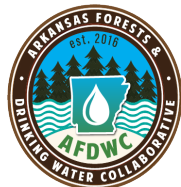


Arkansas Agriculture, Forests, and Water Conference

July 22 - 24, 2025

Building Resilience through Sound Science and Practice



We have lined up an array of experts to share their research, perspectives, and experiences regarding agriculture, forests, and water issues and challenges across Arkansas.

AGENDA

Tuesday, July 22

0825 Welcome and Conference Kick Off, Brian Haggard, AWRC

AWRC Sponsored 104(b) Research on Emerging Water Issues

Contaminants of Emerging Concern, Moderator, Erin Grantz, AWRC

0830 How Low Can We Go? Towards PFAS Quantitation at the EPA Health Advisory Levels with Diffusive Gradients in Thin-Films Passive Samplers, Julian Fairey, University of Arkansas

0848 Development of On-Site Fluorescence PFAS Sensors, Lei Guo, University of Arkansas

0906 Monitoring Per- and Polyfluoroalkyl Substances in Central Arkansas Surface Water, Gunnar Boysen, University of Arkansas Medical Sciences

0924 Extracellular Antimicrobial Resistance Genes, an Emerging Contaminant in Surface Water Bodies in Northern Arkansas, Nathaniel Elliot, University of Arkansas

0942 3-D Printed Electrochemical Devices for Accessible Point-of-use Heavy Metal Detection in Drinking Water, Mostafa Mahmoudi, University of Arkansas

1000 BREAK

1020 HABs Occurrence and Treatment Technologies, Moderator, Felicia Osburn, ADEQ

1020 Harmful Algal Blooms in Arkansas: From Monitoring to Advisories, Felicia Osburn, Division of Environmental Quality, Arkansas Department of Energy and Environment

1038 Synergistic Effect of Electrocoagulation and Antifouling Nanofiltration Membranes for Microcystin Removal, Chidambaram Thamaraiselvan, University of Arkansas

1056 Evaluating Combinations of Cyanobacteria Remediation Solutions and their Impact on Zooplankton Species, Sarah Webb, Arkansas State University

1114 Identifying Genetic Markers for Microcystin-Producing Algal Blooms, Wafa Youssfi, University of Arkansas

1132 Advances on Toxins and Harmful Algal Bloom Research by the US Geological Survey, Keith Loftin, USGS

1150 LUNCH (let students, poster presenters get food first)

1230 Water Research Poster Session

1330 Lake Frances Bottomland Forests, Wetlands and Vision, Moderator Steve Patterson, BXD

- 1330 From the Olentangy River Wetlands to Lake Frances: Lessons Learned and Opportunities for Wetland Research and Education, Robert Nairn, University of Oklahoma
- 1348 Weaving Rivercane Restoration at Lake Frances: Ecosystem and Educational Benefits of Restoring Culturally Important Vegetation, Hailey Blackwell, University of Oklahoma
- 1406 Unraveling Phosphorus Storage and Mobility in the Lake Frances Legacy Sediment Floodplain, Cheyenne Morgan, University of Oklahoma
- 1424 Sediment Phosphorus Release in Lake Frances in Relation to Illinois River Total Phosphorus Changes, Brian Haggard, AWRC
- 1442 Building Ecological Literacy - The Illinois River Watershed Atlas and the Nature Center at Lake Frances, Ken McCown, University of Arkansas

1500 BREAK

1520 Climate, Hydrologic, and Watershed Drivers of Water Quality, Moderator, Brian Haggard, AWRC

- 1520 Intermittent Insights: Stream Drying Drives Divergent Patterns in Nutrient Loss, Shannon Speir, University of Arkansas
- 1538 Seasonal Nitrate Drawdown Transitions Lake Ecosystems from Phosphorus to Nitrogen Deficiency in Annual Cycles, Thad Scott, Baylor University
- 1556 Water Quality Changes in Response to Watershed Management at the Eucha-Spavinaw Watershed, Erin Grantz, Arkansas Water Resources Center
- 1614 Urbanization Impacts on Aquatic Ecosystems: Assessing Phosphorus Transport, Biological Health, and Endocrine Disruptors, Kira Burnett, Arkansas School for Mathematics, Sciences, and the Arts
- 1632 Volunteer Monitoring Program Pilot in the Illinois River Watershed, Suzanne Murphy, IRWP

1650 WRAP UP

1800 SOCIAL, Marley's Pizzeria

Wednesday, July 23

0830 Welcome and Updates from Arkansas Department of Agriculture's Natural Resources Division, Moderator – Tate Wentz

- 0830 Arkansas Water Plan Update: Planning for the Future of Arkansas's Water Resources, Tate Wentz, Natural Resources Division
- 0850 Arkansas Nonpoint Source Pollution Management Program Update for 2026, Blake Forrest– NPS Management, Natural Resources Division
- 0910 Country Roads, Take Me Home: Arkansas Unpaved Roads Program Update, Kevin McGaughey, Natural Resources Division
- 0930 Enhancing Drainage in the Arkansas Delta: Two-Stage Ditches and the Cache River Drainage Roadmap, Blake Calderera, TNC

1000 BREAK

1020 Groundwater, Droughts, and Agriculture, Moderator Canton Ford, Arkansas NRCS

- 1020 We're not California, But We Coulda' Been!, Robert Reynolds, Union County Water Conservation Board
- 1038 Arkansas Drought Mapping and Monitoring Project, Hamdi Zurqani, University of Arkansas, Monticello
- 1056 Influence of Drought on Agricultural Land Value in the Arkansas Delta, Kent Kovacs, University of Arkansas Little Rock

1115 Conservation Delivery Networks, Introduction and Opportunities
Canton Ford, Arkansas NRCS
Jeff Powelson, Central Hardwoods Joint Venture, American Bird Conservancy

1150 LUNCH

1230 EcoREU Research Poster Session

1330 FIRST AFTERNOON SESSION

Forests, Emerging Marshes and Wetlands, Moderator Joy Wasson, ARFDWC

- 1330 Multivariate Evaluation of Soil-Water-Plant Health in Buffer-Strip Systems, Helen Amorim, University of Arkansas
- 1348 A Nature-Based Best Management Practice Designed to Treat Urban Stormwater and Enhance Agricultural Use on a Floodplain Property, Jordan Holt, WCRC
- 1406 Leveraging Deep Learning for Advanced Classification of Emergent Marshes in the Mississippi Alluvial Valley, Hamdi Zurqani, University of Arkansas, Monticello
- 1424 Basal Area Growth of Improved Loblolly Pine in Response to Climate Variability in the Western Gulf Coastal Plain, Chioma Ogbuka, University of Arkansas, Monticello
- 1442 Understanding How Emerging Agricultural Technologies Impact Cybersecurity and Societal Risks and What to Do About It, Jenn Johnson, IAPP

1500 BREAK

1530 Arkansas Water Young Professionals, Moderator – Alyssa Liddle, BWD

- 1530 Her Experience with the Transition from Graduate School to Industry, Srusti Maddala, Trinity Consultants
- 1548 AWWA's Transformative Water Leadership Academy, Meghan Post, BWD
- 1606 Developing your Professional Network Early in your Career Sets you Up for a Successful Future, Luis Silva, Garver
- 1624 An Update on the Arkansas Water Young Professionals Network, Chene Bailey, Rogers Water Utilities

1645 WRAP UP

1800 AWYP SOCIAL, Fossil Cover Brewery and Food Trucks

Thursday, July 24

0830 River Conservation Recreation Partnership Planning, Moderator, Darrell Bowman, AGFC

- 0830 Who's Managing our Rivers and How are they Managed?, Darrell Bowman, AGFC
- 0840 Recreation Stewardship on the Illinois River – How the Illinois River Watershed Partnership Facilitated the First of its Kind Plan for a River in Arkansas, Leif Kindberg, IRWP
- 0900 How and Why Partners Created the First Conservation Recreation Plan for the Upper Saline River Watershed, Kirsten Bartlow, AGFC
- 0920 Connecting Cities and Communities through Water and Bike Trails, Recreation, and Conservation along the West Fork of the White River, Sandi Formica, WCRC
- 0940 Tennessee Created a Program for Conservation Recreation River Planning – "Tennessee Blueways," Ben West, Risora Consulting

1000 BREAK

1020 Restoration Experiences and Lessons Learned Across the Natural State, Moderator, Leif Kindberg, IRWP

- 1020 Introduction to Topic and Speakers, Leif Kindberg, IRWP
- 1030 Setting Goals and Objectives for Stream Restoration in the Ozark Highlands, Graham Thompson, WCRC
- 1048 Restoration Partnerships in War Eagle Watershed, Daniel Hagood, BWA
- 1106 Leveraging Carbon Financing to Restore Floodplains, Sandi Rose, TN
- 1124 Using Conservation Easements for Protecting Restoration Outcomes, Marson Nance, NWALT
- 1145 WRAP UP, CONFERENCE END, Water Webinars, Next Year**

Optional Field Tour (Registration Required)

Field Tour: Thursday, July 24, 1 p.m. – 4 p.m.

Load buses at 11:45 a.m., Lunch at Historic Cane Hill College, Max 100 attendees.

Located near the community of Cane Hill, the Leach Ranch encompasses more than 1,000 acres of prairie and post-oak savannah in different phases of restoration. The tour will include:

- Ecological restoration of historic prairie for Bobwhite Quail and other wildlife habitat on degraded agriculture lands using cereal crops, fire and other management tools.
- Alternative/experimental gully restoration in a karst system utilizing brush structures, ephemeral wetlands, dry dams, mock beaver dams, key line principals, and channel reconstruction to support groundwater recharge, water quality, and flood control.
- Other work including establishing a native seed bank focused on local ecotypes, glade restoration, and discussion of prairie restoration equipment and species selection.

Watershed Sponsors:



Stream Sponsors:



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POSTER PRESENTATION ONLY

Tuesday, July 22

SUBMITTED:

1. Effects of Reservoir Draining on Sediment Nutrient Cycling, Karessa De La Paz, University of Arkansas
2. Factors Associated with Time to Adopt Irrigation Water Management Practices by Rice farmers in the Arkansas Delta Region, Damilola Oni, University of Arkansas
3. Assessment of the Climate Change Impact on Stream Flow and Sediment Load Dynamics for the Arkansas River, Andre Shelby, University of Arkansas Pine Bluff
4. Development of Zwitterionic Dendrimer-functionalized Magnetic Nanoparticles for Cationic and Anionic Dye Adsorption, Olufemi Ogunjimi, University of Arkansas
5. Long-term Nutrient Impacts of the Afforestation of Agricultural Lands, Kathleen J. Cutting, University of Arkansas
6. Fate of intra and extracellular antibiotic resistance genes through wastewater treatment, Samia Parveen, University of Arkansas
7. DNA-Based Monitoring of Harmful Algal Blooms, Wafa Youssfi, University of Arkansas
8. Required Ash Removal from a Wastewater Pond Likely Resulted Harmful Algal Blooms, BENG 49703 59703, University of Arkansas
9. Cyanobacterial Harmful Algal Blooms at Lake Fayetteville, Five Years of Study, Arkansas Water Resources Center

AWRC Water Fellows:

10. Assessing Water Quality in Kernza-Based Filter Strips with Poultry Litter Treatment using Rainfall Simulation, Dario Cano, University of Arkansas
11. Linking Watershed Characteristics to Stream Nutrients Concentrations within the War Eagle Creek Watershed, Emma Busted, Arkansas Water Resources Center
12. Nitrous Oxide Emissions from Tailwater Recovery Systems, Auldyn Faulk, University of Arkansas
13. Unpaved Road Impacts on Sediment Loss in a Rural Watershed, Rachel Haley, University of Arkansas
14. Evaluating the Accuracy of iPhone LiDAR for Stream Morphology Analysis in the Ozarks, Lily Stitt, University of Arkansas

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Wednesday, July 23

EcoREUs:

1. Investigating Nutrient Loss in Arkansas Rice Fields Under Alternate Wetting and Drying Irrigation, Kalen Strunk, Oklahoma State University
2. Evaluation of Autonomous Recording Units detection in Varying Habitats, Delilah Nguyen, University of North Texas
3. Salt's Impact on Stream Life, Cale Prosen, College of Saint Scholastica
4. Evaluating DNA Extraction Kits for Detecting Salmonella in Poultry Waste Using qPCR, Courtney Norwood, University of Tennessee Southern
5. Effects of Urbanization on Space Use and Survival of a Resident Forest Owl, Christian Machen, University of Arkansas
6. The Influence of Adult Feeding Rates on Offspring Inflammatory Cytokine Production, Vansh Singhal, University of Arkansas
7. Effects of Increasing Salt Additions on Riparian Soil Invertebrates, Microbes, and Plants, Vien Tran, University of North Texas
8. Effects of the Developmental Light Environment on Adult Flower Color Preference in *Junonia coenia*, Lillian Ruesink, Siena Heights University
9. Effect of Landuse on Syrphidae Diversity and Larvae Feeding Guild Composition, Austin Kaplan, Hood College
10. A Botanical Inventory of a Restorable Grassland, Kirsten Kierum, Arizona State University
11. Correlations between Wing Morphology and Behavioral Patterns in *Junonia coenia*, Lindsey Maurer, Rochester Institute of Technology
12. How Do Average Temperature and Thermal Variation Act Independently and Interactively to Influence Ectotherm Psychological Performance?, Kohl Thomas, University of Arkansas Pine Bluff
13. Thread-trailing Three-toed Box Turtle Movements within a Wet Prairie and Solar Array, Ruben Jimenez, University of Michigan Dearborn
14. The Influence of Adult Feeding Rates on Offspring Inflammatory Cytokine Production, Salvador Barraza, University of Arkansas

Watershed Sponsors:



Stream Sponsors:

