

In-Depth NONPOINT SOURCE SUCCESS STORY

Highlighting the People Behind the Progress

Cooperative Efforts Build Trust While Reducing Pollution

ILLINOIS RIVER, OKLAHOMA

Decades of implementing targeted actions are steadily reducing pollution problems in Oklahoma's Illinois River, which is a state-designated scenic river. When combined with long-term dedication of multiple stakeholders, the creative use of funding sources, and strategic and consistent monitoring, the success achieved in the Illinois River basin serves as a model for others.

Partners in Success



Ed Fite, Grand River Dam Authority (GRDA)
Local Visionary Creates Change

Ed leads multiagency efforts to increase conservation, monitoring and river protection efforts.



Jerry Hammons, Producer and Cherokee County Conservation District (CD)
Landowner Supports Implementation

Jerry, the first farmer in his county to sign an easement contract, actively encourages others to participate.



Leslie Gore, Producer
Local Farmer Leads by Example

Leslie is a farmer and a long-time participant in cost-share programs for conservation practices.



Shanon Phillips, Oklahoma Conservation Commission (OCC)
State Contact Fosters Communication

Shanon promotes restoration, communicates with stakeholders and helps connect people with funding.



Tashina Kirk, Natural Resources Conservation Service (NRCS)
Federal Employee Connects with Landowners

Tashina reaches out to landowners and emphasizes building lasting partnerships based on trust.



Michael Ramming, NRCS
Federal Employee Coordinates Efforts

Michael connects landowners with funding, technical assistance and education materials.

Success Story Highlights

- **Pollutant of concern:**
Bacteria and nutrients
- **Practices implemented:**
Agricultural conservation practices (CPs), failing septic system replacement or upgrades, education of landowners and river users, and point source pollution control measures
- **Waters restored/improved:**
Water quality has improved in many streams, including five waterbodies that have been removed from the impaired waters list for bacteria
- **Key elements of success:**
 - » Dedicated leaders with a long-term vision
 - » Engaged citizen volunteers
 - » Projects providing environmental, recreational and economic benefits
 - » Availability of funds from Clean Water Act (CWA) section 319 and other sources (NRCS, state, local)
 - » Cooperation between local, state and federal partners



Basin Description

The Illinois River begins in the Ozark Mountains in northwest Arkansas—one of the nation’s most rapidly growing urban areas—and flows west into northeast Oklahoma. After entering Oklahoma, the river flows southwest into Tenkiller Ferry Lake, which serves as a public drinking water source. Approximately 54 percent of the 1,600-square-mile basin (577,550 acres) lies within Oklahoma. The Oklahoma portion of the Illinois River and Barren Fork and Flint creeks are designated as state scenic rivers due to their historical, natural and ecological significance. The city of Tahlequah, along the southwest border of the basin, is the capital of the two federally recognized Cherokee tribes based in Oklahoma: the modern Cherokee Nation and the United Keetoowah Band of Cherokee Indians.

Problem

Data have shown elevated pollutant levels in the basin since the 1970s. After additional water quality testing confirmed high levels of bacteria, Oklahoma added multiple waterbody segments to the CWA section 303(d) list of impaired waters for nonattainment of the primary body contact designated beneficial use. Pollution from grazing lands, animal waste management, urbanization and recreation contributed to the impairments.

Key Accomplishments

Oklahoma has collected data for decades to assess physical, chemical and biological parameters; to prioritize and target implementation; and to track progress. Upgrades to upstream wastewater treatment plants (WWTPs) have reduced point source pollution sources. Oklahoma has been addressing nonpoint source (NPS) pollution problems through programs such as poultry litter transfer, riparian protection, watershed education, streambank stabilization and improved grazing management (see map of CPs, back page).

NPS control efforts have been underway in the watershed for more than 30 years, including a 1992–2005

National NPS Monitoring Program and CP implementation project along Peacheater Creek, a 1995–2004 CP demonstration project in the Illinois River/Baron Fork watershed, and the 2008–2010 partnership-based Illinois River Watershed Implementation Project.

In 2007–2015, the OCC led the Illinois River Watershed CWA Section 319 Riparian Protection Project, which complemented a U.S. Department of Agriculture (USDA) Conservation Reserve Enhancement Program (CREP) effort to protect riparian areas. CREP provides incentive payments to producers in priority watersheds who enter into a 10- to 15-year contract to protect riparian buffers. Section 319 funds enhanced CREP enrollment by cost-sharing on riparian practices that were not otherwise eligible for CREP funding, such as fencing through wooded areas. In a similar effort, 30-year riparian easements were established with funding from the Oklahoma Scenic Rivers Commission (OSRC).

In 2010 NRCS began an Environmental Quality Incentives Program (EQIP) Special Initiative Project that invested more than \$21 million in CPs in the Illinois River and neighboring Spavinaw Lake watersheds. This program helped to ensure consistent density of CPs on both sides of the state line.



Students use nets to collect fish and macroinvertebrates in the Illinois River.

Photo: OCC

THE PEOPLE BEHIND THE PROGRESS

Ed Fite, Grand River Dam Authority

Local Visionary Creates Change

Ed grew up along the waters of eastern Oklahoma. In 1983 he took the helm of the OSRC and has been working on behalf of the Illinois River ever since. For 33 years, he led OSRC's efforts to police the basin's waterways, manage and maintain recreational facilities, conduct outreach and education, and coordinate river protection efforts. Ed spent hours talking with poultry integrators, state agencies and others to overcome differences. In 2016, the OSRC was absorbed by the GRDA, and Ed was hired as the GRDA's Vice President of Rivers Operations and Water Quality. He's currently responsible for ensuring water quality standards (WQS) are met in all the state's scenic rivers and the 12,000-square-mile Grand Lake O' the Cherokees watershed. Ed has received many awards for his dedication, including lifetime achievement awards from Keep Oklahoma Beautiful (2004) and the River Management Society (2016).

- ***What has the Illinois River watershed meant to you?***

Ed: The river has had a remarkable impact and influence on my life. I'm passionate about water and its protection, but I also realize that we need to balance that protection with economics and quality of life.

- ***How has the watershed changed over the years?***

Ed: Around 180,000 people lived in the basin in 1983. Since then, the population has increased to about 700,000, mostly in the headwaters area of northwest Arkansas, and is still growing. Early on, I realized we needed Arkansas's help to meet Oklahoma's water goals. Beginning in the 1980s, everyone was focused on abating the impacts from point sources of pollution. In the late 1990s, the focus changed to deploying a robust water quality monitoring program and mitigation of NPS pollution issues. The states began working together to stabilize streambanks and establish riparian areas. The goal became to establish lush riparian areas that could temporarily store water and then slowly release it back into the environment.

- ***Why did so many people sign long-term riparian protection agreements?***

Ed: After encountering eligibility issues with the CREP program, our partners developed a new riparian conservation easement program that paid \$2,250 per acre upfront to homeowners who signed a 30-year contract. We had people standing in line to sign up for the program. The residents were more willing to commit to long-term contracts if they were paid upfront. The funding allowed them to get out of debt, purchase new equipment, or add on to their house. If residents chose to get out of the contract, they had to pay back for the years they didn't conserve the land. The funding was provided by the 319 Program, the poultry industry and other grant sources.



“We’re one of the few localities in the United States that can say we improved water quality at a time when population increased three-fold.”

Ed Fite



A group enjoys the Illinois River.

Photo: OCC



Ed Fite enjoys kayaking on the Illinois River.

• **How did the 319 Program help the watershed?**

Ed: The 319 Program is a catalyst for why Oklahoma can say our rivers are getting better. The program provided the lion’s share of funding for the 30-year paid upfront conservation easement contracts. As a result of our success, other agencies are exploring conservation easement programs.

• **What were some of your favorite moments?**

Ed: I’ve never had two bad days on the river. I’ve watched kids from the inner city catch their first fish, and I’ve helped people learn to canoe and kayak. Everyday there’s a new memory or funny story from the river. Hopefully I’m leaving a legacy so that others can enjoy the river as well.



**Jerry Hammons, Cherokee County CD
Landowner Supports Implementation**

Jerry, a retired farmer, owns more than 420 acres along the river. He has fished and camped along the Illinois River his entire life, and he owned a convenience store along the river from 2008 to 2012. He’s a strong supporter of conservation and protection for natural resources in the watershed. He was the first landowner in Cherokee County to sign up for CREP and CWA Section 319 Program conservation contracts. His family’s land is held under a conservation easement with the Land Legacy, a nonprofit conservation organization, to ensure the land cannot be commercialized, subdivided or sold. He’s a long-time member of the volunteer fire department and also serves on the board of the CD.

“My land and the river have done so well that I’d like my contracts to be extended indefinitely.”

Jerry Hammons

• **How have conservation programs helped your farm?**

Jerry: I used annual CREP and 319 Program payments to develop riparian buffer strips to keep my livestock out of the creek. Both contracts expire in 2022. My land and the river have done so well that I’d like my contracts to be extended indefinitely. I also received tax incentives from Cherokee County.

• **How have conservation programs helped the Illinois River?**

Jerry: The phosphorus and bacteria levels have declined. The economic impact has been good as well. Businesses on the river are booming, with multiple kayaking, canoeing and other recreational floating operations active during the five-month summer season. The conservation efforts in the watershed need to continue to ensure we take care of the river.

• **What was CD’s role in the Illinois River restoration project?**

Jerry: It provided some funding for the septic and riparian buffer projects in Adair and Cherokee counties. I’ve gotten more involved with the CD to ensure these programs continue.

Leslie Gore, Producer

Local Farmer Leads by Example

Leslie's a farmer and a long-time supporter of conservation in the watershed. He's lived within 30 miles of the Illinois River his entire life and enjoys spending time on the river. Leslie is part of a multigeneration farming family that has remained active in the Illinois River restoration effort. His father-in-law, Richard Self, invited the OCC to place an autosampler on his property to collect long-term data for the OCC's Pecheater Creek National NPS Monitoring Program project in 1992–2005. Over the past 20 years, Leslie has also participated in numerous programs to help support his conservation efforts, including the Wildlife Habitat Incentives Program, EQIP, CREP, the Section 319 Program and the Conservation Stewardship Program.

- **Why have you participated in conservation programs?**

Leslie: Farmers and ranchers, in addition to everyone else, need to help keep the river clean. It's everyone's responsibility, but it's expensive to install and maintain conservation practices. The cost-share programs help offset the costs.

- **What conservation practices have you installed?**

Leslie: I've used no-till drilling; installed automatic water feeders with concrete aprons; fenced the cattle away from the ponds, creek and woods; eradicated the cedar, which is an exotic invasive that requires a lot of water; added nitrogen and phosphate stabilizers to reduce leaching; installed a geotextile liner to prevent manure runoff; and implemented many other practices over the years.

- **How have conservation program helped you?**

Leslie: Without the cost share I couldn't have installed the practices. Some practices cost \$50,000, and the cost share rate is 50 to 90 percent, depending on the practice and the program. Some of the programs provided funding upfront, but most require the farmer to pay for the practice and then be reimbursed a few months later.

- **How have the conservation practices affected the community?**

Leslie: The river is cleaner. Also, the practices made everyone more aware of where the pollution was coming from. It helped show that abandoned septic tanks were contributing pollution, and it was good to have these fixed.

- **How are conservation programs changing?**

Leslie: I'm currently under contract for a few of the programs, but many have expired. Programs are now focusing on poultry operations and in other counties. Program staff and priorities can change depending on local, state and federal politics. You need to be flexible and ready to adjust. If additional programs or contracts were extended in my county, I would sign up again.



“Without the cost share I couldn't have installed the practices.”

Leslie Gore



A fence prevents livestock from accessing a restored riparian area.

Photo: OCC



Landowners spread a concrete apron around an alternative watering tank.

Photo: OCC



Shanon Phillips, Oklahoma Conservation Commission *State Contact Fosters Communication*

Shanon grew up spending time on a family farm in Kansas. She began working in the Illinois River watershed on a Clean Lakes study while pursuing a master’s degree at Oklahoma State University. She’s worked for the OCC for more than 20 years and has served as the Water Quality Division Director for the past 10 years. She’s responsible for implementing Oklahoma’s NPS pollution program, which includes activities completed under the CWA Section 319 Program, the state’s Wetland Program and NRCS CREP.

“The CWA Section 319 Program is like a seed for other programs and processes.”

Shanon Phillips

- **Why is the Illinois River projects worthy of special notice?**

Shanon: The use of both point and NPS controls have effectively reduced bacteria and phosphorus levels in the river, despite the area’s rapidly growing population. The many successes seen in the watershed since the 1970s are finally yielding measurable improvements. Bacteria reductions are due primarily to NPS controls, which couldn’t have been implemented without the 319 Program. Phosphorus reductions are due to both NPS controls and point source controls, including local communities’ \$300 million investment in WWTP upgrades and expansions.

- **How did the CWA Section 319 Program help the project effort?**

Shanon: The 319 Program is like a seed for other programs and processes. It’s flexible enough to fill in gaps, but it’s not the entire solution. It allows us to work with partners and stakeholders to identify the biggest problems and start checking items off.

- **How are CWA Section 319 funds used in the watershed?**

Shanon: We started using the 319 Program to support monitoring and prioritization in the 1990s. Back then, we worked with the OSRC to install port-a-potties on the river because about 500,000 people were floating down the river every summer without access to facilities. More recently we’ve used 319 funds to support the transfer of poultry litter out of the watershed, build litter storage sheds and composters, and support conservation easement payments.

- **What has been an important contribution to the water quality success?**

Shanon: The growing acceptance of riparian protection. Over the last 25 years, the state has worked with hundreds of people to sign contracts to protect riparian areas. Many are from families over multiple generations in the same areas, which shows that not only do people see the value in protecting the riparian areas, but also that we’ve established trust. This was the first place in the state to have this level of participation in long-term riparian area protection. The state doesn’t hesitate to put more resources toward this watershed because residents have demonstrated that if financial and technical assistance is provided, they will work with us.

Photo: OCC



People of all ages enjoy rafting along the Illinois River.

Photo: OCC



Students take part in an OCC-led Blue Thumb education event.

Tashina Kirk and Michael Ramming, NRCS *Federal Employees Coordinate with Landowners*

Tashina (Tash) and Michael work for the Oklahoma NRCS. Tash is the Soil Conservationist in the Jay, Oklahoma, office. She worked previously as the OCC project coordinator for Section 319 Program projects in the Illinois River watershed. Tash enrolled a record number of acres into long-term riparian protection contracts, and she also worked with cooperators to upgrade septic systems and install CPs. Michael is the District Conservationist in Delaware County and the local NRCS team leader. He and his team provide funding and technical support to the three local conservation districts to help implement CPs and develop plans that support the cost-share program.

- ***How has NRCS contributed to the Illinois River project success?***

Tash: NRCS's ability to reach the residents was a big reason for the success. NRCS staff knew the people in the county. OCC didn't have that type of access to the residents without NRCS.

- ***How did the CWA Section 319 Program help the watershed?***

Michael: It offered various avenues of funding, flexibility in the type and contract length of CPs, and support for demonstration farms. It even had flexibility to fix old and non-functioning septic systems when NRCS programs couldn't. The monetary incentives provided by the 319 Program were helpful in getting landowners to try new things.

- ***How did you enroll so many riparian acres in long-term contracts?***

Tash: I spent time with the property owners and discussed possible CPs as well as the problems they might encounter. If I didn't think a practice would work, I wouldn't suggest it. Landowners understood that I was there to help them, not just to enroll them in a program.

- ***What were your favorite moments working in the watershed?***

Michael: Talking with landowners. We were able to get a lot of voluntary conservation measures in place. Landowners appreciated the funding, technical assistance and education provided by field personnel. You're always going to hear complaints if something goes wrong, so it was nice to hear from good people who said we made a difference by helping them.

- ***What impact did the project have on the watershed and residents?***

Tash: People listened when we said, "These are things we can do to help you." I drove by years later and saw that some landowners installed fencing or were restricting animals from the creek. Even though they might not have enrolled in the programs, they'd heard what we said and made improvements to their property on their own.



“Landowners understood that I was there to help them, not just to enroll them in a program.”

Tash Kirk

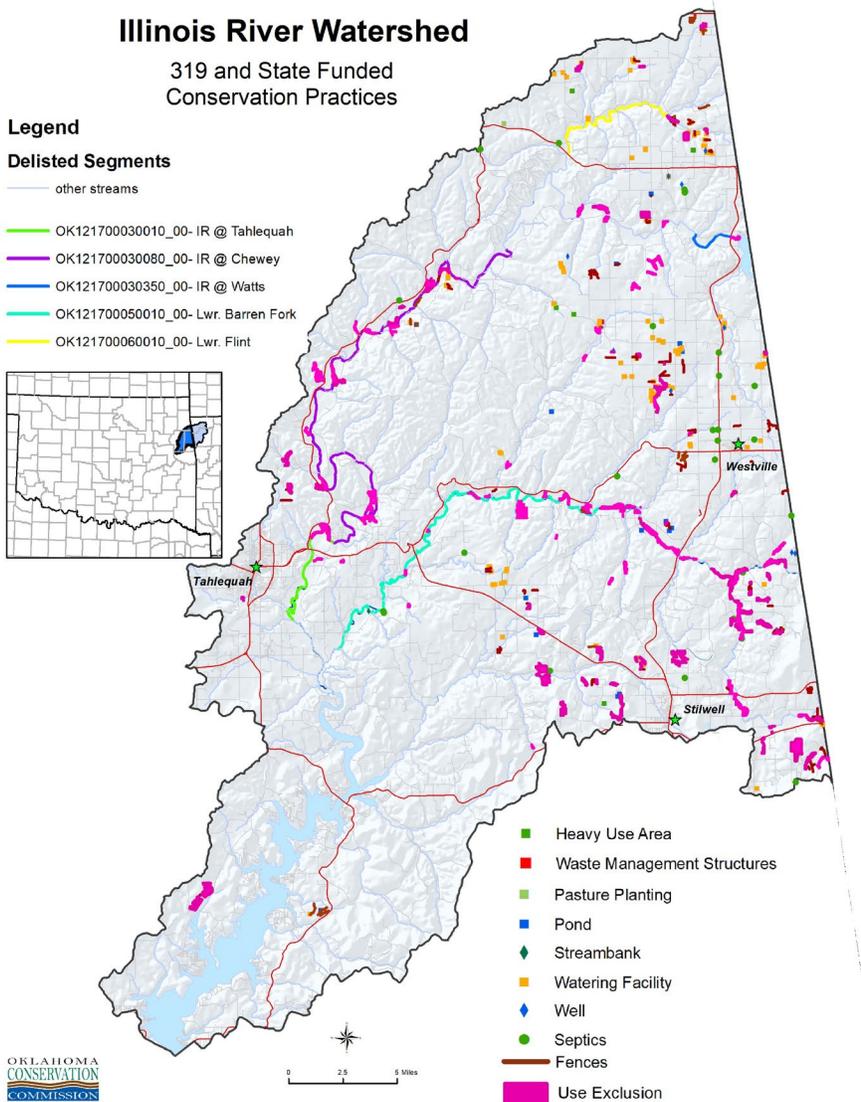


“Landowners appreciated the funding, technical assistance and education provided by field personnel.”

Michael Ramming

Watershed Restoration Results

Water quality has improved in the Illinois River basin, allowing Oklahoma to remove five segments from the impaired waters list for bacteria by 2016 (see map, below). Another 12 segments remain listed for bacteria, but data show improvement. Decreasing phosphorus loads have also been documented; however, eight segments remain impaired for phosphorus. The success of the water quality assessment and enhancement programs in the basin is due to widespread public support and involvement of numerous local, state and federal stakeholders.



Location of the five delisted segments in the Oklahoma portion of the Illinois River, and the placement of all practices implemented (2000–2015) that were funded with sources other than USDA programs.



Looking to the Future

By Shanon Phillips, Director,
OCC Water Quality Division

Encouraged by the progress achieved, partners continue to address the remaining, primarily nutrient related, impairments in the Illinois River. The OCC, GRDA and other partners are enrolling additional long-term riparian use exclusion contracts, and Arkansas has begun a similar program. NRCS continues to implement conservation programs on both sides of the state line.

Monitoring and assessment is ongoing in both states along with water quality and natural resource conservation education efforts. Volunteer monitoring and education programs are coordinating across state lines to plan joint events. Oklahoma is developing new demonstration farms in the watershed to encourage the adoption of soil health and water quality-focused conservation practices.

Oklahoma, Arkansas and the Cherokee Nation signed a collaborative agreement to address the watershed impairments and protect its natural resources. This effort will develop an updated Soil and Water Assessment Tool model and a joint Watershed Implementation Plan to reduce point and nonpoint source contributions to the watershed.



U.S. Environmental Protection Agency
Office of Water
Washington, DC
EPA 841-F-20-001I
April 2020

For additional information contact:

Shanon Phillips
Oklahoma Conservation Commission
405-522-4728
shanon.phillips@conservation.ok.gov