FY 1997 319(h)
Task 400: Institutionalization of Conservation District Non-point Source Pollution Programs of the Illinois River with Programs of the Oklahoma Scenic Rivers Commission
(OCC Task #089)

Final Report

August 2000

Oklahoma Scenic Rivers Commission
Oklahoma Conservation Commission
Cherokee County Conservation District

INTRODUCTION

The Illinois River and its tributaries are one of the highest priorities on the 303(d) list within the State of Oklahoma. The State has recently attributed loss of water clarity and degradation of aquatic habitat to elevated levels of nutrients in the Illinois River and its tributaries. A completed Clean Lakes study, funded from Section 314 of the Clean Water Act, identified the need to reduce phosphorus inputs to Tenkiller Ferry, into which the Illinois River empties. Phosphorus inputs must be reduced at a minimum of 40% to maintain the current water quality of the reservoir. Urban runoff, agriculture, recreational activities, commercial nursery operations, and residential wastes were identified as potential sources of the elevated nutrients.

The Illinois River, one of six state-designated scenic rivers in the State of Oklahoma, originates in the Boston Mountain Region of Arkansas. It flows approximately 40 miles north, then west, through Benton and Washington Counties of Arkansas before reaching the Oklahoma state line. The river then flows another 70 miles west, then south, through Adair, Delaware and Cherokee Counties in Oklahoma before emptying into Tenkiller Ferry Reservoir. The Illinois River Basin encompasses approximately 1,645 square miles. Figure 1 is a map of the Illinois River Basin.

The Oklahoma portion of the Illinois River hosts approximately 400,000 visitors per year. Recreational activities include floating, hiking, fishing, camping, bird watching and day use for picnicking and other recreation. The majority of visitors to the river area come for the purpose of floating the river. There are approximately 15 commercial flotation device outfitters located along the upper portion of the Illinois River. Figure 2 is a map of the Illinois River, which includes the location of commercial flotation device outfitters. The Oklahoma Scenic Rivers Commission works closely with the commercial outfitters to provide information and other services to river users.

In addition to being important fisheries and recreational areas in the state, the Illinois River and Lake Tenkiller are the main sources of drinking water for the eastern half of Cherokee County. The population of Cherokee County is close to 34,000 and growing. Tahlequah, with a population of approximately 12,000 people, is the largest municipality in the basin. There are ten significant permitted point source discharges into the Illinois River or its tributaries and three commercial nursery operations located in the Illinois River Basin.

The majority of land use within the Illinois River Basin is agricultural. According to a 1997 study by the Arkansas Soil and Water Commission, there are approximately 226 million laying hens, broilers or turkeys, 96,000 hogs, 12,000 dairy cattle and 200,000 unconfined cattle. There is increased concern about waste management practices from these operations and their contributions to nutrient increases in the watershed. The Cherokee, Adair and Delaware County Conservation Districts and Natural Resource Conservation Service have been instrumental in providing technical assistance to farmers concerning animal waste management and water quality concerns.

The Oklahoma Scenic Rivers Commission (OSRC) is responsible for promulgating rules for the “proper protection of the aesthetic, scenic, historic, archaeological and scientific features” and to “protect the ecosystem and environment from pollution, despoliation and destruction or waste of

natural resources" of the scenic river portion of the Illinois River. The OSRC and stakeholders in the Illinois River Basin have recently finished a management plan to address these concerns and develop viable solutions. One of the major components of the Illinois River Management Plan (Management Plan) is education outreach to local schools and landowners focusing on non-point source pollution issues.

As the OSRC has been dependent on outside technical resources to support its programs, it did not have the staff to carry out the educational efforts recommended by the Management Plan. The agency needed to be active in coordination of the educational efforts within the basin since it is the state agency designated to have oversight of the river. Many of the recommended activities in the Management Plan are similar to the activities in which the Oklahoma Conservation Commission and local conservation districts are involved. Furthermore, The OCC and OSRC have a continual dialogue directed at ensuring the protection of the river through proper management activities throughout the basin.

PROJECT OBJECTIVES

The goal of this project was to establish a technical position that the OSRC could use on a daily basis to coordinate educational and water quality activities of the OCC, OSRC, Cherokee County Conservation District and other agencies within the Illinois River Basin. One aspect of the project was to provide educational opportunities for groups that potentially impact the river, including pre-school through 12th grade students within the Illinois River Basin, civic groups, river users, landowners and area legislators. Another aspect of the project was to establish a central repository of information concerning the Illinois River.

PROJECT TASKS

Provide educational programs on non-point source pollution and water resources for pre-school through 12th grade students within the Illinois River Basin

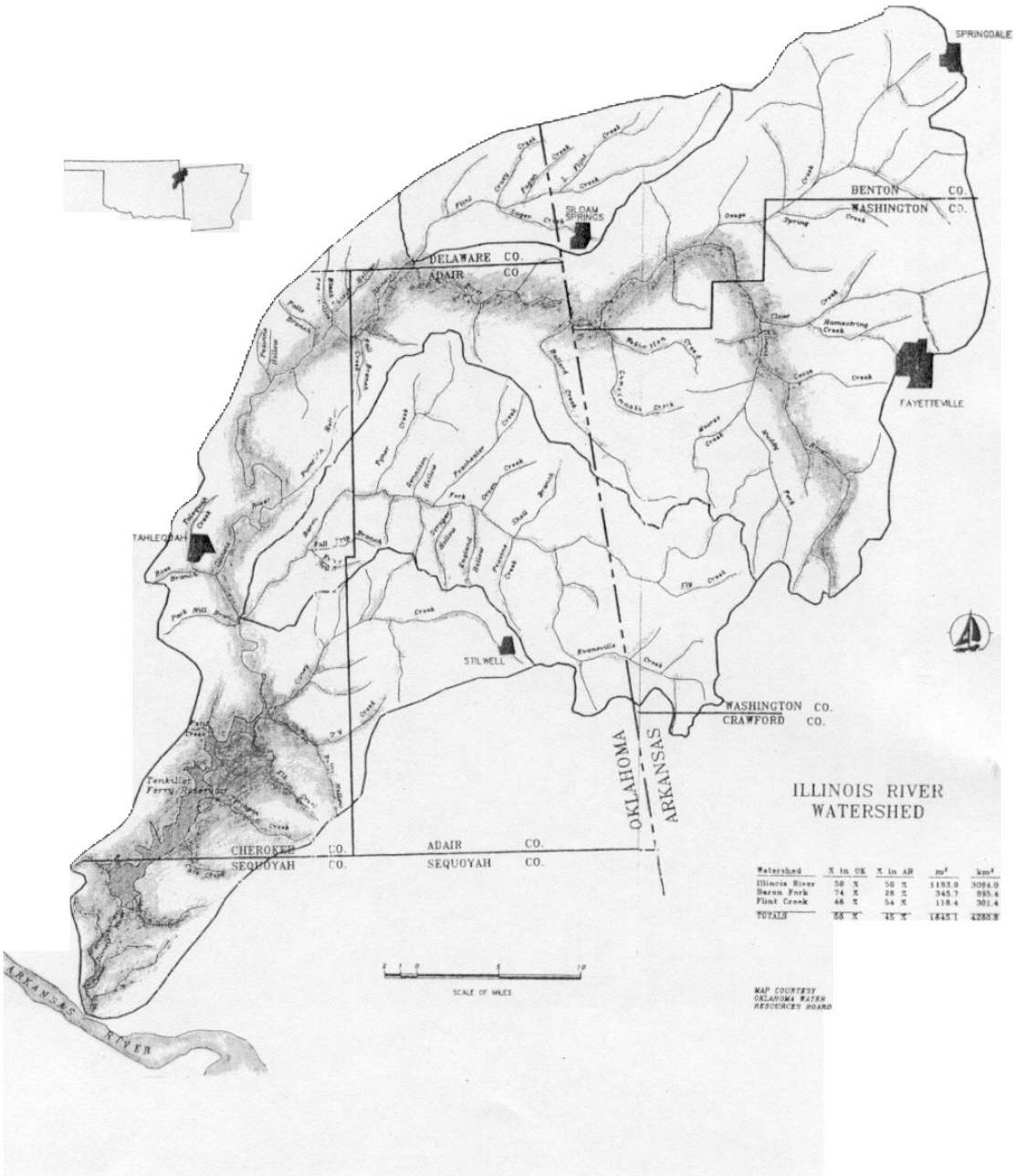
Provide programs for civic organizations and other adult groups about non-point source pollution and water resources

Conduct river awareness surveys of recreational river users and provide interpretive programs about non-point source pollution and water resources for river users and area residents

Provide information and referrals to stakeholders, especially landowners, to keep them informed of local water quality issues and help them minimize their impact on the river

Host legislative field days to keep Oklahoma State Legislators and other state officials informed of the progress and problems in controlling non-point source pollutants in the Illinois River Basin.

Establish and maintain a central repository of information concerning the Illinois River.



Watershed	% in OK	% in AR	mi^2	km^2
Illinois River	50 %	50 %	1183.0	3064.0
Baron Fork	74 %	26 %	345.7	895.4
Flint Creek	46 %	54 %	116.4	301.4
TOTALS	55 %	45 %	1845.1	4285.8

Figure 1. A map of the Illinois River Basin in portions of Arkansas and Oklahoma

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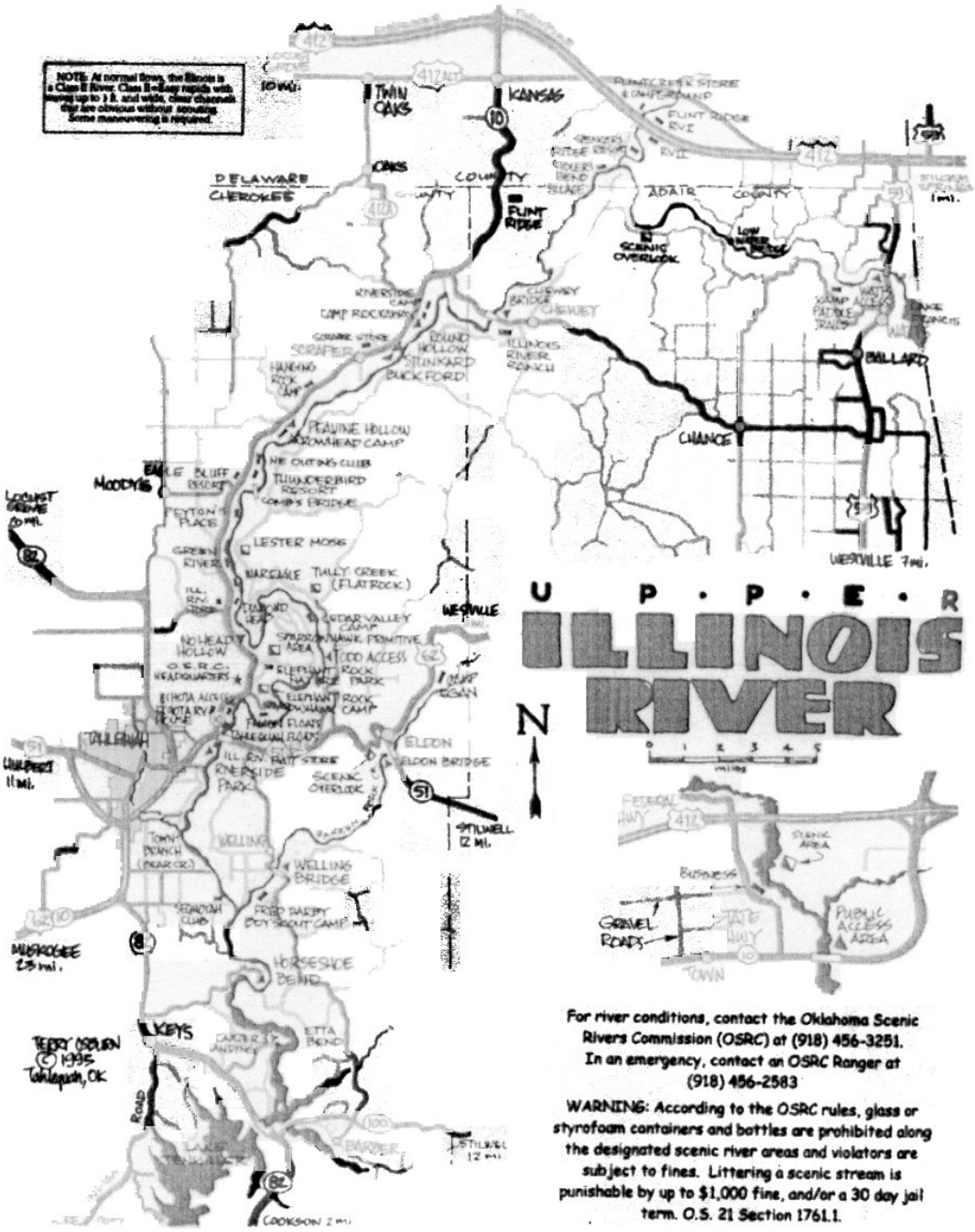

Figure 2. A map of the Oklahoma portion of the Illinois River showing the locations of commercial flotation device operations along the river. From upriver to downriver (generally north to south), the outfitters are: Kamp Paddle Trails, Spencer Ridge Resort, Riverside Camp, Hanging Rock Camp, Arrowhead Camp, Thunderbird Resort, Eagle Bluff, Peyton's, Place, Green River, War Eagle Recreation, Diamondhead Resort, Cedar Valley Camp, Sparrowhawk Camp, Falcon Floats and Tahlequah Floats.

EDUCATION OUTREACH

ELEMENTARY SCHOOL PROGRAMS

There are approximately 31 elementary schools within the Illinois River Watershed. The Elementary Schools Program targeted students from kindergarten through sixth grade. Approximately 7,600 students were reached through this program. Appendix A-1 contains a list of dates, programs presented and number of students reached. The Elementary Schools Programs focused on watershed concepts, anti-litter information, water quality, and the potential effects of non-point source pollution on human health.

The anti-litter programs for lower elementary (K-3rd grade) focused on litter awareness and the affect litter has on safety, aesthetics and water quality. Water quality was discussed in relation to human health for drinking water and bodily contact, and health of terrestrial and aquatic organisms. The presenter and students discussed ways the students could help ensure water quality by disposing of trash properly, picking up litter, using available toilet facilities and educating friends and family about the importance of these efforts. Illinois Jones, the mascot of the Illinois River, was used as part of the program, as availability allowed. Illinois Jones is a copyrighted trademark of the Cherokee County Conservation District and is used exclusively for educational purposes. Illinois Jones was most effectively used for the lower elementary children. Illinois Jones visited the classrooms and interacted with the children. The children responded positively to this and you can still hear them chanting the Illinois Jones Motto, "DON'T BE A TRASHER!" Figure 3 depicts Illinois Jones interacting with kindergarten students. An outline of the lower elementary program and a brochure explaining the development of Illinois Jones and his mission are included in Appendix A-2.

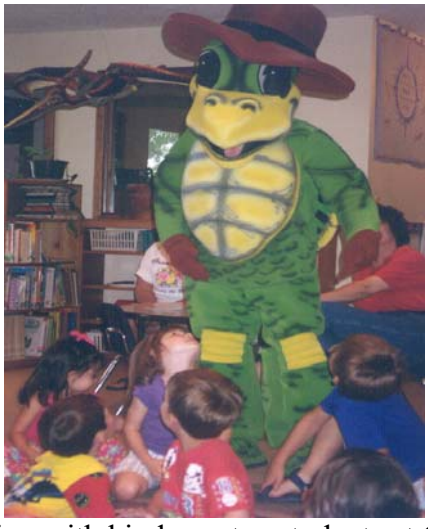

Figure 3. Illinois Jones interacting with kindergarten students at Children's Meeting House Montessori School in Tahlequah, Oklahoma.

Programs for upper elementary students (4th – 6th grade) focused non-point source pollution, specifically litter awareness and the effects of illegal dumping on surface and groundwater. This program emphasized the limited availability of fresh water that can be used for drinking

purposes. This program also increased awareness of drinking water sources. As most of the schools in the Illinois River Basin are rural or non-urban, the drinking water sources are primarily rural water districts and private wells. The concepts of groundwater and groundwater contamination were illustrated by using a groundwater model owned by the Cherokee County Conservation District. Appendix A-3 contains a detailed lesson plan and specific information about the Project Wet activity and groundwater model that were used during the program. The fifth grade programs were done in conjunction with the Solid Waste Institute of Northeast Oklahoma.

MIDDLE SCHOOL AND HIGH SCHOOL PROGRAMS

In addition to the elementary school programs, another program with a slide presentation entitled "Factors Affecting Water Quality in the Illinois River Watershed" was developed to increase awareness of water quality issues in middle school and high school students. The presentation introduced the concept of a watershed, factors affecting water quality, and solutions that individuals, citizen groups, businesses and agencies are implementing to protect water resources. Approximately 385 students were reached through the Middle School and High School Programs. Appendix A-4 contains the script and description of the slide presentation and a list of dates, programs presented and number of students reached.

The slide presentation was used in conjunction with the Project Wet activity, "Sum of the Parts." The students pretended they inherited a piece of riverfront property and a million dollars. They could do whatever they wanted with their land. Most chose to develop it for a home or business. They then watched the slide program that discussed impacts on water quality. After the slide presentation, they evaluated how their actions on their piece of property negatively or positively affected water quality. The activity made the presentation more interactive for the students. The activity also served as a way for the presenter and classroom teacher to evaluate the students' understanding of the concepts introduced in the slide presentation. The exact instructions for the Project Wet activity "Sum of the Parts" are also contained in Appendix A-4. Figure 4 illustrates three students' interpretations of the presented material.

The Oklahoma Scenic Rivers Commission and Cherokee County Conservation District communicated extensively with each other and other agencies including Oklahoma State University Cooperative Extension Service and Solid Waste Institute of Northeast Oklahoma to coordinate efforts, maximize resources and avoid duplication of effort in water quality education.

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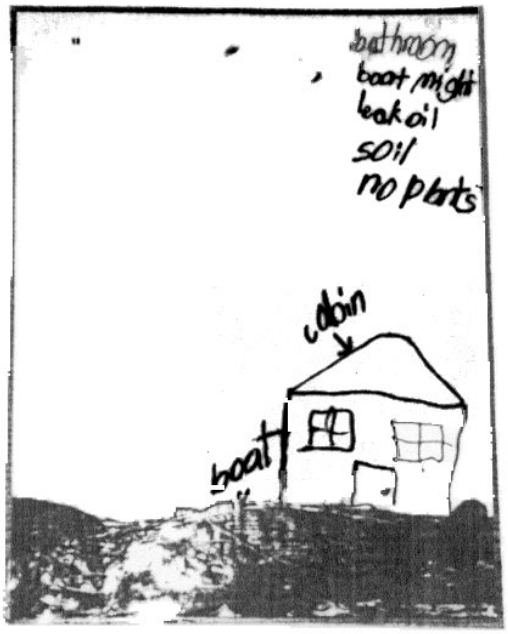
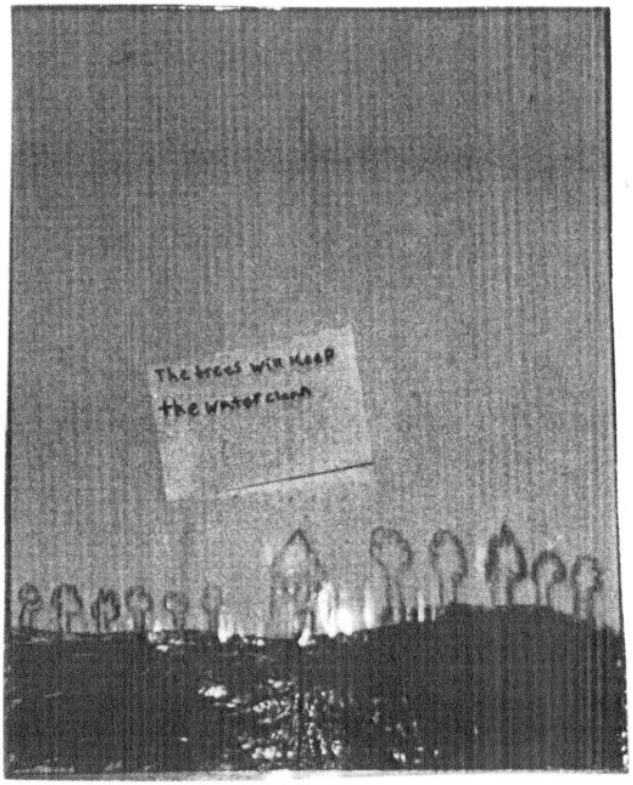
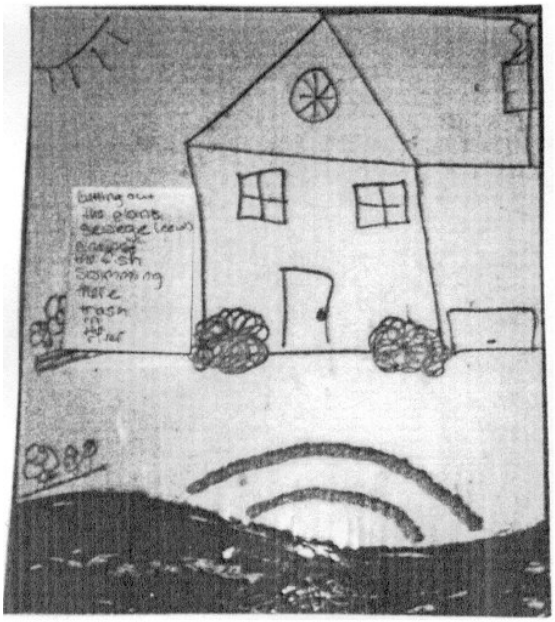


"Bathroom, boat might leak oil, soil, no plants"



"The trees will keep the water clean"



"Cutting out the plants, sewage (eew!), eating the fish, swimming there, trash in the river"

Figure 4. Examples of middle school students' interpretations of Project Wet activity "Sum of the Parts". Students pretended they inherited a million dollars and riverfront property and drew a picture of what they would do with their land and money. After viewing the slide presentation, "Factors Affecting Water Quality in the Illinois River Watershed", they evaluated what impacts their actions may have on the river.

CIVIC GROUPS

Another aspect of the Education Outreach Program was educating adult groups about the importance of protecting water resources. Civic organizations are comprised of members who are taking leadership roles within the community. It is important to present programs to these people about water quality issues to make them aware of the current status of the water resources within their area.

Approximately 1,347 adults were reached through 40 civic and community presentations. Appendix A-5 contains a list of the dates, programs presented and numbers of participants reached. The programs differed slightly in specific content depending on the target group, but all focused on increasing awareness of non-point source pollution and other factors affecting water quality of the Illinois River and other Oklahoma streams (refer to Appendix A-5 for an outline of the presentation). The programs discussed ways the Cherokee County Conservation District, the Oklahoma Scenic Rivers Commission, and other state and federal agencies are working to reduce non-point source pollution and other factors that negatively affect water quality.

RECREATIONAL USERS

Historically, very little effort has been directed toward educating recreational river users. River awareness surveys were conducted at canoe take out points to gain an understanding of river users' perceptions of the water quality of the Illinois River, among other issues. Additionally, interpretive programs were held throughout the recreational season for river users and area residents. Programs included information about the Illinois River, its ecology and non-point source pollution threats to water quality and provided ways that river users could minimize their impact on the river.

River Awareness Surveys

During the 1999 recreational season, river awareness surveys were conducted on random days at canoe take-out points along the Illinois River. Of the 111 Illinois River visitors asked to participate in the survey, 97 (87%) agreed to complete the survey and 14 (13%) refused. Visitors were asked questions about their current visit to the area, the quality of the resource and management issues. During their visit, 75% encountered litter in the river or on the banks, and 44% noticed erosion of the stream banks. When asked to answer questions about the river in general, 75% thought there were too few drinking water sources provided. The majority felt there were an adequate number of public toilet facilities and trashcans (53% and 65%, respectively). With respect to management issues, 53% of visitors felt more public access points should be provided and 62% felt more camp sites should be available. Most people (85%) would like for short hiking trails to be developed along the river. Half of the people surveyed encountered intoxicated people during their visit, but only 35% encountered people shouting or being inconsiderate. A blank copy of the survey and a compilation of the answers for the entire survey are included in Appendix A-6.

River User Interpretive Programs

The Oklahoma Scenic Rivers Commission scheduled Campground Programs each Saturday evening between Memorial Day weekend and Labor Day weekend. Specific programs focusing on water quality issues were presented to a total of 92 people. This falls short of the anticipated attendance of 500 people. One reason may have been that the programs were technical in nature

and had low appeal to prospective attendees. One suggestion for improvement is to design and promote the programs for families with children. Parents will often bring their children to free educational programs and remain at the program with their children. The adults present also hear and learn the information.

Appendix A-7 contains the entire summer schedule, with the water quality programs designated by an asterisk. Following are the summaries for those programs. Pre-tests and post-tests were administered to participants to gain an understanding of participant comprehension of the material. The total number of correct answers on the pre-tests was divided by the total number of correct questions on the post-tests to get a percentage that represents the increase of understanding of the group. Copies of the pre- and post-tests administered are included in Appendix A-7.

The Illinois River: A Pictorial Journey
Ed Fite, Administrator of the Oklahoma Scenic Rivers Commission spoke to 18 people. After a brief introduction, he gave the history of the National Wild and Scenic River Act. There were several reasons why the Illinois River was given state scenic river designation, rather than national designation, the most important being stakeholder resistance. Mr. Fite then presented slides of the Illinois River from the headwaters of the Illinois River in Arkansas to Lake Tenkiller. He discussed factors along the river that influence water quality and riparian areas. He concluded by discussing the Illinois River as a valuable resource. The number of correct answers from the pre-test to the post-test increased by 63%.

Riparian Area Management
Mitch Fram, Area Extension Water Quality Specialist for the Oklahoma Cooperative Extension Service, spoke to an audience of 13. Mr. Fram used slides and the Department of Forestry Stream Erosion Trailer to demonstrate and provide examples of the following topics. Meanders and a stable configuration are evidence of stream stability. Meanders are formed as water disperses energy. A stable configuration is evidence that a stream is able to handle the flow from the watershed. If steep or blown-out high banks, sediment or gravel deposition, braiding, headcutting or a straight channel is observed, it is evidence of stream instability. Mr. Fram also discussed causes, prevention and remediation measures for eroded areas. Erosion can be prevented by maintenance of a vegetation buffer along the stream. Remediation measures include revetment and buffer zone planting. There was an 88% increase in the number of correct answers from the pre-test to the post-test.

Community Solutions to Oklahoma's Illegal Roadside Dumps
Kay Frank, Education/Outreach Coordinator for the Solid Waste Institute of Northeast Oklahoma spoke to an audience of 8. She had participants sort through "clean" trash, and decide if, in their own homes, the items would be recycled, composted, disposed of as household waste, disposed of as bulky items or disposed of as hazardous wastes. Dr. Frank used a slide presentation to illustrate damages to groundwater caused by illegal dumping and trash. Dr. Frank then discussed solutions to illegal dumping. She provided two handouts for participants: "Trash Burning in Oklahoma" and "What Can We Do?" *(about illegal dumping).* No pre- or post-tests were administered with this program.

The Future of the Illinois River
Ed Fite, Administrator for the Oklahoma Scenic Rivers Commission, spoke to an audience of 24. There are many issues affecting the water quality of the Illinois River. Some of the issues are: animal wastes, agriculture, point source pollution, non-point source pollution, recreational impacts, land use and urbanization, removal of riparian buffer zones, erosion and sedimentation. There are many solutions and positive actions that can be adopted to combat water quality problems. Some of these are federal and state agency efforts, cost share monies, education, Governor's Animal Waste and Water Quality Task Force, the Illinois River Management Plan and stakeholder involvement. The questions asked on the pre- and post-test were more a survey of the participants' opinions than questions that could be answered correctly or incorrectly. Therefore, participants' comprehension of the presented material was tallied in the following manner: Pre-test opinions and post-test opinions were compared to see if the answer had changed from the pre-test to the post-test *and* if the opinion in the post-test reflected some of the factual information presented in the talk. The number of answers that met this criteria were divided by the total number of post-test questions to obtain a percentage. There was a 25% increase in the level of comprehension between the pre-test and post-test.

Threatened and Endangered Species
Erich Langer, U. S. Fish & Wildlife Service was delayed en route to the program. The program was cancelled after 30 minutes when he had not yet arrived. This program was not rescheduled, since the programs for the rest of the summer had already been scheduled and confirmed with the speakers.

Stream Management
Paul Balkenbush, Streams Biologist for the Oklahoma Department of Wildlife Conservation, spoke to an audience of 7 people. Oklahoma streams can be categorized as one of two types: the Ouachita type or the Ozark type. Oklahoma wildlife is dependent on streams for habitat, food and oxygen. Water quality and loss of riparian areas affects each of these resources. He then talked about important species of Oklahoma sport and game fish, discussing specific habitat requirements for each. The Oklahoma Department of Wildlife Conservation has several responsibilities related to stream management. Some of these responsibilities include stocking sport and game fish, monitoring fish populations and education. Some of ODWC's educational programs are fishing clinics, stream cleanups and public presentations. It is important that hunters and fishermen purchase hunting and fishing licenses to provide funds to support these efforts. It is important to obey hunting and fishing regulations so that healthy animal populations can be maintained. Mr. Balkenbush provided several handouts to participants: Oklahoma 1999 Fishing Regulations, "Anglers Code of Ethics" with fish stickers, "Sport Fish of Oklahoma" poster, and a fish ruler. The number of correct answers from the pre-test to the post-test increased by 58%.

Illinois Jones
Otis Bennett and Illinois Jones (Tommy Perry) of the Cherokee County Conservation District, Oklahoma Conservation Commission, provided a program for 9 participants. Definitions of groundwater and surface water were presented. Water quality issues affecting surface water can be categorized as point source pollution or non-point source pollution. There are many sources of

pollution that can contaminate groundwater. Septic systems can be a source of pollution from residential areas. In industrial areas, waste generation and leaky waste storage tanks are problems. There are many sources of pollution from agricultural areas, such as row cropping, fertilizer, pesticides and herbicides. Mr. Bennett showed four examples of water: potable water, water containing phosphorus, water containing dirt (turbid), water containing oil. Mr. Bennett introduced Illinois Jones and his message "Don't Be a Trasher!" and passed out Illinois Jones coloring books, pencils and bumper stickers. Due to the young age (pre-school through 3rd grade) of the target group, written pre- and post-tests were not administered. Verbal response of participants was noted to see if Jones' message "Don't Be a Trasher!" was effectively communicated. 100% of participants responded accurately.

STIR (Save the Illinois River)
Ed Brocksmith, of Save the Illinois River, spoke to a group of 13 people about the Illinois River. Several factors are currently affecting river health. Nutrients, such as nitrogen and phosphorus come from animals and their waste products. Nutrient-rich water acts as a "fertile soup" for algal growth. Excessive algae growth robs water of dissolved oxygen necessary for fish and other aquatic organisms. To maintain the current water quality in Lake Tenkiller, nutrient loading must be reduced by 40%. To improve water quality in Lake Tenkiller, nutrient loading must be reduced by 70%. Population growth and land use changes also affect the river. There are increases in the population in the Illinois River Basin in both Oklahoma and Arkansas. This means there is increased sewage to deal with, increased industry and an increased number of animals. In spite of these factors, the river, in terms of water quality and clarity, is better than it was 10 years ago. These improvements have come about because people are more aware of environmental issues, people are working together to ensure water quality in area streams and people care. Citizens can help ensure water quality by being conscientious about their own activities and by joining organizations working to help the environment. Some of these organizations are the Sierra Club, the Scenic Rivers Association, National Wildlife Organization and Save the Illinois River (STIR). The number of correct answers from the pre-test to the post-test increased by 50%.

Table 1. Increase in level of comprehension of interpretive program material. The percent (%) increase was determined by dividing the total number of correct answers on the pre-test by the total number of correct answers on the post-test.

Interpretive Program Title	**% increase in level of comprehension of material**
The Illinois River: A Pictorial Journey	63%
Riparian Area Management	88%
Community Solutions to Oklahoma's Illegal Roadside Dumps	No pre and post-tests administered
The Future of the Illinois River	25%
Stream Management	58%
Illinois Jones	100%
Save the Illinois River	50%

STAKEHOLDERS

From time to time the OSRC is contacted by local landowners with questions or concerns about land use and best management practices in the Illinois River Basin. The OSRC provided information and referrals to agencies that could provide technical assistance, cost-share monies or information to help landowners meet their needs. Additionally, the OSRC published a newsletter that targeted stakeholders.

A newsletter can be an effective way to reach a large number of people on a regular basis about regional watershed issues. Four issues of the newsletter were published by the Oklahoma Scenic Rivers Commission (OSRC), in February, May and August 1999 and February 2000. The goals of the newsletter were to provide a format to increase communication, keep stakeholders and community members informed of regional watershed issues and provide education on the importance of sustaining natural resources. Individuals outside the agency who have varying perspectives on and interests in the river are encouraged to submit articles. Approximately 300 copies of each newsletter were mailed to individuals on the OSRC mailing list, and up to 300 more were distributed through other agencies and at community presentations and events. The mailing list is composed of stakeholders, interest groups and individuals that wish to be informed of watershed issues. Anyone can be added to the mailing list or obtain a copy of the newsletter. Appendix A-8 contains copies of the newsletters.

OSRC Administrator Ed Fite and/or OSRC Education Outreach Coordinator Sophia Sweeney attended meetings of EQIP, Oklahoma State University Cooperative Extension, Watershed Restoration Action Strategies (WRAS), Cherokee Nation, Solid Waste Institute of Northeast Oklahoma and Northeastern State University as well as monthly Cherokee County Conservation District Board Meetings in a effort to brief these groups about OSRC activities and the status of water quality in the Illinois River Basin.

LEGISLATIVE FIELD DAYS

Field Days were held to update Oklahoma State Legislators and other state officials of the progress and problems in controlling non-point source pollution in the Illinois River Basin. The programs included a summary of water quality data, information on sources of pollutants, an update on the education outreach efforts and canoe trip tour focusing on some of the water quality problems and solutions in the basin. The Oklahoma Scenic Rivers Commission and the Cherokee County Conservation District communicated on potential dates for and content of the field days.

The first Legislative Field Day was hosted by the Oklahoma Scenic Rivers Commission, the Illinois River Association and area commercial flotation device outfitters. A total of 28 guests attended, including Senator Glenn Coffee, Senator Carol Martin, Senator Herbert Rozell, Senator Jerry Smith and 12 Oklahoma State Senate staff members. OSRC Chairman Bill Blackard and OSRC Administrator Ed Fite represented the Oklahoma Scenic Rivers Commission, along with OSRC Park Rangers and other OSRC staff. The event was held June 11, 1999 at the Illinois River near Tahlequah, Oklahoma. The guests were treated to a float trip on the Illinois River and lunch.

The second Legislative Field Day consisted of a series of meetings between OSRC Administrator Fite and several Oklahoma State officials. The meetings were held March 20,

2000 at the Oklahoma State Capitol with the following officials: First Lady and Governor Keating, Attorney General Drew Edmondson, Oklahoma State Senators Rick Littlefield, Carol Martin, Herbert Rozell, Ben Brown, J. Berry Harrison, Kathleen Wilcoxson, Oklahoma State Representatives Larry Adair, Bob Ed Culver and Joe Hutchison.

Administrator Fite met with these officials about the following issues:

- Riparian area protection
- Streambank stabilization
- Oklahoma Scenic River Act
- Funding needs
- Ranger jurisdiction
- The need for expansion of the Ranger and Education Outreach Programs
- Charging camping fees in public access areas
- Capital needs for these projects/improvements
    - Informational signage
    - A visitor pullout area with informational signage
    - Boat launch
    - Improvements to public access areas including asphalting roadways, installation of an recreational vehicle (RV) dump site and electricity

Additionally, a substantial amount of time was spent discussing the Illinois River Management Plan (IRMP). Several legislators were nervous about the IRMP, feeling that there was a lack of stakeholder support. Administrator Fite explained that actually the sections of the IRMP on recreation, corridor values and water quality were written by the stakeholders. The OSRC and National Park Service facilitated the meetings that led to the development of the IRMP.

ILLINOIS RIVER BASIN WATER QUALITY BIBLIOGRAPHY & REPOSITORY

A database of information relating to the Illinois River in Arkansas and Oklahoma has been developed using the program Microsoft Access. The bibliography focuses on scientific studies, and is available in an electronic version or hardcopy to other agencies, students and individuals. The Oklahoma Scenic Rivers Commission is in the process of collecting the works listed in the bibliography to be included in a central repository. This project is ongoing, and will be continuously updated with new information. A copy of the current bibliography is included in Appendix B.

BUDGET INFORMATION

Output	Federal	State	Total
Schools Program	$9,928.20	$6,618.80	$16,547.00
Civic Organizations	$1,215.6	$810.40	$2,026.00
River Users	$5,556.00	$3,704.00	$9,260.00
Conservation District & Landowner Interaction	$2,866.80	$1,911.20	$4,778.00
Legislative Field Day	$2,742.00	$1,828.00	$4,570.00
Newsletters	$2,650.80	$1,767.20	$4,418.00
Slide Presentation	$1,376.40	$917.60	$2,294.00
Illinois River Information Services	$3,664.20	$2,442.80	$6,107.00
TOTAL	**$30,000.00**	**$20,000.00**	**$50,000.00**

CONCLUSIONS

PROBLEMS AND OBSTACLES ENCOUNTERED

The completion of the project was delayed due to a change in Key Personnel. Ginger Tramell, Water Quality Specialist/Education Outreach Coordinator, resigned at the end of October 1998. Sophia Sweeney replaced her as Education Outreach Coordinator in mid-November 1998.

A disappointing number of individuals attended the river user interpretive programs. One reason may have been that the programs were technical in nature and had low appeal to prospective attendees. One suggestion for improvement is to design and promote the programs for families with children. Parents will often bring their children to free educational programs and remain at the program with their children. The adults present also hear and learn the information.

~~MEASURES OF SUCCESS~~COMPLETION OF PROJECT TASKS

The goal of this project was to establish a technical position that the OSRC could use on a daily basis to coordinate educational and water quality activities of the OCC, OSRC, local conservation districts and other agencies within the Illinois River Basin. One aspect of the project was to provide educational opportunities for groups that impact the river, including pre-school through 12th grade students within the Illinois River Basin, civic groups, river users, landowners and area legislators. Another aspect of the project was to establish a central repository of information concerning the Illinois River. These objectives were all successfully completed and documented, as described in detail throughout the report, supported by the appendices and summarized below. The reporting period for this project is January 1997 through September 1999.

Provide educational programs on non-point source pollution and water resources for pre-school through 12th grade students within the Illinois River Basin. Approximately 7,985 students were reached through the Illinois River Schools Programs.

Provide programs for civic organizations and other adult groups about non-point source pollution and water resources. Approximately 1,347 individuals were reached through civic and community programs.

Conduct river awareness surveys of recreational river users and provide interpretive programs about non-point source pollution and water resources for river users and area residents. 111 individuals completed river awareness surveys. 92 visitors and community members attended interpretive programs. There was at least a 25% increase in the number of correct answers between the test administered before the program and the same test administered after the program in each program.

Provide information and referrals to landowners and stakeholders to keep them informed of local water quality issues and help them minimize their impact on the river. Approximately 600 copies of four different issues of the quarterly newsletter, River Currents, were mailed or distributed to stakeholders. Additionally, over 300 copies of the Illinois River Management Plan were distributed.

Host legislative field days to keep Oklahoma State Legislators and other state officials informed of the progress and problems in controlling non-point source pollutants in the Illinois River Basin. The OSRC and local commercial flotation device operators hosted 28 individuals at the first Legislative Field Day. OSRC Administrator Ed Fite met with 12 state government officials the second Legislative Field Day.

Establish and maintain a central repository of information concerning the Illinois River. At this time, a bibliography and repository of information concerning the Illinois River has been established. Information is being added monthly.

MEASURES OF SUCCESS

1. Increase land users' knowledge and understanding of the need to implement practices that result in reducing of phosphorus loads in the Illinois River Basin. At least 80% of the land users within the basin will have an increased knowledge of the phosphorus non-point source issues within the next three years. There is a definite increase in landowner knowledge of phosphorus non-point source issues, especially among the poultry producers in the basin. This change has come about from pressure placed on the poultry industry by the Oklahoma Department of Agriculture. The Governor's Animal Waste Task Force was instrumental in the implementation of the poultry law that requires poultry producers to get 9 hours of initial training and 3 hours per year of training annually thereafter on such subjects as phosphorus levels, best management practices, etc. Other land users have an increased awareness of the impacts of phosphorus on water quality, but may not have the in-depth understanding that poultry producers have. This awareness has come about, in part, from the efforts of this project. Well over 10,000 people were directly reached with information about non-point source pollution, including information about phosphorus. This project was just a beginning. The Oklahoma Scenic Rivers Commission has been able to continue the work that this project initially funded, specifically the schools program, quarterly newsletter, land user workshops, civic and community presentations and distribution of the Illinois River Management Plan. The Cherokee County and Adair County Conservation Districts are administering a 319 Project in the Illinois River Basin that will continue for the next 4 years. A major component of that project is stakeholder education about non-point source pollution, including phosphorus.

2. Through the combined efforts of all state, local and federal agencies, at least 80% of the land users within the basin will have implemented practices and/or measures that result in phosphorus load reduction within the next 10 years. It is estimated that 90-95% of poultry producers will have implemented best management practices (BMPs) in the next 10 years, including practices such as composters and waste storage facilities. Additionally, it is estimated that within 10 years, 80-90% of landowners will be implementing riparian buffers. Programs such as EQIP, WHIP, WQUIP and Non-point Source 319 Demonstration Projects enable landowners to implement BMPs by providing funding, education and technical assistance. Landowners who use their land for agriculture may realize that implementation of BMPs increase their profit and benefit the environment. The Illinois River 319 Project, which continues for the next 4 years, has established the priorities of riparian area management, human and animal waste management and prescribed grazing. Incentive payments and technical assistance are being offered to landowners through this project who implement the BMPs on their riparian area property. This project, in conjunction with the aforementioned programs, has the potential of greatly increasing land user awareness of phosphorus non-point source issues and implementation of practices that result in phosphorus load reduction. We now know that in order to effect change on a large scale, agencies have to communicate and coordinate to most effectively and efficiently undertake educational efforts, provide technical assistance and help land users obtain available cost-share money.

3. Increase recreational river users' awareness of potential impacts from irresponsible behavior and make users aware of simple behavioral changes that will improve water quality. Many recreational river users stay at the river for a 1-3 day period during the season. It is estimated that 400,000 people visit the river during the summer season to float, fish, swim, camp, picnic and enjoy nature. It is important for visitors to realize that their behavior during the few hours they are here does impact the river. Agencies have two options for changing the behavior of these visitors. Either we can set rules and regulations and enforce them or we can educate river users. Education is the alternative that the public will accept. The most resourceful way to educate the largest number of people is through literature and signage. Literature, such as informational brochures, can be dispersed through the commercial outfitters, regional businesses, agency offices and visitor information centers. Signage is a way to put the information in the area where visitors are using the resource. However, with both of these methods, the information is only useful if the visitor reads the brochure or the sign. Another way to disperse information is through face-to-face contact through formats such as interpretive programs, visitor surveys and having personnel available to talk with and answer questions for visitors. The face-to-face methods probably have much more of an impact, but are more costly. A combination of printed literature and face-to-face contact is probably the most practical solution for educating recreational river users.

The most successful aspects of this grant, as far as reaching large numbers of people, were the Illinois River Schools Programs, the civic presentations and the stakeholder newsletter. However, even the programs through which small numbers of people were reached can be considered successful. Few people were reached through the interpretive programs, but the people who did attend understood more about river ecology after the program than before. A small number of people were also reached during the legislative field days (28 during the first day, 12 the second). However, the OSRC administrator had the opportunity to answer many

questions and discuss important information with state officials who are in a position to ensure protection of our water resources.

Oklahoma citizens, from pre-school children all the way up to our state's governor, learned a little bit more about non-point source pollution, the benefits of riparian areas, and the importance of protecting our valuable water resources for the future of us all. Although the project was successful in reaching many people with some very important messages, we have just begun the work that needs to be done.