Meeting Arkansas’s Water Needs Now and Into the Future

JULY 21 & 22, 2015
AWRC Annual Conference
University of Arkansas
Global Campus
WELCOME TO THE 2015 ANNUAL 
WATERSHED & RESEARCH CONFERENCE

Dr. Brian Haggard, Professor & Director
Erin Scott, Program Manager

2015 TECHNICAL ADVISORY COMMITTEE

Bob Caulk - Beaver Watershed Alliance
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Andrew Sharpley - UA Division of Agriculture
Tim Snell - The Nature Conservancy
Evan Teague - Arkansas Farm Bureau
Billy Ammons - CH2M HILL OMI
Darcia Routh - ADH

We appreciate your service!

Tuesday July 21

7:30 am
Check-in, Coffee, Juice, Pastries

9:00 am
Conference Welcome & Introduction
Brian Haggard, AWRC Director, UA Dept. of Biological and Agricultural Engineering

9:05 am
Implementing the Updated Water Plan
Edward Swaim, Arkansas Natural Resources Commission

Session 1: Animal Manure and the 
Land-Water Interface - 20 Years Later

9:50 am
Reducing Nutrient Runoff Using 
Litter Incorporation
Dan Pote, USDA-ARS

10:10 am
Long-term Effects of Alum Applications 
to Poultry Litter on Phosphorus Runoff and Leaching
Philip Moore, USDA-ARS

10:30 am
Modeling Phosphorus Runoff to Test the 
Phosphorus Index
Peter Kleinman, USDA-ARS

Session 1 continues on next page
Session 1 Continued

10:50 am
Science for the People: Big Creek Monitoring - One Year On
Andrew Sharpley, UA Dept. of Crop, Soil and Environmental Sciences

11:10 am
Recent Efforts in Fecal Source Tracking: Do We Know More Now than 10 Years Ago?
Kristen Gibson, UA Dept. of Food Science

Lunch & Poster Session

11:30 am Lunch Provided

12:30 pm
Poster Session
Presenters should chaperone their posters.

Thank you sponsors!
Measuring and Modeling Net Photosynthesis of Three Rice Genotypes Based on their Photosynthetic Response to Light, CO2 and Temperature
Student Daniel Bereznyakov, Univ. of Massachusetts Amherst
Advisor Dr. Kusum Naithani

Relationship Between Ozark Stream Phosphorus Concentration and Macroinvertebrate Taxonomic Composition
Student Isamar Cortes, Montclair State Univ.
Advisor Dr. Michelle Evans-White

High Activity and Rapid Growth of Regina grahamii in a Highly Seasonal Environment
Student Jessika Dorcas, Elon Univ.
Advisor Dr. John D. Wilson

Methane Emission Inventory at the University of Arkansas
Students Sierra Matlock and William Woodward, Purdue Univ.
Advisor Mr. Erik Pollock

The Difference in Methane Output in Correlation to Water Quality Over a Conventionally Flooded and Alternative Wetting and Drying Rice Fields
Student Tyler Fletcher, Connors State College
Advisor Dr. Benjamin Runkle

Using Electrodialysis for the Purification of Swine Wastewater used in Growing Porphyridium cruentum
Students Emily Gottberg, Clemson Univ. and Jessica Vaden, Univ. of Maryland Baltimore County
Advisor Dr. James Hestekin

Effects of Summer Drought on Smallmouth Bass Relative Weight, Diets and Growth Potential in Ozark Streams
Student Brin Kessinger, Ohio State Univ.
Advisor Dr. Dan Magoulick

Water Column Anaerobic Ammonium Oxidation in a Thermally Stratified Reservoir (Lake Fayetteville)
Student Deanna Mantooth, Univ. of Arkansas
Advisor Dr. Thad Scott

Heterocyte Densities as Proxies for Nitrogen Fixation in Ozark Lakes
Student Sarah Hallett, Univ. of Arkansas
Advisor Dr. Thad Scott

Water Quality Testing and Sampling Along the West Fork of the White River
Student Haley McLaughlin, Univ. of Arkansas
Advisor Dr. Brian Haggard

Effect of Heavy Metals in Karst Systems
Student Asher Sampong, Univ. of Arkansas
Advisor Dr. Steve Boss
STUDENT POSTER SESSION

Different Sources of Methane Emissions in Conventional and Alternate Wetting and Drying Rice Fields
Student Dustyn Perkins, Univ. of Arkansas
Advisor Dr. Benjamin Runkle

Acidothermus cellulolyticus and Streptomyces Growth and Enzyme Behavior in the Presence of Lignin
Student Jasmine Phan, Carroll College
Advisor Dr. Ravi Barabote

Do Herbivorous Fish Densities (Campostoma spp.) Relate Positively with Ozark Stream Nutrient Concentrations?
Student Amber Roberts, Westville High School
Advisor Dr. Michelle Evans-White

Crayfish Size in Relation to Substrate Size in the White River Drainage System
Student Bailey Stein, Eckerd College
Advisor Dr. Dan Magoulick

Stream Algal Biomass Across a Gradient of Agricultural and Unconventional Natural Gas Wells
Student Hannah Verkamp, Univ. of Arkansas
Advisor Dr. Michelle Evans-White

Influence of Flow Regime on Algal Growth and Physicochemical Attributes in Forested Ozark Streams
Student Delaney Hall, Univ. of Arkansas
Advisor Dr. Michelle Evans-White

FACULTY POSTER

Cattle Diet Effects on Nutrient Concentrations in Runoff from Fecal Patches
Presenter Dr. Dirk Philipp, Univ. of Arkansas

Climate Effect on Resistance to Fire Blight Among Apple Varieties Grown in the Northwest Arkansas Region
Student Khoa Hoang Thai, Univ. of Arkansas
Advisor Dr. Curt Rom and Julia Stover

Poster Session sponsored by

ILLINOIS River
WATERSHED PARTNERSHIP
Tuesday July 21
Session 2: Agricultural Water Management in the Delta

1:30 pm
Irrigation Water Management in the Delta: the State of the Industry
Chris Henry, UA Dept. of Biological and Agricultural Engineering

1:45 pm
USDA-ARS Long-Term Agroecosystem Research Network: A New Initiative for Long-Term Monitoring, Research, and Collaboration...
JR Rigby, USDA-ARS

2:00 pm
To On-Farm Reservoir or Not To On-Farm Reservoir: an Economist’s Perspective
Kent Kovacs, UA Dept. of Agricultural Economics

2:15 pm
Erosion of Irrigation Reservoir Levees
Daniel Wren, USDA-ARS

2:30 pm
Nutrient Mitigation Potential in Vegetated Ditches: Experimental Exploration of Mechanisms and Caveats
Jason Taylor, USDA-ARS

2:45 pm
Nutrient Losses from Row Crop Production in Arkansas
Mike Daniels, UA Dept. of Crop, Soil and Environmental Sciences

3:00 pm Networking Break
Networking Break sponsored by Water Monitoring Solutions.
Tuesday July 21
Session 3: Emerging Research by Students Funded through the USGS 104B Program

3:30 - 5:00 pm
Arkansas Climate Diversity
Megan Land, ASU Dept. of Civil Engineering
Relationship between Sediment Oxygen Uptake Rate and Sediment Oxygen Demand
Adrian Beirise, UA Dept. of Biological and Agricultural Engineering

Physical and Chemical Predictors of Human Perceptions of Water Quality in Five Southwestern Ozark Rivers
Amie O. West, UA Environmental Dynamics Program

The Impact of Organic Matter on the Evolution of Water Chemistry and Biomass Production in Epikarst Springs of Newton County, AR
Victor L. Roland II, UA Environmental Dynamics Program

Influence of Selected Integrase and Mobilization Genes on the Persistence of Trimethoprim and Sulfamethoxazole Resistant Escherischi coli
Suhartono, UA Dept. of Crop, Soil and Environmental Sciences

Use of Coliphage and Enteric Viruses for Fecal Source Tracking in 303 (d) Streams in the Illinois River Watershed
Jay M. Jackson, UA Dept. of Food Science

A Comparison of Four Nucleic Acid Extraction Methods from Environmental Samples through Next Generation Sequencing
Connie Moloney, UA Dept. of Civil Engineering

6:30 pm Social at Marley’s Pizzeria
Sponsored by
Located at 609 W. Dickson St.
Wednesday July 22

7:30 am
Check-in, Coffee, Juice, Pastries

Session 4: Urban Stormwater Management I

8:15 am
What if We Don’t Maintain It? Long-Term Clogging and Cleaning Method Assessment for Pervious Concrete
Jason Vogel, OSU Dept. of Biosystems and Agricultural Engineering

8:35 am
Municipal Implementation of Runoff Reduction Assessment in Tennessee
Andrea Ludwig, Univ. of TN Dept. of Biosystems Engineering and Soil Science

8:55 am
White Oak Bayou Management in an Urbanizing Watershed
Greg Phillips, GBMc and Associates

9:15 am
Stream Restoration and Streambank Stabilization, Upper Prairie Creek Watershed, Rogers, Arkansas
Kale Farmer, FTN Associates

9:35 am Networking Break
Session 5: Urban Stormwater Management II

10:00 am
An Evaluation of the Northwest Arkansas Rain Garden Project
Brad Huffhines, Beaver Water District

10:20 am
Capturing the Flow through Stakeholder Engagement
Katie Teague, UA System Division of Agriculture Cooperative Extension Service

10:40 am
Reduction of Sediment and Nutrient Transport through Stream Restoration Projects on Mullins and Niokaska Creeks
Matthew VanEps, Watershed Conservation Resource Center

11:00 am
Why an Inspector Certification?
Max Sestili, City of Hot Springs

11:30 am Lunch Provided

Construction Site Inspection Training and Certification Course

1:00 pm
BMP Design, Application and Inspection for Construction Sites
Jessica Johnson, City of Hot Springs
Opportunity for CEU’s (continuing education units)

4:30 pm Certification Exam (optional)

5:00 pm Conference Adjourns

Thank you for attending!
Thank You Moderators!

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Katie Teague
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If you have any questions regarding the conference sessions, please feel free to contact the session moderators at the email provided.

17th Annual EPA Region 6 Stormwater Conference

What: 17th Annual EPA Region 6 Stormwater Conference

When: October 18-22, 2015

Where: Hot Springs Convention Center, 134 Convention Blvd, Hot Springs, AR

Why: To address topics like managing municipal stormwater, LID, TMDL’s, BMP’s, and new rules and regulations throughout the region.
Thank You Speakers!

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Thank You Sponsors!

- USGS
- UofA - Division of Agriculture Research & Extension
- Beaver Water District
- Water Monitoring Solutions
- GBMC
- Hach
- Upstream Art
- Beaver Watershed Alliance
- Illinois River Watershed Partnership
- Ozarks Water Watch
- Stream Mart
Where to Go

**UA Global Campus**
2 E Center St.
Fayetteville, AR 72701

**The Chancellor Hotel and Parking**
70 N East Ave.
Fayetteville, AR 72701

**Marley's Pizzeria**
609 W. Dickson St. #103
Fayetteville, AR 72701