

ILLINOIS

Conservation Reserve Enhancement Program

A Partnership Between the USDA and the State of Illinois



2003 Annual Report

Illinois Conservation Reserve Enhancement Program (CREP)

Reporting Period: October 1, 2002 through September 30, 2003

The Illinois Conservation Reserve Enhancement Program (CREP) is a federal-state program that was created by a Memorandum of Agreement (MOA) between the U.S. Department of Agriculture, the Commodity Credit Corporation, and the State of Illinois in March 1998. Enrollments into this program began on May 1, 1998. Since the beginning, the program has been extremely well received by the landowners in the targeted area. The MOA was re-authorized by all the parties on December 18, 2002 increasing the eligible acreage for enrollment to 232,000 acres. Since that time, the state's program has not re-opened, and, with few exceptions, only those acres on a pre-existing waiting list have been able to enroll.

Additional funding has been appropriated at the state level, and the state is now determining what additional acreage they can enroll.

CREP is being implemented through a federal-state-local partnership in the eligible area. The Agencies that are implementing the program are USDA - Farm Service Agency (FSA), USDA - Natural Resource Conservation Service (NRCS), the Illinois Department of Agriculture (IDOA), the Illinois Environmental Protection Agency

(IEPA), the Illinois Department of Natural Resources (IDNR), and the County Soil and Water Conservation Districts (SWCDs) along with the Association of Illinois Soil and Water Conservation Districts (AISWCD) in the eligible area. Other Agencies and organizations provide guidance and assistance for the program through the CREP Advisory committee, which is a subcommittee of the State Technical Committee.

Enrollment Summary:

For the reporting period of October 1, 2002 through September 30, 2003, the USDA-Farm Service Agency (FSA) approved 167 CRP contracts, enrolling 5,263.4 acres into CREP. The average rental rate for these contracts was \$151 per acre, which includes a \$118 per acre average soil rental rate plus maintenance and an average \$33 per acre incentive payment.

During the same reporting period, the State approved 11 contracts enrolling 757.74 acres into State options. A total of 750.24 acres or 99% of the acres in State Options are enrolled in permanent easements. Another 7.5 acres or 1% are in 35-year contract extensions.

The average state incentive payment per acre for these enrollments is \$552 per acre. The average cost to the State per acre is \$705.48 per acre, which includes the incentive payment, cost-share, administrative expenses, state technical assistance and legal expenses.

TECHNICAL ASSISTANCE AND PROGRAM STAFF:

Technical assistance in this program is made up of three types:

- § Assistance to the landowners during the enrollment process in determining eligibility, options, and selecting approved practices;
- § Assistance to landowners in implementing the approved CREP practice once the property is enrolled in the program; and
- § Assistance to the SWCD and landowners in the state requirements for execution of the state easement documents.

The Farm Service Agency, Natural Resource Conservation Service, Department of Natural Resources, and the County Soil and Water Conservation Districts primarily provide technical assistance.

The Department of Natural Resource has provided \$942,883.23 from its operational funds to provide technical assistance, program administrative assistance, contract and data management, reports, training, and providing GIS coverage.

Other agencies have re-allocated staff time, as well, but as the program continues to grow and expand, all agencies are struggling to meet the program demands for all types of technical assistance.

NON-FEDERAL PROGRAM EXPENDITURES:

The State obligated \$733,945.21 dollars for CREP expenditures to pay for the 11 State contracts (757.74 acres), State cost-share expenses, monitoring costs, SWCD administrative fees and other associated enrollment and easement costs. In addition, the IDNR has provided another \$208,941.02 from its operational dollars to provide for CREP Administrative Expenses, bringing the total State dollars directly expended for CREP enrollments to \$942,883.23.

**State CREP Expenses
October 1, 2002 through September 30, 2003**

State Bonus Payment for State Option	\$ 418,496.78
State Cost-Share Payments	\$ 68,811.60
Soil and Water Conservation District (SWCD) Administrative Fees	\$ 37,698.11
DNR Administrative Expenses - Contract and Data Management, Technical Assistance, Reports, Training	\$ 208,941.02
Additional Admin. Fees – Legal, Survey, filing costs	\$ 9,572.88
Monitoring	\$ 199,362.84
TOTAL	\$ 942,883.23

The total federal annual rent payment for the 167 CREP contracts (5,263.4 acres) is \$795,664.00. The total annual incentive payment is \$172,349.00. The total federal annual rent plus incentive and maintenance over the life of the 15-year contracts is \$11,842,353.00. The estimated total federal cost-share is \$682,349.00.

The Memorandum of Agreement (MOA) for the Illinois CREP, as amended on December 18, 2002, details the formula to determine the overall costs of the program and to determine if the State has fulfilled its obligation to provide 20% of the total program costs. To determine the overall costs of CREP,

the following costs are to be used: the total land retirement costs, which will include the CRP payments made by the Commodity Credit Corporation and the easement payments or the bonus payments made by Illinois; the total reimbursement for conservation practices paid by the CCC and Illinois; the total costs of the monitoring program; and the aggregate costs of technical assistance incurred by Illinois for implementing contracts and easements, and a reasonable estimate of the cost incurred by the State to develop conservation plans. Since the CRP contract payments will be annual payments, an 8 percent per annum discount rate (per the MOA)

will be used to compare the CRP payment.
 Payments with the State Bonus

**Annual CRP Payments
 Discounted at 8% for 15 Years**

Payment Year	Annual Payment	Payment Year	Annual Payment
Year 1	\$795,664	Year 9	\$408,350
Year 2	\$732,011	Year 10	\$375,682
Year 3	\$673,450	Year 11	\$345,627
Year 4	\$619,574	Year 12	\$317,977
Year 5	\$570,008	Year 13	\$292,539
Year 6	\$524,407	Year 14	\$269,136
Year 7	\$482,455	Year 15	\$247,605
Year 8	\$443,858	TOTAL 15 Years	\$7,098,343

**Total Federal and State Expenditures
 October 1, 2002 through September 30, 2003**

CRP Payments (Before Discount)	\$11,842,353	CRP Payment (Discounted 8%)	\$7,098,343
Federal Cost- Share	\$ 682,349	Federal Cost- Share	\$ 682,349
State Payments for CREP Enrollments	\$942,885.23	State Payments for CREP Enrollments	\$942,883.23
Total Program Costs	\$13,467,585.23	Total Program Costs	\$8,723,575.23

The total Federal and State costs of the CREP from October 1, 2002 through September 30, 2003 was \$13,467,585.23. The State's

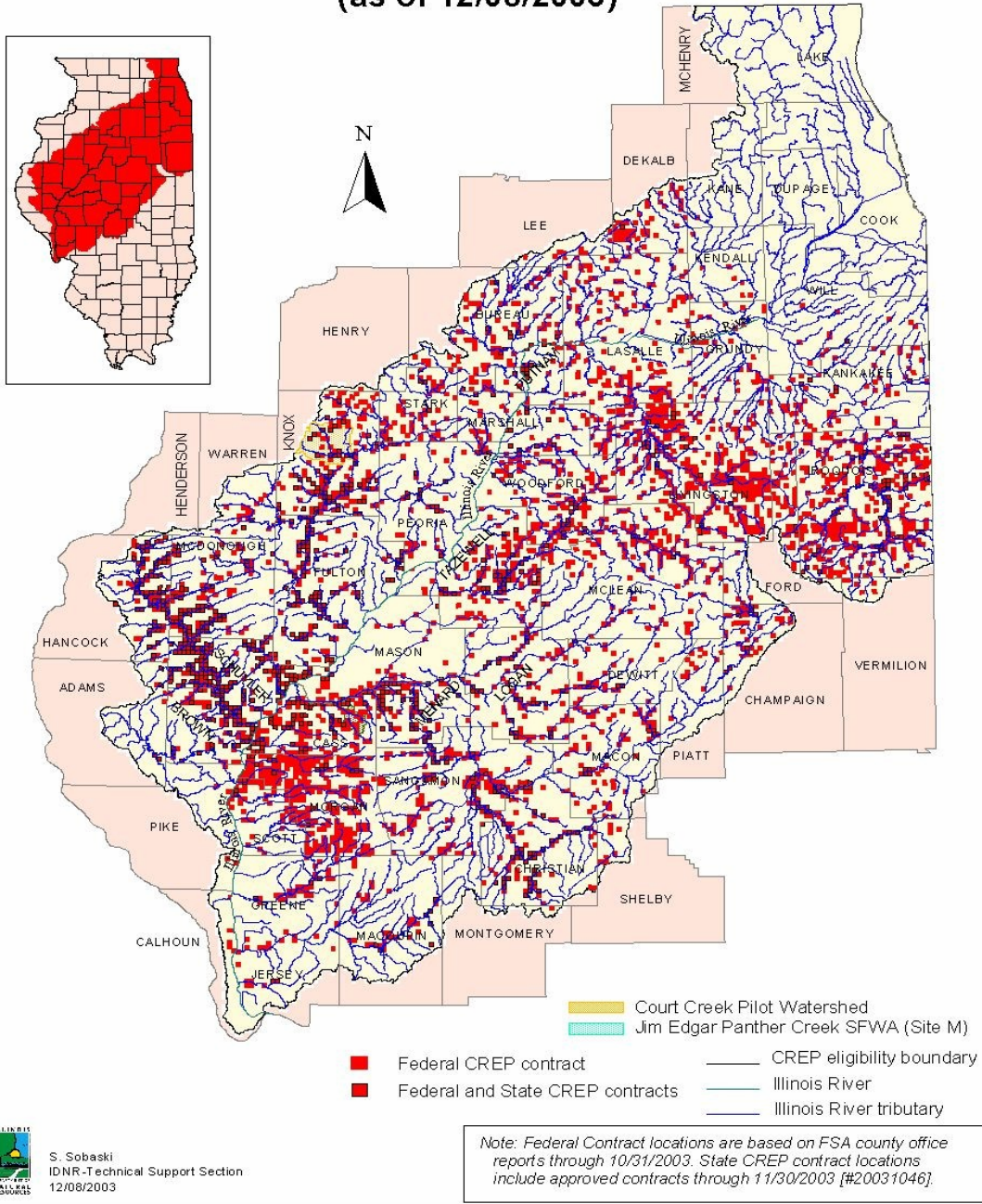
share of costs for the reporting period was \$942,883.23. Using the 8% per annum discount rate per the MOA, the Federal costs to be used

for comparison to the state expenditures are \$7,098,343.

Per the December 18, 2002 Agreement, The State must contribute 20% from the Program inception in May 1998. Total Program discounted costs for this

period are \$227,084,849. The State contributed \$46,234,052.23, or 20.36% of the total program costs after using the discount rate. The State has met the requirement for incurring 20% of the total Program costs.

Location of Approved Illinois CREP contracts from the USDA and State of Illinois - FY99 to Present (as of 12/08/2003)



S. Sobaski
IDNR - Technical Support Section
12/08/2003

PROGRAM ACTIVITIES AND ACCOMPLISHMENTS

Since the beginning of the CREP program on May 1, 1998 through the end of the current reporting period (September 30, 2003), CREP has restored and/or protected 110,854.3 acres of land either in existing native vegetation or in a previous CRP sign-up (See Map 1).

During that same time period, 66,647.26 acres were enrolled in the CREP State Options. Of these acres, 92% or 61,333.09 acres were enrolled in permanent easements;

4.9% or 3,260.17 acres were enrolled in 15-year contract extensions; and 3.1% or 2054 acres were enrolled in 35-year contract extensions.

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

Success Story News Article:

Stewards of the land and friends of the river **Beardstown family honored for work in enhancing wetlands**

November 16, 2003

By Jessica L. Aberle of the Journal Star as viewed on <http://www.pjstar.com/news/topnews/bla88ftp017.html>
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BEARDSTOWN - With erosion, silt and flooding problems plaguing the Sangamon and Illinois rivers and their watersheds, one central Illinois farm family is working hard to do its part.

‘We try to be good stewards of the land,’ said 49-year-old John Hardwick.

Hardwick, along with his brothers Mike and Bob Jr., sister Suzie and their mother, Mary Ann, owns more than 4,000 acres of farmland in Cass and Schuyler counties. Much of the ground is near the rivers, and a lot of it is right in the flood plain, said 51-year-old Bob Hardwick, who also serves as a Cass County judge. So when the Illinois Conservation Reserve Enhancement Program became available, the Beardstown family decided to enroll about 400 acres total. The largest conservation program project is a 150-acre parcel along the Sangamon River about seven miles northeast of Beardstown near Mound Lake.

“If something like this would’ve happened 60 years ago, we wouldn’t have the problems like we have now in Beardstown with the silting in of the marina,” Bob Hardwick said of the cooperative effort between landowners and state, local and federal agencies offered through the conservation program.

While all the family members own the land once farmed by the family patriarch, who died in 1989, Mike and John Hardwick now handle all the farming.

Our dad would’ve really got a kick out of this whole project, Bob Hardwick said. “He was a character of the first order. He would’ve had a good time with this. He loved it down here.”

Bob Hardwick Sr. likely would have been very proud of his family for all its conservation work. His father started buying the farmland and instilled in his family a true love of the outdoors, according to Bob Jr.

That history made the receipt of the Illinois Wildlife Landowners of the Year award from the Illinois Department of Natural Resources that much more significant for the Hardwick family.

The family first began working with the natural resources department in 1997 and soon became interested in the wetlands enhancement potential that existed on a number of their properties. Specifically, the area along the Sangamon River opposite the Sanganois Conservation Area has become a source of great pride and enjoyment for the family.

“This farm has been totally overhauled through efforts from IDNR, Cass County Natural Resources Conservation Service, Soil and Water Conservation District, Duck Unlimited and the U. S. Fish and Wildlife Service,” said IDNR district wildlife biologist Mike Chandler, who nominated the Hardwicks for the award. “The wetlands that have been created and enhanced become the temporary home for thousands of ducks and geese, and it is not unusual to see anywhere from two to more than two dozen swans in the area.”

John Hardwick said none of the work would have been possible if not for the help of some great family employees.

Mike Hardwick, 46 said enrolling in the program was questionable at first. The family and government shared the cost of the improvements, but the project involved a lot of physical work. In the end, it turned out to be worth it.

“We enhanced it, and it turned into a really nice area,” Mike Hardwick said. “I’m down there about five days a week. I built a cabin down there.”

While the area is managed for waterfowl and wetland creatures, deer, wild turkey and doves can be spotted on any given day.

Development of the site is a continual process, said Bob Hardwick, who can point out some of the failed ideas. Ponds, waterways, control structures, dry dams and many more successes over the past 15 years, however, have resulted in a haven for wildlife.

“The CREP program is the biggest program we’ve been involved in,” Bob Hardwick said.

Landowners who take environmentally sensitive land out of agricultural production in the Illinois River watershed receive financial incentives, cost-share incentives and technical assistance for establishing long-term, resource-conserving covers.

Since enrolling in the program in 1998, what was once farmland now features marsh, moist soil plants, and waterfowl nesting areas and feeding areas.

The development was intentionally planned with different levels of the ground becoming visible when water on the site reaches different depths in different seasons. As the water rises and falls, with the help of control structures, new plants emerge, and if viewed from above, the terraced growth takes on the shape of two starfish and what appears to be a turtle.

The Hardwicks know their project alone is not going to change the course of the river’s decline. But several other area farmers with adjoining property also have gotten involved.

And they would encourage anyone with property along the rivers to do the same. The IDNR award focused on wildlife management, but the project ultimately aids in the health of the river.

“The whole purpose of CREP, as part of the Illinois River Initiative, is to stop the silt and erosion into the river, Bob Hardwick said.

“And the river definitely needs cleaned up.”

Due to overwhelming enrollment, a waiting list had to be created in October 2001 as demand exceeded available money for the conservation program.

OTHER PROGRAMS AND PARTNERSHIPS

There are other state, federal and organizational programs that are contributing to the accomplishment of the goals of the Illinois CREP. The following highlights some of the programs that contributed to achieving the goals the State has set

for the Illinois River Basin. Any state or non-federal dollars that have been expended in these programs have not been included in the previous section that describe and list the direct state expenditures for CREP match.

STATE SUPPORTING AGENCIES

ILLINOIS DEPARTMENT OF NATURAL RESOURCES - THE CONSERVATION 2000 ECOSYSTEMS PROGRAM

The Conservation 2000 Ecosystems Program currently has 20 Ecosystems Partnerships in the CREP area, which consist of Big Rivers, Chicago Wilderness, DuPage River Coalition, Fox River, Headwaters, Heart of the Sangamon, Illinois River Bluffs, Kankakee River, Lake Calumet, LaMoine River, Lower Des Plaines, Lower Sangamon Valley, Mackinaw River, North Branch of the Chicago River, Prairie Parklands, Spoon River, Thorn Creek, Upper Des Plaines, Upper Salt Creek, and Vermilion Watershed Task Force. Since 1996, these partnerships have been awarded of over \$10,000,000 for projects providing a variety of benefits to the watersheds. Over \$7,400,000 has been granted for habitat restoration and land acquisition projects, which significantly contribute to the accomplishment of the goals of CREP.

The Ecosystems Program's Strategic Sub-watershed Identification Process (SSIP) will soon be benefiting partnerships in the CREP area. The goal of SSIP is to focus protection and restoration efforts in strategic sub-watersheds to provide the maximum benefit, given a limited conservation budget. Staff has met with the Illinois Departments of Agriculture and Environmental Protection Agency, Army Corps of Engineers, and the U.S. Fish & Wildlife Service who support the initiative and are enthusiastic about working with us. Currently, Illinois River Bluffs, Upper Des Plaines, and DuPage River Coalition Ecosystem Partnerships are going through the SSIP process. As these are completed, staff will be applying SSIP to

additional CREP area partnerships.

Further C2000 grants in the CREP area partnerships include support and vision grants. Support grants are available to partnerships to assist them in functioning effectively. Vision grants provide funds for vision plans used to guide future ecosystem planning and project implementation activities throughout the partnership. The LaMoine Ecosystem Partnership has been awarded a grant to create a vision plan and is currently working on the plan. In the future, other CREP area partnerships may also receive a vision grant.

ILLINOIS DEPARTMENT OF AGRICULTURE

Through September 30, 2003, with state funds appropriated in FY 03, \$1,173,516 has been spent on upland soil and water conservation practices in the 53 counties that comprise the Illinois River watershed, through the Conservation 2000 - Conservation Practices Program. An additional \$634,366 is earmarked for conservation practices now under construction. The program, administered by the Department and county soil and water conservation districts (SWCD), provides 60% of the cost of constructing eligible conservation practices that reduce soil erosion and protect water quality. Eligible

conservation practices include such practices as terraces, grassed waterways, water and sediment control basins and grade stabilization structures. From July 2002 through September 2003 approximately 1534 individual conservation projects were completed in the Illinois River watershed. This resulted in 43,040 acres being benefited by the program.

Soil loss was reduced to T or tolerable levels, as well as control of gully erosion, on this land. In addition, over 134,432 tons of soil has been saved and will continue to be saved each year.

In FY 2004, the State of Illinois, through the Department of Agriculture, provided nearly \$3.2 million to the 51 county SWCDs in the Illinois River watershed. Funds are used to provide financial support for SWCD offices, programs and employees salaries. Employees in turn, provide technical and educational assistance to both urban and rural residents of the Illinois River watershed. Their efforts are instrumental in delivering programs that reduce soil erosion and sedimentation, and protect water quality.

In an effort to stabilize and restore severely eroding streambanks that would otherwise contribute sediment to the Illinois River and its tributaries, the Department is administering the Streambank Stabilization and Restoration Program (SSRP). The SSRP, funded under Conservation 2000, provides monies to construct low cost, vegetative or bio-engineered

techniques to stabilize eroding streambanks. In FY 2003, 36 individual streambank stabilization projects, totaling \$397,230, were constructed in 23 counties within the Illinois River watershed. In all, 19,755 linear feet of streambank, or nearly 3.75 miles, have been stabilized thereby protecting adjacent water bodies.

The Department's Sustainable Agriculture Program provides research and educational grants to help protect our natural resources and improve the economic viability of farmers and rural communities. Improving water quality has been and continues to be an important aspect of the program. Grants are available to individuals, nonprofit organizations, agencies and Universities to conduct on-farm research and demonstrations, outreach and education, and University research trials. In FY 2003, \$475,734 was awarded to 24 recipients within the Illinois River Watershed. Projects addressed such topics as alternative crops such as Kenaf, stream buffers, composting livestock waste, soil quality/health, organic production, and youth education. The research and education efforts will help to protect the Illinois River Watershed and the citizens who make a living from agriculture within its boundaries.

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

The Illinois Environmental Protection Agency (IEPA) continues

to support the Conservation Reserve Enhancement Program (CREP) and participates on the State CREP Advisory Committee. In FY 2003, IEPA continued to provide financial assistance to 24 Soil and Water Conservation Districts (SWCD) to help them maintain staff to assist with CREP enrollment efforts.

The benefits derived through this financial support is not only efficiency in the sign-up process to increase CREP enrollment, but it also allows the existing SWCD and NRCS staff to continue to implement the other conservation programs so desperately needed to improve water quality in the Illinois River watershed.

The CREP complements the IEPA's Nonpoint Source Pollution Control

program and is a positive step to help the state to meet water quality goals throughout the Illinois River Watershed. The program and partnerships created and reinforced through the implementation of CREP have been influential to help additional programs and partnerships merge programs that have parallel but different goals. Illinois has seen additional benefits in the areas of environmental education, water quality and habitat improvements.

IEPA continues to believe that this type of success demonstrates the need to provide assistance not only in counties with high landowner interest, but also in counties needing enhanced marketing of the program to improve sign-up.

FEDERAL PROGRAMS CONTRIBUTING TO THE GOALS FOR THE ILLINOIS RIVER BASIN

NATURAL RESOURCES CONSERVATION SERVICE

The EQIP program works to provide technical, financial, and educational assistance to farmers and private landowners who are faced with serious threats to soil, water and related natural Resources. Currently, the EQIP program has spent approximately \$7.9 million for financial and educational assistance in the Illinois River Basin to treat Natural Resource concerns on approximately 312,430 acres working with approximately 2,892 landowners.

The Wildlife Habitat Incentive Program (WHIP) provides assistance to people who want to develop and improve wildlife habitat primarily on private lands. Statewide the program has worked with approximately 510 producers to improve wildlife habitat on approximately 13,723 acres. Approximately, \$877,000 was spent to enhance or create wildlife habitat through this program. Approximately 25% of the WHIP financial assistance has been put in place in the Illinois River Basin.

The Wetland Reserve Program (WRP) increases wildlife habitat and improves water quality by providing increased wetland habitat, slowing overland flow and providing a natural pollution control. To date, approximately \$4.2 million have been spent in the Illinois River Basin on Wetland Restoration, covering 3969 acres and working with 22 producers.

The Forestry Incentives Program (FIP) provides an avenue of 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 have been spent to treat approximately 520 acres and working with 21 producers.

Approximately \$15,800 will be spent on timber practices in the Illinois River Basin.

CRP enrollments beyond the CREP Program enrollments provide additional in-place conservation practices facilitating resource management in the Illinois River Basin.

FISH AND WILDLIFE

The U.S. Fish and Wildlife Service (Service) supports and promotes the Illinois River CREP because of the system-wide habitat restoration, enhancement, and protection provided by this voluntary, incentive based partnership with private landowners. CREP is also important from the

Service perspective because of the significant scale and quality of benefits that accrue to Federal trust lands and trust species. Since the inception of the Illinois River CREP in 1998, the Service, its Partners for Fish and Wildlife (Partners) program, has participated directly as a member of the CREP advisory committee, provided technical assistance on individual site restoration and enhancement planning with local CREP partners, and referred landowners with suitable eligible properties to CREP for evaluation and inclusion in the program.

The Partners for Fish and Wildlife program is a source of technical and financial assistance for landowners wanting to restore, enhance, and preserve natural habitats. In the Illinois CREP area, Partners fills a niche working with landowners and lands that do not meet CREP eligibility and other requirements, or other landowner assistance programs. These Partners projects add value both to individual CREP projects and other multi-faceted restoration activities on the Illinois River. In 2003, Partners completed 10 projects that restored and enhanced 1889 acres of wetland in the Illinois River watershed.

NON-GOVERNMENTAL PARTICIPANTS

ILLINOIS FARM BUREAU

Illinois Farm Bureau (IFB) continues to publicize and promote the Conservation Reserve Enhancement Program (CREP). In 2003, articles in FarmWeek provided information about aspects of the program and details about the number of contracts and the total acres involved in the program. Information was also distributed regarding changes in eligibility and expanded areas of CREP. IFB also used our statewide radio network to highlight aspects of the program.

Information on CREP was sent directly to county Farm Bureaus[®] (CFB) via e-mail and through our CFB mail system. An Illinois Farm Bureau statewide workshop on voluntary programs for farmers included information about CREP and other conservation programs through various agencies.

Illinois Farm Bureau also continues to serve on the CREP Advisory Committee and provide input into the Program.

THE NATURE CONSERVANCY

The Nature Conservancy supports the Illinois Conservation Reserve Enhancement Program and sees it as an important tool in implementing restoration work in the Illinois River watershed. The Conservancy promotes the program

in the areas where it works. The Nature Conservancy has established a watershed program that is looking at agriculture issues and promoting conservation practices on agricultural lands around the state. CREP is critical to meeting the goals of the Conservancy in the Illinois River watershed.

Other accomplishments: The Illinois River and its watershed is a high priority for The Nature Conservancy. In 1997, the Conservancy worked with scientists, biologists and other experts to write a conservation plan for the Illinois River watershed, which helps guide the work of the Conservancy. Some of the strategies identified in the plan include restoration of large floodplain habitat, reduce Illinois River bluffs erosion, and work in agricultural and urban areas to reduce run off. In the capital campaign just completed for the Illinois chapter, The Nature Conservancy has raised \$13 million for work in the Illinois River watershed.

UNIVERSITY OF ILLINOIS EXTENSION

In 2001, Extension, IDNR and the Illinois Environmental Protection Agency forged a new relationship. With 3 years of funding provided by the three parties and support from members of the CREP Advisory Committee, two new Extension Educators are now in the field and developing a comprehensive information program for landowners and a consistent set of training materials for staff from all the agencies and organizations responsible for implementing CREP.

During the second half of the 3-year agreement, the two Educators will focus their efforts on watershed problems and the development of an education program for identifying and implementing economically sound, resource-enhancing solutions. Three years of progress will hopefully set the stage for an even stronger partnership and commitment to continue the work.

RECOMMENDATIONS AND FUTURE PLANS

Many counties that were last added to the eligible area did not have much time to enroll landowners before the federal and state program freeze went into effect. Once adequate state appropriations are in place and available for obligation, we look towards the following:

FUTURE PLANS

1. Continue to pursue long-term additional staff to assist all SWCDs in the administration of the CREP Program at the County level. Efforts to work with IEPA and other supporters need to continue and expand.
2. Through contractual assistance with the University of Illinois Extension, maintain the web site for the Illinois CREP Program that will assist SWCDs and landowners with information on the program.
3. Hold training and workshops, as needed, for all field staff as a means

of updating staff on issues, and refinement of the enrollment process.

4. Refinement and implementation of the State's CREP site monitoring procedures is completed and in place for use by SWCDs. Continued refinement of monitoring forms and procedures will occur. Periodic site visits to the SWCD's will occur as a QA/QC method.

OTHER RECOMMENDATIONS

- Additional funding should continue to be sought for dedicated full-time staff to provide technical assistance to landowners in the following Agencies: NRCS, DNR, and SWCDs.
- Once the CREP Program is re-opened in Illinois, the marketing tool for absentee landowners should be developed.

MONITORING

Hydrology, Sediment and Nutrient Monitoring

Laura Keefer and Mike DeMissie
*Illinois State Water Survey,
 Watershed Science Section*

Background

In August 1999, the Illinois State Water Survey began monitoring five small watersheds in the Illinois River basin in support of the Illinois River Conservation Reserve Enhancement Program. Three of the watersheds are located in the Spoon River watershed, while two are located within the Sangamon River watershed. The monitoring program includes streamflow, sediment, and nutrient. A detailed description of the monitoring program and data collection procedures are discussed in the progress report prepared in 2001 and in the Quality Assurance Project Plan prepared in 2000. The following is a brief summary of the progress made in data collection, analyses, and interpretation of the results.

Monitored Data

Streamflow. The five monitoring stations were equipped to continuously monitor stream stage. Over 670 discharge measurements were made at the five monitoring stations to develop rating curves

used to convert stream stage data into streamflow. The rating curves were then used to generate the streamflow values for determining sediment and nutrient discharges at the monitoring stations. These daily streamflow data are now available for each monitoring station.

Sediment. A total of 5,320 suspended sediment samples have been collected and analyzed for the project. Of this total, 3,303 suspended sediment samples were collected at the three monitoring stations in the Spoon River watershed and 2,018 samples are from the two monitoring stations within the Sangamon River watershed. Additionally, 23 cross-sectional samples have been collected and analyzed to characterize the particle size

distribution of the suspended sediment. The suspended sediment concentration data in conjunction with streamflow are used to calculate the sediment discharges at each station. Maximum suspended sediment concentrations range from 10,488 to 23,969 ppm for the Sangamon River stations and from 9,818 to 12,522 ppm for the Spoon River stations. These high concentrations illustrate the importance of storm event monitoring for small watersheds.

Nutrient. From the five monitoring stations, a total of 1,680 samples was analyzed to determine nutrient

Similar data, as collected for this project, do not exist for other small watersheds in Illinois. These data, in conjunction with data collected for larger watersheds by the IEPA, USGS, and USACOE, will be used to develop an improved sediment and nutrient budget for the Illinois River basin.

concentrations. From this total, 1,238 samples were analyzed for NO₃-N, P-ortho, and NH₄-N, while 442 were analyzed for NO₂-N, P, TKN, and dissolved P. The nutrient concentration data have been used to calculate the nutrient loads at each of the monitoring stations. For these stations, nutrient concentrations were generally higher for Sangamon River basin watersheds compared to the Spoon River watersheds. For example, the maximum NO₃-N concentrations in the Sangamon River watersheds ranged from 13.9 to 18.1 ppm, while they ranged from 8.3 to 10.8 ppm in the Spoon River watersheds.

Data Analyses and Interpretation

The data collected will be used to develop improved and more reliable estimates of sediment and nutrient inflows into the Illinois River from tributary streams. Similar data, as collected for this project, do not exist for other small watersheds in Illinois. These data, in conjunction with data collected for larger watersheds by the IEPA, USGS, and USACOE, will be used to develop an improved sediment and nutrient budget for the Illinois River basin. In addition, the data are being used to calibrate watershed models necessary for evaluating the impacts of land use changes on sediment and nutrient transport.

Evaluation of CREP Wetland Habitat Quality for Wildlife

Don Phillips

Illinois Natural History Survey

(INHS) Center for Wildlife Ecology

Approach

A habitat-based approach, utilizing information on the quality of the plant community was used to indirectly measure wildlife usage of CREP sites. Sites were visited to gather data on plant communities, and site characteristics, and to evaluate wetland function. A floristic quality index (FQI) based on the methods used by the wetlands group at INHS, and a hydrophyte FQI from Taylor University, IN were determined for each site. The FQI's provided information on the quality of native and wetland plants, wetland function, and allowed a comparison to the Illinois standard.

Based on the site visits detailed information on major plant communities and land formations were used to digitize coverage data using Digital Orthophotographic Quadrangles as a base. These maps were compared to Illinois GAP data to estimate the CREP habitat created for various species including threatened and endangered species.

Monitored Data

Habitat

Ninety-two CREP wetland sites ranging from 1.7 to 120 acres (ave. 28.4) were sampled totaling 2397 acres. Grasslands and mixed prairie were the largest fraction, totaling 1976 acres. There were 221 acres of natural regeneration scrub trees, including silver maple and cottonwoods. Planted seedling trees

comprised 184 acres, and aggressive weeds including giant ragweed, reed canary grass, common reed, and horseweed made up 174 acres of sampled CREP land.

The FQI ratings were low for all sites; the overall index averaged of 22.76 and ranged from 13.27 to 31.77. The hydrophyte index averaged 20.01 and varied from a low of 18.51 to 20.99. Although it was expected that the FQI values would increase with time, the CREP sites did not show a significant increase. Sites contracted five years or longer showed a slight decrease in both FQI's. Aggressive weeds and farm weeds tended to dominate sites for the first one to two years after they were contracted. Seeded and native plants began to increase in relative abundance during the second and third years and contributed to higher FQI's for sites not overtaken by giant ragweed or *Phalaris*.

The CREP wildlife suitability-scoring matrix rates sites according to hydrology, soils, vegetational composition, buffer area, site characteristics, and wildlife. This index rated sites as functioning for wildlife use but at a lower quality than expected.

Wildlife

Analysis using the Illinois GAP database showed that sample sites created potential habitat for many native resident and migratory wildlife species. The potential suitable habitat created for endangered and threatened species

included 18 acres for bobcat to over 2500 acres for Northern Harrier. For the American Bittern and Bald Eagle 160 acres of potential habitat were created and approximately 20 acres could be considered as suitable for the Black-crowned Night-Heron and Least Bittern. Migratory waterfowl could benefit from the CREP sites studied, with approximately 100 acres of suitable habitat developed for Canvasback, and almost 1000 acres for the American Wigeon and Canada Goose. Species that inhabit open grasslands and shrubby areas like the Bobolink and Dickcissel gained 1976.41 acres and the Clay-colored Sparrow gained 2381.43 acres of potential habitat.

CREP has created critical habitat for many of Illinois' wildlife species, including those that are threatened and endangered. Future studies plan to test the effectiveness of the CREP program, reliability of this assessment method, and GAP database use. Surveys were not conducted to measure vertebrate species usage, although many species were noted during vegetational surveys.

Stream Physical Habitat and Biota

Hope Dodd and Dave Wahl
*Illinois Natural History Survey,
Center for Aquatic Ecology*

Background

Physical habitat, benthic macroinvertebrates, and fish

assemblages were monitored in the Court Creek watershed to document the effects of Best Management Practices (BMPs) on stream ecosystems. In the Spoon River basin two sites were monitored in each of the Court Creek and Haw Creek watersheds with the emphasis to examine effects of BMPs at the sub-watershed and watershed scale. Both watersheds were sampled from 1998 to 2003 for physical habitat (e.g., substrate, riparian habitat), fish, and macroinvertebrates. Implementation of practices began in Court Creek in fall of 1999 and spring 2000. We collected data during both the pre-BMP phase (1998-2000) and the implementation phase (2001-2003) in Court and Haw Creeks.

Monitored Data

Physical Habitat

Physical habitat data were collected at both the site-scale and transect – scale. Site-scale parameters consisted of habitat characteristics that change very little over the reach of stream within the sampling period (e.g. temperature, discharge, etc.) and, thus, were collected at one location in the site. Transect-scale variables were those attributes expected to vary considerably within a site (e.g. substrate, channel width, etc.) and were measured along 10 transects within the site. Data analysis of pre-BMP site-scale and transect-scale habitat characteristics has been completed for 1998-2000 and data for the implementation phase for 2001-2002 has been analyzed, with data analysis

underway for 2003.

Fish

Fish were collected at each habitat site in late summer or early autumn of 1998-2003. Fish community data has been analyzed for 1998-2002, and samples collected in 2003 are currently being processed. Species richness, abundance, percent composition, and Index of Biotic Integrity scores are being used to assess the responses of fish assemblages to BMPs. From 1998-2003, boney structures (i.e. scales, fin rays, otoliths of selected fish species were collected) to evaluate age structure and growth rates. Determining fish growth rates is ongoing and growth data from largemouth bass, bluegill, green sunfish, and longear sunfish from 1998-2001 have been analyzed. Growth rates and age structure of white sucker, yellow bullhead, and creek chub is currently being analyzed and assessed.

Benthic Macroinvertebrates

Benthic macroinvertebrates samples were collected in autumn of 1998 and spring, summer, and autumn of 1999-2002 to evaluate pre-BMP community structure (1998-2000) as well as changes in the community during the implementation phase (2001-2002). A stratified random sampling design was used in which riffle, run, and glide/pool habitats were sampled in proportion to their occurrence at the sites. Most macroinvertebrates were identified to the family taxonomic level with the more sensitive families

(Ephemeroptera, Plecoptera, Trichoptera; EPT taxa) identified to genus. Processing of samples from 2000 - 2002 is ongoing, but baseline data for sites in 1998 – 1999 and summer of 2000 have been analyzed. Taxa richness, density, percent composition, and biotic indices (Family Biotic Index; Percent Ephemeroptera, Plecoptera, and Trichoptera), are used to assess responses of invertebrates to Best Management Practices.

Monitoring individual BMPs in the Court Creek watershed began in 2000, using the same sampling protocols used to assess effects of BMPs at the watershed scale. This sampling focused on two pool and riffle sites on North Creek (a tributary to Court Creek).

Conservation Mapping within the Illinois River basin

Steve Sobaski, Illinois Department of Natural Resources, Technical Support Section

Tracking Illinois CREP Enrollments

Efforts have continued, during the 2003 reporting period for Illinois CREP, to document the location and nature of active enrollments in CREP as well as that of other active USDA conservation easements (i.e., CRP, EQIP, WRP) throughout the Illinois River basin using three information systems managed by the Illinois

Department of Natural Resources (IDNR). The oldest of these systems is the GIS/PC-based **CREP Enrollment Database**, which documents the *general* location of all Illinois CREP contracts (USDA and State) based on the Illinois Public Land Survey System section location(s) of practices implemented under those enrollments. Since its inception in 1999, the CREP Enrollment Database has been regularly updated with new enrollment data gathered from monthly CREP enrollment reports submitted by Illinois' FSA county service center offices and provided to IDNR by the Illinois State FSA office. The system also incorporates data from IDNR's tabular State CREP contract database.

During 2003, 255 new contracts were added to the CREP Enrollment Database and 34 culled out due to cancellations from the program. A total of 5,280 CREP enrollments (4,301 USDA and 979 State) encompassing 150,442 acres (USDA and State contract additional acreage combined) are now documented in this database (Figure 1). Efforts will continue during 2004 to maintain the currency of this database by adding any new USDA or State CREP enrollment, eliminating cancelled enrollments, and continuing further follow-ups with the FSA State and county offices to resolve any potential under-reporting of CREP contracts in the database (checked relative to FSA county contract totals posted monthly to the Internet by the Farm Service Agency).

The CREP Enrollment Database continues to serve an important role for agencies involved in supporting the Illinois CREP, by offering the means to visualize and report on the extent of the program's success in the Illinois River basin through products such as status maps and tabular summaries. It also continues to be a good source of general conservation easement location data for simulation models, watershed planning, and other analyses relevant to the Illinois River basin and CREP assessment work.

Development Status of the Illinois Conservation Practices Tracking System (ICPTS)

While the CREP Enrollment Database has been developed to serve as a comprehensive source of information on the general location of all Illinois CREP enrollments, it can only provide a limited glimpse into how the entire Illinois River basin is changing through the many conservation programs currently offered by government agencies and non-governmental organizations within Illinois. In order to address the need for a more comprehensive and detailed picture of how conservation programs may be impacting the water quality, habitat, and fish and wildlife within the basin, the **Illinois Conservation Practices Tracking System (ICPTS)** was designed in 2000 (see Illinois CREP Annual Reports 2000 and 2001 for a detailed description of the system) and a project to populate the database for all counties within the

Illinois River basin initiated. ICPTS is a PC-based spatial and relational database, designed to track the precise location, nature, and duration of all active conservation practices implemented within the Illinois River basin. Beginning in 2000, the Illinois Department of Natural Resources and University of Illinois Extension have collaborated on an initiative to develop the content of ICPTS in cooperation with the Illinois State and County FSA offices and Illinois Soil and Water Conservation District, with funding from the IDNR State CREP program and the USDA Farm Service Agency. Over this period, FSA county service center offices and Illinois Soil and Water Conservation District offices in Middle Illinois River basin have been visited by U of I Extension GIS technicians. Those technicians have reviewed all active conservation contract files held by the FSA County Service Center offices and digitized the footprint of each conservation practice implemented through CREP (USDA and State of Illinois), the Conservation Reserve Program (CRP), Environmental Quality Incentives Program (EQIP), Wetland Reserve Program (WRP), and Wildlife Habitat Incentives Program (WHIP), as well as State CREP contracts managed by county ILSWCD offices.

Summary of University of Illinois Extension Digitizing Work

Over the current reporting year, the Illinois Conservation Practices Tracking System significantly grew in geographic scope. Work has also

begun to revise the system's design to improve its compatibility with FSA's statewide ArcView GIS implementation and county Common Land Unit data layer development projects. The FSA-funded, IDNR/University of Illinois Extension project "The Illinois Conservation Practices Tracking System: Improving Compatibility and Assessment Capabilities" under Dr. Gary Schnitkey and managed by its one full-time research technician, Steve Niemann, extended the ICPTS digitizing effort to two new counties during 2003: Morgan and Menard. Four previously completed counties (Christian, Fulton, Sangamon, and Schuyler) were also revisited to capture new enrollments in CREP and CRP and to identify any recently expired contracts. Altogether 1,136 new enrollments, covering 19,928 acres, were added to the *contract-specific* module (Paradox relational database) of the Illinois Conservation Practice Tracking System during 2003. This brings the total number of contracts from all conservation programs documented by this project into the system to 6,101 encompassing 150,480 acres within the Illinois River basin. Conservation practices from a total of 1,042 enrollments were digitized and added to the *practice-specific* (ArcView GIS) module of ICPTS during this same period, bringing the total number of contracts digitized by this project to 5,353 covering 91,284.5 acres of the Middle Illinois River basin (Figure 2).

Summary of collaborative digitizing

with the IDNR Conservation 2000 Ecosystems Program

The Illinois Conservation Practices Tracking System grew further during 2003 through a collaborative effort with the IDNR Conservation 2000 (C2000) Ecosystems Program. The C2000 Ecosystem Program is a voluntary conservation incentive program that "integrates the interests and participation of local communities and private, public and corporate landowners to enhance and protect watersheds through ecosystem-based management." Competitive funding is available from IDNR annually for watershed-based C200 Ecosystem Partnerships to support watershed planning, restoration, habitat acquisition, and educational programs.

In 2003 two Ecosystem Partnerships within the Illinois River basin, the La Moine River and the Vermilion Watershed Task Force, received C2000 grants to develop watershed plans for their areas of the Illinois River basin as well as to support the program's Strategic Sub-Watershed Identification Process. County USDA offices active in these Ecosystem Partnerships coordinated with the ICPTS mapping project staff to document active conservation practices in their partnership areas following the database format and digitizing protocols of the Illinois Conservation Practices Tracking System. ICPTS project staff trained and supervised three GIS data technicians, provided technical support and quality control for data received from these technicians and

incorporated that information into the comprehensive ICPTS database. The result of these efforts were the addition of conservation practice data for portions of the five counties that fall within the Vermilion River of the Illinois watershed (Iroquois, La Salle, Livingston, McLean, Woodford) and the six major counties which comprise the La Moine River watershed (Adams, Brown, Fulton, Hancock, McDonough, and Schuyler). Of these, all are new counties to ICPTS save for Fulton and Schuyler, bringing the total number of counties within the Illinois River basin with data in ICPTS to 17 (Figure 2).

A total of 2,892 CREP, CRP, EQIP, and WRP contracts were entered into the *contract-specific* module (Paradox) of ICPTS (1,513 for the La Moine partnership, 1,379 for the Vermilion) comprising a total of 48,319 acres. A total of 2,833 contracts were added to the *practice-specific* (ArcView GIS) module of ICPTS during this same period (1,454 for the La Moine partnership, 1,379 for the Vermilion) covering a total of 43,199 acres.

The overall contribution of data to ICPTS through this collaborative effort has been significant, more than doubling the number of CREP counties with data in the tracking system and contributing approximately 33% of the total contract records currently in ICPTS. The ICPTS project partnership with the C2000 program also served to initiate a new comprehensive

database that will track all partnership projects funded by C2000 program. By closely following the design and protocols of ICPTS, this database should provide an excellent complement to ICPTS when examining the extent and influence of conservation programs in the Illinois River basin.

Overall summary of ICPTS digitizing through 2003

Combining the digitizing work completed by the University of Illinois Extension through 2003 and that collaboratively done with the C2000 Ecosystem Program, ICPTS now features a nearly complete data set of State CREP and USDA conservation easement contracts for 10 CREP counties and partial data sets for another seven. A total of 8,993 contracts have been entered into the Paradox *contract-specific* module of ICPTS comprising a total of 198,799 reported acres. Of these a total of 8,186 contracts have been digitized and entered into the *practice-specific* (ArcView GIS) module of ICPTS covering a total of 134,483.5 acres. A total of 2,420 of 5,364 (45%) USDA CREP contracts have been entered into ICPTS to date, accounting for 63,273 of 109,490 acres (57.8%) enrolled in Federal side of the program.

ICPTS design modifications

To improve the compatibility of ICPTS for use in USDA county service center offices, several modifications were made to the tracking system following discussions with the Illinois FSA

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State office staff involved in the statewide implementation of GIS software for FSA's county service center offices and FSA's Common Land Unit (CLU) data development project. The Paradox *contract-specific* module of ICPTS was converted to Microsoft Access and the system may now be used with either relational database package. Data distributed to USDA county offices will be standardized on Access and GIS data will be standardized on the appropriate projection for that county (e.g., UTM Zone 16N, NAD83 for Sangamon County). A process to convert the ICPTS county coding to the Federal FIPS code has also begun and should be completed in January 2004.

Scope of work planned for ICPTS in 2004

Expansion of the geographic area covered by ICPTS is scheduled to continue during 2004. Following discussions with the Illinois State FSA office and through funding provided by the U.S. Fish and Wildlife Service to support IDNR's State Comprehensive Wildlife Habitat Conservation Planning project, four new CREP- eligible counties are slated for digitizing work during 2004: Logan, Mason, Peoria, and Tazewell. The addition of these four counties to ICPTS will essentially complete the initial mapping of the Middle Illinois River region. Trips to Cass, Fulton, Knox, and Schuyler counties are also scheduled to update existing

contracts, check the boundaries of the ICPTS polygons against certified CLU records, document previously digitized contracts which have expired or been terminated, and add new enrollments. As time permits, similar periodic database maintenance visits will also be made to Christian, Menard, Morgan, and Sangamon counties.

Beyond these basic digitizing and data base maintenance tasks, increased attention will be paid to providing ICPTS data and training in the tracking system to interested staff in county USDA Service Center offices where initial mapping work has been completed. Distributions of ICPTS data will be coordinated with Illinois FSA's State GIS Specialist to ensure compatibility with FSA's GIS protocols and applications and their Common Land Unit (CLU) data layer. The current data entry methodology and design of ICPTS will also be further scrutinized to identify aspects of the system that should be modified to improve compatibility with FSA's county GIS protocols. Where and if possible, the newly certified county CLU data layers and recent FSA digital aerial photography will be used as a more detailed basemap for digitizing new conservation practice boundaries. Custom maps of conservation practice locations will also continue to be made available to those USDA county offices where data were initially gathered as their needs arise. These and associated efforts

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will be priorities of the ICPTS project in order to provide a tool that ideally will significantly add value to the GIS resources available to USDA Service Center staff and make their daily operations more efficient.

Lastly, a long-standing goal of the ICPTS initiative has been to expand the programmatic scope of the tracking system in order to build a comprehensive system for tracking conservation practices within Illinois. This past year marked the initial addition of several programs to the database: USDA SWCA contracts and Illinois Department of Agriculture: Conservation Practices Cost-Share Program (CCP) projects to the database. A USEPA/ Illinois Environmental Protection Agency (IEPA) funded project to the Prairie Rivers RC&D and the University of Illinois Extension Illinois has also commenced to develop a new comprehensive tracking system, following the ICPTS design, to document the location and details of all Nonpoint Source Management Program (Section 319) projects managed by IEPA within upper Illinois River basin and, eventually, within the entire state since the inception of the program. This project will also develop a secure, on-line, interactive tool that will permit technicians to view and enter conservation practice data directly into the 319 project tracking system by merely using their web browser, as well as allow users to estimate the sediment and nutrient load reduction

provided by individual practices. Such an application could be expanded to include other conservation program data, such as that of IDNR and USDA, if interest exists and issues such as data privacy and security can be appropriately addressed.

In summary, the growth in ICPTS data has accelerated significantly during 2003. The system's design has also served as a model for new, complementary conservation tracking systems that, when taken cumulatively, are bringing Illinois conservation program administrators, planners, and researchers closer to a full picture of the extent and impact of conservation work in the Illinois River basin. Data from ICPTS have also begun to be applied for assessment and research, such as the examination of the wildlife benefits provide by CREP wetland restoration projects (*see D. Phillips discussion earlier in this report*), assessment of the sediment loading reduction provided by CREP in the Illinois River basin relative to alternative scenarios for retiring highly erodible land, and the potential of using satellite imagery to detect changes in land cover with possible application towards assessing program compliance.

Thus, ICPTS is steadily moving towards achieving the project goal of provide researchers, managers, and planners with the necessary baseline data for assessment, as well as a tool

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that will aid partner agencies in conservation in improved planning, implementation, and coordination of watershed management projects within the Illinois River basin, and provide a means to visualize the extent and cumulative impact of conservation programs within the Illinois River basin. All of this work has continued, and would have been impossible without, the support and cooperation of the Illinois FSA state executive director William Graff and his Conservation Program Chief Specialist, Lisa Scott, as well as FSA County Executive Directors and staff, Soil and Water Conservation District Resource Conservationists, NRCS District Conservationists, IDNR State CREP and C2000 program staff and the national FSA office. This project is greatly indebted to all for their continued guidance and support in helping this initiative successfully grow.

Wetland Restoration Project Tracking System

Wetland restoration projects continue to account for more enrollments in Illinois CREP (USDA and State) than any other single conservation practice and comprise a significant source of recent wetland gains in the Illinois River basin. Overall, through November 2003, wetland restoration enrollments conservatively account for 33,934 acres or 31% of the total acres enrolled in the USDA portion of CREP (<http://www.fsa.usda.gov/crpstorpt/10Approved/r7crepyr/il.htm>). Given

the particular importance of tracking wetland gains and losses to the state's natural resource management efforts, work continued during 2003 to expand the scope of the Wetland Restoration Project Tracking System.

As previously reported, the Wetland Restoration Project Tracking System expands on the wetland restoration practice information maintained in the Illinois Conservation Practices Tracking System by documenting more detailed information on the construction of these projects, characteristics of the areas where they are established, and the type of wetland anticipated from the restoration project (see the 2001 Illinois CREP annual report for a detailed discussion of the system design). This GIS-based information system is intended to serve as the basis for a comprehensive information system from which the state could track the location and design of all wetland gains (i.e., restorations and mitigation banks) as well as losses throughout the Illinois River basin and, eventually, the entire state. As such, this system could eventually provide an invaluable data set for resource managers as well as agencies involved in reviewing wetland permit applications through GIS tools such as the Wetland Impact Review Tool (WIRT).

For the eight Illinois CREP counties mapped through December 2003, a total of 394 USDA wetland restoration project enrollments and

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180 State of Illinois CREP contracts, affecting 20,236 acres, have been entered into the Wetland Restoration Tracking System (Figure 3). Of the USDA projects, 304 projects (17,616 acres) are CREP enrollments, 85 projects (1,718 acres) are CRP enrollments, and five projects (774 acres) are WRP enrollments. The 180 State CREP contracts extend the length of 15,026 acres enrolled with FSA in CREP and CRP. While wetland restoration projects occur in all eight counties mapped to date by the University of Illinois Extension, they are especially prevalent along the La Moine and Illinois River main channels and along Sugar Creek in Schuyler County and along the South Fork of the Sangamon and Flat Branch streams in Christian County. Further records will continue to be added to this system during 2004 on a county-by-county basis as wetland restoration projects are added to the ICPTS.

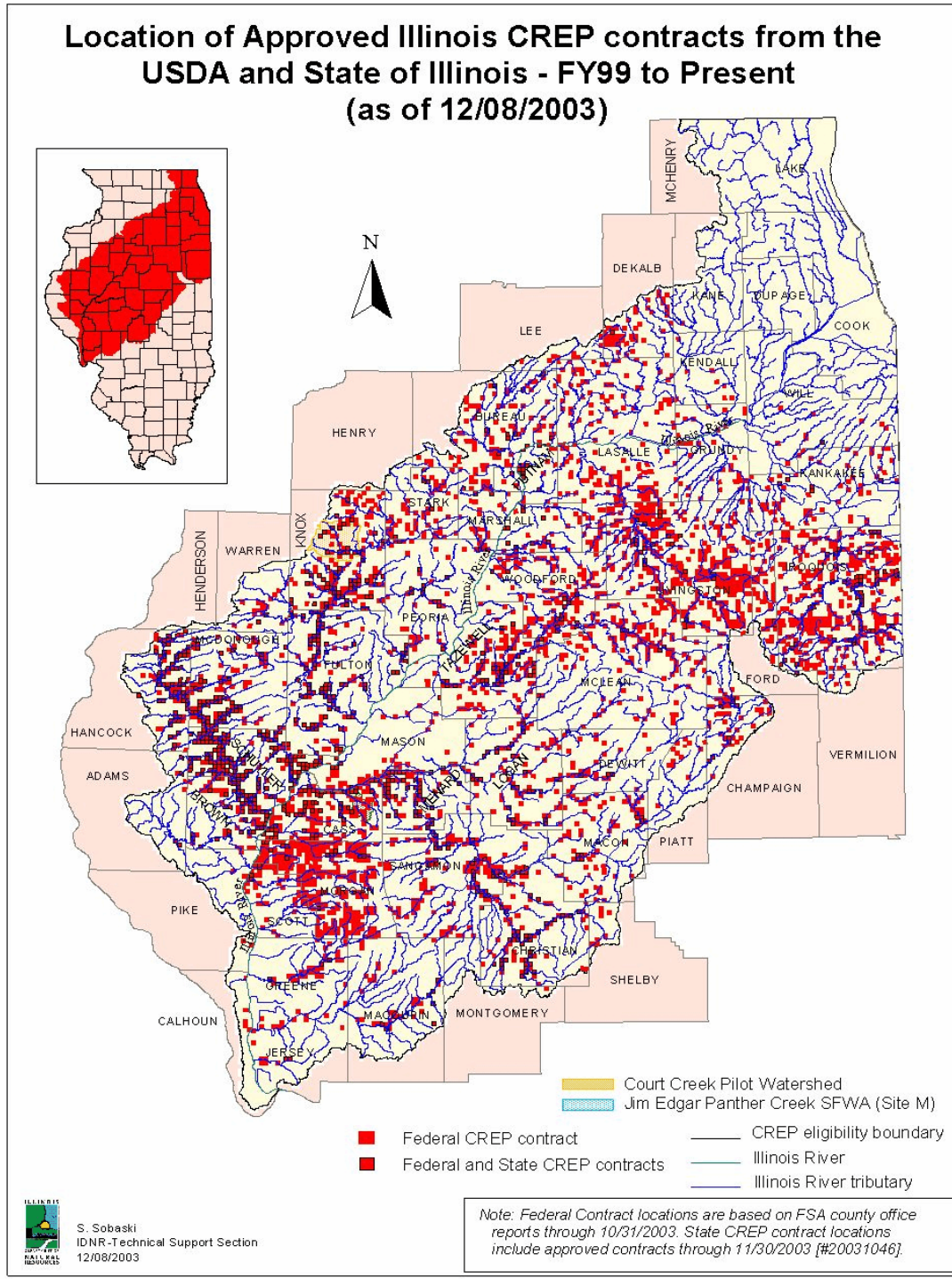


Figure 1. Status map of general Illinois CREP enrollment locations, based on Public Land Survey System sections, within the Illinois River Basin through November 2003. Each red square represents a PLSS section (approximately 1 sq. mi.) with one or more CREP contracts.

Illinois Conservation Practices Tracking System USDA and State Conservation Easements digitized through November 2003

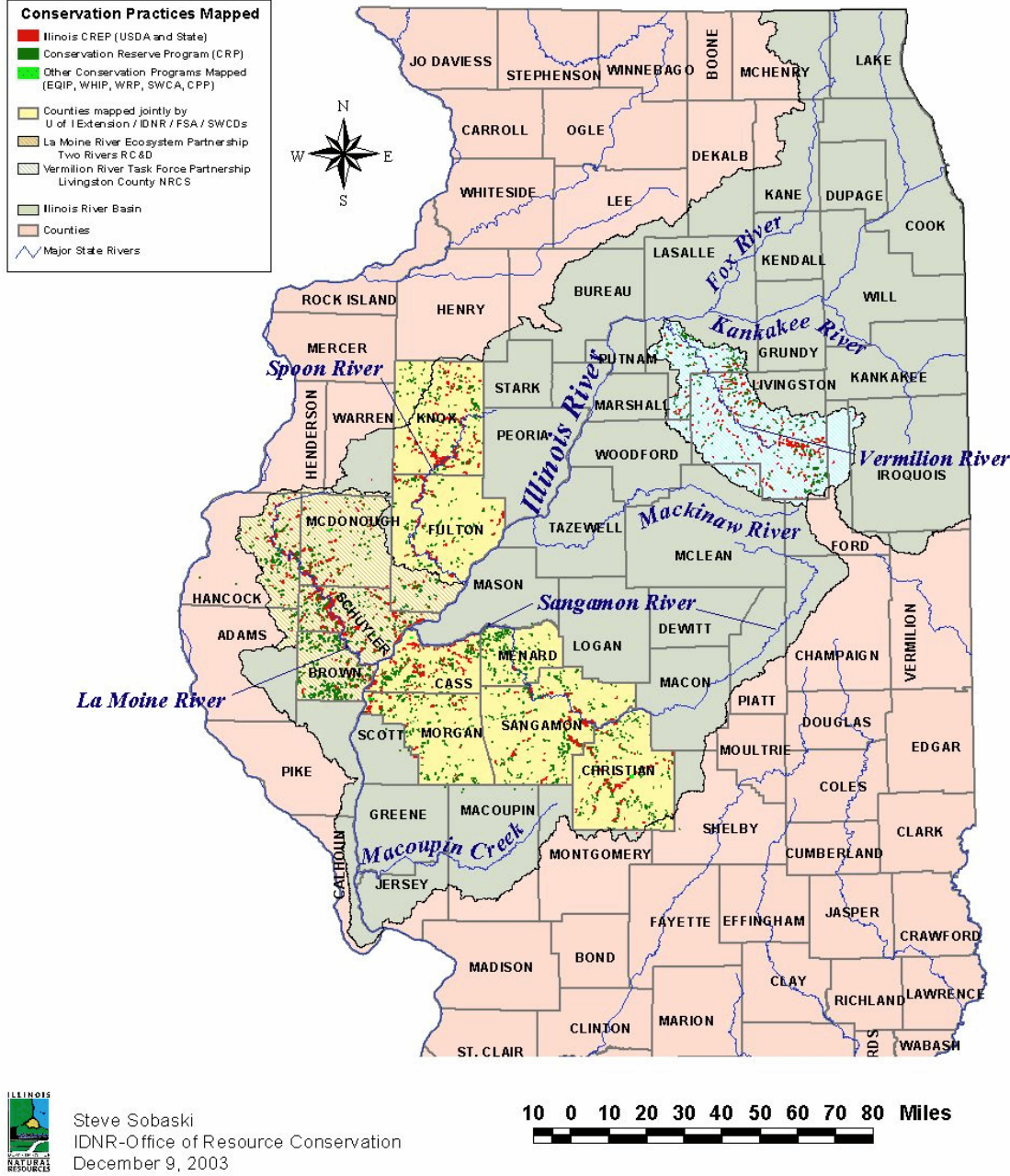


Figure 2. Extent of the 8,186 conservation practice contracts from Illinois CREP eligible counties and subwatersheds mapped for the Illinois Conservation Practices Tracking System through November 2003.

