



ANNUAL REPORT 2021



GRAZING SCHOOL at Ozark Pasture Beef - October '21

THE ILLINOIS RIVER WATERSHED PARTNERSHIP

works to improve the integrity of the Illinois River Watershed through public education, outreach, and implementation of conservation and restoration practices throughout the watershed.

WE
ENVISION
THAT THE

ILLINOIS RIVER AND ITS TRIBUTARIES

will be a fully functioning ecosystem, where ecological protection, conservation, and economically productive uses support diverse aquatic and riparian communities, meet all state and federal water quality standards, promote economic sustainability, and provide recreational opportunities.

LETTER FROM THE DIRECTOR

“Reflecting on 2021 and looking forward to 2022...”

With the startup of two new programs and transitions in staff, IRWP made some big changes in 2021. First, as the new Executive Director, I’m thankful for the work that Dr. Nicole Hardiman accomplished in strengthening the governance, financial health, and effectiveness of the organization during her 5 years at IRWP. Through her work, IRWP has been able to effectively implement multiple conservation programs and water quality monitoring, advancing the region’s understanding of streambank erosion and the aquatic health of some of our most impacted tributaries. As I begin my work at IRWP, I’m deeply appreciative of all of the work our partners from the business community, cities and counties, farmers, and other stakeholders pursue to improve the health of the watershed. It is my feeling that all of us recognize that addressing water quality requires long-term commitment, and we are making headway with improvements in how we manage nutrients and nonpoint source pollutants. Thank you all for your collaboration as we continue to meet the challenge of a changing region and making improvements that enable the Illinois River and its tributaries to meet water quality standards.

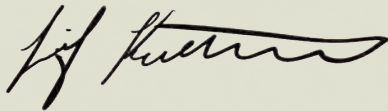
In 2022 we look forward to building on several successful programs. We will be expanding the Riparian Restoration Program in the Upper Illinois River Watershed to support more landowners, helping them to achieve their management goals while simultaneously improving water quality. We expect to provide more than 30 grants and zero-interest loans to homeowners to replace failing septic systems. We will work with Arkansas and Oklahoma schools in the watershed to engage more than 3,000 elementary and high school student minds in water quality

learning and in protecting their watershed. We are also looking forward to working with new partners to improve the Illinois River for recreation – to help more people learn why they care about this watershed!

In 2022 we will continue to work with regional partners to assess and prioritize urban stormwater solutions including the implementation of low impact development practices. Benton and Washington counties grew at double-digit rates in the last decade. This growth is projected to continue, requiring that we all support smart growth to protect the lives, livelihoods, and land throughout the region.

These are just a few of the things that we are excited to be working with you, our most important members, to achieve in 2022. Thank you for allowing me to serve you in achieving watershed management goals and please let me know how we can help. I look forward to seeing you soon!

Sincerely,

A handwritten signature in black ink, appearing to read 'Leif Kindberg', written in a cursive style.

Leif Kindberg
Executive Director



Kayaking the Illinois River, January 2022

WATER QUALITY MONITORING, in partnership with IRWP Sponsors & Partners

- **12 sites surveyed** three times throughout the year as part of the ecological assessment of priority subwatersheds in Oklahoma, in partnership with Grand River Dam Authority (GRDA) laboratory and Oklahoma Blue Thumb.
- **45 miles of streambank** were inventoried for rates of erosion and sediment loading for the fourth time in partnership with Natural State Streams LLC.
- **Water samples were collected and tested** throughout the year at **two 303(d) listed sites**, in partnership with Arkansas Division of Environ-

SEPTIC TANK REMEDIATION PROGRAM,

in partnership with Arkansas Natural Resources Division (ANRD)

- **16 failing septic systems replaced** or repaired to improve water quality in the Upper Illinois River Watershed
- **\$172,771 in septic repairs and replacements** in Benton and Washington Counties
- **56 homeowners** provided with septic system maintenance educational information

RIPARIAN RESTORATION & LANDOWNER

SERVICES, in partnership with Walton Family Foundation, Arkansas Natural Resources Division (ANRD)

- **49 acres of riparian buffer restored** with native vegetation and BMPs installed on 4 miles of headwater streams
- **460 acres of pasture** supplied with alternative watering sources to reduce direct contact with streams, including installing **26,000 feet of fence** for rotational grazing
- **15 landowner conservation plans** prepared with tailored management practices covering **408 acres**

OUTREACH and

EDUCATION, in partnership with

American Electric Power Foundation, Natural Resource Conservation Service (NRCS), & Sponsors

- **Hosted 3 events and sent nearly 5K newsletters to stakeholders** with information about land management and opportunities to improve water quality
- **8 webinars on land conservation** resources access to technical assistance
- **412 students participated** in water quality and watershed management education programming



2021 IRWP STAFF

Leif Kindberg Executive Director

Travis Chaney Program Manager, Riparian Restoration

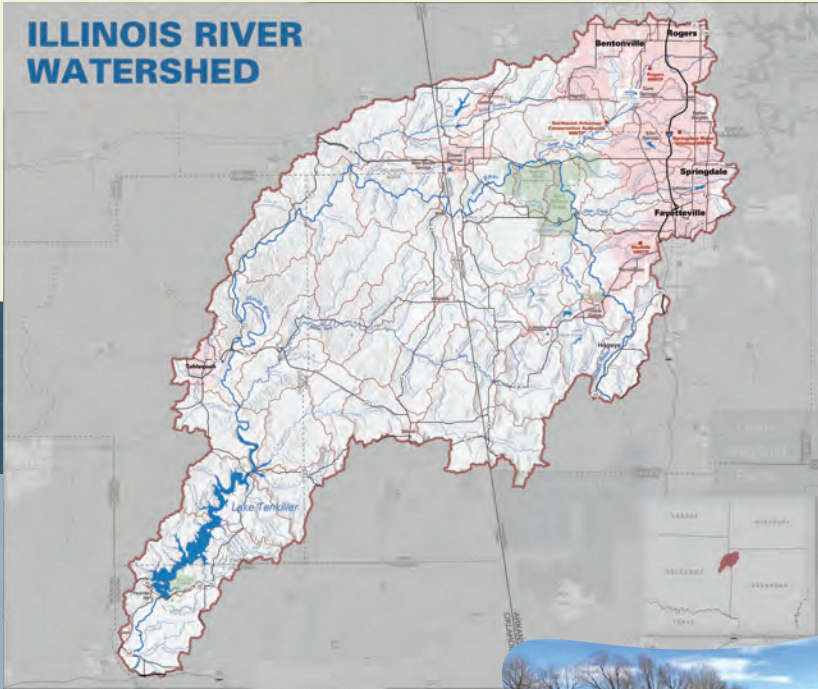
Matt Taylor Program Manager, Septic Tank Remediation

Justin Nachtigal Program Manager, Youth Education & Water Quality Monitoring

Morgan Keeling Community Relations Manager

Desiree Main Administrative Specialist

ILLINOIS RIVER WATERSHED



LAND USE CHALLENGES

It almost goes without saying, but the pace and scale of land-use challenges in our watershed continue to accelerate for everybody in Northwest Arkansas. Farmers, ranchers, city planners, county roads crews, land developers, and homeowners alike are all feeling the growing pains. Suburban developments are rapidly absorbing the region's farms and forests.



The increase of new impervious surfaces, combined with the increased frequency of intense storms is bringing the need for improved storm-water management to the forefront of many people's minds. A record rain event on April 28th flooded homes and businesses that never imagined they would need flood insurance. Farmers and ranchers lost fences, and in some cases lost livestock. Gravel and trash piled up across hayfields, leading to costly cleanup and loss of productivity.

The April 28th flood made clear to many leaders in Northwest Arkansas that Smart Growth strategies, low impact development, regional stormwater planning, and a commitment to water quality improvements will be a necessity as our region marches toward 1 million residents within the next 20 years.



Rescue in Siloam Springs during April 2021 Flood - Photo: KATV



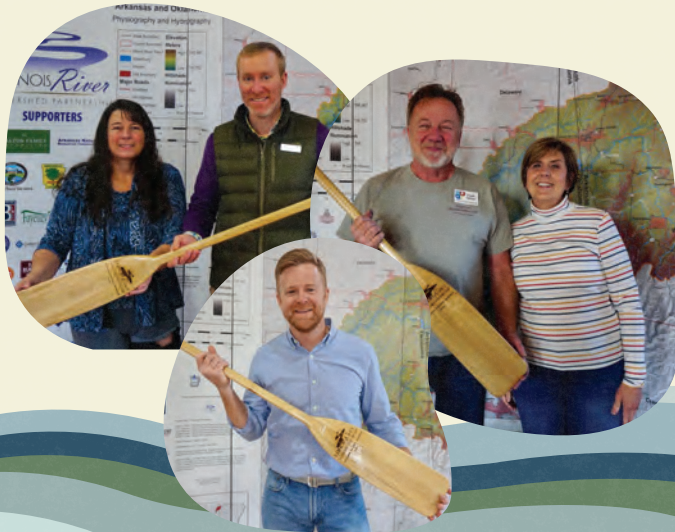
Arkansas Darter - Dustin Lynch, Arkansas Natural Heritage Commission

SPECIES OF CONSERVATION CONCERN

The Illinois River Watershed is home to both Federal recognized threatened or endangered (T&E) species, as well as many plant and animal species that Arkansas state agencies consider being of greatest conservation need (SGCN). In 2021, IRWP worked on projects to protect and improve habitat for SGCN animal species such as Arkansas Darter, Least Darter, Midget Crayfish, and SGCN plant species such as Pointed Broom Sedge and Swamp Milkweed.

GOLDEN PADDLE AWARDS

Since 2008 IRWP has been recognizing the leadership and work of businesses, agriculture producers, governments, researchers, educators, conservation groups, construction contractors, and others who are making a difference in water quality. Keep up the important work and let us know how we can help you!



Left to Right: Elizabeth Bowen, Leif Kindberg, Wes Craiglow, Curtis and Donna Leister

2021 WINNERS

Agriculture: **The Ollers**

Conservation: **Grand River Dam Authority (GRDA) Scenic River Operations**

Business: **Arvest Bank**

Construction: **Wes Craiglow (ULI) NWA Urban Land Institute**

Government: **Elizabeth Bowen (NWARPC) Northwest Arkansas Regional Planning Commission**

Technical/Research & Education: **Candice Miller Oklahoma Blue Thumb**

Volunteer: **Curtis Leister**

SPONSORS

LEGACY and WATERSHED

WALTON FAMILY
FOUNDATION



RIVER and TRIBUTARY

GEORGE'S

Simmons



Springdale
WATER UTILITIES



Coca-Cola

ARVEST



Denali
WATER SOLUTIONS



ROGERS
WHERE POSSIBLE... LIVE!

Houston & Company, P.A.
CERTIFIED PUBLIC ACCOUNTANTS



STREAM, CREEK, and SPRING



CITY OF
TAHLEQUAH
OKLAHOMA

OKLAHOMA
FARM BUREAU

GRDA
Grand River Dam Authority

FARM
BUREAU
ARKANSAS



Jacobs

NWA LOW IMPACT DEVELOPMENT (LID) CONFERENCE

The NWA Low Impact Development Conference provided educational opportunities for development professionals from city and municipal governments, engineering, and landscape architecture to learn new or updated practices and measures to proactively address water quality through LID (also known as green infrastructure or "GI") via precipitation management. The summit was held on November 3rd and 4th at Thaden Fieldhouse in Bentonville, Arkansas and educated 99 attendees over the two days. Speakers from multiple disciplines of stormwater management in various aspects of stormwater management, design, planning, and financing delivered 45-minute presentations and hosted discussions by Q and A. A field tour portion was hosted at Osage Park wetland preserve to praise our floodplains, wetlands, prairies, and demonstrate creative ways to increase utilization of and positive public perception for LID and the use of stormwater-infiltration efficient native species in community and public spaces.





CONFERENCE CURRICULUM

With the overall message of “In 10 years, what will we wish we had done to protect the Illinois River?” we focused the LID Conference curriculum on driving awareness of current non-point source water quality challenges in the watershed. The conference introduced a range of solutions from active measures, such as site planning for green infrastructure practices, to passive measures such as conservation of undeveloped floodplains, wetlands, and riparian forests and flood mitigation.

The NWA LID Conference introduced new and proven best management practices that participants hope to use in reducing nonpoint source pollution. The presentations are recorded and are accessible to conference attendees and the public through the NWA LID Conference Hub, access it at www.irwp.org/nwalid2021.



irwp.org/nwalid2021

REGIONAL LEADERSHIP on STORMWATER MANAGEMENT



In 2021, IRWP launched the Blue Cities, Blue Neighborhoods program to proactively address stormwater in our communities. The program engaged city councils and planning commissions to bring awareness to the challenges we are facing in the watershed: major streambank erosion, changing weather patterns, growing small towns that must act like “big” cities, and some of the solutions in our shared toolbox to addressing these. Additionally in 2021 the methodology for prioritizing neighborhoods to engage in outreach was developed using GIS spatial technology that measured slope, flow accumulation, and other metrics. In 2022, we will earmark potential projects to work together on with local governments, agency partners, and community groups.



Vegetation management training with Water Conservation Resource Center (WCRC), December 2021



Addressing nonpoint source pollution in Siloam Springs.



On June 30th, 2021

IRWP hosted a Stormwater Action Meeting where state officials, local governments, and key stakeholders joined to discuss the Northwest Arkansas Stormwater Action Plan. The Northwest Arkansas Regional Planning Commission (NWAPC) is working with IRWP, cities, counties and others to study stormwater management challenges in the Upper Illinois River Watershed and identify water quality improvement priorities for our region. As a major component of the Blue Cities outreach, the Illinois River Watershed Toolkit was developed as a guide to the challenges and opportunities in our changing watershed.



RIPARIAN RESTORATION

Even with COVID-19 disrupting our traditional outreach strategies, IRWP continued to implement best management practices for water quality and build relationships with stakeholders throughout the watershed as a part of our Riparian Restoration Program.

In 2020, we reached agreements with landowners to:

- Implement BMPs for water quality along 4 miles of headwaters streams.
- Install off-stream livestock watering facilities on 460 acres of pasture.
- Construct over 26,000 feet of fence to improve rotational grazing opportunities.

Additionally, IRWP provided assistance to a neighborhood along a particularly degraded stretch of Clear Creek by facilitating virtual meetings and funding the development of a Master Plan for streambank restoration in partnership with Watershed Conservation Resource Center (WCRC).





One of the most exciting projects to come out of 2020 is a partnership with the City of Siloam Springs at a nine-hole golf course called The Course at Sager's Crossing. Sager Creek has been the defining natural feature of Siloam Springs since its founding, and the headwaters of the creek are at "Box Spring", just off one of the fairways at the golf course. Over the years, removal of riparian vegetation has led to erosion, which is now affecting playability and threatening bridges, greens, and tee boxes. IRWP is contracting with Natural State Streams to reinforce critical banks with stone and wood structures, replant 4,000 feet of riparian vegetation, and create almost 9 acres of additional floodplain and upland prairie habitat.



WALTON FAMILY
FOUNDATION

PROGRAM SPONSORS

IRWP's Septic Tank Remediation Program was started up in 2021 supporting homeowners in the Illinois River Watershed in Benton and Washington counties to replace or repair their failing septic systems. This program offers up to \$30,000 to homeowners who meet those requirements; the funding is provided as a combination of grants and 0% interest loans depending on taxable household income. There is no income cap for this water quality improvement initiative. Through this three year program IRWP will implement at least \$1 million in septic tank repairs or replacements using Clean Water Revolving Loan Funds provided by the Arkansas Department of Agriculture, Division of Natural Resources.



**PRAIRIE GROVE,
REPLACED SEPTEMBER '21**

Septic effluent regularly surfaced on the property and ran off into an ephemeral stream which feeds the Upper Muddy Fork subwatershed.

SEPTIC TANK REMEDIATION PROGRAM



WHAT IS IMPAIRING THE ILLINOIS RIVER?

Multiple subwatersheds and the main stem of the Illinois River in Oklahoma and Arkansas are impaired. This shaped IRWP's priorities and focus in 2021. Much of the Illinois River, subwatersheds of Barron Fork, Caney Creek, Ballard Fork, Tyner Creek, Little Osage Creek, Moores Creek, Lower Muddy Fork, and other subwatersheds do not meet water quality criteria due to multiple sources of contamination.

Sulfates and E. coli have been the most common impairments in Arkansas portions of the watershed while phosphorus and bacteria are the most common in Oklahoma. Elevated sulfate is common throughout the US, though the source of sulfate pollution can be difficult to pinpoint. Phosphorus is often from human causes and IRWP research also shows that as much as 54% of total phosphorus in Arkansas is a result of streambank erosion - see 2021 Streambank Erosion Report.

Very important for human and animal health is addressing the elevated bacteria levels found in several Oklahoma and Arkansas streams. Sources of E. coli contamination includes failing septic system and livestock in or near streams, two nonpoint sources that IRWP programs sought to address in 2021.



Justin Nachtigal takes a water sample at Moore's Creek.



YOUTH EDUCATION



**AMERICAN
ELECTRIC
POWER
FOUNDATION**

IRWP's Board of Directors and staff are honored to have the financial support of the American Electric Power Foundation to support Youth Education and Water Quality Monitoring.

In 2021, after interruptions due to COVID-19, we have been able to relaunch youth education programming and continue the citizen science work with science educators across the watershed. We look forward to growing our conservation program of hosting interactive, science-based field trips for students. Additionally, Mobile Learning Labs kicked off with in-classroom activities that spark thoughtful insights on our hidden ecosystems and the impact we can have their water quality. IRWP has and will continue to design, test, and make publicly available at no cost full lesson plans on water quality and watershed management that educators will be able to replicate independent of IRWP staff in their classrooms.

With the program re-launch, we revamped our youth education webpage. The new, simple, and user-friendly webpage design enables educators to view a snapshot of our program offerings and request mobile learning labs to be executed in their classrooms by IRWP staff or field trips to our 30 acre sanctuary (<https://www.irwp.org/youth-education>).

OUR PROGRAM IMPLEMENTATION PARTNERS

Local City Governments

Natural Resources Conservation Service

NWA Master Naturalists

Arkansas Natural Heritage Commission

Arkansas Game and Fish Commission

The Nature Conservancy

Arkansas Water Resources Center

Watershed Conservation Resource Center

Northwest Arkansas Regional Planning Commission

U of A Cooperative Extension

Benton County Roads Department

National Center for Appropriate Technology

Benton and Washington County Health Departments

Ecological Design Group

Natural State Streams

Oklahoma Blue Thumb

Education Accelerated by Service and Technology

...and others!



WATER QUALITY MONITORING

IRWP's monitoring work is focused on macroinvertebrate indexing to assess the ecological health of the Illinois River and its tributaries. The Eco-Assessment Project targets two goals: 1) to engage local youth in the science, study, and management of watersheds and water quality and 2) to acquire usable data that IRWP can utilize in order to guide decisions around landowner outreach and facilitation of conservation and restoration projects in Arkansas and Oklahoma. These Eco-Assessments occur in the field in April, August, and November each year. IRWP's goal is to assess 25 locations in Arkansas and 12 locations in Oklahoma. Each state will be assessed on an every-other-year basis - Oklahoma was the focus of 2021 and Arkansas will be in 2022. IRWP trains volunteers (students and adults) to complete habitat assessments and collect macroinvertebrates (aquatic insects) which are indicators of overall ecosystem health. Water quality samples are also collected and delivered to a lab for analysis of various water quality parameters - phosphorus, nitrogen, bacteria, total suspended solids, etc.



ECOASSESSMENT: WHAT DID WE FIND?

The subwatersheds sampled in Oklahoma have a higher average macroinvertebrate diversity score (24) as compared to Arkansas (16). In fact, macroinvertebrate diversity was significantly higher across all Oklahoma sites when compared to Arkansas.

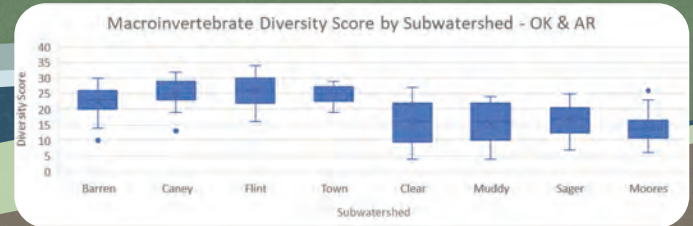
There were positive relationships between diversity and presence of gravel and cobbles within the streambed. There were negative relationships between diversity and presence of silt, clay, and mud within the streambed, filamentous algae in the water column, and presence of trees along streambanks.

As a consequence of erosion, small soil particles can degrade aquatic organisms' ability to obtain oxygen. These sediments fill open spaces between rocks that are important to these organisms' survival.

Management recommendations in the report focus on reduction of silt, clay, and mud from the immediate site, as well as from upstream land uses (which presumably contribute silt, clay, and mud to the sampling sites).



Read a Summary or download the full 2022 EcoAssessment



LANDOWNER OUTREACH and EDUCATION

In 2021 with the help of NRCS, we were able to send nearly 5,000 educational mailings to landowners on these subjects:

- Streambank Erosion**
- Riparian Buffers**
- Rotational Grazing**

Field Tours were held for each of the best management practice categories across the watershed. Attendees from a variety of backgrounds and disciplines learned from partners at WCRC, Arkansas Game and Fish, UA Cooperative Extension, FlowState, and others to generate awareness and action to protect the vulnerable riparian corridors of the Illinois River and its tributaries.



Business in the Buffer - Gibbs Ranch, Siloam Springs





Grazing School

On October 8th, in partnership with NRCS, Ozark Pasture Beef, Quail Forever, and NCAT, we hosted Grazing School. Producers joined us in Fayetteville near Lake Wedington at the farm where Ron Morrow and Ann Wells graze their cattle and sheep. Attendees learned the importance of soil health, about cool and warm season grasses for forage, and ways we can protect wildlife habitat on-farm. NRCS's runoff simulator demonstrated the importance of deep-rooted, native vegetation to combat erosion from runoff and absorb water and nutrients. In the future, we hope to expand this programming to serve more Oklahoma producers and build the landowner-to-landowner connections that drive changes in farming, grazing, and watering practices.



Grazing School Resource Hub



Greg Watkins (NRCS) demonstrates the Rainfall Simulator

FINANCIALS

Assets

Cash	\$1,132,928
Restricted Restoration Funding	\$2,200,185
Fixed and Other Assets	\$1,789,011
Total Assets	\$5,122,124

Liabilities

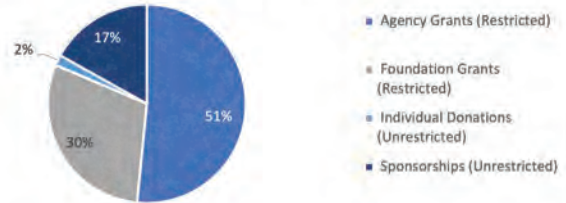
Accounts Payable	\$14,959
Deferred Grant Revenue	\$2,104,305
Total Liabilities	\$2,119,265

Net Assets

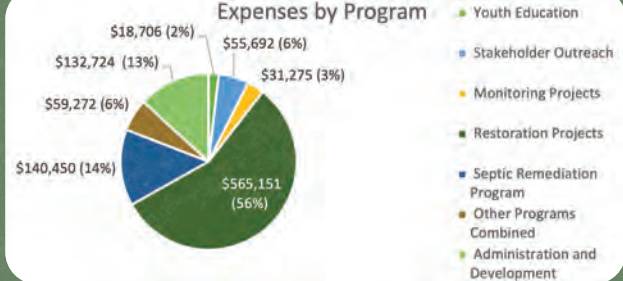
Beginning Net Assets	2,632,393
Change in Net Assets	409,353
Total Net Assets	3,041,746

Total Liabilities & Net Assets \$5,161,011

Revenue by Source



Expenses by Program



OUR BOARD OF DIRECTORS

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