### Alabama Section of the American Water Resources Association
#### Symposium Program

**Wednesday, September 4, 2013**

**Theme: Water and Economic Development**

<table>
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<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>10:00 a.m.</td>
<td>Registration Open – (Lobby)</td>
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</table>
| 1:00 p.m. - 1:05 p.m. | Introduction & Welcome – (Salons E-H)  
Stan Cook, President, AWRA Alabama Section |
| 1:05 p.m. - 1:10 p.m. | Symposium Introduction – (Salons E-H)  
Todd Boatman, President Elect, AWRA Alabama Section |
| 1:10 p.m. - 1:35 p.m. | The Importance of Alabama's Agricultural Sector,  
Bill Batchelor, Auburn University and Alabama Agricultural Experiment Station |
| 1:35 p.m. - 2:00 p.m. | The Role of Water in Alabama’s Economic Development,  
Greg Canfield, Alabama Department of Commerce (invited) |
| 2:00 p.m. - 2:25 p.m. | Economic Impact of Recreation in Alabama,  
Tom Allen, Southwick Associates |
| 2:25 p.m. - 2:50 p.m. | Water, Power and Commerce in Alabama,  
Kenneth Novak, Alabama Power Company |
| 2:50 p.m. - 3:10 p.m. | Break (Ballroom Foyer) |
| 3:10 p.m. - 3:35 p.m. | The RESTORE ACT and other Economic Opportunities,  
Susan Rees, U.S. Army Corps of Engineers, Mobile District |
| 3:35 p.m. - 4:00 p.m. | Alabama's Port and Its Economic Value to the State,  
Jimmy Lyons, Alabama Port Authority |
| 4:00 p.m. - 4:45 p.m. | Panel Discussion |
| 5:30 p.m. - Until   | Social and Dinner (Flora-Bama)  
(Casual/Beach Attire) |

### 2013 Sponsors
- Alabama Coal Association
- Alabama Farmers Federation
- Alabama Power Company
- Alabama Pulp and Paper Council
- AMEC Environment and Infrastructure
- Auburn University Center for Forest Sustainability
- Balch & Bingham, LLP
- Cahaba Consulting, LLC
- Cawaco Resources Conservation Development Council
- CH2M Hill
- Hach Hydromet
- Kleinschmidt – Energy & Water Resource Consultants
- PowerSouth Energy
- Woolpert
### Alabama Water Resources Conference

#### Program Overview

**Thursday, September 5, 2013**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>7:30 a.m.</td>
<td>Registration Open (Lobby) and Continental Breakfast (Ballroom Foyer)</td>
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<tr>
<td>8:00 a.m. - 8:40 a.m.</td>
<td><strong>Welcome &amp; Introduction (Salons E-H)</strong>&lt;br&gt;<strong>Brian Atkins</strong>, Chairman, Conference Organizing Committee&lt;br&gt;<strong>Keynote Presentation (Salons E-H)</strong>&lt;br&gt;<strong>Dr. Berry H. (Nick) Tew</strong>, Jr., State Geologist, Geological Survey of Alabama, <em>Alabama’s Water Future: The Role of Scientific Assessments</em></td>
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<tr>
<td>8:40 a.m. - 9:10 a.m.</td>
<td>Alabama Water Agencies Working Group (AWAWG) Update (Salons E-H)</td>
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<tr>
<td>9:10 a.m. - 9:20 a.m.</td>
<td>Break (Ballroom Foyer)</td>
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<tr>
<td>9:20 a.m. - 10:30 a.m.</td>
<td><strong>Concurrent Session One</strong>&lt;br&gt;Salon E&lt;br&gt;<strong>Deep Water Horizon Oil Spill Research/Recovery/Other</strong>&lt;br&gt;Salons F-H&lt;br&gt;<strong>Watershed Assessment &amp; Management</strong>&lt;br&gt;Sand Castle I&lt;br&gt;<strong>Water Policy and Law</strong></td>
</tr>
<tr>
<td>10:30 a.m. - 11:30 a.m.</td>
<td><strong>Concurrent Session Two</strong>&lt;br&gt;Salon E&lt;br&gt;<strong>Water/Energy Issues</strong>&lt;br&gt;Salons F-H&lt;br&gt;<strong>Coastal Issues</strong>&lt;br&gt;Sand Castle I&lt;br&gt;<strong>Groundwater Issues</strong></td>
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<tr>
<td>12:00 p.m. - 12:30 p.m.</td>
<td>Lunch (Grand Point)</td>
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<tr>
<td>12:30 p.m. - 1:30 p.m.</td>
<td><strong>Concurrent Session Three</strong>&lt;br&gt;Salon E&lt;br&gt;<strong>Economic Development</strong>&lt;br&gt;Salons F-H&lt;br&gt;<strong>Water Quality and TMDLs</strong>&lt;br&gt;Sand Castle I&lt;br&gt;<strong>GIS and Water Management I</strong></td>
</tr>
<tr>
<td>1:30 p.m. - 2:30 p.m.</td>
<td>Break (Ballroom Foyer)</td>
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<tr>
<td>2:30 p.m. - 3:45 p.m.</td>
<td><strong>Concurrent Session Four</strong>&lt;br&gt;Salon E&lt;br&gt;<strong>Water Supply Management/Planning</strong>&lt;br&gt;Salons F-H&lt;br&gt;<strong>Riparian and Aquatic Ecosystems</strong>&lt;br&gt;Sand Castle I&lt;br&gt;<strong>GIS and Water Management II</strong></td>
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<td>3:45 p.m. - 5:30 p.m.</td>
<td><strong>AWRA State Section Business Meeting (Salons E-H)</strong></td>
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<td>5:30 p.m. - 7:00 p.m.</td>
<td>Social Hour and Poster Presentations (Salons E-H)&lt;br&gt;Refreshments are courtesy of corporate sponsors.</td>
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**Friday, September 6, 2013**

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<tr>
<th>Time</th>
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<tr>
<td>7:30 a.m.</td>
<td>Continental Breakfast (Ballroom Foyer)</td>
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<tr>
<td>8:00 a.m. - 8:50 a.m.</td>
<td><strong>Keynote Presentation (Salons E-H)</strong>&lt;br&gt;Introduction by <strong>Brian Atkins</strong>, Chairman, Conference Organizing Committee&lt;br&gt;<strong>Keynote Address</strong>, Governor Robert Bentley&lt;br&gt;<strong>Student poster presentation competition award (Salons E-H)</strong></td>
</tr>
<tr>
<td>9:00 a.m. - 10:00 a.m.</td>
<td><strong>Concurrent Session Five</strong>&lt;br&gt;Salon E&lt;br&gt;<strong>Conservation/Stewardship/Sustainability</strong>&lt;br&gt;Salons F-H&lt;br&gt;<strong>Remediation/Restoration/Mitigation</strong>&lt;br&gt;Sand Castle I&lt;br&gt;<strong>Public Involvement in Water Management</strong></td>
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<tr>
<td>10:30 a.m. - 11:30 a.m.</td>
<td>Break (Ballroom Foyer)</td>
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<tr>
<td>11:30 a.m. - 12:00 p.m.</td>
<td><strong>Concurrent Session Six</strong>&lt;br&gt;Salon E&lt;br&gt;<strong>Agricultural/Forestry Water Issues</strong>&lt;br&gt;Salons F-H&lt;br&gt;<strong>Joe’s Branch Watershed Project</strong>&lt;br&gt;Sand Castle I&lt;br&gt;<strong>Stormwater Management</strong></td>
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<tr>
<td>12:00 p.m.</td>
<td>Conference Adjourns</td>
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### General Session

**Topic:** Alabama Water Agencies Working Group (AWAWG) Update  
*Session Chair: Brian Atkins, Alabama Office of Water Resources*

- Legal subcommittee: Bennett Bearden, Water Policy and Law Institute, University of Alabama
- Database subcommittee: Tom Littlepage, Alabama Office of Water Resources
- Stakeholder subcommittee: Lance LeFleur, Alabama Department of Environmental Management
- Legislation subcommittee: Stan Cook, Alabama Department of Conservation and Natural Resources
- Reporting subcommittee: Pat O’Neil, Geological Survey of Alabama
- Public Information subcommittee: Brian Atkins, Alabama Office of Water Resources

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<tr>
<th>Time</th>
<th>Session</th>
<th>Location</th>
<th>Topic</th>
<th>Presenters</th>
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<tbody>
<tr>
<td>Thursday, 8:40 a.m. – 9:10 a.m.</td>
<td>General Session</td>
<td>Salons E-H</td>
<td>Alabama Water Agencies Working Group (AWAWG) Update</td>
<td>Session Chair: Brian Atkins, Alabama Office of Water Resources</td>
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### Concurrent Session One

**Session One (A): Deep Water Horizon Oil Spill Research/Recovery/Other**  
*Session Chair: Brian Atkins, Alabama Office of Water Resources*

- *Flows to RESTORE the Bay: Leveraging RESTORE Act Funds for Restoring the Freshwater Balance in Mobile Bay*, Mitchell Reid, Alabama Rivers Alliance
- *Case Study of Condensate Recovery and its Reuse at the University of Alabama at Birmingham*, Atul Kajale, University of Alabama at Birmingham

**Session One (B): Watershed Assessment and Management**  
*Session Chair: Shannon Weaver, USDA, Natural Resources Conservation Service*

- *Flood Maps Revealed: The Data Behind the Data*, Jessica Mason, AMEC Environment & Infrastructure
- *Evaluation of Simulated Flow Results at Streamflow Stations Across the Mobile-Alabama River System (MARS) Using the Variable Infiltration Capacity Model*, Abdoul Oubeidillah, University of Alabama
- *Update on Surface Water Assessments in Alabama*, Tom Littlepage, Alabama Office of Water Resources

**Session One (C): Water Policy and Law**  
*Session Chair: Barbara Gibson, Choctawhatchee, Pea and Yellow Rivers Watershed Management Authority*

- *Stakeholder Involvement in the Development of Water Management Policy*, Cindy Lowry, Alabama Rivers Alliance
- *Water Conflict: Enforcement and Dispute Mechanisms in Statewide Water Policy*, Vaughn McWilliams, Red Mountain Law Group
# Concurrent Session Two

**Session Two (A): Water/Energy Issues**  
*Session Chair: Bennett Bearden, Water Policy and Law Institute, University of Alabama*

- **"Nontraditional" Hydropower - An Underutilized Resource**, Amanda Fleming, Kleinschmidt
- **Alabama Resource Management: Recommendations for Water**, Ewan Hadgraft, Alabama Rivers Alliance
- **Sources of E. coli in Lake Martin**, Brian Burnes, University of West Alabama

**Session Two (B): Coastal Issues**  
*Session Chair: Roy McAuley, Alabama Pulp and Paper Council*

- **Alabama’s Coastal Monsoon: Variability in Sea Breeze Thunderstorm Rainfall**, Jason Senkbeil, University of Alabama
- **Evaluation of Submarine Groundwater Discharge along the Gulf Shores of Alabama Using Coupled Numerical Modeling and $^{222}$Rn Mass-balance Methods**, John Ellis, University of Alabama
- **Impact of Hurricanes on Nutrient Transport from Catchment to Coast: An Integrated Case Study of Mobile Bay and its Watershed**, Alexander Maestre, University of Alabama
- **Hydrodynamic Timescales of Mobile Bay, Alabama and their Spatial Variability**, Bret Webb, University of South Alabama

**Session Two (C): Groundwater Issues**  
*Session Chair: Athena Clark, U.S. Geological Survey, Alabama Water Science Center*

- **ENSO-Induced Drought Impacts on Groundwater Levels in the Lower Apalachicola-Chattahoochee-Flint River Basin**, Subhasis Mitra, Auburn University
### Alabama Water Resources Conference
### Session Topics and Presenters

#### Concurrent Session Three

**Thursday, 1:30 p.m. – 3:00 p.m.**

| Salons E | Session Three (A): Economic Development  
*Session Chair: Charles Stover, Alabama Power Company* |
|----------|--------------------------------------------------|
| **Tools for Water Supply and Water Management**, Richard McNider, University of Alabama in Huntsville  
**WTI: An Online Water and Wastewater Technician Education Program**, Joseph Gutenson, University of Alabama  
**Potential Impacts of Georgia's Proposed Interbasin Transfers on Alabama's Rivers**, Cline Jones, Tennessee River Valley Association  
**Alabama Inland Waterways An Economic Engine for Alabama**, Billy Houston, Coalition of Alabama Waterways |

| Salons F-H | Session Three (B): Water Quality and TMDLs  
*Session Chair: Lynn Sisk, Alabama Department of Environmental Management* |
|-----------|--------------------------------------------------|
| **Working with Stakeholders in Developing Watershed and Water Quality Models: The Dos and Don’ts**, Brian Watson, Tetra Tech  
**Phosphorus Removal from Surface Water Discharge: Spray Irrigation and On-Site Disposal as Alternatives to Surface Water Discharge**, Allen McLemore, Alternative Wastewater Engineering LLC, Kellie Johnston, Cawaco RC&D  
**Water Quality Monitoring and Assessment of Factory Creek in Sumter County, Alabama**, Brian Burns, University of West Alabama  
**Watershed Hydrology Modeling: What is Considered Calibrated?** Jeremy Wyss, Tetra Tech |

| Sand Castle I | Session Three (C): GIS and Water Management I  
*Session Chair: Tom Littlepage, Alabama Office of Water Resources* |
|--------------|--------------------------------------------------|
| **Alabama's Solution for Communicating Flood Risk--No GIS Required**, Jason Wilson, AMEC  
**There’s a Dam There? Using GIS to Re-inventory Alabama Dams**, Jeff Zanotti, AMEC  
**Identification and Classification of North Alabama’s Geographically Isolated Wetlands Using Geographic Object Based Image Analysis (GeOBIA)**, Tyler Jones, Auburn University |
## Session Four (A): Water Supply Management/Planning

**Session Chair:** Sabra Sutton, CH2M HILL

- *Hydrological Responses to Climate and Land-Use Changes in Southeastern United States*, Qichun Yang, Auburn University
- *Water Use in the Tennessee Valley for 2010 and Projected Use in 2035*, Amanda Bowen, Tennessee Valley Authority
- *Managing the Complexities of Statewide Water Management Planning in Oklahoma*, Bryan Mitchell, CH2M HILL

## Session Four (B): Riparian and Aquatic Ecosystems

**Session Chair:** Marlon Cook, Geological Survey of Alabama

- *Porewater Collection and Risk Evaluation*, Jacob Gruzalski, Environmental Standards, Inc.
- *Design and Construction of Quarry Capture Prevention BMPs*, Brad Maurer, The Nature Conservancy
- *Chattahoochee Dam Removal and Ecosystem Restoration Project*, Joe Paine, U.S. Army Corps of Engineers, Mobile District, Doug Baughman, CH2M HILL

## Session Four (C): GIS and Water Management II

**Session Chair:** Stan Cook, Alabama Department of Conservation and Natural Resources

- *Using Public Participation Geographic Information Systems to Identify Watershed Services*, Cody Cox, Auburn University
- *USGS SPARROW Decision Support System (DSS)*, Athena Clark, USGS, Alabama Water Science Center
<table>
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<th>Session Five (A): Conservation/Stewardship/Sustainability</th>
<th>Session Chair: Allison Jenkins, Alabama Clean Water Partnership</th>
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<tr>
<td><strong>ACF Stakeholders Making Progress</strong>, Mitchell Reid, Alabama Rivers Alliance</td>
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<td><strong>Volunteer Water Monitoring in Alabama ...Trends and Initiatives of Alabama Water Watch</strong>, William Deutsch, Alabama Water Watch, Auburn University</td>
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<td><strong>Rain Garden Certification Program for Alabama</strong>, Kaye Christian, Auburn University</td>
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<td><strong>Implementation of Tower Gardens on an Urban University Campus in the Southeastern United States</strong>, Natalia Barbour, University of Alabama at Birmingham</td>
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<thead>
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<th>Session Five (B): Remediation/Restoration/Mitigation</th>
<th>Session Chair: Todd Boatman, U.S. Army Corps of Engineers, Mobile District</th>
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<tr>
<td><strong>Jackson-Reading Park Stream Bank Restoration</strong>, Christian Miller, Alabama Clean Water Partnership</td>
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<td><strong>Water We Doing to Clean Up Mill Creek?</strong> Katie Dylewski, Auburn University</td>
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<td><strong>Habitat Creation/Shoreline Stabilization Along Mon Louis Island's Mobile Bay Shore</strong>, Tom Herder, Mobile Bay National Estuary Program</td>
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<td><strong>Natural Attenuation of Heavy Metals in Sediments Impacted by Coal Combustion Waste</strong>, James Markwiese, Environmental Standards, Inc.</td>
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<th>Session Five (C): Public Involvement in Water Management</th>
<th>Session Chair: Barbara Gibson, Choctawhatchee, Pea and Yellow Rivers Watershed Management Authority</th>
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<tr>
<td><strong>Alabama Water Watch Citizen Data Credibility and Application at the Municipal, County and State Level</strong>, Eric Reutebuch, Auburn University</td>
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<td><strong>Sixth Degrees of Separation Part 2: Jefferson County Clean Water Awareness Program from a Partner’s Perspective</strong>, Taylor Steele, Friends of Birmingham Botanical Gardens</td>
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<td><strong>Potential Use of Discovering Alabama Materials to Target Educational Needs Identified by the Alabama Water Agencies Working Group</strong>, Doug Phillips, Discovering Alabama, University of Alabama</td>
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<td><strong>An Update on the NOAA National Water Center in Tuscaloosa, AL</strong>, Timothy Schneider, NOAA-NWS</td>
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</table>
| Concurrent Session Six | Session Six (A): Agricultural/Forestry Water Issues  
*Session Chair: Samuel Fowler, Water Resources Center, Auburn University* |
|------------------------|-------------------------------------------------------------------------------------------------|
| Salon E                | **Modeling the Impact of Irrigation on Nutrient Export from an Agricultural Field in the Southeastern United States**, Walter Ellenburg, University of Alabama in Huntsville  
**Gridded Crop Model Results & Analysis of the Flash Drought in Alabama during the 2012 Growing Season**, Cameron Handyside, University of Alabama in Huntsville  
**Wastewater Management at an Animal Protein Rendering Facility**, Joseph Hess, Auburn University  
**Conversion of Forest to Urban Land Cover in Aquifer Recharge Zones: Influences on Drinking Water Quality and Willingness of Residents to Accept Payments for Water Quality Services**, Lauren Behnke, Auburn University |
| Salons F-H             | **Utilizing Financial and Technical Resources to Improve Water Quality in Alabama (Joe’s Branch Watershed)**, Patti Hurley, Alabama Department of Environmental Management  
**Joe’s Branch: The Value of Multijurisdictional Collaboration in the Restoration and Management of Watersheds**, Ashley Campbell, City of Daphne  
**Design and Construction of a Step Pool Storm Conveyance (SPSC) System on an Unnamed Tributary to Joe’s Branch, D’Olive Bay Watershed, Baldwin County, Alabama**, Emery Baya and Wade Burcham, Thompson Engineering  
| Sand Castle I          | **The City of Auburn, Alabama’s Outfall Reconnaissance Inventory Program – A Low Cost and Effective MS4 Best Management Practice (Program Update)**, Daniel Ballard, City of Auburn  
**Vegetative Filter Strip Performance for Cost-Effective Roadway Runoff Treatment**, Cecil Bernhard, University of South Alabama  
**Design of Underground Storage Tanks Involving Water Collection for Water Reuse of Irrigation Purpose: A Case Study for the Campus Green Area of UAB**, Zhuo Li, University of Alabama at Birmingham  
**Stormwater Management in Alabama: Penny Wise, Pound Foolish and Violating the Public Trust**, Michael Mullen, Choctawhatchee Riverkeeper |