



SESSION 1 THURSDAY | SEPT. 8 | 9:15AM - 10:35AM

RESTORATION I

MODERATOR: PAT O'NEIL, GEOLOGICAL SURVEY OF ALABAMA (FORMER)

1. **Use of Indicator of Reduction in Soils (IRIS) in Wetlands (083).** Thorsten Knappenberger, Auburn University
2. **Using hydrogeomorphic characteristics to predict tree species distribution and resulting ecosystem functions in a bottomland hardwood forest (080).** Nate Jones, The University of Alabama
3. **Pensacola East Bay Oyster Restoration Project (111).** Heather Hyde, Jacobs Engineering
4. **D'Olive Watershed Restoration in Baldwin County, Alabama (164).** Jason Kudulis, Mobile Bay National Estuary Program

GROUNDWATER

MODERATOR: GREG GUTHRIE, GEOLOGICAL SURVEY OF ALABAMA

1. **Long Short-Term Memory (LSTM) Model for Predicting Groundwater Level in the State of Alabama (096).** Victoria Robinson, The University of Alabama Department of Mathematics*
2. **Hyporheic Zone Temperatures as an Indicator of Surface Water-Groundwater Interactions (081).** Mary Hastings Puckett, Geological Survey of Alabama*
3. **Karst features and aquifer systems in Alabama (040).** Gheorghe Ponta, Geological Survey of Alabama
4. **In-Situ Chemical Oxidation Groundwater Remediation at the Robertsdale Elementary School ADEM Tank Trust Fund Site (141).** Kendall Rich, Wood Environment & Infrastructure Solutions, Inc.

WATER QUALITY I

MODERATOR: CHRIS JOHNSON, ALABAMA DEPT. OF ENVIRONMENTAL MANAGEMENT

1. **Generational funding opportunity "now is the time to fund your project" (029).** John Laney and William Lott, Alabama Department of Environmental Management
2. **Carbon Dynamics in Headwater Wetlands of the Weeks Bay Watershed (087).** Ana Flavia Brancalion Costa, Auburn University*
3. **Investigating physical drivers of stream intermittency in Alabama (046).** Delaney Peterson, The University of Alabama*
4. **Using the BCG and measures of watershed condition to improve Alabama's Surface Water Quality Program (100).** Lisa Huff, Alabama Department of Environmental Management

LIGHTNING TALKS I

MODERATOR: AMY GILL, US GEOLOGICAL SURVEY

1. **The spatiotemporal patterns of community vulnerability in Mobile Bay from 2000-2020 (172).** Wanyun Shao, The University of Alabama.
2. **Temperature Tolerances of Threatened Organisms in the Cahaba River and how Future Climate Conditions May Impact Them (082).** Jonathan Carpenter, Auburn University*
3. **Hurricane Patterns on the Emerald Coast and the Risk They Pose (116).** Christopher Whatley, Auburn University*
4. **The effects of dams and invasive species on community structure and trophic interactions of stream crayfishes (119).** Riley Egan, Troy University*
5. **The relationship between changing land use land cover and macroinvertebrate diversity over twenty years in Choccolocco Creek, Northeast Alabama (147).** Kindall Brown, Jacksonville State University Department of Biology*
6. **Comparing sediment dynamics between a natural and constructed tidal marsh of the Gulf of Mexico (120).** Jacob Dybiec, The University of Alabama*
7. **Spatio-temporal variation of nitrogen biogeochemistry in a forested intermittent watershed (092).** Kaci Zarek, The University of Alabama*
8. **Microplastic accumulation, excretion, and effects on the behavior of freshwater organisms-Daphnia magna (144).** Jessica Okutsu, Auburn University*
9. **EPA Gulf of Mexico Program Funding (015).** Amy Newbold, US EPA Gulf of Mexico Program
10. **AFC Coastal Program Update: Current and Future Funding Opportunities (025).** Ryan Peek, Alabama Forestry Commission

*STUDENT PRESENTER



SESSION 2 THURSDAY | SEPT. 8 | 10:45AM - 12:05PM

RESTORATION II

MODERATOR: AMY GILL, US GEOLOGICAL SURVEY

1. **Hurricane-fire interactions and impacts on carbon cycling in Weeks Bay National Estuarine Research Reserve (095).** Yaniv Olshansky, Auburn University
2. **How EPA's How's My Waterway Creates Easy Access to EPA's Data (016).** Amy Newbold, US EPA Gulf of Mexico Program
3. **Freshwater Conservation at Scale: A 5-Year Review of Successes, Challenges and Adaptive Thinking (017).** Jason Throneberry, The Nature Conservancy
4. **ARSNiC: A New Approach for Prioritizing Aquatic Organism Passage and Infrastructure in Alabama (002).** Daniel West, Geological Survey of Alabama

COASTAL RESILIENCY I

MODERATOR: REBECCA BEARDEN, GEOLOGICAL SURVEY OF ALABAMA

1. **Robust Changes in North America's Hydroclimate Variability and Predictability (074).** Sanjiv Kumar, Auburn University
2. **Extreme weather threat and watershed land use change: A study of forest landowners on the northern Gulf of Mexico (050).** Anna Brown, Auburn University*
3. **A human-natural framework for assessing, forecasting and managing for coastal resiliency at Perdido Bay (157).** Christopher Anderson, Auburn University
4. **Muddied waters: Stakeholder perceptions of water quality and clarity in the northern Gulf of Mexico (021).** Kelly Dunning, Auburn University College of Forestry, Wildlife, and Environment

WATER QUALITY II

MODERATOR: CHRIS JOHNSON, ALABAMA DEPT. OF ENVIRONMENTAL MANAGEMENT

1. **Assessment of Water Quality and Sediment Chemistry at an Abandoned Mine Land Site in Eastern Tuscaloosa County, Alabama (012).** Abby Friedman, The University of Alabama*
2. **Stream Crossings in Georgia, A Handbook for Connectivity and Resilience (GA-ACT) (170).** Fred Halterman, Moffatt and Nichol Engineers
3. **Using molecular tools to discover organisms responsible for taste and odor episodes in a drinking water reservoir (004).** Brendan Higgins, Auburn University
4. **Impacts of change in landscape composition and configurations on the water quality of Pensacola watershed-bay systems (075).** Tesfay Gebremicael, University of Florida

LIGHTNING TALKS II

MODERATOR: PAT O'NEIL, GEOLOGICAL SURVEY OF ALABAMA (FORMER)

1. **The Georgia Flow Incentive Trust (GA-FIT) - Protecting Farmers and Streams (068).** Mark Masters, Albany State University Georgia Water Planning & Policy Center
2. **Projected Mid-Century Rainfall Erosivity under Climate Change Over the Southeastern United States (007).** Bijoychandra Takhellambam, Auburn University*
3. **Conservation Practice Adoption and Disadoption in the U.S. (061).** Wendiam Sawadgo, Auburn University
4. **Geographical Distribution of Perceptions: Identifying and Mapping Barriers to Climate-Smart Agriculture in Alabama (073).** Ruchie Pathak, The University of Alabama*
5. **Effect of Image resolution and soil core size on soil pore characteristics (056).** Preetika Kaur, Auburn University*
6. **Alabama Drought Reporting and Condition Monitoring Program - A New Partnership (161).** Rachel McGuire, Auburn University Water Resources Center
7. **Sediment Transport and Storage in Geographically Isolated Wetlands within Agricultural Fields in the Southeastern USA (057).** Chloe Eggert, Auburn University*
8. **Evaluation of Atmospheric Land Exchange Inverse model (ALEXI) Evaporative Stress Index (ESI) utilizing Soil Climate Analysis Network (SCAN) stations across Alabama (094).** Corey Walker, University of Alabama in Huntsville*

*STUDENT PRESENTER

LUNCH IN GRAND REEF: 12:15-1:30 PM



SESSION 3 THURSDAY | SEPT. 8 | 1:40PM - 3:00 PM

AQUATIC ECOLOGY I

MODERATOR: TODD FOBIAN, ALABAMA DEPT. OF CONSERVATION & NATURAL RESOURCES

1. **Following Watershed Management Plan Recommendations to Eradicate the Island Apple Snail from the Langan Park Lakes in Mobile, Alabama (165).** Christian Miller, Mobile Bay National Estuary Program
2. **Demonstrating De Minimis Impacts at Cooling Water Intake Structures (018).** Lynn Sisk, Jacobs Engineering and Sheila Scott, Ascend Performance Materials
3. **Tidal creek ecosystem structure and function changes associated with coastal watershed development (128).** Samuel Bickley, Auburn University*
4. **Water Quality Analysis and Habitat Threats Concerning the Slenderclaw Crayfish on Sand Mountain in Northeast Alabama (059).** Rebecca Bearden, Geological Survey of Alabama

COASTAL RESILIENCY II

MODERATOR: ASHLEY HENDERSON, ALABAMA SOIL AND WATER CONSERVATION COMMITTEE

1. **Development of a Cross-scale Hydrodynamic Model for Perdido Bay (067).** Zhilong Liu, University of South Alabama, Dauphin Island Sea Lab
2. **Long term trends in temperature, salinity, oxygen, and pH in Alabama coastal waters (019).** John Lehrter, University of South Alabama
3. **Assessment of the impacts of land use change and future climate change on water quantity and quality in the Perdido Watershed (043).** Dongjun Lee, Auburn University*
4. **Forest Carbon Offset Markets and Water Quality (166).** Richard Hall, Auburn University

WATER QUALITY III

MODERATOR: SABRA SUTTON, ALABAMA ASSOCIATION OF CONSERVATION DISTRICTS

1. **TEMPO oxidized nanofibrillated cellulose (CNF)/polyethylene imine (PEI) composite hydrogels for dyes removal from water (079).** Yufei Nan, Auburn University*
2. **Interactions of Per and Polyfluoroalkyl Substances with Dissolved Organic Matter as a Potential Contributor to Soil and Water Contamination (138).** John Lawhon, Auburn University*
3. **Modeling Organic Carbon Loading with the Soil Water Assessment Tool: Application to the Big Creek Watershed (076).** Sabahattin Isik, Auburn University
4. **Alabama's Area Wide Optimization Program (005).** William McClimans, Alabama Department of Environmental Management

LIGHTNING TALKS III

MODERATOR: ROY MCAULEY, MANUFACTURE ALABAMA

1. **Overview of Alabama's Growing Envirothon Competition (123).** Courtney Curenton, Alabama Association of Conservation Districts
2. **Partnerships and Funding Opportunities (168).** Ronald Davis, Wiregrass RC&D
3. **National Association of RC&D Councils Organization Update (167).** Colton Buckley, National Association of RC&D Councils
4. **"How-To" Guide for Wastewater Management of Rural, Underserved Communities in the Black Belt Region of Alabama: A Resource for Local Stakeholders (113).** Jillian Maxcy Brown, The University of Alabama*
5. **Exploring and Mitigating Pathogen Pollution in Our Waters through Youth-Focused Citizen Science (077).** Mona Dominguez, Auburn University Water Resources Center
6. **An Educator's Guide to Alabama Rivers (148).** Sydney Zinner, Alabama Water Watch
7. **Promoting Citizen Science to put paddles and preservation into the current of a Capitol's undervalued asset (151).** Rebekah Correia, Alabama Water Watch
8. **SipSafe Program: Findings from our first year of lead testing in drinking water at child care facilities (093).** Jason Barrett, Mississippi Water Resources Research Institute

*STUDENT PRESENTER

BREAK: 3-3:30 PM



SESSION 4 THURSDAY | SEPT. 8 | 3:30PM - 4:50 PM

AQUATIC ECOLOGY II

MODERATOR: TODD FOBIAN, ALABAMA DEPT. OF CONSERVATION & NATURAL RESOURCES

1. **The importance of agency-academia partnerships in training aquatic biologists of the future (131).** Lori TolleyJordan, Jacksonville State University
2. **Species-specific thermal stress responses in freshwater mussels of the Pea River, AL (160).** Hannah Adkins, Troy University*
3. **The Rise and Fall of Native Black Bass Diversity in the Southeastern U.S. (098).** Steve Sammons, Auburn University
4. **A review of North American freshwater mussel (*Bivalvia: Unionoida*) lethal thermal tolerance (163).** Kaelyn Fogelman, Auburn University

COASTAL ISSUES

MODERATOR: ATHENA CLARK, US GEOLOGICAL SURVEY

1. **Assessing the spatial variation of wave climate in a fetch-limited estuary with clustering methods (070).** Ramin Baghbani, Mississippi State University*
2. **Applying what we know about local ecological knowledge of Gulf of Mexico Anglers to Coastal Resilience and Management Challenges across Ecosystems (022).** Kelly Dunning, Auburn University College of Forestry, Wildlife and Environment
3. **Saltwater Disposal Wells: An Economic Search to Recover Valuable Metals from Produced Waters (049).** Ann Arnold, Geological Survey of Alabama
4. **Recovering the Oyster Fisheries and Habitat in the Pensacola Bay System (026).** Anne Birch, The Nature Conservancy

STORMWATER

MODERATOR: LISA HARRIS, CHOCTAWHATCHEE, PEA & YELLOW RIVERS WMA

1. **Enhancing the Hydraulic Performance of Wattles for Erosion and Sediment Control (041).** Jannell Clampitt, Auburn University*
2. **Breaking Down LID+GSI Barriers: A Code Audit Tool for Local Governments (159).** Eban Bean, University of Florida
3. **Research Update for the Auburn University - Stormwater Research Facility (048).** Wes Donald, Auburn University
4. **2022 Updates to Alabama's Blue Book (001).** Perry Oakes, AL Soil and Water Conservation Committee

LIGHTNING TALKS IV

MODERATOR: MARY HASTINGS PUCKETT, GEOLOGICAL SURVEY OF ALABAMA

1. **Assessing the Temporal Variations in Groundwater Recharge Fluxes in Wolf Bay Watershed (028).** Pooja Preetha, Alabama A&M University
2. **Empowering oyster growers while growing capacity: Addressing microbiological impediments on shellfish aquaculture (132).** Melissa Partyka, Auburn University
3. **Ethics in the field: evaluating the environmental impacts of field research. (072).** Shelby Rinehart, The University of Alabama
4. **Status of Centralized Wastewater Treatment and Land Applications Sites in the Alabama Black Belt (030).** Tristan Wilson, Auburn University*
5. **Novel Time-integrated Techniques to Quantify Waterborne Fecal Microorganisms in the Alabama Black Belt (154).** Corinne Baroni, The University of Alabama*
6. **Engaging partners and empowering communities: establishing a well water network in Alabama (033).** Jessica Curl, Auburn University Water Resources Center
7. **Forecasting harmful algal blooms in inland water bodies using Sentinel-2 data and long-short term memory (LSTM) (134).** Kamand Bagherian, Auburn University*
8. **A Status Check of Groundwater Data Management in the Southeastern U.S. (039).** Eliane Volk, The University of Alabama*
9. **Blindly Seeking the Blind: Assessing the Efficacy of an Environmental DNA (eDNA) Metabarcoding Approach For The Detection Of Subterranean Crayfish (052).** Nathaniel Sturm, Geological Survey of Alabama - Ecosystems Investigations Program.

*STUDENT PRESENTER



SESSION 5

FRIDAY | SEPT. 9 | 9:15 AM - 10:35 AM

OUTREACH

MODERATOR: ASHLEY MCVICAR, ALABAMA POWER

- 1. Spreading awareness and prevention of marine debris through community cleanup events (035).** Jessi James, Mississippi Inland Cleanup Program
- 2. Reimagining Public Participation in Watershed Stewardship (045).** Laura Bell, Auburn University Water Resources Center
- 3. Turning a Plan into Action: Working alongside stakeholders to restore the Pensacola and Perdido Bays (104).** Whitney Scheffel, Pensacola and Perdido Bays Estuary Program
- 4. Respecting Public Priorities & Protecting Water Resources (065).** Scott Rogers, Alabama Department of Transportation

USGS RESTORE

MODERATOR: GREG GUTHRIE, GEOLOGICAL SURVEY OF ALABAMA

- 1. Uncertainty of Multiple-Machine Learning Statistical Daily Salinity Forecasting for Bays and Estuaries of the Gulf Coast (117).** William Asquith, USGS Oklahoma-Texas Water Science Center
- 2. Low-flow frequency estimation from synthetic daily mean streamflow with bias correction estimated at 5,316 level-12 hydrologic unit code (HUC12) pour points in the south-central and southeastern United States (162).** Amanda Whaling, USGS LMG WSC
- 3. Baseline Flow, Gage Analysis, and On-Line Tool Development Supporting Bay and Estuary Restoration in Gulf States (140).** Kirk Rodgers, USGS Lower Mississippi-Gulf Water Science Center
- 4. Generalized Additive Model Estimation of No-Flow Fractions and L-Moments to Support Flow-Duration Curve Quantile Estimation (136).** Elena Crowley Ornelas, USGS
- 5. Modeling hydrologic alteration in the Pearl and Pascagoula River Basins using rule-based model tree machine learning algorithm (133).** Victor Roland, USGS

WASTEWATER SYSTEMS MANAGEMENT

MODERATOR: LYNN SISK, JACOBS

- 1. Seeking Sustainable and Replicable Wastewater Solutions for Small, Rural Communities in the Alabama Black Belt-Decentralized Cluster Demonstrations (139).** Kevin White, University of South Alabama
- 2. Soluble recalcitrant phosphorus removal and recovery from wastewater using micro-algae systems (085).** Giacomo DeLuca III, University of South Alabama*
- 3. Understanding Socio-technical Barriers to Decentralized Wastewater Management in the Rural Alabama's Black Belt (064).** Amal Bakchan, University of South Alabama
- 4. Functionalized-MXene Thin-Film Nanocomposite Hollow Fiber Membranes for Enhanced PFAS Removal from Water (009).** Milad Esfahani, The University of Alabama

MODELING I

MODERATOR: KEITH CHANDLER, ALABAMA POWER

- 1. Developing Water System Climate Resilience with Research to Operations Stakeholder Engagement (106).** Ryan Johnson, The University of Alabama
- 2. Restoring streamflow in southeastern watersheds: simulated forest restoration and irrigation reduction have similar effects (013).** Steven Brantley, Jones Center at Ichauway
- 3. Investigating the impacts of longleaf pine (*Pinus palustris*) restoration on water quantity and quality in the Mobile River Basin-AL (088).** Henrique Haas, Auburn University*
- 4. Documenting change in the Coosa Bypass using the High Definition Stream Survey (103).** Brett Connell, Trutta Environmental Solutions

AGRICULTURE & IRRIGATION

MODERATOR: EVE BRANTLEY, AUBURN UNIVERSITY WATER RESOURCES CENTER

- 1. Understanding the interacting effects of climate and land use on sedimentation rates in geographically isolated wetlands in agricultural landscapes (102).** Frances O'Donnell, Auburn University
- 2. Effects of Poultry Litter with Flue Gas Gypsum Bedding on Nutrient Release and Water Quality (060).** Anna Powell, Auburn University*
- 3. Evaluating Ecosystems Services for Irrigated versus Rainfed Agricultural Land in Watershed Plans (063).** Maury Estes, University of Alabama in Huntsville
- 4. A quantitative PCR-based approach to assess fecal pollution sources in the Lake Martin Watershed (038).** Wenjing Ren, Auburn University*

*STUDENT PRESENTER

BREAK - 10:35-10:55 AM



SESSION 6 FRIDAY | SEPT. 9 | 10:55 AM - 12:15 PM

DROUGHT, FLOOD & CLIMATE

MODERATOR: EVE BRANTLEY, AUBURN UNIVERSITY WATER RESOURCES CENTER

- 1. Drought Impacts on Reservoir Retention Time in Alabama and the Southeastern United States (130).** Benjamin Webster, Auburn University*
- 2. USGS Water Mission Area FY21 NGWOS R&D Project: USGS Real-time Flood Impact Map (169).** Athena Clark, U.S. Geological Survey
- 3. Using natural flood records from alluvial rivers to better understand extreme floods (150).** Lisa Davis, The University of Alabama Department of Geography
- 4. Differences in tolerance and responses to thermal stress between diploid and triploid oysters in the northern Gulf of Mexico (115).** Kayla Boyd, Auburn University*

WATER LAW & POLICY

MODERATOR: ASHLEY HENDERSON, ALABAMA SOIL AND WATER CONSERVATION COMMITTEE

- 1. ADEM Drinking Water Update (006).** Ross Caton, Alabama Department of Environmental Management
- 2. Delineation of Groundwater Recharge Areas for Water Management and Water Policy Development (020).** Greg Guthrie, Geological Survey of Alabama
- 3. Rural Resources - Mapping Alabama Grassroots Groups (003).** Ryan Thomson, Auburn University Department of Agricultural Economics and Rural Sociology
- 4. Developing an Ecosystem Services Framework in Watershed Plans (129).** Adam Newby, Auburn University Water Resources Center

GIS

MODERATOR: LYNN SISK, JACOBS

- 1. Are elevated E. coli concentrations in Choccolocco Creek related to onsite wastewater treatment systems and land cover? (110).** Mallory Jordan, Auburn University*
- 2. Septic Tank Inventory: A GIS approach to base line data collection (126).** Casey Fulford, AL Association of Conservation Districts
- 3. A GIS Analysis of Individual On-Site Wastewater Disposal Systems and their Vulnerability to Climate Change in Coastal Regions (125).** John Cartwright, Mississippi State University
- 4. Mapping the Impacts of Climatic Extremes across the CONUS on the cloud and on-the-fly (032).** Anuska Narayanan, The University of Florida*

MODELING II

MODERATOR: JENNIFER RASBERRY, ALABAMA POWER

- 1. Future Project Timelines in the Changing Landscape of FEMA's Risk MAP Program (086).** Jeff Zanotti, Wood Environment & Infrastructure Solutions, Inc.
- 2. Floating Aquatic Vegetation on Wheeler Reservoir, Alabama (024).** Daniel Saint, Tennessee Valley Authority
- 3. Diverse farmer behaviors lead to complex food-water-energy interactions (042).** Nicholas Magliocca, The University of Alabama Department of Geography
- 4. An Overview of FEMA Flood Risk Products Available for Communities in Alabama (099).** Kelley Rich, Wood Environment & Infrastructure Solutions, Inc.

WATER QUANTITY

MODERATOR: TOM LITTLEPAGE, AL DEPT. OF ECONOMIC AND COMMUNITY AFFAIRS

- 1. Update on Water Use Data Management Application for Alabama (027).** Michael Harper, Alabama Office of Water Resources
- 2. Public knowledge and understanding about groundwater (097).** Ann Ojeda, Auburn University
- 3. An irrigation potential index for sustainable surface water withdrawals (105).** Lee Ellenburg, University of Alabama in Huntsville
- 4. Water Use in the Tennessee Valley for 2020 and Projected Use in 2045 (053).** Jenny Sharkey, Tennessee Valley Authority

*STUDENT PRESENTER