

21st Tennessee Water Resources Symposium



Symposium Dates:

April 13-15, 2011

Pre-registration for Symposium:

Before April 10, 2011

Symposium Location and Accommodations:

Montgomery Bell State Park
1000 Hotel Avenue
Burns, TN 37029

A block of rooms at the Montgomery Bell Inn and some villas have been reserved. Inn rooms are \$77, 2-bedroom villas are \$325.50 for a 2-night stay (2-night minimum) plus tax. When making your reservations, please specify that your room be reserved under "AWRA". For reservations call (615) 797-3101 or (800) 250-8613.

Please reserve lodging by MARCH 13, 2011, to ensure availability and rate.

Directions to park:

For detailed directions to the park, please visit:

http://tnawra.er.usgs.gov/2011/map_dir.html

Sponsors & Exhibitors

Opportunities are still available for your organization to be an exhibitor or sponsor. For more information, contact Lori Weir at (615) 837-4720 or visit:

<http://tnawra.er.usgs.gov/2011/exhibitor.html>

Exhibitors

- Advanced Drainage Systems, Inc.
- AMEC Earth & Environmental
- Backwater Environmental
- Crawford Hydrology Laboratory
- Eureka Environmental
- In-Situ Inc.
- LB Services
- S&ME, Inc.
- Stantec
- Stevens Water Monitoring Systems, Inc.
- Suntree Technologies Inc.
- Sutron Corporation
- Tennessee Environmental Council
- Tennessee Instrumentation Company, Inc.
- Tetra Tech
- Water Quality Matters!

Companies both Sponsoring and Exhibiting

- Hach Hydromet
- Tennessee Stream Mitigation Program
- Tennessee Valley Authority
- Tennessee Water Resources Research Center/ISSE, UT

Sponsors

- American Society of Civil Engineers, Tennessee Section
- ARCADIS U.S., Inc.
- Barge Waggoner Sumner & Cannon, Inc.
- Cedar City Consulting
- Center for the Mgmt, Utilization & Protection of Water Resources, TTU
- Clinard Engineering
- EnSafe
- Fulghum, MacIndoe & Associates, Inc.
- Ground Water Institute, The University of Memphis
- Neel-Schaffer, Inc.



Flood/drought banners courtesy of USGS

April 13		AGENDA		Registration in Exhibit Room 7:30am-5:30pm
7:00am	Golf Tournament at Montgomery Bell Golf Course (to sign up, email Larry Lewis at larrylewis@taud.org)			
8:30am	Room A: OASIS Model Workshop			
12:00pm	Lunch with Keynote Speaker co-sponsored by TN ASCE—Dennis Yankee, Tennessee Valley Authority			
	Session 1A (Room A)	Session 1B (Room B)	Session 1C (Room C)	
	Fly Ash I Moderator: Paul Davis, TDEC	Stormwater I Moderator: Tom Palko, Metro Water Services	Engineering Track	Groundwater Moderator: Tom Moss, TDEC
1:30pm	Integrated Ecological Research--TVA Kingston Ash Recovery Project. <i>N. Carriker</i>	Development of a Geographic Information System for Analysis and Prioritization of Findings from Visual Assessment Surveys of Stream Corridors in Crossville, Tennessee. <i>K. Bynum</i>		Contaminant Load and Sources to Tributaries near the Velsicol Dump, Hardeman County, Tennessee. <i>M. Bradley</i>
2:00pm	Simulation of Erosion, Transport, and Long-Term Fate of Coal Fly Ash from the TVA Kingston Site. <i>S. Scott</i>	Water Sensitive Urban Design. <i>A. Wyatt</i>		Did Memphis Take Mississippi's Ground Water? The \$1.3 Billion Question. <i>B. Waldron</i>
2:30pm	Assessing Risks in a Dynamic Environment: the TVA Kingston Ash Recovery Project. <i>D. Jones</i>	Metro Nashville's MS4 Program: Before and After the Flood. <i>J. Hayes</i>		The Times They are A-Changin': the Evolution of Clean Water Act Requirements. <i>D. Bambic</i>
3pm	Coffee Break in the Exhibit Room co-sponsored by Hach Hydromet and ARCADIS U.S., Inc.			
	Fly Ash II Moderator: Kim Elkin, TWRA	Stormwater II Moderator: Dennis George, TTU	Engineering Track	Planning Moderator: David Duhl, TDEC
3:30pm	Assessment of Metal Bioaccumulation and Health of Fish Populations in the Vicinity of the Kingston Fly Ash Release. <i>M. Adams</i>	Water Quality of Fletcher Creek, Shelby County, TN during Storm and Non-storm Discharge: Relationships to Surface- and Ground-Water Hydrology. <i>D. Larsen</i>		Critical Area Identification for Watershed Planning. <i>J. Hagen</i>
4:00pm	The Effects of Fly Ash Release from the TVA Kingston Steam Plant on Fish and Benthic Macroinvertebrate Assemblages. <i>T. Baker</i>	Construction Stormwater Management and Monitoring for the New Cleveland Municipal Airport. <i>T. Buttrey</i>		Consensus Building and Its Role in Successful Stormwater Utility Implementation. <i>D. Mason</i>
4:30pm	Bioaccumulation, Maternal Transfer, and Effect of the TVA Kingston Ash Spill. <i>S. Young</i>	A Stream Corridor Assessment: A Rapid Method of Prioritizing Watershed Health in Stock Creek, Beaver Creek, and Bullrun Creek, Knox County, TN. <i>M. Hamrick</i>		Urban Recreational Greenways: Opportunities for Better Stormwater Management? <i>J. McFadden</i>
5-6pm	Vendor Equipment Demonstration Session at the dock behind the hotel restaurant.			
6-8pm	Dinner and Live Music at Group Camp 1			

APRIL 14 7:00 am **Fun Run sponsored by Barge Waggoner Sumner & Cannon, Inc.**
7:30 am **Coffee and biscuits in Exhibit Room sponsored by the Ground Water Institute, The University of Memphis**

Registration in Exhibit Room 7:00am-5:30pm

Time	Session 2A (Room A)	Session 2B (Room B)	Session 2C (Room C)	
	Ecology/Biology I Moderator: Bill Wolfe, USGS	Stormwater III Moderator: Tim Gangaware, UT	Engineering Track	SWAT Moderator: Sherry Wang, TDEC
8:30am	Review of USEPA's Draft Ammonia Water Quality Criteria- Role of Freshwater Mussels and Unique Implementation Issues. <i>S. Hall</i>	Keeping Score - Using the USEPA Scorecard to Facilitate Holistic MS4 Compliance. <i>C. Owen</i>		Evaluation of an Intensive Data Collection System to Calibrate the Soil and Water Assessment Tool. <i>H. Armstrong</i>
9:00am	The Interaction of Chemical, Hydrological, and Basin Factors Influencing Brook Trout in Great Smoky Mountain Streams. <i>K. Neff</i>	Constructed Floodplain Wetland for Stormwater Pollutant Management. <i>A. Ludwig</i>		Application of Soil and Water Assessment Tool (SWAT) for Water Quality Simulations: Importance of Crop Yield Calibration. <i>S. Surendra Nair</i>
9:30am	Exposure of Fish to Pharmaceutical Products in Surface Waters. <i>J. Park</i>	An Evaluation of Market-Based Strategies for Watershed Restoration in West Tennessee. <i>C. Bridges</i>		Watershed Modeling Using an Intensive, Short Term Data Collection Technique: SWAT Application to Lick Creek Watershed in Greene County, TN. <i>S. Hawkins</i>
10:00am	Coffee Break in Exhibit Room co-sponsored by EnSafe Inc. and Fulghum, MacIndoe & Associates, Inc.			
	Ecology/Biology II Moderator: Jimmy Smith, TDEC	Water Supply Moderator: Alan Schwendimann, TDEC	Engineering Track	Modeling Moderator: Dustin Bambic, AMEC
10:30am	Detection of Environmental Estrogens in Tennessee Waters by Assessment of Vitellogenin Gene Expression in Fishes. <i>M. Connolly</i>	Assimilative Capacity Modeling in Support of the Georgia Comprehensive State-Wide Water Management Plan. <i>B. Watson</i>		Using SWAT to Simulate the Effects of Land Use Change on Water Quality for the Oostanula Creek Watershed. <i>X. Zhou</i>
11:00am	Regression Models of Ecological Streamflow Characteristics in the Cumberland and Tennessee River Valleys. <i>R. Knight</i>	System Modeling for Integrated Water Resource Planning. <i>L. Williams</i>		Use of the River 2D Hydrodynamic Model for Stream Restoration Assessment and Design. <i>J. Schwartz</i>
11:30am	Potential Use of Substrate Metrics in Tracking TMDL Targets. <i>H. Terrell</i>	Evaluating Groundwater Availability in Support of Georgia's Comprehensive State-Wide Water Management Plan. <i>J. Boyer</i>		CWMS Software Modeling for Cumberland River Reservoir Operation Decisions. <i>C. Neel</i>

APRIL 14			
Noon			
Lunch in Rooms A&B—Scott Potter, Metro Water Director			
Time	Session 2A (Room A)	Session 2B (Room B)	Session 2C (Room C)
	Health I Moderator: Alice Layton, UT	Sediment & Geomorphology I Moderator: John Schwartz, UT	Methods & Technology Moderator: George Garden, BWSC Engineering Track
1:30pm	Pilot Study to Assess Flood Related Well Water Contamination via Ultrafiltration. <i>J. Manners</i>	Calculating Suspended-Sediment Concentration and Sediment Loads for Tennessee Streams. <i>M. Harris</i>	Selecting the Right Stormwater Treatment Technology. <i>M. Miller</i>
2:00pm	Recovery of Streams in the Mill Creek Watershed from the May 2010 Flood Using <i>E. coli</i> as Indicator Bacteria. <i>M. Garmon</i>	Bankfull Geomorphic Relationships and Reference Reach Assessment of the Ridge and Valley Physiographic Province. <i>J. McPherson</i>	Leaching and Adsorption of Stormwater Contaminants Associated with Fly Ash-Amended Pervious Concrete. <i>B. Bachner</i>
2:30pm	Sanitary Sewer Overflow Analysis and Planning (SSOAP) Toolbox: An Overview with Examples of Application in Tennessee. <i>B. Sherman</i>	Design and Construction of the Little Chatata Creek Realignment for the New Cleveland Municipal Airport. <i>M. Pannell</i>	Bench-Scale Treatability Using Chemical Agents in Clay-Rich Residuum Contaminated with Residues from Explosives Manufacturing. <i>L. McKay</i>
3:00pm	Coffee Break in Exhibit Room co-sponsored by ARCADIS U.S., Inc. & Clinard Engineering		
3:30pm	Judges will evaluate student posters in the Mezzanine. Student Poster Presenters will be available to discuss and answer questions about their posters with the judges.		
3:30pm	Health II Moderator: Larry McKay, UT	Monitoring Moderator: Greg Denton, TDEC	Restoration Moderator: Joey Woodard, TSMP Engineering Track
	Molecular Study of Microbiological Integrity of Water Supply: Focusing on the Water Distribution System. <i>Q. He</i>	Up the Creek with a Paddle: Performance of a Visual Stream Assessment on Non-Wadeable Stream. <i>M. Hatcher</i>	Comparison of Two Watershed Projects (Initial Similarity was Mistaken). <i>L. Carmichael</i>
4:00pm	Environmental Factors Affecting Relationships between Bacteroides and <i>E. coli</i> in Mixed Land-Use Watersheds. <i>A. Layton</i>	Dajugezhuang Village Comprehensive Village Waste Management Demonstration Project: Implications for Nutrient Management and Water Quality in China. <i>F. Walker</i>	The Practice of Stream Restoration in West Tennessee. <i>N. Ober</i>
4:30pm	In-Field Decay Rates of <i>E. coli</i> and Bovine Bacteroides in Beef Cattle Manure. <i>S. Hawkins</i>	TDOT Turbidity Sampling: Lessons Learned. <i>G. Russell</i>	Setting Realistic Goals and Expectations for the Longview Branch Urban Stream Restoration Project. <i>M. Sloop</i>
5:30pm	Poster Session in the Mezzanine: All Poster Presenters will be available to discuss and to answer questions about their displayed posters.		
6-8pm	Dinner in Rooms A & B followed by TN AWRA Business Meeting and Live Music ♪		

APRIL 15 7:30 am Coffee & biscuits in the Exhibit Room sponsored by Tennessee Water Resources Research Center/ISSE

**Registration in Exhibit Room
8:00am-10:30am**

Time	Session 3A (Room A)	Session 3B (Room B)	Session 3C (Room C)
	May 2010 Flood-Federal Response Moderator: Bob Sneed, USACE Engineering Track	Sediment & Geomorphology II Moderator: Tim Diehl, USGS	Karst Moderator: Mike Bradley, USGS
8:30am	Cooperative Efforts in Flood Preparedness in Nashville. <i>J. James</i>	Surrogate Sediment Substrates: Revisiting Artificial, Formulated, and Synthetic Sediment. <i>A. Gonzalez</i>	Characterization of Karst Systems to Support EIS Decision. <i>A. Epperson</i>
9:00am	Rapid Response: Working Collaboratively with State and Federal Agencies to Collect High Water Marks after the 2010 Flooding. <i>M. Taylor</i>	Hydrology and Geomorphology of a 500-Year Flood, Blackburn Fork, Putnam-Jackson Counties, 18 August 2010. <i>E. Hart</i>	Using a Combination of GIS Techniques and Field Methods to Analyze Karst Terrain in the Red River Basin, Tennessee and Kentucky. <i>D. Ladd</i>
9:30am	Real-Time Flood Inundation Mapping Tools for the Cumberland River near Nashville, Tennessee. <i>S. Williams</i>	Work in Progress, 2011 - Development of Assessment and Modeling Guidance on Estimating Reliable Bed-Material Transport Rates for Gravel-Bed Streams in TN. <i>P. McMahon</i>	Bacteria Models, Source-Tracking, and Transport in the Fall Creek Watershed and Upper Duck River. <i>A. Choquette</i>
10:00am	Coffee Break in Exhibit Room co-sponsored by the Tennessee Stream Mitigation Program		
	Responding to the Unexpected: Lessons from the May Flood (Panel) Moderator: Scott Gain, USGS		Engineering Track
10:30am	Bob Sneed, USACE; TEMA; Chief Stephen Halford, Nashville Fire Department; Paul Davis, TDEC-WPC; Tom Womack, TN Dept. of Agriculture; NWS		
	Session adjourns 12:30 p.m.		



21st Tennessee Water Resources Symposium



Photo courtesy of David Boyd, USGS

Montgomery Bell State Park
Burns, Tennessee
April 13-15, 2011

Hosted by

Tennessee Section of the American Water Resources Association

Planning Committee

- * Barge Waggoner Sumner & Cannon, Inc.
- * Center for the Management, Utilization & Protection of Water Resources, TTU
- * City of Chattanooga
- * Cumberland River Compact
- * Harpeth River Watershed Association
- * Nashville Metro Water Services
- * Tennessee Department of Environment and Conservation
- * Tennessee Valley Authority
- * Tennessee State University, Agricultural Sciences
- * University of Tennessee, Biosystems Engineering & Soil Science-Knoxville
- * U.S. Geological Survey
- * Water Quality Matters!

Symposium Chair

Michael Hunt
Metro Water Services
Email: michael.hunt@nashville.gov
Tel: (615) 880-2420



Presented by the
TN Section AWRA
including a
Special First Day
Workshop: OASIS Model



April 13-15, 2011
Montgomery Bell State Park
Burns, TN

KEYNOTE SPEAKER:

Dennis Yankee

Tennessee Valley Authority
Senior Manager, Environmental
Monitoring & Analysis



LUNCHEON SPEAKER:



Scott Potter
Director
Metro Water Services

Registration and Preliminary Agenda
(ATTN Engineers: Opportunity for PDHs/CEUs)

Tennessee Section AWRA
c/o U.S. Geological Survey
640 Grassmere Park, Suite 100
Nashville, TN 37211
Address service requested

<http://tnawra.er.usgs.gov>

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21st Tennessee Water Resources Symposium Pre-Registration Form

(Online registration is available at: <http://tnawra.er.usgs.gov/2011/TWRS-Reg.html>)

Title Mr., Ms., Dr. (circle one)

Name _____

What do you preferred to be called _____

Title _____

Organization _____

Address _____

City, State, Zip _____

Daytime Phone _____

Email Address _____

Type of Registration	Cost per person	Number of registrants	Subtotal
Regular Registration	\$100**		
Speaker	\$100**		
Professional Poster Presenter	\$100**		
Moderator	\$100**		
Sub Total			
Discount 10% (if more than 10 \$100 registrations)			
Student Registration*	\$30**		
Student Poster Registration*	\$30**		
Extra Meals for spouses	\$15		
Grand Total			

Send Registrations to:
 TN AWRA
 c/o U.S. Geological Survey
 640 Grassmere Park, #100
 Nashville, TN 37211
 ATTN: Lori R. Weir
 Phone: (615) 837-4720
 FAX: (615) 837-4783
 Email: lrweir@usgs.gov

*Student sponsorships for registration fees are available again this year. If you are a student and would like to be considered for sponsorship, please write "Student Sponsorship" on this form by your name.

Please circle one: **Visa** **Mastercard**

Credit Card # _____ Exp. _____

Signature _____

Please print name on card (if different from above): _____

Mailing address on credit card statement (if different than above):

Address _____

City _____ State _____ Zip: _____

*Tuesday-only registration includes lunch and breaks on Tuesday, Proceedings CD, and TN AWRA 2011-12 Membership fees.

**Pre-registration fee is \$100 until April 9, 2011; onsite registration fee is \$120. Student registration is \$30. A 10% discount applies if 10 or more people register from one organization (student registrations are already discounted). Make check payable to "Tennessee AWRA" or "TNAWRA." Visa and Mastercard are also accepted. The registration fee covers the costs for each registrant's CD copy of the summary of abstracts and the costs for both lunches, both dinners, coffee breaks, and 2011-12 membership fees. Additional meals may be purchased for spouses for \$15 each.

Additional registrants if at the same address. If addresses differ or if more space is needed, please use a separate piece of paper.

2. Name: _____
 Email: _____
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*****Special Events*****



Fun Run sponsored by BWSC. A morning jog is scheduled for April 14 at 7am. If you are interested, please call George Garden at (615) 252-4255.

Golf Tournament. The tournament is scheduled for 7:00 am, April 13. To sign up or for more information, please call Larry Lewis at (731) 234-0360 or email him at larrylewis@taud.org.



Live Entertainment at both dinners.

Poster Session

In the Mezzanine on Thursday afternoon at 3:30 p.m., the Poster Judges will be judging the Student Posters. The general Poster Session will follow at 5:30 p.m. Please be sure to attend.

To encourage student participation, TN Section AWRA will present awards for the best student posters.

If you are not affiliated with a university or a student poster presenter and would like to be a judge, please send email to Vena Jones at: venaj@cumberlandrivercompact.org

For a listing of this year's poster presenters, please visit: <http://tnawra.er.usgs.gov/2011/posters.htm>

Attention ASCE Members



The ASCE Tennessee Section is again a sponsor of the TN AWRA Water Resources Symposium. This year's agenda identifies an "Engineering Track" that might be of particular interest to many civil engineers. Earn up to 16 Professional Development Hours by participating in these activities:

- OASIS Workshop
- Keynote luncheon address by Dennis Yankee, Tennessee Valley Authority
- Break-out sessions with presentations on stormwater (construction and MS4), groundwater and surface water supply, treatment technologies, stream restoration, and flood response.

Of course, with your \$100 registration you, can attend any of the sessions offered and come and go as you need. Take a look. We hope you can join us and keep yourself at the forefront of water resource issues in Tennessee.

OASIS Modeling Suite Workshop: An Introduction to Water Supply Modeling

(April 13 @ 8:30 a.m. in Rooms A&B)

The Tennessee Department of Environment and Conservation (TDEC) has recently acquired a license to use OASIS statewide. OASIS is a patented water resources modeling suite that was used in the development of regional water supply plans for Southern Cumberland Plateau and North Central Regions. The modeling platform will be housed on a server at The Center for the Management, Utilization, and Protection of Water Resources (CMUPWR), Tennessee Technological University. The modeling suite will be accessible to those in government, academia, and the private sector working on water supply issues in Tennessee. Over time CMUPWR will develop the expertise to build applications for specific water systems or regions and also to train others to do the same. It is hoped that eventually students trained at TTU will provide a cadre of professionals in the work force who are already familiar with the model.

The purpose of this workshop is to introduce the OASIS platform. Attendees will learn the input data required to develop an application, the basics of building an application, how to use the model to evaluate alternative scenarios of facilities or operating policies, and how to interpret model output. Attendees will also be introduced to the use of ensemble forecasts from which probability-based operating rules can be developed. With this initial block of construction, attendees will acquire sufficient understanding of the model to appreciate its utility for their particular interests.

Vendor Equipment Demo Session

Where: At the boat dock behind the hotel restaurant
When: April 13, 2011, 5:00-6:00 p.m.

Vendors are signing up to demonstrate their equipment in the field. Check the following website for vendor information:
<http://tnawra.er.usgs.gov/2011/equipdemo.html>

Please contact Don Green for more information:
(615) 308-1014
biogreen1@comcast.net

Be sure to stay for the door prizes.

