

WEDNESDAY, SEPTEMBER 3, 2025

1-5 p.m. American Water Resources Association, AL Section 2025 Symposium

THURSDAY, SEPTEMBER 4, 2025

7:00 a.m. Breakfast Buffet Opens

8:00 a.m. KEYNOTE ADDRESS:
Colonel Kelcey R. Shaw, Mobile District Commander, U.S. Army Corps of Engineers

8:45 a.m. BREAK

Session 1 9:15-10:35 a.m.	Coastal Issues 1 <i>Moderator: Kenneth Odom</i> 1. Alabama Floodplain Assessment Project: An Assessment of Flood Risk at State-Owned Properties (10). Carl Ferraro, Stantec Consulting Services Inc. 2. A Shore Thing: Planning a Resilient Future for Mobile County’s Coastline (33). Christian Miller, Mobile Bay National Estuary Program 3. Co-Producing Resilience: Rethinking Frameworks for Equitable Climate Planning (59). Emma Lowe, University of Alabama 4. Modeling Submarine Groundwater Discharge and Contaminant Pathways in a Rapidly Developing Coastal Region: A Case Study of Baldwin County, Alabama (162). Maryam Daneshvar, University of Alabama	Ag & Irrigation 1 <i>Moderator: Shannon Weaver</i> 1. Advancing Irrigation and Watershed Planning in Alabama: Updates from Ongoing Projects (60). Thorsten Knappenberger, Auburn University 2. Coupled modeling of diverse adaptation behaviors and land-atmosphere interactions to identify transformative adaptation pathways in agri-food systems (62). Nicholas Magliocca, University of Alabama 3. The relative profitability of adopting irrigation on Alabama corn farms: Preliminary results from an economic simulation (115). Joshua Duke, Auburn University 4. Influence of Biochar Types on Poultry Litter Based Phosphorus and Nitrate Immobilization in Saturated Soils (174). Atiqur Rahman, Auburn University	Aquatic Ecology <i>Moderator: Todd Fobian</i> 1. Structural Control of Groundwater/Surface Water Interactions and Imperiled Species Habitats, Alabama Foreland Fold and Thrust Belt (16). Gregory Guthrie, Geological Survey of Alabama 2. AQUACULTURE EDUCATION: A THREE-PRONGED APPROACH (58). David Cline, Alabama Cooperative Extension System, Auburn University 3. Understanding how different Gulf killifish (<i>Fundulus grandis</i>) populations respond to osmotic stress (97). Antrelle Clark, Auburn University 4. Understanding Phenology of Invasive Aquatic Plants to Inform Management Initiatives in the United States (146). Gray Turnage, Mississippi State University	Water Quality 1 <i>Moderator: Kelly Kirven</i> 1. Fish sludge to energy, feed, and fertilizer (14). Qichen Wang, Auburn University 2. Mechanistic Insights into Phosphate Removal by Hybrid Anion Exchange Resins: Advancing Sustainable Nutrient Recovery from Wastewater (57). Neha Sharma, Auburn University 3. Efficacy of Biochar Variants and Application Rates in Phosphorus Runoff Mitigation Under Low and High Simulated Rainfall Events (117). Temitope Popoola, Auburn University 4. The status of phosphorus in Alabama soil: What’s in the horizon? (155). Rishi Prasad, Auburn University	Extension, Outreach & Partnerships 1 <i>Moderator: Mona Dominguez</i> 1. Coastal Commitment: Building a Stronger Volunteer Network for Alabama’s Waterways (107). Mona Dominguez, Auburn University Water Resrouces Center -AL Water Watch 2. The Water-R2O NSF Research Traineeship: Leveraging Experiential Learning to Translate Operational Hydrology Research into Practice (125). Steve Burian, University of Alabama 3. Enhancing Estuarine Education and Outreach Through Immersive Story Mapping: A Case Study of Weeks Bay National Estuarine Research Reserve (127). Dixie Cartwright, Mississippi State University, Geosystems Research Institute 4. Integrating Community Revitalization and Watershed Health: Leveraging Clean Water Act Section 319(h) Funding to Mitigate Urban Nonpoint Source Pollution in Athens, Alabama (137). Cody Watson, Alabama Department of Environmental Management
Session 2 10:45– 12:05 p.m.	Topic: Coastal Issues 2 <i>Moderator: Matt Womble</i> 1. Forest Ecology and Productivity of the Lower Mobile Tensaw River Delta (95). Andrew Balder, Auburn University 2. Adapting GSSHA for Coastal Flood Modeling: Capturing Tidal Impacts on Roadway Vulnerability (100). Luiz Morgado, Auburn University 4. Measured Retreat - Using a multi-proxy approach to contextualize long-term back-barrier erosion and eco-geomorphic response to sea-level rise, storms and anthropogenic influence in coastal Alabama (160). Emily Elliott, University of Alabama	Ag & Irrigation 2 <i>Moderator: Bill Batchelor</i> 1. Nutrient Dynamics in Broiler Litter: Impact of Storage Methods and Environmental Implications (18). Shruthi Koneti, Auburn University 2. Does Land Tenure Affect Adoption of Cover Crops and No-till? (69). Emmanuel Okonkwo, Auburn University 3. Manure Application in Conventional Tillage (114). Chhabi Raj, Auburn University 4. Assessing Irrigated Acreage Response to Drought Severity and Water Availability in Alabama (175). Tej Gautam, Tuskegee University	Drought & Climate <i>Moderator: Lee Ellenburg</i> 1. ACFS Sponsored Drought Exercises (35). Bradford Moore, Apalachicola, Chattahoochee, Flint Stakeholders 2. What the 2023 Drought Taught Us About Drought in the Southeast (53). Brianne Minton, Alabama Office of the State Climatologist 3. Predicting Subterranean Drought and Ecological Risk using Hydrologic Indicators (67). Shaelyn Deal, University of Alabama in Huntsville 4. A Southeastern US Regional Flash Drought Review and Agricultural Impact Assessment (168). Lee Ellenburg, University of Alabama in Huntsville	Water Quality 2 <i>Moderator: Chris Johnson</i> 1. The State of Alabama’s Estuaries and Coast: An update on the health of our coastal ecosystems and communities (56). Blair Morrison, Mobile Bay National Estuary Program 2. Addressing microbiological impediments to oyster growing through cooperative monitoring and transparent communication (143). MELISSA PARTYKA, Auburn University 3. Understanding Basic Wastewater Math and Permit Parameters (171). Jason Barrett, Mississippi Water Resources Research Institute 4. Co-transport and Retention of Arsenic and Pine Wood Biochar in Saturated Porous Media: Fate and Interaction Mechanisms under Solution Chemistry and Practical Feasibility (173). Rakesh Kumar, Auburn University	Extension, Outreach & Partnerships 2 <i>Moderator: Lynn Sisk</i> 1. How are oyster farmers and harvesters responding to climate change? (73). Jillian Sower, Auburn University 2. A case study of a commercial broiler farm in Cullman County, Alabama utilizing a rainwater harvesting system to offset rising water costs. (74). Carson Edge, Auburn University 3. Empowering Women in Natural Resources: Insights from the Bennett Trust Land Stewardship Program (76). Leanne Wiley, Texas A&M AgriLife Extension 4. The Waters We Share – Charting Coastal Alabama’s Next Comprehensive Conservation Management Plan (176). Jason Kudulis, Mobile Bay National Estuary Program
Session 3 1:40–3:00 p.m	Restoration 1 <i>Moderator: Lisa Harris</i> 1. Restoration of Kingle Creek in Washington DC (52). Ranbir Kang, Kennesaw State University 2. Elba Hydroelectric Dam Removal Project on the Pea River: Biomonitoring and Outreach Efforts (118). Brian Helms, Troy University 3. An Overview of FEMA Flood Risk Products Available for Communities in Alabama (121). Kelley Rich, WSP USA Inc. 4. Hydrologic and Hydraulic Modeling of a Robust Gully System to Support a Blend of Natural and Traditional Stabilization (138). Benhur ASEFAW, Geosyntec Consulting	Water Quantity <i>Moderator: Roy McAuley</i> 1. A comparison of rain gauges and soil sensors at the South Alabama Mesonet. (19). Sytske Kimball, University of South Alabama 2. Quantifying the Contributions of Stochastic and Deterministic Factors in Streamflow Dynamics of United States Rivers (26). Krzysztof Raczynski, Mississippi State University 3. Streamflow As a Stressor: Disentangling Hydrology and Water Quality Impacts to Characterize Flow-Ecology Relationships Across Two Southeastern Landscapes (29). Joshua Hubbell, Geological Survey of Alabama 4. Water use trends, how water use has changed in Alabama since 2010. (38). Michael Harper, ADECA Office of Water Resources	Special Session - CONSERVE 1 <i>Moderator: Mike Fedoroff</i> 1. Rooted in Culture and Code: Advancing Rivercane Restoration Through Genomic Research and Tribal Leadership (61). Michael Fedoroff, University of Alabama CONSERVE 2. From Alabama to Oklahoma: Bridging Culture and Environmental Science Through Mixed Method Storytelling (65). Ekaterina Menkina, Alabama Water Institute 3. What we know about sea-level rise and storms in Alabama from the geologic record (142). Rebecca Totten, University of Alabama 4. Real-Time Microplastic Detection: Developing a Low-Cost, Portable Sensor for Water Monitoring in Coastal Alabama and Mississippi (179). Anthony Vedral, University of Alabama	Special Session - Well Water Panel <i>Moderator: Ann Ojeda</i> 1. Power in Partnerships: Linking Research, Extension, and Communities to Support Well Water Users (177). Jessica Curl, Auburn University Water Resources Center	Stormwater 1 <i>Moderator: Ashley McVicar</i> 1. Evaluation of Floating Surface Skimmer Flowrates Though Experimental Testing (40). Caroline Harrison, Auburn University 2. Removal and Recovery of Phosphorus Using Modified Geotextiles (41). Aidan Bosman, Auburn University 3. Improving Rock Check Dam Installations through Full-Scale Testing (101). Brian Roche, Auburn University 4. Phosphorus Removal and Recovery from Stormwater via Iron-Biochar Augmented Geotextiles (108). Jean Pierre le Roux, University of South Alabama

Session 4 3:30–4:50 p.m	Restoration 2 <i>Moderator: Michael Harper</i> 1. : Has No Dam Purpose! Making the Case for Ecological Restoration (4). Steve Newton, TTL, Inc. 2. Freshwater Restoration Across Alabama’s Rural Landscape- Bolstering resiliency in a changing climate (30). Alana Reynolds, The Nature Conservancy 3. Rebuilding Alabama’s Mississippi Sound One Project at a Time (47). Mary Kate Brown, The Nature Conservancy 4. Lower Alabama River Fish Passage: Policy and Implementation (109). Jason Throneberry, The Nature Conservancy	Special Session - RESTORE <i>Moderator: Ann Ojeda</i> 1. Integrated Assessments of Social, Infrastructural, and Environmental Vulnerabilities in Mobile Bay, Alabama (86). Wanyun Shao, University of Alabama 2. Quantifying Wetland Changes in the MTA Delta Using Deep Learning and Remote Sensing Approaches (87). Md Mozahidul Islam, Auburn University 3. Assessing Infrastructure Vulnerability and Evacuation Routes to Flooding Using Spatial Database Management: A Case Study of Mobile City, Alabama (90). MD MUNJURUL HAQUE, University of Alabama 4. Functional Assessment and Mapping of Headwater Slope Wetlands in Coastal Alabama (157). Christopher Anderson, Auburn University 5. Factors affecting salinity and ecosystem metabolism in Gulf Coast bayous (164). Christopher Anderson, Auburn University	Special Session - CONSERVE 2 <i>Moderator: Mike Fedoroff</i> 1. ‘We only hear because you know somebody who knows about it’: Role of Social Networks in Irrigation Adoption in Alabama (64). Ruchie Pathak, University of Alabama 2. Spatial Patterns of Power and Water in Alabama's Food System (78). Sydney Turpin, University of Alabama 3. Assessing Impacts of Reintroducing Cultural Stewardship Practices on Pitcher Plants (111). Michael McKain, University of Alabama 4. Unraveling the Diet of the Dominant Shredding Caddisfly in Southeast Watersheds Using Shotgun Metagenomics: A Better Approach to Understanding Stream Food-web Dynamics (178). Kyle Breault, University of Alabama	Special Session - Water Law & Policy Panel <i>Moderator: Nick Magliocca</i> 1. Policy needs for the future of Alabama’s agriculture-water nexus II (68). Nicholas Magliocca, University of Alabama	Stormwater 2 <i>Moderator: Lynn Sisk</i> 1. Engineered Media Removal of Nutrients (32). Grace Kerr, Auburn University 2. Improving Silt Traps: Full-Scale Performance Evaluation Under Regional Conditions (72). Lillian Krueger, Auburn University 3. Performance Implications of Erosion Controls on Different Soil Types (79). Wesley Donald, Auburn University 4. Assessing Private Well Vulnerability to Flood Risk in Mobile and Baldwin Counties Using Remote Sensing and Climate Projections (159). Abraham Alvarez, Auburn University
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POSTER SESSION 5:30-7:30 p.m.
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FRIDAY, SEPTEMBER 5, 2025

7:00 a.m.	Breakfast Buffet Opens				
8:00 a.m.	KEYNOTE ADDRESS Katie Butler, Water Division Director, U.S. EPA Region 4				
8:45 a.m.	BREAK				
Session 5 9:15-10:35 a.m.	Lightning Talk - Outreach & Extension <i>Moderator: Ashley Henderson</i> 1. ARSNIc and InBOLD: Addressing Longitudinal Connectivity for Habitat and Humanity (7). Daniel West, Geological Survey of Alabama 2. SEJCA Grant (22). Jennifer Barker, Alabama Department of Environmental Management 3. "The Alabama Climate Observing Network: Connecting Data, Tools, and Users" (50). Michael Solomon, University of Alabama in Huntsville 4. Improving the Management of Evaporative Cooling Systems (71). Kelly Griggs, Auburn University 5. Understanding Bats: Benefits and Regulatory Review for Development Projects (77). Nick Sharp, TTL, Inc. 6. Leading the Next Generation: An Environmental Leadership Program (80). Evie Moellering, Cahaba Riverkeeper 7. Concentrating Nature-Based Solutions to Stormwater for Ecosystem Benefits (132). Ben Wegleitner, The Nature Conservancy 8. Water and Wastewater Education and Outreach Impacts in the Rural Alabama Black Belt (144). Rachel Chai, University of South Alabama 9. Woods, Water, and Wildlife: Education & Outreach Opportunities with The Jones Center at Ichauway (163). Rachel McGuire, The Jones Center at Ichauway 10. Alabama Envirothon: Engaging the Next Generation in Environmental Stewardship (165). Courtney Curenton Baker, Alabama Association of Conservation Districts	Lightning Talk - Research 1 <i>Moderator: Pat O'Neil</i> 1. Impact of Agricultural Land Use on Sedimentation of Geographically Isolated Wetlands with Partial and Full Agricultural Catchments (21). Suranjana Chatterjee, Auburn University 2. Investigating the Impacts of Calcium Additive to Drainage in Blackland Prairie Soil (25). Alistair Bebbington, Auburn University 3. Evaluating Nitrogen Losses under the Precipitation Variability in the Winter Wheat using the DSSAT-CERES-Wheat Model (63). Vaibhav Shelar, Auburn University 4. Novel Approaches to Understanding the Hydrology of Geographically Isolated Wetlands (93). Frances O'Donnell, Auburn University 5. From Waste to Wonder: The Potential of Biochar in Mitigating Greenhouse gas Emissions (113). Maryam Saeed, Auburn University 6. Effect of Broiler Litter Application Rate on Phosphorus, Nitrogen, and Sediment Loss from 4 Consecutive One Acre-Inch Rainfall Events (120). Carson Archie , Auburn University Biological Resources Laboratory 7. An Integrated Hydrologic Atlas of Opportunity and Risk for Enhanced Water Resource Management in Alabama (141). Sifan A Koriche, University of Alabama 8. Evaluating the Potential of Commercial and Modified Biochar to Mitigate Phosphorus Loss in No-Till Agricultural Systems with Cover Crops (148). Gibi Thomas , Auburn University, Auburn, Alabama 9. A Novel Approach for Nitrate Removal and Recovery from Wastewater Using Pseudomonas Nitrate Binding Proteins (170). Daniel Servos, University of South Alabama 10. Investigating the Impacts of Land Use on Soil Biogeochemistry in Headwater Wetlands in Alabama (172). Brianna Travis, Auburn University	Water Security & Risk <i>Moderator: Matt Womble</i> 1. Paleohydrologic analyses reveals insights into longterm hydrologic volatility in the French Broad River (5). Lisa Davis, University of Alabama 2. PFAS Transport in Soil Columns: Impact of Dissolved Organic Matter (147). Ziteng Song, Auburn University 3. From Data to Design: Leveraging the Research of Water Resource Managers to Inform the Work of Landscape Architecture Along the Gulf Coast (106). Rob Holmes, Auburn University 4. Adapting CIROH’s Research to Benefit Water Resources Management in Alabama (158). Steve Burian, University of Alabama	Water Law & Policy <i>Moderator: Bennett Bearden</i> 1. Water Policy and Law in the “Anthropocene”: Changing With the Times (3). Bennett Bearden, Geological Survey of Alabama 2. Geoscience Impacts on State Water Policy in Alabama (17). Gregory Guthrie, Geological Survey of Alabama 3. These Chips are Making Me Thirsty: Data Center Water Use in Alabama (81). Charles Miller, Alabama Rivers Alliance 4. “Water” We Doing?—A Stakeholder Friendly Approach to Communicating Water Research (116). Rebecca Bearden, Geological Survey of Alabama	GIS <i>Moderator: Amy Gill</i> 1. Extreme Makeover: Flood Risk (13). Jeff Zanotti, WSP 2. Investigating the Spatiotemporal Patterns of Annual Water Yield in Alabama Watersheds (36). Jan Joseph Dida, Auburn University 3. UTILIZING GIS FOR DYNAMIC STORMWATER UTILITY FEE MANAGEMENT (96). Tanya Gallagher, Jacobs 4. GeoCoast Tools (166). John van der Zwaag, Mississippi State University

Session 6 10:55-12:15 p.m.	Modeling & Water Management <i>Moderator: Brett Connell</i> 1. A post-processed NextGen framework reanalysis dataset (23). Savalan Naser Neisary, University of Alabama 2. Characterizing Water Budgets and Landscape Connectivity in Isolated Wetlands (46). Kathryn Perkins, Auburn University/ The Jones Center at Ichauway 3. Investigating model reliability: A twofold evaluation of the National Water Model using time series and extreme events (51). Md Shahabul Alam, University of Alabama 4. Reconstructing Historical Streamflow: Reanalysis via Strong Data Assimilation (136). James Halgren, Alabama Water Institute	Lightning Talk - Research 2 <i>Moderator: Roy McAuley</i> 1. Using Anthropogenic Biomarkers in Sediments to Assess Fossil Fuel and Fecal Pollution in Urban Estuaries (8). Yuehan Lu, University of Alabama 2. Unraveling Seasonal Microbial and Chemical Interactions in Aquatic Ecosystems via NGS and Mass Spectrometry (28). MD IMAM UL KHABIR, Alabama State University 3. Characterization of Risks from Decentralized Water and Wastewater Infrastructure: A Multifaceted Approach (70). Rebecca Etter, Auburn University 4. Advancing Hydrologic Modeling through Community-Driven Development: The NextGen Framework (89). Arpita Patel, Alabama Water Institute 5. A method to resolve spatial mismatches in geospatial exposure modeling (102). Helen Moylan, Auburn University 6. Game Changer: How AI is Transforming Flood Resilience Education (123). Qiuhua Duan, University of Alabama 7. Integrating Novel Mitochondrial Markers with MST Tools to Detect Fecal Indicator Bacteria (FIB) Sources in Vulnerable Subtropical Coastal Ecosystem (124). ronell bridgemohan, SMU/ EPA 8. Democratizing Data: A Low-cost, Real-time Monitoring Network for AL: Phase One Implementation of a Water Monitoring Strategy (140). Ronald Bond, University of California, Davis 9. A Neural Network-Based Integration of HEC-RAS, LISFLOOD-FP, and OWP HAND-FIM for Enhanced Flood Inundation Mapping (150). Sadra Seyvani, University of Alabama 10. Development of Magnesium-Impregnated Geotextiles for Simultaneous Recovery of Ammonia and Phosphorus from Stormwater (167). Haneen Darwish, University of South Alabama 11. Urban Drainage Capacity Assessment under Compound Coastal Flooding in Mobile, Alabama (169). Michael Lewis, University of Alabama	Social Sciences/Human Dimensions <i>Moderator: Rebecca Bearden</i> 1. A Survey of Public Perceptions and Attitudes About Water Issues in Texas (45). Joel Pigg, Texas A&M AgriLife Extension 2. Is groundwater good for your heart? (49). Matthew Loop, Auburn University 3. Assessing the Capacity of Local Officials in Alabama to Plan for Climate-Resilient Water Infrastructure and Management (83). John Morris, Auburn University 4. Assessing Social Vulnerability and Land Use Change Interactions Across the Gulf Coast: A Multi-Temporal Analysis in Alabama, Louisiana, and Mississippi (84). Annyca Tabassum, University of Alabama	Water Monitoring <i>Moderator: Greg Guthrie</i> 1. HYDROGEOLOGICAL MONITORING OF THE KEY CAVE NATIONAL WILDLIFE REFUGE, LAUDERDALE COUNTY, ALABAMA (43). Gheorghe Ponta, Geological Survey of Alabama 2. Groundwater Level Trends Across Alabama’s Groundwater Provinces: Information from the 2024 Water Year (88). Kyle Olsen, Geological Survey of Alabama 3. Evaluating Cover Crops Impact on Runoff and Nutrient Loss in South Alabama Row-Crop Systems (122). Anh Nguyen, Auburn University 4. Cradle to Early Grave: Reaching No Further Action at the Robertsdale Elementary School ADEM Tank Trust Fund Site (139). Kendall Rich, WSP USA Inc.	
12:15 p.m. 2025 ALWRC Adjourns					