Louis, Missouri;
- Development of a high-speed rail shuttle between downtown Chicago to the new supplemental airport in Will County;
- Extension of I-355 from Bolingbrook to I-80 in New Lenox;

[69] Illinois Dept. of Transportation, *South Suburban Airport Draft Environmental Assessment,* Vol. l.. September 12, 1997.

- Extension of the Calumet Expression along Illinois Route 394 to a proposed new South Suburban Expressway, which would extend from I-355 in Will County to the Illinois-Indiana state line;
- Interstate 57 Corridor Planning Council development studies between I-80 and Kankakee;
- Interstate 80 Corridor Planning Council to provide guidance for growth and development along the I-80 corridor;
- Extension of Metra's Southwest Service Line from 179th Street in Orland Park to Manhattan and eventually to the Midewin National Tallgrass Prairie and National Veterans Cemetery south of Joliet;
- Union Pacific line extension from Chicago to Crete;
- Proposed Metra commuter rail service to the proposed supplemental airport;
- Construction of Monee Mall on 528 acres west of the Village of Monee

Environmental Justice

Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations,* directs all Federal agencies to achieve environmental justice as part of their mission by identifying and addressing disproportionately high and adverse human health or environmental effects of their activities on minority and low-income populations.

CREP is a voluntary enrollment program open to all landowners within the Illinois River Basin who meet the eligibility requirements. At the 2002 National CREP Forum, the Illinois State Executive Director commented that the state's policy is to *not* let tenants be run off the land they are farming.

Some tenant farmers, who have low incomes and be of minority status, may actually benefit from CREP by receiving a reduction in rent without a reduction in the area that can be farmed. One panelist related an experience with a tenant farmer and his landlord. A landlord did not enroll all his land in CREP. He took the least productive land out of production and enrolled it in CREP. Since the tenant was paying a lease per acre, the tenant actually received a cut on the rent without much difference in the acreage he was farming. A Logan County producer commented that both landlords and tenants were enrolling for more than just money; they are concerned about erosion and other environmental issues, as well.[70]

Based on limited information available, no impacts to low-income or minority populations have been identified.

4.1.10 Historic and Cultural Resources

Chapter 3 presents a discussion of the existing identified National Historic Landmarks and National Register sites within the Illinois River Basin. Although the archeological sites have not been identified, on a programmatic basis, CREP would essentially minimize potential impacts to these resources by prohibiting cultivation activities, such as plowing, that could potentially harm these resources. Ground disturbance caused by development and construction activities,

[70] *National CREP Forum 2002 Final Report.*

cultivation and revegetation and tree plantings could potentially disturb archeological sites, though maintaining the land in its natural state would help preserve these resources.

Cultural resources will be assessed on a contract-by-contract basis as part of the specific environmental evaluation.

4.2 Alternative 2-Continued Enrollment of Targeted Acreage in 2002 Agreement

4.2.1 Soils

Alternative 2 would expand the existing CREP region by 100,000 acres. The goals of CREP for Illinois include a 20 percent reduction in off-site sediment loadings and a 10 percent reduction in nutrient loadings. Lands with a weighted average EI of $\geq$ 12 would be eligible for inclusion in the program if—

1. they are adjacent to a stream or river corridor,
2. the landowner agrees to enroll riparian areas in the program, and
3. the land has become an uneconomic remnant due to establishing riparian buffers or due to modifications that promote effective functioning of such a buffer.

The ability to continue with existing land cover where practicable and consistent with the wildlife benefits of CREP would prevent removal of established vegetative cover, thus minimizing the risk of erosion and runoff. Eligible conservation practices for which the landowner would be compensated include establishing native vegetation and tree plantings and establishing filter strips and riparian buffers.

Alternative 2 allows for existing CREP agreements to be extended for another 10-15 years with additional acreage allocated toward the program. An increase in the cropping history requirement has the potential to moderately impact soils by targeting cropland that has been under more intensive production and thus possibly more vulnerable wind and water erosion. Long term benefits to soils and water quality would occur if landowners placed land within CREP under a permanent easement, as provided for with this alternative.

A case study within the Lower Sangamon Watershed, located in Cass County, showed that with no retirement of land, sediment loadings to the river in the Lower Sangamon Watershed were estimated to be 38,642 tons for the five-year storm event. Inclusion of 6,626 acres of cropland that had been enrolled into CREP by July 2001 reduced sediment loadings by 24 percent to 29,231 tons. Given the goal of reducing sediment by 20 percent, CREP was highly successful in meeting the sediment reduction goal for this watershed.[71]

The study also showed that with enrollment of 4,340 acres in CREP within a 900 food buffer along all water bodies in the Lower Sangamon Watershed, 22 percent of the sediment was abated

[71] Khanna, Madhu, et al. "Environmental and Cost Effectiveness of Conservation Programs in Illinois." *Illinois Rural Policy Digest*, Vol. 1, No. 4. Illinois Agricultural Policy Center, University of Illinois at Urbana-Champaign. Summer 2003.

relative to the base case. Thus, 90 percent of the sediment abatement achieved by land retirement in either CRP or CREP in this watershed was due to retirement of 66 percent of the land parcels within the 900 foot buffer along streams and rivers. The study further concluded that retirement of land parcels within a 900 foot buffer is very important to reducing sediment and that the distance from the river is an important factor in determining the off-site sediment abatement benefits of retired land parcels.[72]

Of the 100,000 acres originally approved for the program, 85 percent were to be sought from riparian areas (defined as the 100 year floodplains of the Illinois River and its tributaries and streams). The remaining 15 percent could be selected from highly erodible cropland adjacent to enrolled riparian areas. These criteria make over 5 million acres of cropland eligible for CREP enrollment.

In FY 2002, soil loss was reduced to "T" or tolerable levels, as well as control of gully erosion on CREP land. In addition, more than 195,133 tons of soil has been saved and will continue to be saved each year.[73] Based on 5,345 agreements signed in Illinois as of August 2003, an estimated total of 101,555 tons of soil is saved every year. In addition, producers who enroll acreage in CREP greatly reduce their application of pesticides and fertilizers on these acres, essentially eliminating CREP lands as a source of runoff containing these chemicals and pollutants.

Additional benefits from reducing sedimentation under this alternative include:

- Lower water treatment costs
- Lower sediment removal costs
- Reduced flood damage
- Improved aquatic and riparian habitats
- Larger and more diverse populations of aquatic species
- Increased water-based recreational values
- Reduced maintenance costs for water navigation systems
- Reductions in eutrophication or stagnation caused by lower levels of nutrients and pesticides

4.2.2 Water Resources

Under Alternative 2, water quality benefits would continue as CREP agreements are extended or as permanent easements are granted. Positive impacts in terms of reduced non-point source pollutant loadings to achieve TMDLs would occur when landowners enroll land that has been more intensely cropped (4 out of 6 years). Marginal pastureland dedicated to vegetative cover would also these areas to implement conservation practices to help improve the water quality and reduce sediment runoff. Eligible conservation practices include construction of terraces, grassed waterways, water and sediment control basins and grade stabilization structures.

CREP is restoring and protecting large stretches of floodplain corridors both on the mainstem of the Illinois River and along its major tributaries. According to the 2002 CREP annual report, 19

[72] *Ibid.*
[73] *Illinois Conservation Reserve Enhancement Program Reporting Period: October 1, 2001 through September 30, 2002,* p. 6.

Ecosystem Partnerships in the CREP area were awarded $3.1 million in state Conservation 2000 funds for 208 projects that are directly related to CREP's goals for water quality, habitat and wildlife population increases. These projects involved streambank stabilization, wetland and prairie restorations, riparian buffers, and vegetative covers on construction sites.
Based on a USGS National Water Quality Assessment Program report, concentrations of pesticides alachlor and cyanazine have decreased in the Illinois River since 1991 because of decreased use by farmers. Relations between chemicals used in agricultural and urban settings, and the types and concentrations of contaminants in streams and groundwater are seen in every basin.[74]

Small areas that are infeasible to farm that are enrolled along with a buffer would further contribute to the enhancement of water quality, but only if conservation practices that target water quality improvements are adopted. These practices include the establishment of filter strips, riparian buffers and wetland restoration. The ability to maintain the existing land cover where practicable and consistent with wildlife benefits would also benefit water quality by decreasing the potential for wind and water erosion on plowed fields and not causing short-term erosion to occur.

In an effort to stabilize and restore severely eroding streambanks that would otherwise deposit sediment into the Illinois River and its tributaries, IDA is administering the Streambank Stabilization and Restoration Program (SSRP). Funded under Conservation 2000, this program provides funds to construct low cost, vegetative or bio-engineered techniques to stabilize eroding streambanks. In FY 2002, 81 individual streambank stabilization projects, totaling $505,916 were constructed in 12 counties within the Illinois River Watershed. In total, 52,162 linear feet of streambank, or nearly 10 miles, have been stabilized, thereby protecting adjacent water bodies.

Enrollment into other programs such as WRP, PRP and GRP would also contribute to improving water quality in the Illinois River Basin.

4.2.3 Riparian Areas, Wetlands and Floodplains

The MOA defined riparian areas in CREP as those areas that are—

- within the 100-year floodplain of the Illinois River and its tributary system that occur within the watershed, or
- for wetland restoration purposes within the watershed and is determined by NRCS to be farmed wetland, prior converted wetland or a wetland farmed under natural conditions.

Alternative 2 expands the CREP area from 132,000 to 232,000 acres to encompass the entire Illinois River Watershed. Through this alternative, landowners may renew their contracts for another 15 or 35 years, enroll in a continuous sign-up program or obtain a permanent easement to ensure the viability of these resources. This alternative provides more specific CREP conservation practices targeted at enhancing riparian buffer and wetlands. These practices include the following resource-related conservation measures:

- Filter strips

[74] USGS. "Information Supports Water-Resources Decisions by Communities and States."

- Grass waterways
- Hardwood tree planting
- Permanent wildlife habitat under non-easements
- Shallow water areas for wildlife
- Maintenance of vegetative cover and trees already established
- Riparian buffers development
- Wetlands Restoration

Because CREP provides incentives to landowners to plant trees and enhance riparian buffer zones between farm fields and adjacent waterbodies, these riparian areas should consider opportunities to link riparian areas to other wildlife habitats. In the Midwest, NRCS recommends that riparian forest buffers should extend to the boundary of the 100-year floodplain and be a minimum of 50 feet wide along stream banks for small streams and 100 feet wide along river banks and larger streams.

Increased emphasis on the enrollment and restoration of cropped wetlands occurs under this alternative. Cropped wetlands provide important habitat for migratory birds and other wildlife, especially many threatened and endangered species. Wetland acreage also filters out pollution and sedimentation and improves water quality, and serves as an important flood control mechanism by attenuating and slowing down the flow of water. If the CREP boundary is expanded to 232,000, it would be beneficial to define natural resource priority areas and make efforts to work with the landowners in these areas.

Grass waterways can help heal gullies and washout areas, and greatly reduce loss of topsoil and the sedimentation of streams, ponds and lakes. Usually broad, shallow waterways must have the capacity to carry the runoff of a 24-hour storm that presumably occurs every 10 years. However in some areas where prolonged water flows, high water tables or seepage problems occur, a rock-lined center channel may be required.

4.2.4 Cropland, Forestlands and Grasslands

As discussed in section 4.1.4, total cropland in Illinois declined to 23.9 million acres in 1997 from 24.1 million in 1992. However, harvested cropland increased to 22.3 million acres from 21.9 million acres in 1992. Total cropland enrolled in CREP was 110,854 acres under 5,345 signed agreements. Under this alternative, no more than 25 percent of the cropland in a county may be enrolled in CREP. Due to overwhelming enrollment, a waiting list was created in October 2001, as demand had exceeded the number of acres and money available for the program. Future enrollments in this program are contingent upon State funding for the program and allocation of additional CREP acres to Illinois by USDA.

Under this alternative, up to 232,000 acres may be enrolled in CREP, provided the state has funding. Acreage beyond the 132,000 approved in the previous Agreement, dated July 12, 2002, will be limited to 20,000 acres per state fiscal year, beginning on July 1, 20003 through December 31, 2007. The State Director will release the 20,000 annual acres by August 20 of each year, provided that it is determined that the State has appropriated sufficient funds for the SIP.

The Illinois Land Cover 2000 project showed approximately 10.5 million acres of agricultural land, 1.7 million acres of forestland and 1.6 million acres of grassland existed within the Illinois River Basin in 2000. Relevant conservation practices are discussed in the following sections.

4.2.5 Wildlife Habitat

Alternative 2 increases the area 100,000 acres to a total of 232,000 acres. With the addition of 100,000 acres, particularly if it can be connected in contiguous corridors or large segments, wildlife populations will more successfully breed and thrive. Illinois CREP conservation practices encourage the establishment of diverse cover types of natural grasses and other native plantings, tree plantings and establishment of food plots that are aimed at providing habitat and food for a broad range of wildlife and waterfowl.

Although most of the land in the CREP program was aimed at protecting highly erodible soil, eligible land also includes cropped wetlands, floodplains, and riparian areas, all of which support diverse and unique habitats important to the survival of many wildlife species.

As discussed in section 4.1.4, the single greatest contribution the Illinois River Watershed makes to waterfowl and shorebird populations is that it provides a resting area for migrating birds and waterfowl during fall and spring migrations. In Chapter 3.0, Table 3-2 shows that CREP has the potential to significantly increase habitat in general and wetland habitat in particular, much of which is important to migrating waterfowl and shorebirds.

Many Midwestern nongame and game grassland bird species have experienced population declines in the past several decades (Herkert 1995). Habitat loss and fragmentation are top among the factors implicated in these declines. CREP acreage enrolled in practices, such as establishing permanent native grasses (CP-2), permanent wildlife habitat (CP4D), wildlife food plots (CP12) and rare and declining habitat (CP25) could benefit these species. The size, quality and distribution of grassland patches crated will determine the influence on grassland bird populations.[75]

Most grassland practices will be implemented on highly erodible land in the uplands, although some grass will be planted in filter strips and other practices in the floodplain. The upland habitat (highly erodible land) allowed under CREP is limited to 15,000 acres and enrollments in this category have been very low. Grassland practices will have the most positive effect on grassland bird species in general if they are placed near other grasslands and away from trees, creating a complex that can support a wide range of species.

The Illinois CREP has made significant contributions to the enhanced protection of high quality areas in the Illinois River Basin. These areas are defined on a watershed scale using the Illinois IEPA map that delineates 816 watersheds (average size of 44,000 acres). Resource rich areas were then identified based on (1) percent of watershed in forests, (2) percent of watershed as wetlands, (3) total area included in the Illinois Natural Areas Inventory, and (4) total length of streams designated as biologically significant. Approximately 20 percent of the highest quality land in the state was categorized as being in a resource rich area. Conservation easements

[75] Illinois Conservation Reserve Enhancement Program (CREP) 2002. Annual Report for reporting period October 2000 through September 2001. p. 59.

through CREP have added 19,489 acres of protection to these areas. Significant areas of protection have focused on the Mackinaw River Basin (Tazewell, McLean and Woodford Counties) and near the confluences of the La Moine and Sangamon Rivers with the Illinois River (Schuyler, Brown and Cass Counties). Significant corridors of land have also been established along the main channels of the La Moine, Sangamon, Mackinaw and Spoon Rivers.[76]
By expanding CREP by an additional 100,000, the opportunities to establish and conserve contiguous habitat areas are much greater than with Alternative 1.

4.2.6 Terrestrial and Aquatic Species

Alternative 2 would provide for increased acreage in the program, and would encourage the specific conservation practices that would benefit wildlife. These conservation practices include:

- Establishment of permanent wildlife habitat under non-easements
- Establishment of wildlife food plots
- Restoration of rare and declining habitats for prairie ecosystem restoration and tall grass prairie/oak savanna ecosystems

For certain high priority conservation practices yielding highly desirable environmental benefits, landowners may sign up for the program at any time without waiting for an announced sign up period. Continuous sign up allows landowners management flexibility in implementing certain conservation practices on their cropland. These practices are specially designed to achieve significant environmental benefits, giving participants an opportunity to help protect and enhance wildlife habitat, improve air quality and improve the condition of water resources. For lands that qualify as riparian buffers or wetlands, the following eligible CREP practices apply:

- Filter strips
- Grass waterways
- Hardwood tree planting
- Shallow water areas for wildlife
- Maintenance of vegetative cover and trees already established
- Riparian buffers development
- Wetlands restoration
- Restoration of rare and declining habitat for prairie and tall grass prairie/oak savanna ecosystems

This alternative would also provide for the continued benefits to aquatic species through decreased sediment transport rates and improved water quality. A goal of this program alternative is to increase native fish and mussel stocks by 10 percent in the lower reaches of the Illinois River.

As a Federal agency, FSA must also comply with Executive Order 13112, *Invasive Species,* which prevents the introduction of invasive species and provides for their control. Consideration should be given to developing management practices and monitoring to ensure that invasive species do not continue to threaten the survival of native species.

[76] *Ibid.*, p. 61.

4.2.7 Threatened and Endangered Species

As mentioned in Chapter 3 and in section 4.1.6, a total of 52 threatened or endangered faunal species and 111 threatened or endangered plant species have been recorded by IDNR within the CREP 100-year floodplain. In the entire land area of the CREP boundary, 75 faunal species and 147 plant occurrences have been recorded.[77]

An analysis similar to that summarized for wildlife habitat (section 4.2.4) was conducted for threatened and endangered species in the 2001 CREP annual report. The analysis was conducted by examining location of threatened and endangered species, termed "element occurrence records (EOR) in conjunction with CREP easements. Out of 3,522 EORs in the Illinois River Basin, 249 fall completely within a section (640 acres) where a CREP easement also exists, while 705 EORs are in sections adjacent to an easement. Of the 25,409 sections in the Illinois River Basin, 2,580 contain at least one CREP easement. Of the sections that contain a CREP easement, 188 also include an EOR record while 688 have or are adjacent to sections with EORs.

This analysis does not indicate that the easements will direct benefit the species; it only shows that there are EORs and easement within the same 640 acre section. However, the proximity may provide additional habitat in some situations. This analysis also shows that there are potential opportunities for targeting of CREP easements in locations where additional habitat may be beneficial to know populations of threatened and endangered species. To use CREP as a more targeted conservation tool would potentially provide more direct natural resource benefits but would also require additional efforts by field staff.[78]

The expanded acreage offered under Alternative 2 would have a greater potential to positively benefit threatened and endangered species by providing greater opportunities to establish larger and more contiguous habitat areas and migration corridors. In addition to CREP, landowners could also utilize other programs at the state and Federal level, such as the U.S. Fish & Wildlife Safe Harbor Agreement, to enhance or expand land set aside as habitat for threatened and endangered species. Landowners could see additional benefits in areas targeted by an approved CREP agreement, if approved practices consist of conservation practices that target habitat enhancement. In addition, the opportunity to expand and connect lands due to the expanded 100,000 acres would help support the needs of most threatened and endangered species.

CREP complies with Section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531-1543), which requires that agencies consult with the U.S. Fish & Wildlife Service regarding potential impacts to federally protected species. The affected FWS field offices were consulted during scoping regarding this project. No comments were received. Consultation pursuant to Section 7 will continue.

4.2.8 Forestlands and Grasslands

Since 1982, nearly 22 percent of pastureland, or 701,900 acres, have been lost to development in Illinois. In 1997, forests covered only 10.5 percent, or 3.8 million acres, of the total land in Illinois (35,579,705 acres). Based on current Illinois CREP contract stipulations, haying and

[77] *Ibid*., p. 60.
[78] *Ibid*., pp. 60-61.

grazing are not allowed during the CRP contract period unless FSA gives permission for emergency purposes under normal CRP rules.

The 19,165-acre Midewin National Tallgrass Prairie is located within Will County. The Prairie Supervisor presented comments during the scoping period that focus on several issues of concern. These issues are listed in Chapter 1, Scoping. In summary, protection of water quality and streamflow, native plant communities, wetlands and grasslands for bird habitat are important issues to the Prairie. Management of invasive and non-native plant species is also an important issue. Protection or restoration of riparian areas and wetlands in the Illinois River Basin can have important outcomes for the Prairie by directly affecting the area's watershed or by affecting the ecological context for management of Midewin's natural resources.

The Prairie Supervisor has requested that allowances be made for lands that can provide the necessary habitat for grassland bird species either through CREP or other state or Federal programs. A grazing regime may be necessary to provide the habitat conditions required by some species. Grassland bird populations in Illinois might receiver greater benefit from CREP if the program is coordinated with efforts to protect grazing land or convert marginal or highly erodible cropland to pasture.

4.2.9 Socioeconomic Impacts

The population trends for the region are illustrated in Figure 4-2. Approximately 10,483,200 people are projected for the CREP region by 2025, thus adding development pressure to these rural communities.

During the *National CREP Forum 2002,* a discussion on the effects of the CREP program on the local economy occurred. Based on a comment relating to the decision to enroll in the continuous CRP received at in the one lender's small bank had no customer in this program, as all their customers were enrolling in permanent easements. Another lender had some customers enrolled in 10-year CRP contracts and a third lender said that if his customers owned land in the watershed, most of that land was going into the CREP.

The benefits of converting the land to natural areas for wildlife habitat has provided economic benefits to land owners in terms of revenue generated from hunting activities. According the discussion at the 2002 Forum, land value seemed to have held their value when converted to their natural state. Even tenant farmers have seen benefits. In one case, the landowner retired land that was infeasible to crop to a riparian area within a floodplain. This area was an uneconomic remnant and because the landowner received payments in the form of conservation incentives, he was able to pass these benefits along to the tenant farmer by not increasing the rent. Land values have seemed to hold the same value as open space and in some cases, have actually been assessed higher value than if it had been cropped.

Landowners are compensated for retiring this environmentally sensitive land from cultivation. In addition to the money they receive from the program, they often gain further revenues from this land by opening it to hunters. CREP specifies conservation practices, such as establishing permanent native grasses, tree planting, shallow water areas for wildlife, filter strips and wetland restoration to be implemented on land that is retired from crop production and enrolled in CREP.

FSA determines the eligibility to participate in the CRP portion of the Enhancement Program and pays the landowner 50 percent of the costs of CRP conservation practices. Landowners, in turn, receive rental payments for the 15 year CRP contract at normal CRP rates, plus several incentive payments. Landowners, for example, receive an additional 30 percent increase in the annual per acre rental rate for enrolling cropland situation in riparian areas or for restoring wetlands. The corresponding incentive payment for enrolling erodible land is 20 percent.

Landowners enrolled in CREP also receive a one-time SIP of $10 per acre for establishing filter strips and riparian buffers and a PIP equal to 40 percent of installation costs for establishing filter strips, riparian buffers and shallow water areas for wildlife on enrolled land. The State provides additional incentives in the form of a lump sum bonus payment to enroll land for an addition 15 or 35 years or permanently and shares an additional 40 to 40 percent of the costs of implementing approved conservation practices.

CREP acreage limit under this alternative is 132,000 acres. Since its inception in May 1998, 118,002 acres of land have been formally enrolled in CREP. Of this amount, about 67,000 acres have been enrolled for an additional 15 or 35 years or permanently in the CREP State options. Total discounted federal and state expenditures on the program since 1998 have been $220 million.[79]

The potential economic impacts related to agricultural suppliers of products and services, such as fertilizer, seed, mulch, equipment, fuel and transportation, are unknown. As land is removed from production, the indirect effects on the local and State economy has not been determined.

As stated earlier in Chapter 1.0, CRP/CREP limits the amount of land that can be enrolled in a county to 25 percent of its cropland. There is also a 10 percent limit on the number of easements that can be placed on land by state agencies as part of a CREP agreement.

For the future, it is recommended that an economic impact study of the CREP be conducted as part of the programmatic re-evaluation.

Under Alternative 2, these types of benefits would be expanded as more land is enrolled into the program.

Contemplated Future Actions

As discussed under Alternative 1, the state has been planning for a major new supplemental airport to Chicago O'Hare International in Will County, as well as other major infrastructure projects. Refer to section 4.1.8 for a listing of these known contemplated projects that are in the planning to development stages.

Environmental Justice

Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations,* directs all Federal agencies to achieve environmental

[79] Khanna, Madhu, et al. "Environmental and Cost Effectiveness of Conservation in Illinois," *Illinois Rural Policy Digest.* Vol. 1, No. 4. Summer.

justice as part of their mission by identifying and addressing disproportionately high and adverse human health or environmental effects of their activities on minority and low-income populations.

CREP is a voluntary enrollment program open to all landowners within the Illinois River Basin who meet the eligibility requirements. At the 2002 National CREP Forum, the Illinois State Executive Director commented that the state's policy is to *not* let tenants be run off the land they are farming.

Some tenant farmers, who have low incomes and be of minority status, may actually benefit from CREP by receiving a reduction in rent without a reduction in the area that can be farmed. One panelist related an experience with a tenant farmer and his landlord. A landlord did not enroll all his land in CREP. He took the least productive land out of production and enrolled it in CREP. Since the tenant was paying a lease per acre, the tenant actually received a cut on the rent without much difference in the acreage he was farming. A Logan County producer commented that both landlords and tenants were enrolling for more than just money; they are concerned about erosion and other issues, as well.[80]

Based on limited information available, no impacts to low-income or minority populations have been identified.

4.2.10 Historic and Cultural Resources

Chapter 3 presents a discussion of the existing identified National Historic Landmarks and National Register sites within the Illinois River Basin. Although the archeological sites have not been identified, on a programmatic basis, CREP would essentially minimize potential impacts to these resources by prohibiting cultivation activities, such as plowing, that could potentially harm these resources. Ground disturbance caused by development and construction activities, cultivation and revegetation and tree plantings could potentially disturb archeological sites, though maintaining the land in its natural state, if it had not been plowed, would help preserve these resources.

Although impacts to archeological and historical sites in the watershed have not been analyzed on a programmatic basis, CREP is expected to essentially minimize potential impacts to these resources by prohibiting cultivation activities, such as plowing that could potentially harm these resources. However, ground disturbance due to conversion of land through revegetation and tree plantings and installation of structures could potentially disturb archeological sites.

Because many archeological and cultural resources have been found in floodplains where indigenous people once lived, continuation of the CREP program and expansion of the CREP area within the Illinois River Watershed would serve to further minimize any potential impacts to these resources by retiring the land from crop cultivation.

Cultural resources will be assessed on a contract-by-contract basis as part of the specific environmental evaluation.

[80] *National CREP Forum 2002 Final Report.*

4.3 Cumulative Impacts

Illinois' participation in CREP leads the nation. Building upon the success of CREP is the Illinois Rivers 2020 initiative, a $2.5 billion, 20-year Federal-state partnership to restore and enhance wildlife habitat and to retire land with erodible soils from cultivation, thus improving water quality in the Illinois River Basin.

Alternative 1, though highly successful with more than 110,000 acres enrolled into the program, substantially limits the area and the ability for larger, more contiguous areas. Alternative 2 would allow for the expansion of the program and would provide for more land eligible for enrollment into the CREP. As a result, greater opportunities exist under Alternative 2 to establish linkages between existing CREP lands and permanent easements.

Continuation of the Open Land Trust is the number one funding priority of Conservation Congress. The Open Land Trust and a $30,000 donation from three Pheasants Forever Chapters in Ford, Iroquois and Kendall Counties will preserve and restore 160 acres of grassland habitat in southwest Iroquois County. Other properties acquired include 1,662 acres at Braidwood in northeast Illinois, 147 acres along the Little Vermilion River in east-central Illinois and 16 acres of critical buffer land to Wolf Road Prairie in Cook County, considered one of the largest and highest quality black soil prairies remaining in the state.

Other programs and partnerships that contribute to the accomplishment of the goals of CREP include[81]:

- *Conservation 2000-Conservation Practices Program:* The program, administered by IDA and SWCDs, provides 60 percent of the cost of constructing eligible conservation practices that reduce soil erosion and protect water quality. Between July 2000 and September 2001, approximately 783 conservation projects, comprising 35,264 acres, were completed in the Illinois River watershed. Soil loss was reduced to "T" or tolerable levels, as well as control of gully erosion. In addition, more than 157, 000 tons of soil have been saved and will continue to be saved each year.
- *Streambank Stabilization and Restoration Program (SSRP)*: The SSRP provides monies to construct low cost, vegetative or bio-engineered techniques to stabilize eroding stream banks. In FY 2001, $386,614 was awarded to 17 grant recipients in such areas as alternative crops, nitrogen rate studies, residue management and other research to help protect the Illinois River Watershed.
- *IEPA:* Through programs, such as Section 319 of the Clean Water Act, the IEPA has been able to provide financial support to assist 16 counties in their enrollment efforts. Those 16 counties constitute 54,500 acres of the 94,300 enrolled acres (58 percent) and approximately 13,400 of the 35,300 pending acres (38 percent) yet to be enrolled in the federal side of CREP.
- *Environmental Quality Incentives Program (EQIP)*: EQIP is currently funding 15 priority areas in the Illinois River Basin to provide assistance to farmers and private landowners who are faced with serious threats to soil, water and related natural resources. EQIP has expended approximately $4.2 million for financial and educational assistance in the

[81] *2001 Annual Report, Illinois Conservation Reserve Enhancement Program (CREP),* pp. 6-10.

Illinois River Basin to treat natural resource concerns on approximately 277,000 acres working with approximately 2,593 landowners.

- *Wildlife Habitat Incentive Program (WHIP)*: WHIP provides assistance to people who want to develop and improve wildlife habitat primarily on private lands. Approximately $300,000 was spent to enhance or create wildlife habitat through this program. Approximately 25 percent of WHIP financial assistance has been put in place in the Illinois River Basin.
- *Wetlands Reserve Program (WRP)*: WRP increases wildlife habitat and improves water quality by providing increased wetland habitat, slowing overland flow and providing a natural pollution control. Approximately $3.9 million have been spent in the Illinois River Basin on wetland restoration, covering 2,700 acres and working with 17 producers.
- *Forestry Incentives Program (FIP)*: FIP provides assistance to private landowners for planting trees, improving timber stands, as well as other non-industrial private forest land practices. In the Illinois River Basin, approximately $21,000 has been spent to treat about 520 acres through 21 producers. Approximately $15,800 will be spent on timber practices in the Illinois River Basin through 2002.
- *CRP*: CRP enrollments provide additional in-place conservation practices facilitating resource management in the Illinois River Basin. A total of 34,182 acres were enrolled in other CRPs during this period.
- *Illinois Farm Bureau (IFB)*: IFB promotes CREP in *Farm Week*, the radio and through other media.
- *The Nature Conservancy (TNC)*: TNC supports CREP as an important tool in implementing restoration work in the Illinois River Watershed. TNC prepared a conservation plan for the Illinois River Watershed, which helped to guide restoration of large floodplain habitat, reduce Illinois River bluffs erosion and reduce run-off in agricultural and urban areas.
- *University of Illinois-Extension:* The university developed training materials and a program for landowners and staff to aid in implementing CREP. A partnership among the university, IDNR and IEPA was forged to collaborate on implementing CREP.

The cumulative benefits of the Illinois CREP involve the ability to conserve and enhance wildlife habitat in the Illinois River Watershed and to retire land with erodible soils from cultivation, thus improving water quality. Alternative 1, though highly successful with more than 132,000 acres enrolled into the program, substantially limits the area and the ability for larger, more contiguous areas. Alternative 2 would expand the acreage for enrollment into CREP to 232,000 acres along the mainstem of the Illinois River and its tributaries. As a result, greater opportunities would exist under Alternative 2 to develop linkages between existing CREP lands or permanent conservation easements. Economically, the program has proven to have positive benefits to landowners, tenant farmers and communities.

The potential negative effects that could occur relate to unforeseen programmatic changes that could occur in the CREP. At any time, Congress could eliminate support for the program, and reliance on the state and nonprofit organizations would shift. As the Chicago region continues to expand and population increases, developers could persuade state and local communities to minimize contributions, thus spawning land sales by farmers to developers. Such sales could

result in wider areas of fragmented habitat, incompatible development in or up to floodplains and riparian areas, and increases in sedimentation and runoff.

CHAPTER 5.0 COORDINATION AND CONSULTATION

In October 2003, the FSA State Executive Director contacted nearly 70 Federal, state and local offices, as well elected officials representing the Illinois River Basin districts, and advised them that FSA was preparing a programmatic environmental assessment on the Illinois CREP. A summary of the scoping comments is provided in Chapter 1.

Scoping letters were sent to the following individuals and agencies. Follow-up coordination was conducted with EPA, F&WS, IDNR and IEPA, as well as Forest Service and NRCS and the University of Illinois.

Name	Title	Agency
Jim Dryden	Field Manager	Bureau of Land Management
William Sullivan	Director	Environmental Council
Denis Rewerts	Capacity Officer	FAA-Chicago ADO
Edward G. Buikema	Regional Administrator	Federal Emergency Management Agency
Dean Mentjes		Federal Highway Administration
Chief	Bureau of Environmental Programs	Illinois Dept of Agriculture
Jim Hartwig	Bureau of Farmland Protection	Illinois Dept of Agriculture
Mike Rahe	Sustainable Agriculture	Illinois Dept of Agriculture
Chief	Bureau of Land and Water Resources	Illinois Dept. of Agriculture
Charles A. Hartke	Director	Illinois Dept. of Agriculture
Daniel Guthrie		Illinois Dept. of Commerce & Community Affairs
Dale Brockamp	Agricultural Engineer	Illinois Environmental Protection Agency
Renee Cipriano	Director	Illinois Environmental Protection Agency
A.G. Taylor	Agricultural Advisor	Illinois Environmental Protection Agency
Marcia T. Willhite	Bureau Chief	Illinois Environmental Protection Agency
Joel Brunsvold	Director	Illinois Dept. of Natural Resources
Jerry Jones	Director	Illinois Dept. of Natural Resources
Rick Pietruszka	Project Manager	Illinois Dept. of Natural Resources
Rich Christopher	Deputy Chief Counsel	Illinois DOT
Linda Wheeler	Director, Office of Planning and Programming	Illinois DOT
Larry Piche	Env. Section Chief	Illinois DOT, Bureau of Design & Environment
Cathy Ames		Illinois DOT, Bureau of Design & Environment

Name	Title	Agency
Terrence Schaddel	Environmental Officer	Illinois DOT, Division of Aeronautics
William C. Burke	Director	Illinois Emergency Management Agency
David L. Wirth	Director	Illinois Farm Development Authority
Anne E. Haaker	Deputy State Historic Preservation Officer	Illinois Historic Preservation Agency
David L. Thomas	Chief	Illinois Natural History Survey
William W. Shilts	Chief	Illinois State Geological Survey
Derek Winstanley	Chief	Illinois State Water Survey
Julie L. Terstriep	Governor's Appointee	Illinois Sustainable Agriculture Committee
Sandra Washington	Chief, Planning	National Park Service
John H. Paige		Northeastern Illinois Planning Commission
Rod R. Blagojevich	Governor	Office of the Governor
Norm Niedergang	Assistant Regional Administrator	Resource Management
Chris Cochrane	Acting Project Manager	South Suburban Airport Project Office
Chief	Resource Mgmt. Office	U.S. Army Corps of Engineers
District Engineer		U.S. Army Corps of Engineers
Roy Deda	Chief, Planning, Programming & Project Mgmt.	U.S. Army Corps of Engineers
Duane Gapinski	District Engineer	U.S. Army Corps of Engineers
Gary E. Johnston	District Engineer	U.S. Army Corps of Engineers
Robert A. Rowlette	District Engineer	U.S. Army Corps of Engineers
Administrator	Region 5	U.S. Environmental Protection Agency
Joyce Collins	Assistant Field Supervisor	U.S. Fish & Wildlife Service
Rick Nelson	Field Supervisor	U.S. Fish & Wildlife Service
John Rogner	Field Supervisor	U.S. Fish & Wildlife Service
Judy Biggert	13th District	U.S. House of Representatives
Lane Evans	17th District	U.S. House of Representatives
Dennis Hastert	14th District	U.S. House of Representatives
Henry Hyde	6th District	U.S. House of Representatives
Timothy V. Johnson	15th District	U.S. House of Representatives
Ray LaHood	18th District	U.S. House of Representatives
John Shimkus	19th District	U.S. House of Representatives
Jerry Weller	11th District	U.S. House of Representatives
Richard J. Durbin		U.S. Senate
Peter G. Fitzgerald		U.S. Senate
William Stewart	Associate Professor	University of Illinois

Compiled by Environmental Management Collaboration, Ltd., 2003

CHAPTER 6.0 LIST OF PREPARERS AND CONTRIBUTORS

The following individuals contributed to the preparation and review of the Illinois Conservation Reserve Enhancement Program (CREP) Programmatic Environmental Assessment.

Name	Agency/Firm	Expertise	Experience
Charles W. Foor, GIS Analyst	Office of Resource Conservation, Illinois Dept. of Natural Resources	GIS analysis, water resources	12 years
James P. Fortner, Environmental Compliance Manager	USDA-Farm Service Agency	NEPA & agency environmental compliance procedures	18 years
John W. Gehrke, Farm Loan Specialist and State Environmental Coordinator	USDA-Farm Service Agency	Farm Loan Programs; NEPA compliance	19 years
Lisa Manning-Scott, Conservation Program Specialist	USDA-Farm Service Agency	CREP acreage, program enrollments, technical assistance	31 years
Rick Mollahan, Manager	Watershed Protection and Conservation Reserve Protection Programs, Illinois Dept. of Natural Resources	CREP, wetlands, watershed planning, natural resources, GIS analysis	25 years
Kathleen Schamel, Federal Preservation Officer	USDA-Farm Service Agency	NEPA & Sec. 106 compliance; cultural resources; Historic Preservation	19 years
Eileen M. Carlton, Principal Environmental Planner	Environmental Management Collaboration, Ltd.	NEPA & regulatory compliance	25 years

REFERENCES

The following listings were sources used in the preparation of the Illinois CREP Programmatic Environmental Assessment.

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APPENDIX A
SIGNED ILLINOIS CREP CONTRACTS AND ACREAGE BY COUNTY

Appendix Table A-1: Signed Illinois CREP Agreements and Acreage by County

CREP County	Signed Agreements	Acres
Adams	4	63.9
Brown	96	2528.9
Bureau	137	2060.8
Calhoun	3	63.6
Cass	284	7060.7
Champaign	76	1028.7
Christian	196	4002.7
Dekalb	64	1000.6
Dewitt	87	1642.9
Ford	87	1636.1
Fulton	154	4927.4
Greene	129	4483.7
Grundy	70	765.1
Hancock	98	3424
Henderson	0	0
Henry	0	0
Iroquois	533	8814.7
Jersey	6	177.2
Kane/DuPage	1	8.1
Kankakee	91	1186
Kendall	9	68.5
Knox	269	7084.9
LaSalle	217	1744.5
Lee	9	84.7
Livingston	468	5994
Logan	124	3668.3
McDonough	105	3,516.10
McHenry/Lake	0	0
Mclean	239	2319.8
Macon	105	1094.7
Macoupin	59	1272.4
Marshall/Putnam	100	3442.3
Mason	68	1650.9
Menard	111	2623.6
Montgomery	3	22.9
Morgan	102	2557.8
Peoria	95	2358.5
Piatt	23	331.5
Pike	5	122.1
Sangamon	202	6426.7
Schuyler	256	9537.3
Scott	52	2274

CREP County	Signed Agreements	Acres
Shelby	18	263.2
Stark	101	784.6
Tazewell	249	4087.5
Vermilion	10	92.1
Warren	28	391.5
Will/Cook	14	107.9
Woodford	188	2056.9
TOTALS	**5,345**	**110,854.3**

Source: Final Illinois CREP Report, August 2003. USDA-Farm Service Agency. Compiled by Lisa Manning-Scott, Conservation Program Specialist, Nov. 2003.

APPENDIX B
Profile of Illinois Agriculture
1982-1997

Appendix Table B-1: Profile of Illinois Agriculture, 1982-1997

Census of Agriculture	1997	1992	1987	1982
Farms (number)	73,051	77,610	88,786	98,483
Land in Farms (acres)	27,204,780	27,250,340	28,526,664	28,726,114
Average Size of Farm (acres)	372	351	321	292
Median Size of Farm (acres)	180	n/a	n/a	n/a
Farms by Size (acres)				
1 to 9	4,254	5,026	5,931	6,101
10 to 49	12,604	12,191	12,971	15,183
50 to 69	3,639	3,449	3,880	4,439
70 to 99	5,767	5,665	6,776	7,849
100 to 139	5,365	5,739	6,505	7,342
140 to 179	4,835	5,386	6,663	7,883
180 to 219	3,548	4,097	4,928	5,638
220 to 259	2,995	3,601	4,542	5,411
260 to 499	11,688	13,629	17,250	20,674
500 to 999	11,619	12,833	14,320	13,879
1,000 to 1,999	5,414	5,115	4,407	3,606
2,000 or more	1,323	879	613	478
Approx. Land Area (acres)	35,579,705	35,579,705	35,612,601	35,612,601
Approx. Land Area, Proportion in Farm (%)	76.5	77	80	81
Mkt. Value of Ag. Prod. Sold ($1,000)*	8,556,486*	7,336,864*	6,376,801*	7,313,529*
Mkt. Value of Ag. Prod. Sold Average per Farm (Dollars*)	117,130*	94,535*	71,822*	74,262*
Operators by Prin. Occupation: arming	41,645	47,875	57,122	63,756
Land under CRP or WRP (farms)	12,119	8,547	2,918	n/a
Land under CRP or WRP (acres)	657,665	465,026	176,179	n/a

NOTE: Dollar values have NOT been adjusted to reflect changes over time.
Source: Data from 1997 Census of Agriculture and Historical Census of Agriculture, Table 1: State Summary Highlights & Table 6: Farms, Land in Farms, Value of Land and Buildings, and Land Use

APPENDIX C
Threatened and Endangered Species

Appendix Table C-1: Threatened or Endangered Species Occurring in the Entire CREP Area, 2001

Scientific Name	Common Name	State Status	Federal Status	Number of Occurrences
FAUNA				
Hemidactylium scutatum	Four-toed Salamander	ST		1
Pseudacris streckeri illinoensis	Illinois Chorus Frog	ST		23
Ammodramus henslowii	Henslow's Sparrow	SE		25
Asio flammeus	Short-eared Owl	SE		3
Bartramia longicauda	Upland Sandpiper	SE		30
Botaurus lentiginosus	American Bittern	SE		4
Buteo lineatus	Red-shouldered Hawk	ST		17
Buteo swainsoni	Swainson's Hawk	SE		5
Certhia Americana	Brown Creeper	ST		7
Chlidonias niger	Black Tern	SE		27
Circus cyaneus	Northern Harrier	SE		5
Egretta caerulea	Little Blue Heron	SE		3
Egretta thula	Snowy Egret	SE		1
Falco peregrinus	Peregrine Falcon	SE		8
Gallinula chloropus	Common Moorhen	ST		50
Grus canadensis	Sandhill Crane	ST		44
Haliaeetus leucocephalus	Bald Eagle	ST	FT, PDL	28
Ictinia mississippiensis	Mississippi Kite	SE		1
Ixobrychus exilis	Least Bittern	ST		35
Lanius ludovicianus	Loggerhead Shrike	ST		44
Nyctanassa violacea	Yellow-crowned Night Heron	SE		2
Nycticorax nycticorax	Black-crowned Night Heron	SE		30
Pandion haliaetus	Osprey	SE		1
Phalaropus tricolor	Wilson's Phalarope	SE		1
Podilymbus podiceps	Pied-billed Grebe	ST		92
Rallus elegans	King Rail	SE		10
Sterna forsteri	Forster's Tern	SE		3
Sterna hirundo	Common Tern	SE		1
Thryomanes bewickii	Bewick's Wren	SE		2
Tyto alba	Barn Owl	SE		1
Xanthocephalus xanthocephalus	Yellow-headed Blackbird	SE		69

Scientific Name	Common Name	State Status	Federal Status	Number of Occurrences
FAUNA				
Ammocrypta clarum	Western Sand Darter	SE		1
Catostomus catostomus	Longnose Sucker	ST		3
Coregonus artedi	Cisco	ST		1
Etheostoma exile	Iowa Darter	SE		25
Fundulus diaphanus	Banded Killifish	ST		9
Hybopsis amnis	Pallid Shiner	SE		2
Ichthyomyzon fossor	Northern Brook Lamprey	SE		2
Lepomis miniatus	Redspotted Sunfish	ST		3
Moxostoma carinatum	River Redhorse	ST		18
Moxostoma valenciennesi	Greater Redhorse	SE		14
Notropis anogenus	Pugnose Shiner	SE		4
Notropis chalybaeus	Ironcolor Shiner	ST		10
Notropis heterodon	Blackchin Shiner	ST		12
Notropis heterolepis	Blacknose Shiner	SE		8
Notropis texanus	Weed Shiner	SE		4
Lontra canadensis	River Otter	ST		4
Myotis grisescens	Gray Bat	SE	FE	1
Myotis sodalis	Indiana Bat	SE	FE	14
Clemmys guttata	Spotted Turtle	SE		3
Clonophis kirtlandi	Kirtland's Snake	ST		16
Crotalus horridus	Timber Rattlesnake	ST		8
Emydoidea blandingii	Blanding's Turtle	ST		28
Heterodon nasicus	Western Hognose Snake	ST		4
Kinosternon flavescens	Illinois Mud Turtle	SE		10
Sistrurus catenatus catenatus	Eastern Massasauga	SE	C	5
Caecidotea lesliei	Isopod	SE		1
Aflexia rubranura	Redveined Prairie Leafhopper	ST		7
Atrytone arogos	Arogos Skipper	SE		1
Hesperia metea	Cobweb Skipper	ST		3
Hesperia ottoe	Ottoe Skipper	ST		10
Incisalia polios	Hoary Elfin	SE		1
Lycaeides melissa samuelis	Karner Blue Butterfly	SE	LE	1
Nannothemis bella	Elfin Skimmer	ST		2

Scientific Name	Common Name	State Status	Federal Status	Number of Occurrences
FAUNA				
Papaipema eryngii	Eryngium Stem Borer	SE		5
Somatochlora hineana	Hine's Emerald Dragonfly	SE	LE	8
Speyeria idalia	Regal Fritillary	ST		16
Alasmidonta viridis	Slippershell	ST		24
Cyclonaias tuberculata	Purple Wartyback	ST		3
Ellipsaria lineolata	Butterfly	ST		1
Elliptio dilatata	Spike	ST		16
Ligumia recta	Black Sandshell	ST		6
Plethobasus cyphyus	Sheepnose	SE		4
Toxolasma lividus	Purple Lilliput	SE		1
Villosa iris	Rainbow	SE		5

Scientific Name	Common Name	State Status	Federal Status	# of Occurrences
FLORA				
Agalinis skinneriana	Pale False Foxglove	ST		12
Amelanchier interior	Shadbush	SE		6
Amelanchier sanguinea	Shadbush	SE		6
Arctostaphylos uva-ursi	Bearberry	SE		2
Arenaria patula	Slender Sandwort	ST		10
Asclepias lanuginosa	Wooly Milkweed	SE		7
Asclepias meadii	Mead's Milkweed	SE	FT	2
Asclepias ovalifolia	Oval Milkweed	SE		1
Aster furcatus	Forked Aster	ST		19
Astragalus crassicarpus var	Large Ground Plum	SE		3
Astragalus tennesseensis	Tennessee Milk Vetch	SE		2
Besseya bullii	Kittentails	ST		3
Betula alleghaniensis	Yellow Birch	SE		2
Bidens beckii	Water Marigold	SE		2
Boltonia decurrens	Decurrent False Aster	ST	FT	42
Cakile edentula	Sea Rocket	ST		11
Cardamine pratensis var	Cuckoo Flower	SE		3
Castilleja sessiliflora	Downy Yellow Painted Cup	SE		2
Ceanothus ovatus	Redroot	SE		1

Scientific Name	Common Name	State Status	Federal Status	Number of Occurrences
FAUNA				
Chamaedaphne calyculata	Leatherleaf	ST		7
Chamaesyce polygonifolia	Seaside Spurge	SE		7
Chimaphila maculata	Spotted Wintergreen	SE		1
Cimicifuga racemosa	False Bugbane	SE		2
Cirsium hillii	Hill's Thistle	ST		35
Cirsium pitcheri	Pitcher's (Dune) Thistle	ST	FT	1
Comptonia peregrina	Sweetfern	SE		5
Cornus canadensis	Bunchberry	SE		2
Corydalis aurea	Golden Corydalis	SE		1
Corydalis sempervirens	Pink Corydalis	SE		1
Dalea foliosa	Leafy Prairie Clover	SE	FE	8
Drosera intermedia	Narrow-leaved Sundew	ST		8
Drosera rotundifolia	Round-leaved Sundew	SE		7
Epilobium strictum	Downy Willow Herb	ST		9
Filipendula rubra	Queen-of-the-prairie	SE		8
Galium labradoricum	Bog Bedstraw	ST		23
Gaultheria procumbens	Wintergreen	SE		1
Geranium bicknellii	Northern Cranesbill	SE		3
Helianthus giganteus	Tall Sunflower	SE		1
Hymenoxys herbacea	Lakeside Daisy	SE	FT	2
Hypericum adpressum	Shore St. John's Wort	SE		4
Hypericum kalmianum	Kalm's St. John's Wort	SE		6
Lathyrus ochroleucus	Pale Vetchling	ST		13
Lechea intermedia	Pinweed	ST		6
Lespedeza leptostachya	Prairie Bush Clover	SE	FT	3
Lesquerella ludoviciana	Silvery Bladderpod	SE		1
Liatris scariosa var nieuwlandii	Blazing Star	ST		25
Malvastrum hispidum	False Mallow	SE		7
Microseris cuspidata	Prairie Dandelion	SE		2
Mimulus glabratus	Yellow Monkey Flower	SE		3
Oenothera perennis	Small Sundrops	ST		13
Orobanche fasciculata	Clustered Broomrape	SE		3
Orobanche ludoviciana	Broomrape	ST		5

Scientific Name	Common Name	State Status	Federal Status	Number of Occurrences
FAUNA				
Phlox pilosa ssp sangamonensis	Sangamon Phlox	SE		10
Plantago cordata	Heart-leaved Plantain	SE		4
Polanisia jamesii	James' Clammyweed	SE		1
Polygala incarnata	Pink Milkwort	SE		5
Polygonum careyi	Carey's Heartsease	SE		4
Populus balsamifera	Balsam Poplar	SE		4
Ranunculus cymbalaria	Seaside Crowfoot	SE		2
Ranunculus rhomboideus	Prairie Buttercup	ST		4
Rhamnus alnifolia	Alder Buckthorn	SE		2
Ribes hirtellum	Northern Gooseberry	SE		2
Rubus odoratus	Purple-flowering Raspberry	SE		4
Rubus pubescens	Dwarf Raspberry	ST		9
Rubus setosus	Bristly Blackberry	SE		5
Salix serissima	Autumn Willow	SE		3
Salix syrticola	Dune Willow	SE		2
Salvia azurea ssp pitcheri	Blue Sage	ST		1
Sambucus pubens	Red-berried Elder	SE		5
Sanguisorba canadensis	American Burnet	SE		3
Sarracenia purpurea	Pitcher Plant	SE		8
Shepherdia canadensis	Buffaloberry	SE		5
Solidago sciaphila	Cliff Goldenrod	ST		4
Stellaria pubera	Great Chickweed	SE		1
Stylisma pickeringii	Patterson's Bindweed	SE		4
Styrax americana	Storax	ST		2
Symphoricarpos albus var albus	Snowberry	SE		2
Tomanthera auriculata	Ear-leafed Foxglove	ST		24
Trientalis borealis	Star-flower	ST		4
Trifolium reflexum	Buffalo Clover	SE		8
Ulmus thomasii	Rock Elm	SE		2
Utricularia cornuta	Horned Bladderwort	SE		2
Utricularia minor	Small Bladderwort	SE		4
Vaccinium corymbosum	Highbush Blueberry	SE		3
Vaccinium macrocarpon	Large Cranberry	SE		8

Scientific Name	Common Name	State Status	Federal Status	Number of Occurrences
FAUNA				
Vaccinium oxycoccos	Small Cranberry	SE		2
Valeriana uliginosa	Marsh Valerian	SE		2
Valerianella chenopodifolia	Corn Salad	SE		1
Valerianella umbilicata	Corn Salad	SE		1
Veronica americana	American Brooklime	SE		4
Veronica scutellata	Marsh Speedwell	ST		17
Viburnum molle	Arrowwood	ST		5
Viola canadensis	Canada Violet	SE		1
Viola conspersa	Dog Violet	ST		17
Viola incognita	Hairy White Violet	SE		3
Viola primulifolia	Primrose Violet	SE		4
Juniperus communis	Ground Juniper	ST		8
Juniperus horizontalis	Trailing Juniper	SE		2
Larix laricina	Tamarack	ST		7
Pinus banksiana	Jack Pine	SE		1
Pinus resinosa	Red Pine	SE		1
Thuja occidentalis	Arbor Vitae	ST		19
Ammophila breviligulata	Marram Grass	SE		7
Beckmannia syzigachne	American Slough Grass	SE		5
Calla palustris	Water Arum	SE		1
Calopogon tuberosus	Grass Pink Orchid	SE		19
Camassia angusta	Wild Hyacinth	SE		1
Carex aurea	Golden Sedge	SE		10
Carex brunnescens	Brownish Sedge	SE		1
Carex canescens var disjuncta	Sedge	SE		2
Carex chordorrhiza	Cordroot Sedge	SE		2
Carex communis	Fibrous-rooted Sedge	ST		4
Carex crawfordii	Sedge	SE		2
Carex cryptolepis	Sedge	SE		4
Carex disperma	Shortleaf Sedge	SE		4
Carex echinata	Sedge	SE		1
Carex garberi	Sedge	SE		2
Carex intumescens	Swollen Sedge	ST		3

Scientific Name	Common Name	State Status	Federal Status	Number of Occurrences
FAUNA				
Carex oligosperma	Few-seeded Sedge	SE		3
Carex prasina	Drooping Sedge	ST		3
Carex trisperma	Three-seeded Sedge	SE		2
Carex tuckermani	Tuckerman's Sedge	SE		8
Carex viridula	Little Green Sedge	ST		19
Corallorhiza maculata	Spotted Coral-root Orchid	ST		6
Cyperus grayioides	Umbrella Sedge	ST		10
Cypripedium acaule	Moccasin Flower	SE		1
Cypripedium calceolus var	Small Yellow Lady's Slipper	SE		7
Cypripedium candidum	White Lady's Slipper	ST		34
Cypripedium reginae	Showy Lady's Slipper	SE		5
Echinodorus tenellus	Small Burhead	SE		3
Eleocharis olivacea	Spikerush	SE		1
Eleocharis pauciflora	Few-flowered Spikerush	SE		2
Eleocharis rostellata	Spike Rush	ST		15
Elymus trachyculus	Bearded Wheat Grass	SE		8
Eriophorum virginicum	Rusty Cotton Grass	SE		4
Erythronium mesochoreum	Prairie Trout-lily	ST		20
Fimbristylis vahlii	Vahl's Fimbristylis	SE		3
Juncus alpinus	Richardson's Rush	SE		5
Luzula acuminata	Hairy Woodrush	SE		2
Medeola virginiana	Indian Cucumber Root	SE		1
Melanthium virginicum	Bunchflower	ST		8
Milium effusum	Millet Grass	SE		1
Panicum boreale	Northern Panic Grass	SE		2
Panicum columbianum	Hemlock Panic Grass	SE		1
Platanthera ciliaris	Orange Fringed Orchid	SE		1
Platanthera clavellata	Wood Orchid	SE		4
Platanthera flava var herbiola	Tubercled Orchid	SE		15
Platanthera leucophaea	Eastern Prairie Fringed	SE	FT	30
Platanthera psycodes	Purple Fringed Orchid	SE		5
Poa alsodes	Grove Bluegrass	SE		4
Poa languida	Weak Bluegrass	SE		2

Scientific Name	Common Name	State Status	Federal Status	Number of Occurrences
FAUNA				
Poa wolfii	Wolf's Bluegrass	SE		6
Pogonia ophioglossoides	Snake-mouth	SE		7
Polygonatum pubescens	Downy Solomon's Seal	SE		8
Potamogeton gramineus	Grass-leaved Pondweed	ST		11
Potamogeton praelongus	White-stemmed Pondweed	SE		5
Potamogeton pulcher	Spotted Pondweed	SE		1
Potamogeton robbinsii	Fern Pondweed	SE		7
Potamogeton strictifolius	Stiff Pondweed	SE		1
Rhynchospora alba	Beaked Rush	ST		7
Scirpus cespitosus	Tufted Bulrush	SE		3
Scirpus hallii	Hall's Bulrush	ST		21
Scirpus hattorianus	Bulrush	SE		4
Scirpus paludosus	Alkali Bulrush	SE		5
Scirpus purshianus	Weak Bulrush	SE		2
Scirpus smithii	Smith's Bulrush	SE		1
Sisyrinchium atlanticum	Eastern Blue-eyed Grass	SE		6
Sisyrinchium montanum	Mountain Blue-eyed Grass	SE		10
Sparganium americanum	American Burreed	SE		3
Sparganium chlorocarpum	Green-fruited Burreed	SE		7
Spiranthes lucida	Yellow-lipped Ladies' Tresses	SE		2
Spiranthes romanzoffiana	Hooded Ladies' Tresses	SE		1
Tofieldia glutinosa	False Asphodel	ST		10
Tradescantia bracteata	Prairie Spiderwort	ST		4
Triglochin maritima	Common Bog Arrow Grass	ST		13
Triglochin palustris	Slender Bog Arrow Grass	ST		16
Trillium cernuum	Nodding Trillium	SE		2
Trillium erectum	Ill-scented Trillium	SE		1
Trillium viride	Green Trillium	SE		1
Veratrum woodii	False Hellebore	ST		2
Zigadenus glaucus	White Camass	SE		1
Botrychium multifidum	Northern Grape Fern	SE		1
Botrychium simplex	Dwarf Grape Fern	SE		1
Isoetes butleri	Quillwort	SE		5

Scientific Name	Common Name	State Status	Federal Status	Number of Occurrences
FAUNA				
Lycopodium clavatum	Running Pine	SE		2
Lycopodium dendroideum	Ground Pine	SE		3
Thelypteris phegopteris	Long Beech Fern	SE		1

Source: IDNR.

Appendix Table D-2: Distribution of Federally Listed Threatened, Endangered and Proposed Species in Illinois

Species	Status	Habitat	Current Distribution	Potential Habitat	Historical Records
BIRDS					
Peregrine falcon *Falco peregrinus*	Delisted 8/25/99				
Bald eagle *Haliaeetus leucocephalus*	(Proposed Delisting)	Breeding	Adams, Alexander, Bond, Calhoun, Carroll, Fayette, Fulton, Greene, Jo Daviess, Jackson, Mason, Pike, Pope, Randolph, St. Clair, Union, Winnebago, Williamson	Hancock, Jasper	
		Wintering	Adams, Alexander, Brown, Bureau, Calhoun, Carroll, *Cass, Christian, Clinton, De Witt, Fayette, Franklin, *Fulton, Greene, Grundy, Hancock, *Henderson, Jackson, Jasper, Jefferson, *Jersey, Jo Daviess, Johnson, LaSalle, Madison, Marshall, Mason, McHenry, Menard, *Mercer, Monroe, *Morgan, Moultrie, Ogle, Peoria, Pike, Pulaski, *Putnam, Randolph, *Rock Island, Sangamon, *Schuyler, Scott, Shelby, St. Clair, Tazewell, Union, Wabash, White, *Whiteside, Will Winnebago, Williamson, Woodford ***Counties with night roosts**		
Least Tern *Sterna antillarum*	E	Bare alluvial and dredged spoil islands	Alexander, Jackson, Massac, Pope (Mississippi & Ohio Rivers)	Gallatin, Hardin, Pulaski (Ohio River);Wabash, White (Wabash	

Species	Status	Habitat	Current Distribution	Potential Habitat	Historical Records
				River); Madison (Mississippi River)	
Piping Plover *Charadrius melodus*	E	Lakeshore beaches	EXTIRPATED	Cook, Lake (Lake Michigan shoreline	Cook, Gallatin, Lake, Madison, Pope
FISH					
Pallid Sturgeon *Scaphirynchus albus*	E	Large rivers	Mississippi River downstream of confluence with Missouri River	Ohio River below Dam #53	Calhoun, Hancock, Henderson
MAMMALS					
Gray bat *Myotis grisescens*	E	Caves and mines; rivers & reservoirs adjacent to forests	Alexander, Hardin, Jackson, Johnson, Madison, Pike, Pope, Pulaski	Search for bats in caves, particularly in southern and southwestern Illinois	Adams, Jersey
Indiana bat *Myotis sodalist*	E	Caves; mines (hibernacula); small stream corridors with well-developed riparian woods; upland forests (foraging)	Adams, *Alexander, Bond, Ford, *Hardin, Henderson, *Jackson, *Jersey, Johnson, *LaSalle, Madison, Macoupin, McDonough, *Monroe, Perry, Pike, *Pope, Pulaski, *Saline, Schuyler, Scott, *Union, Vermillion ***Counties with hibernacula Critical Habitat: Blackball Mine, LaSalle County**	Statewide search for bats in caves, particularly in southern and southwestern Illinois.	Cook, Christian, Jo Daviess, Madison, Morgan, Will
INVERTEBRATES					
Karner blue butterfly *Lycaeides Melissa samuelis*	E	Pine barrens and oak savannas on sandy soils and containing wild lupines (*Lupinus perennis)*, the only known food plant of the larvae	EXTIRPATED	Carroll, Iroquois, Jo Daviess, Kankakee, Lake, Lee, Ogle, Winnebago	

Species	Status	Habitat	Current Distribution	Potential Habitat	Historical Records
Hines emerald dragonfly *Somatochlora hineana*					
Illinois cave amphipod *Gammarus acherondytes*	E	Spring fed wetlands, wet meadows and marshes	Cook, Will, DuPage, (Des Plaines River drainage)		
Iowa pleistocene snail *Discus macclintocki*	E	Cave streams in Illinois sinkhole plain	Monroe, St. Clair		
REPTILES					
Eastern massauga rattlesnake *Sistrurus c. catenatus*	P	Shrub wetlands	Clinton, Cook, Fayette, Knox, Lake, Piatt, Will		
MUSSELS					
Higgins=eye pearly mussel *Lampsilis higginsi*	E	Mississippi River; Rock River to Steel Dam	Jo Daviess, Mercer, Henderson, Rock Island **Essential Habitat: Sylvan Slough at Rock Island**	Adams, Carroll, Hancock, Pike, Whiteside (Mississippi River upstream of Dam #22)	
Fanshell mussel *Cyprogenia stegaria (=C. irrorata)*	E	Wabash River	White	Gallatin	
Fat pocketbook pearlymussel *Potamilis capax*	E	Mississippi, Wabash, Little Wabash, Ohio Rivers	*Hancock, *Pike (Mississippi River); Gallatin, Lawrence, Wabash, White (Wabash & Little Wabash Rivers); Pope, Massac (Ohio River) ***Transplanted populations**		
Pink Mucket pearlymussel *Lampsilis orbiculata (=Plethobasis abrupta)*	E	Ohio River	Massac	Alexander, Gallatin, Hardin, Pope, Pulaski	
Orange-footed pearlymussel *Plethobasis cooperianus (=P. striatus)*	E	Ohio River below confluence with Cumberland River)	Pulaski	Alexander, Massac, Pope	Clark, Crawford, Lawrence, Wabash (Wabash River)
Tubercled-blossom pearlymussel *Epioblasmas torulosa torulosa*	E	Rivers	EXTIRPATED		

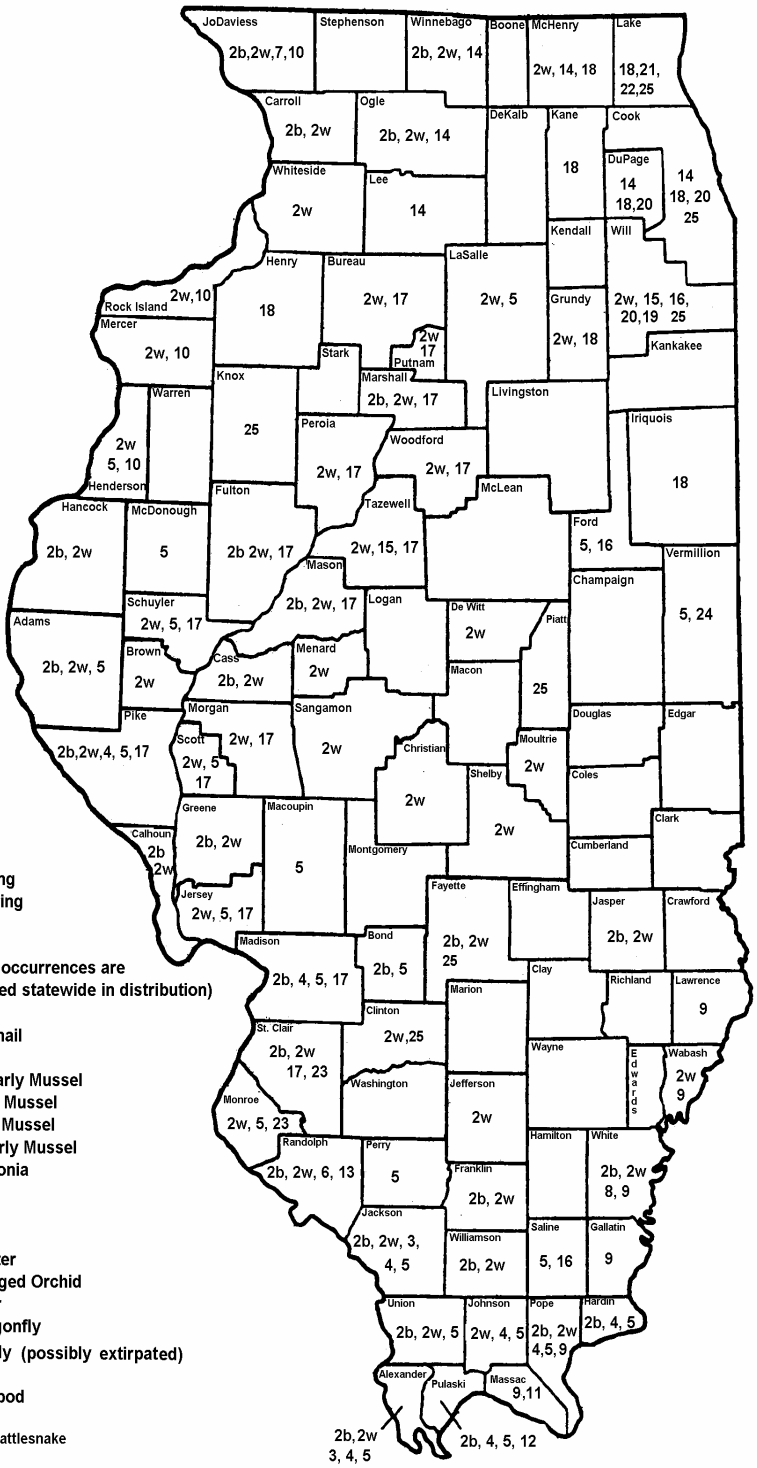
Species	Status	Habitat	Current Distribution	Potential Habitat	Historical Records
White warty-back pearlymussel *Plethobasis cicatricosus*	E	Rivers	EXTIRPATED	Clark, Gallatin, White (Wabash River)	Clark, Crawford, Lawrence, Vermillion, Wabash (Wabash River)
Clubshell *Pleurobema clava*	E	Rivers	Vermillion (N. Fork Vermillion River)		Wabash & Lower Ohio Rivers
Rough pigtoe *Pleurobema plenum*	E	Rivers	EXTIRPATED		Wabash & Lower Ohio Rivers
Ring pink *Obovaria retusa*	E	Rivers	EXTIRPATED		
PLANTS					
Prairie bush clover *Lexpedeza leptostachya*	T	Dry to mesic prairies with gravelly soil	Cook, DuPage, Lee, Ogle, McHenry, *Winnebago * introduced	Search for this species whenever prairie remnants are encountered	
Small whorled pogonia *Isotria medeoloides*	T	Dry woodlands	Randolph		St. Clair, Tazewell, Williamson
Eastern prairie fringed orchid *Platanthaera leucophaea*	T	Mesic to wet prairies	Cook, DuPage, Grundy, Henry, Iroquois, Kane, Lake, McHenry	Search for this species whenever prairie remnants are encountered	
Mead=s milkweed *Asclepias meadii*	T	Virgin prairies	*Ford, Saline, *Will * introduced	Search for this species whenever prairie remnants are encountered	
Lakeside daisy *Hymenopsis herbacea*	T	Dry rocky prairies	*Tazewell, *Will * introduced		Logan, Menard
Decurrent false aster *Boltonia decurrens*	T	Distrubed alluvial soils	Bureau, Fulton, Jersey, Madison, Marshall, Mason, Morgan, Peoria, Pike, Putnam, Schuyler, Scott, Tazewell, Woodford (Illinois River floodplain; St. Clair (Mississippi River floodplain)	Brown, Calhoun, Cass, Greene, Grundy, LaSalle, Pike (Illinois River floodplain); Alexander, Jackson, Monroe, Randolph, St. Clair	

Species	Status	Habitat	Current Distribution	Potential Habitat	Historical Records
				(Mississippi River floodplain)	
Leafy prairie clover *Dalea foliosa*	E	Prairie remnants on thin soil over limestone	Will (Des Plains River floodplain)		
Dune thistle *Cirsium pitcheri*	T	Lakeshore dunes	Lake (introduced)		Cook
Running buffalo clover *Trifolium stoloniferum*	E	Disturbed bottomland meadows	EXTIRPATED		Cook, Fulton, Hancock, Henderson, Peoria
Price=s potato bean *Apios priceana*	T	Wet floodplain forests, shrubby swamps	EXTIRPATED		Cook

Source: U.S. Fish and Wildlife Service, revised November 20, 2001.
E=Endangered; T=Threatened; P=Proposed Listing

Current Distribution of Federally-Listed Threatened and Endangered Species in Illinois

US Fish & Wildlife Service - Rock Island, Illinios



2b.Bald Eagle - breeding
2w.Bald Eagle - wintering
3. Least Tern
4. Gray Bat
5. Indiana bat (known occurrences are shown - considered statewide in distribution)
6. Pallid Sturgeon
7. Iowa Pleistocene Snail
8. Fanshell Mussel
9. Fat Pocketbook Pearly Mussel
10. Higgins' Eye Pearly Mussel
11. Pink Mucket Pearly Mussel
12. Orange-Footed Pearly Mussel
13. Small Whorled Pogonia
14. Prairie Bush Clover
15. Lakeside Daisy
16. Mead's Milkweed
17. Decurrent False Aster
18. Eastern Prairie Fringed Orchid
19. Leafy Prairie Clover
20. Hines Emerald Dragonfly
21. Karner Blue Butterfly (possibly extirpated)
22. Pitcher's Thistle
23. Illinois Cave Amphipod
24. Clubshell Mussel
25. Eastern Massasauga Rattlesnake

APPENDIX D
Wildlife Habitat Needs within the Illinois River Watershed

Appendix Table E-1: Wildlife Habitat Needs with the Illinois River Watershed

Habitat type	Species Common Name	General Habitat Needs	Specific Habitat Needs
Aquatic			
	Banded Killifish	aquatic	clear glacial lakes
	Black Sandshell	aquatic	medium to large rivers in riffles or raceways in gravel or firm sand
	Blackchin Shiner	aquatic	clear, well-vegetated glacial lakes and their connected streams
	Blacknose Shiner	aquatic	clear vegetated lakes, and pools and runs of clear streams
	Butterfly	aquatic	large rivers in sand or gravel substrates especially in bars in current
	Greater Redhorse	aquatic	sandy to rocky pools and runs of medium to large rivers and lakes
	Iowa Darter	aquatic	clear well-vegetated lakes, sloughs, and stream
	Ironcolor Shiner	aquatic	small, clear, low-gradient streams
	Lake Sturgeon	aquatic	bottoms of lakes and large rivers usually in water 4-9m deep
	Northern Brook Lamprey	aquatic	clean, clear gravel riffles and runs of small rivers
	Pallid Shiner	aquatic	pools with negligible current in medium to large rivers
	Pugnose Shiner	aquatic	clear, heavily vegetated lakes and rarely in low-gradient streams
	Purple Wartyback	aquatic	medium to large rivers in gravel or mixed sand and gravel
	Rainbow	aquatic	creeks and small to medium sized rivers
	River Redhorse	aquatic	deep, swift, gravelly riffles of small and medium sized rivers
	Sheepnose	aquatic	
	Slippershell	aquatic	small to medium sized streams
	Spike	aquatic	small to large streams and lakes in mud or gravel substrates
	Weed Shiner	aquatic	clear sand-bottom creeks
	Western Sand Darter	aquatic	sandy runs of medium to large rivers
	River Otter	forest, aquatic	from 33 counties, riparian habitat with extensive woodlands, good water quality, and the presence of suitable den sites and open water in winter
	Bald Eagle	forest, wetland, aquatic	undisturbed areas near large rivers and lakes

Habitat type	Species Common Name	General Habitat Needs	Specific Habitat Needs
	Indiana Bat	forest, wetland, aquatic, cave	winter habitat, caves and mines, summer habitat includes a variety of wooded and riparian settings
	Kirtland's Snake	forest, wetland, aquatic, prairie	wet meadows, open swamp-forests, reservoirs, and occasionally wet, vacant urban areas
	Illinois Mud Turtle	prairie, savanna, wetland, aquatic	sand areas that are interspersed with semi-permanent or permanent ponds and sloughs
	Spotted Turtle	prairie, wetland, aquatic	sedge meadows
	American Bittern	wetland, aquatic	freshwater marshes, marshy, lake shore
	Black Tern	wetland, aquatic	freshwater marshes and shallow ponds and lakes
	Blanding's Turtle	wetland, aquatic	prairie marshes, ponds, swamps, bogs, shallow slow-moving rivers, oxbows, and pools adjacent to rivers
	Common Moorhen	wetland, aquatic	freshwater marshes, canals, quiet rivers, lakes and ponds with emergent aquatic vegetation
	Elfin Skimmer	wetland, aquatic	fens, seeps and springs
	Forster's Tern	wetland, aquatic	marsh-bordered lakes
	Pied-billed Grebe	wetland, aquatic	fairly large, well vegetated lakes, ponds, sluggish streams, and marshes
	Redspotted Sunfish	wetland, aquatic	well vegetated swamps, sloughs, and bottomland lakes
	Black-crowned Night Heron	wetland, forest, aquatic	bottomland forest
Cave			
	Indiana Bat	forest, wetland, aquatic, cave	winter habitat, caves and mines, summer habitat includes a variety of wooded and
Forest			
	Bewick's Wren	forest, savanna	thickets, brushy areas, hedgerows and thickets in farming country, and open and riparian
	Eastern Massasauga	prairie, forest, wetland	wet prairies, bogs, swamps and rarely dry woodlands
	Black-crowned Night Heron	wetland, forest, aquatic	bottomland forest
	Indiana Bat	forest, wetland, aquatic, cave	winter habitat, caves and mines, summer habitat includes a variety of wooded and
	River Otter	forest, aquatic	from 33 counties, riparian habitat with extensive woodlands, good water quality, and the presence of suitable den sites and open

Habitat type	Species Common Name	General Habitat Needs	Specific Habitat Needs
	Mississippi Kite	forest, prairie	mature, mixed bottomland forest for nesting and fallow fields, mixed forest, marshes, or
	Bald Eagle	forest, wetland, aquatic	undisturbed areas near large rivers and lakes
	Timber Rattlesnake	primary, forest	forested areas with bluffs and rock outcrops, upland forests or crop fields
	Kirtland's Snake	forest, wetland, aquatic, prairie	wet meadows, open swamp-forests, reservoirs, and occasionally wet, vacant urban areas
	Brown Creeper	forest, wetland	deciduous and mixed woodlands, cypress swamps and floodplain forests
	Red-shouldered Hawk	forest, wetland	moist and riparian forests including wooded swamps
Prairie			
	Regal Fritillary	prairie	tallgrass prairies, wet meadows, and wet pastures
	Eastern Massasauga	prairie, forest, wetland	wet prairies, bogs, swamps and rarely dry woodlands
	King Rail	wetland, prairie	fresh-water marshes
	Illinois Chorus Frog	prairie, wetland	open sandy areas of river lowlands
	Leafhopper	prairie	sand dunes near the shore of lake michigan
	Eryngium Stem Borer	prairie	large prairie areas that have abundant populations of rattlesnake master
	Loggerhead Shrike	prairie, savanna	open, agricultural areas interspersed with grassland habitat
	Illinois Mud Turtle	prairie, savanna, wetland, aquatic	sand areas that are interspersed with semi-permanent or permanent ponds and
	Mississippi Kite	forest, prairie	mature, mixed bottomland forest for nesting and fallow fields, mixed forest, marshes, or
	Sandhill Crane	wetland, prairie	large undisturbed freshwater marshes and prairie ponds
	Kirtland's Snake	forest, wetland, aquatic, prairie	wet meadows, open swamp-forests, reservoirs, and occasionally wet, vacant urban areas
	Spotted Turtle	prairie, wetland, aquatic	sedge meadows
	Upland Sandpiper	prairie	prairies, pastureland and hayfields
	Henslow's Sparrow	prairie, wetland	prairie habitat, abandoned fields and hayfields with tall-dense cover
	Redveined Prairie Leafhopper	prairie	

Habitat type	Species Common Name	General Habitat Needs	Specific Habitat Needs
Savanna			
	Bewick's Wren	forest, savanna	thickets, brushy areas, hedgerows and thickets in farming country, and open and riparian
	Loggerhead Shrike	prairie, savanna	open, agricultural areas interspersed with grassland habitat
	Illinois Mud Turtle	prairie, savanna, wetland, aquatic	sand areas that are interspersed with semi-permanent or permanent ponds and sloughs
Wetlands			
	Yellow-headed Blackbird	wetland	moderately dense stand of cattails and bulrushes with interspersed open water for
	Forster's Tern	wetland, aquatic	marsh-bordered lakes
	Hine's Emerald Dragonfly	wetland	calcareous, spring-fed marshes overlaying dolomite limestone bedrock
	Eastern Massasauga	prairie, forest, wetland	wet prairies, bogs, swamps and rarely dry woodlands
	King Rail	wetland, prairie	fresh-water marshes
	Illinois Chorus Frog	prairie, wetland	open sandy areas of river lowlands
	Pied-billed Grebe	wetland, aquatic	fairly large, well vegetated lakes, ponds, sluggish streams, and marshes
	Black-crowned Night Heron	wetland, forest, aquatic	bottomland forest
	Elfin Skimmer	wetland, aquatic	fens, seeps and springs
	Indiana Bat	forest, wetland, aquatic, cave	winter habitat, caves and mines, summer habitat includes a variety of wooded and
	Redspotted Sunfish	wetland, aquatic	well vegetated swamps, sloughs, and bottomland lakes
	Illinois Mud Turtle	prairie, savanna, wetland, aquatic	sand areas that are interspersed with semi-permanent or permanent ponds and
	Least Bittern	wetland	shallow freshwater lakes and marshes
	Bald Eagle	forest, wetland, aquatic	undisturbed areas near large rivers and lakes
	Sandhill Crane	wetland, prairie	large undisturbed freshwater marshes and prairie ponds
	Common Moorhen	wetland, aquatic	freshwater marshes, canals, quiet rivers, lakes and ponds with emergent aquatic vegetation
	Blanding's Turtle	wetland, aquatic	prairie marshes, ponds, swamps, bogs, shallow slow-moving rivers, oxbows, and pools
	Kirtland's Snake	forest, wetland, aquatic, prairie	wet meadows, open swamp-forests, reservoirs, and occasionally wet, vacant urban areas

Habitat type	Species Common Name	General Habitat Needs	Specific Habitat Needs
	Spotted Turtle	prairie, wetland, aquatic	sedge meadows
	Black Tern	wetland, aquatic	freshwater marshes and shallow ponds and lakes
	Brown Creeper	forest, wetland	deciduous and mixed woodlands, cypress swamps and floodplain forests
	Red-shouldered Hawk	forest, wetland	moist and riparian forests including wooded swamps
	American Bittern	wetland, aquatic	freshwater marshes, marshy, lake shore
	Henslow's Sparrow	prairie, wetland	prairie habitat, abandoned fields and hayfields with tall-dense cover

Source: Illinois Department of Natural Resources, 2003.