

TENNESSEE
STORMWATER
ASSOCIATION



TNSA

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TNSA Times

Tennessee Stormwater Association News & Information

May/June 2016

Crystal's Corner: A Message from the President

Flowing with Energy

"Attitude lies somewhere between emotion and logic. It's that curious mix of optimism and determination that enables you to maintain a positive outlook and to continue plodding in the face of the most adverse circumstances." – Pat Summitt

We are half way through 2016, and what a ride it has been for Stormwater Professionals in Tennessee!

We've seen the enactment of new state laws regarding Post-Construction Stormwater Management (Public Chapter 1007), and drafts of CGP and MS4 permits.

Many communities have been updating local codes and ordinances too. It is easy to get bogged down in these policy procedures and become discouraged or exhausted. Networking with other professionals can help pull you from the bog and re-energize your efforts. As a member of TNSA, you have an endless network of folks that can lend advice and wisdom about

managing MS4 programs (perhaps provide solace too).

Charlene has been diligently working to grow TNSA's membership and network, such as exhibiting at several professional conferences. TNSA is growing – a lot of which has been a result of Charlene's hard work (Thank you Charlene)!

At this year's Annual Conference, we are adding a full day dedicated to connecting our members. Networking opportunities that day will include a friendly game of kickball, the Annual Membership Meeting, and a Member's Reception. Also that day, a special session called "MS4 101" will be geared toward newer MS4 programs or new MS4 managers, and will allow you the opportunity to have an open dialogue and Q&A with a panel of experts.

The TNSA Annual Conference will be held at Fall Creek Falls State Park, October 18 – 20, 2016. This year's keynote speaker is Dr. David Ethier – the King of Tennessee Fishes!!! Visit tnstormwater.org to

view the full conference schedule.

It's a new budget year for many, so book your room fast. Early Bird conference pricing ends August 31st! You don't want to miss this opportunity to connect with old friends and make new ones!

I am optimistic that positive times are flowing for TNSA.

**Crystal Bishop
TNSA President**



TNSA Executive Director, Charlene DeSha and President Crystal Bishop exhibiting at the 2016 Tennessee Municipal League Conference in Gatlinburg, TN

Quarterly Stormwater Professional Spotlight: Mark Heinzer

Mark Heinzer is TNSA's President-Elect and is currently the Engineering Manager for Drainage & Flood Control for the City of Chattanooga. He was the project manager for the City on the Runoff Reduction Standards Project that was incorporated into city ordinances in December of 2014.

Mark has a Master's Degree in Civil Engineering and is a *Leadership in Energy and Environmental Design Accredited Professional (LEED AP)* and a *Certified Professional in*

Erosion and Sediment Control (CPESC). He has worked in the public sector for both Municipal and State level agencies as well as in the private sector as a consultant and has been with the City of Chattanooga since 2010.

Mark has extensive experience with storm water management and green infrastructure including: hydrology and storm sewer hydraulics, erosion and sediment control, site grading, retention and detention ponds, bioswales, biore-

tention cells, pervious pavements, Urban Best Management Practices (BMP's), linear construction projects, and preparation of Storm Water Pollution Prevention Plans (SWPPP's).

In 2014, Mark and the City of Chattanooga won a [Governor's Stewardship Award](#) for Excellence Building Green – Johnson Street Redevelopment.



Continued on page 10



Executive Director

Charlene DeSha

Charlene@tnstormwater.org

TNSA Committees

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We welcome TNSA Members to participate on any of these committees! Please contact the committee chair for additional information.

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TNSA Executive Director Message

By *Charlene DeSha*

Happy Summer! I hope everyone is keeping cool during these warm summer months.

As the 2015-2016 fiscal year comes to a close, I hope all have been able to keep your spirits up despite the recent legislation and new permit delays. It has been discouraging to see a decline in the way our world views environmental needs. It seems people care less and less about the strain humans put on the earth and more about the almighty dollar.

One of my favorite poems from my Indian ancestors is:

Treat the earth well.

*It was not given to you
by your parents,*

it was loaned to you by your children.

*We do not inherit the Earth from our
Ancestors,*

we borrow it from our Children.

When you feel overwhelmed and beaten down with local and state restraints remember you are working for the greater good.

All of you are making a difference everyday. As you all know, water is our most precious resource and you are on the front lines protecting it. Just imagine what would happen if regulations were not in place and people like you were not protecting this important resource.

Thank you for protecting this resource and working hard to make sure Tennessee residents can enjoy our waters for generations to come. You are all heroes in my eyes!

Charlene DeSha
Executive Director

Register Here!

Save the Date!

4th Annual Nashville Urban Runoff 5K

August 20, 2016

Join us August 20, 2016, at Shelby Park for Nashville's 4th Annual Urban Runoff 5K!

Nashville's Metro Water Services, the Tennessee Department of Environment & Conservation and the Tennessee Stormwater Association have teamed up together once again to host the Urban Runoff 5k.

The run weaves its way past several cool and innovative green stormwater management practices. Dogs on leashes and strollers

welcome! We'll have a fun and educational Water Quality Festival for the whole family to enjoy from 7:30-11:00.

For more information about the race, please visit our [Facebook Page](#) or the [TNSA](#) or [TDEC](#) pages.

[Register for the Race here.](#)

For more information on the race or how to become a sponsor or sign up for a WQ Booth, please contact Jennifer Watson: jennifer@stormwater.org or Beth Wilson: Elizabeth.Wilson@nashville.gov



Thank you to the following sponsors and booths for supporting our race!



This year's Presenting Sponsor is TDEC's Department of Solid Waste Management, Used Oil Program!

Thank you!



Forestry



Alan, Sparkman, TNSA Board Member, Oversees Installation of Pervious Concrete ADA Accessible Sidewalk at Knox County School.

By Roy Arthur, Knox County

Alan Sparkman, Executive Director of the Tennessee Concrete Association and TNSA Board member, spent two days in Knoxville in early May to oversee the installation of 300' of ADA accessible pervious concrete sidewalk in the Halls Outdoor Classroom at Halls High School.

In order to provide the reader with some background on the Halls Outdoor Classroom, we'll take a step back and describe the fantastic people and programs that ultimately led to the installation of the pervious concrete and the completion of this exciting project.

Ruth Anne Hanahan, Senior Research Associate for the Water Resources Research Center (WRRRC), coordinates a 7 member AmeriCorp Water Quality Team (WQT) for Knox County Stormwater Management. For the past 20 years WQT members have worked with teachers implementing a program named Adopt-A-Watershed in an average of 15 middle and high schools in Knox County. The program teaches watershed education through hands-on place-based service learning activities and projects. Over 1,500 students are engaged in this program annually.

The Halls High School (HHS), which is where the Halls Outdoor Classroom is located, has been in the Adopt-A-Watershed program since its inception. In 2002, Knox County removed 4 houses on 3.3 acres of land directly behind the school that experienced chronic flooding due to being in the floodplain of the North Fork of Beaver Creek. Since the land is adjacent to HHS, Chris Granju, Director Knox County Stormwater Management (KCSM), suggested Knox County Stormwater give the land to Knox County Schools to be used as an outdoor classroom for the school and the local Halls Community.

A Steering Committee, facilitated by the WRRRC and KCSM, composed of teachers, students, and local community businesses and organizations provides direction for the Halls Outdoor Classroom (HOC). For years now, students and faculty at the high school have been able to use this facility as an outdoor learning space.

In December 2015, a HHS student built a new amphitheater for the classroom as an Eagle Scout project. Teachers and administrators lamented the fact that handicapped students, particularly wheelchair bound students, could not access the outdoor classroom and the amphitheater. To remedy the situation, the HOC Steering Committee decided to build a walkway from the main campus to the amphitheater. The construction project was used as a "real world" learning experience for HHS CTE teacher Jeff McMurray's Construction Trades Classes and served as a service project for the Adopt-A-Watershed program.



Amphitheater in Halls Outdoor Classroom

The last 3 weeks of school, students and community members were hard at work preparing to pour a pervious concrete walkway to make the outdoor classroom ADA accessible. Pervious concrete is a mix made without sand leaving it porous so that stormwater flows through it into a rock base that holds the water while it infiltrates back into the soil.

Roy Arthur, Knox County Watershed Coordinator, was the project manager for the sidewalk installation. He and others were able to cover the costs of all the labor and materials through generous donations from the local community. Hallsdale Powell Utility District provided the excavation and stone base. Jeff McMurray's Advanced Construction Trades class built the forms with materials provided by Tindell's Lumber Company. Harrison Con-



Alan Sparkman conducts infiltration test on pervious sidewalk at Halls High School.

crete and Ready Mix USA provided the concrete. Alan provided equipment and oversight for the installation. Alan gave a lecture to Mr. McMurray's class about pervious concrete and then the class, along with the Water Quality Team, installed the sidewalk.

Not only did Alan provide an introduction to all things pervious concrete, but next year handicapped students will be able to access the outdoor classroom and the amphitheater for the first time. The pervious concrete sidewalk now connects Halls High School to the Halls Outdoor Classroom. This \$10,000 project was the end result of building community relationships through the Adopt-A-Watershed program at Halls High School.

Many thanks to Alan Sparkman for donating his time and effort to make this green infrastructure project a reality.

Roy Arthur is Knox County's Watershed Coordinator and may be reached at: Rarthurroy@aol.com or via phone at: 865-755-9053.



Alan demonstrates how to finish concrete



Many thanks to Knox County AmeriCorps WQT

TDEC Phase II MS4 Permit and New Permanent Stormwater Law Updates

The public comment period for Tennessee's for the Phase II MS4 general permit has closed and TDEC—Division of Water Resources (DWR) is currently reviewing comments and drafting a Notice of Determination which includes responses to all comments received by the division.

TDEC has uploaded all the comments on their website on the permit dataviewer which may be accessed [Here](#).

Also uploaded at this location, is DWR Director Tisha Calabrese Benton's Memo on the new Tennessee Law regarding Permanent (Post-Construction) Stormwater re-

quirements and its significance and potential implication to our MS4s. Ms. Benton clarifies that the "recent change in the law merely references minimum requirements of federal law, i.e. the maximum extent practicable standard but, does not otherwise define that phrase." A copy of the new law is attached to this memo which you can download [Here](#).

New EPA Report: City Green: Innovative Green Infrastructure Solutions for Downtowns and Infill Locations

EPA's Smart Growth Program just published [City Green: Innovative Green Infrastructure Solutions for Downtowns and Infill Locations](#), a collection of 12 case studies of projects across the country that showcase cities overcoming challenges to implementing green infrastructure.

In these cases, space is at a premium and soil conditions are often unknown or unsuitable for infiltration. Each of the 12 communities demonstrated what is possible for managing stormwater, accommodating historic properties, planning for long-term maintenance and implementing other valuable benefits.

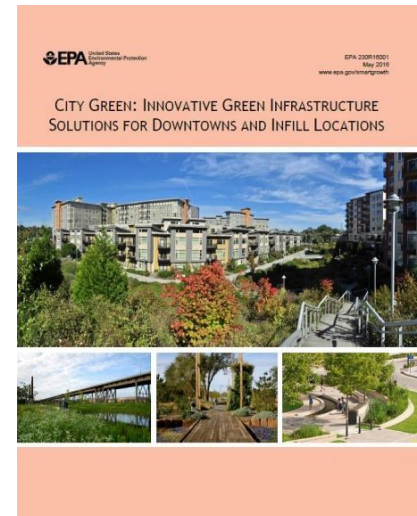
Excerpt from the [website](#):

Communities of all sizes and in all climates are using green infrastructure to manage stormwater where it falls using the natural processes associated with soils and vegetation to capture, slow down, and filter runoff, often allowing it to re-

charge ground water. [Green infrastructure](#) manages stormwater to control flooding from small storms and improve water quality and offers a wide range of other environmental, economic, public health, and social benefits.

[City Green: Innovative Green Infrastructure Solutions for Downtowns and Infill Locations](#) (2016) is for local governments, private developers, and other stakeholders who help shape redevelopment projects in downtowns and infill locations where development has already occurred. It provides inspiration and helps identify successful strategies and lessons learned for overcoming common barriers to using green infrastructure in these contexts. The examples could encourage cities to adopt policies that would expand the number of projects incorporating similar green infrastructure approaches.

Twelve case studies showcase projects from around the country that have overcome many common challenges to green infrastructure at sites surrounded by existing



development and infrastructure. In these cases, space is at a premium, and soil conditions are often unknown or unsuitable for infiltration. The case studies help identify successful strategies and lessons learned for overcoming common problems.

Grant Opportunity! 2016-17 Clean Stream Grants Application Period Extended

NASHVILLE --- The Tennessee Wildlife Resources Agency has announced the application period for grant dollars for stream clean-up projects and planting projects has been extended through July 11.

The availability of the grant dollars are to assist cities, schools, community organizations, civic groups, watershed organizations, and conservation groups, etc., with stream clean-up projects and planting projects during the 2016-17 fiscal year.

Five grants, at a maximum of \$1,000 each,

are available for each of TWRA's four regional Aquatic Habitat Protection projects (a total of \$5,000 per region). The funds will be obligated as grants, so the grantee must have a nonprofit tax number. The projects are to be completed, the money spent, and a report submitted by June 30, 2017.

The grant money could be used to buy supplies such as rakes, work gloves, and garbage bags. Also, it could be used to pay disposal fees for solid waste and tire removal or to provide promotional items like project advertisement or T-shirts and refreshments for volunteer support.

Grant proposals should include the applicant organization's name, tax ID number, address, phone, and name of a contact person authorized to enter into contractual agreement on behalf of the organization. The proposal should also include the name of the stream, county or counties involved, and the project area and description.

Contact TWRA Environmental Service Division's Della Sawyers at (615) 781-6577 or by email at della.sawyers@tn.gov with any questions.

Grant Opportunity: UR5K Water Quality Grants!

Attention NGOs! Applications due July 15th!

In order to promote the implementation of local watershed quality stewardship projects, a portion of the proceeds generated from the Urban Runoff 5K (UR5K) will be awarded back to the community through two watershed quality awards of **\$750.00**. Local Non-Governmental Organizations (NGOs) will have the opportunity to submit specific stewardship proposals that will be judged by the UR5K Planning Committee. The committee is seeking projects

focused on Pollutant Runoff Reduction Implementation. Contest entries include any proposed project that involves the implementation/installation Best Management Practices (BMPs) that will improve runoff within a specific watershed. Examples BMPs could include, but not be limited to, rain gardens or other bio-retention basins, tree plantings, downspout disconnection, rain barrels, etc.

Submission Guidelines:

- Entry must include a team of at least three runners participating in the UR5K

- Entry must include a poster (16x20) illustrating the importance of stormwater management to be displayed along the Urban Runoff 5K route

Project must be shovel-ready. Implementation must occur before March 31, 2017.

Applications must be submitted prior to **July 15, 2016**. Contest awards will be announced during the awards ceremony for the UR5K.



Grant Opportunity: TDEC Recycling Equipment Grants

Eligible Applicants:

The Recycling Equipment Grants are available to local governments and nonprofit recycling organizations working with local governments.

Counties and the cities within those counties eligible to receive a recycling rebate, as directed by T.C.A. § 68-211-825(b), are not eligible to receive a recycling equipment grant. The rebate credits are in lieu of recycling equipment grants. The following Recycling Rebate counties and cities within those counties for FY 2016-2017 are not eligible for the recycling equipment grant: **Davidson, Hamilton, Knox, Rutherford, and Shelby.**

Eligible Projects:

Eligible recycling equipment includes key recycling equipment needed for collection, processing, operations, or to prepare re-

covered materials for transport and marketing. Key recycling equipment includes, but is not limited to recycling carts made with recycled content and embedded RFID tags, containers, compactors, balers, glass crushers, densifiers, and sorting systems, fork lifts, and scales. Collection trucks with a gross vehicle weight rating (GVWR) of 10,000 pounds or higher will be considered.

There are three priorities for this grant:

Applicants that received or were eligible to receive the Recycling Rebate between the Fiscal Years 2011 and 2015

Applicants that develop public/private or public/public partnerships

Applicants that employ developmentally disabled individuals, as defined in T.C.A. §33-1-101 (11)

Funding & Matching Requirements:

The Department has budgeted \$500,000 total for Recycling Equipment Grants. Of that amount, the Department has allocated \$200,000 for rural counties with populations less than or equal to 50,000 and the cities, solid waste authorities, or non-profit organizations within those counties. Additionally, \$300,000 has been allocated for suburban and urban counties with populations of 50,001 or greater and the cities, solid waste authorities, or non-profit organizations within those counties. No grant may exceed \$50,000. A match of 10%-50% is required as indicated in Attachment 3 Recycling Equipment Grant Match Requirement.

To see what grants are currently being offered please click [here](#).

To obtain applications, please contact Loretta Harrington at (615) 532-0086 or Sol-id.Waste@tn.gov.

Grant Opportunity: FY2017 Brownfields Grants

ANNOUNCING New Request for Proposals

EPA is announcing the availability of funding to eligible entities who wish to develop an area-wide plan for brownfields assessment, cleanup, and subsequent reuse. This funding is for research and/or technical assistance activities directed to one or more brownfield site(s) located in a specific area (such as a neighborhood, downtown or business district, local commercial corridor, commu-

nity waterfront or city blocks).

Each project funded under this grant must result in an area-wide plan which includes specific plan implementation strategies for assessing, cleaning up, and reusing the brownfields site(s) as well as related brownfields and project area revitalization strategies. EPA anticipates awarding approximately 20 projects in total, funded at up to \$200,000 each.

The proposal submission deadline is August 10, 2016.

[FY2017 Brownfields Area-Wide Planning Grant Guidelines](#)

[Frequently Asked Questions](#)

[Tips for submitting FY17 BF AWP Proposals through www.grants.gov \(PDF\)](#) (2 pp, 121 K, [About PDF](#))

Level I & II TNEPSC, Permanent Stormwater Design & TN-HDT Courses Schedules

TNEPSC Level I Certification Course	
July 27, 2015	Nashville
September 20, 2016	Jackson
September 28, 2016	Nashville
October 4, 2016	Chattanooga
October 12, 2016	Knoxville
TBD	Memphis
November 9, 2016	Johnson City
November 15, 2016	Nashville
TBD	Knoxville
TBD	Chattanooga

TN-HDT Refresher Course	
TBD	Warner Park Nature Center Nashville
TBD	TDEC Knoxville EFO

TN-HDT Course	
August 8-10, 2016	Montgomery Bell State Park FULL

TNEPSC Level I Recertification Course	
September 15, 2016	Nashville
September 22, 2016	Knoxville
September 30, 2016	Chattanooga
October 27, 2016	Clarksville
November 3, 2016	Memphis
November 10, 2016	Johnson City
December 6, 2016	Nashville
TBD	Chattanooga
TBD	Knoxville

TNEPSC Level II Certification Course	
November 16 & 17, 2016	Nashville
December 7 & 8, 2016	Chattanooga
TBD	Knoxville

SCM Inspection & Maintenance Course	
TBD	Nashville
TBD	Knoxville

Please contact [Tim Gangaware](mailto:Tim.Gangaware@tnstormwatertraining.org) with questions or visit the website: <http://tnstormwatertraining.org/> or <http://tnhdt.org/> or <http://tnepsc.org/>

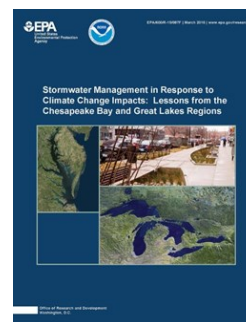
New EPA Report: Stormwater Management in Response to Climate Change

EPA has released "[Stormwater Management in Response to Climate Change Impacts: Lessons from the Chesapeake Bay and Great Lakes Regions.](#)"

This report shares insights from workshops that EPA and NOAA held with local planners on ways to further adopt climate change adaptation practices in stormwater management. The report

assesses common challenges and opportunities across the Chesapeake Bay and Great Lakes regions and provides examples of tools, data, methods, and actions that can be used to address climate change impacts. Recent efforts detail how climate change practitioners can more effectively work with communities.

[Read the Full Report.](#)



Project of the Week for June 20, 2016: The Pinnacle at Symphony Place

One of Nashville's premier buildings was recently featured on [GreenRoofs.com](#) as the project of the week:

Located adjacent to the Schermerhorn Symphony Center in Nashville, Tennessee, [The Pinnacle at Symphony Place](#) is a 29-story, 500,431 sf luxury office and retail skyscraper in the city's SoBro (South of Broadway) district. Designed by Pickard Chilton, the \$170 million Pinnacle is the city's only Class AA office tower and first LEED Gold certified skyscraper, and the primary business address for the city's top corporations.

Articulating the timeless design of classic skyscrapers, the building respects the neighborhood's intimate scale.

Located on a former brownfield site, the Pinnacle boasts numerous sustainable design features such as recycling 90%+ of construction waste generated on-site, daylighting, and incorporating low-E glass. Plus, a one-acre greenroof terrace garden, located over the parking garage at level seven, is landscaped with native and adaptive plants. Designed by [Hawkins Partners](#) using growing media by [ERTH Products](#) and installed by Greenrise Tech-

nologies. The Green Roof has been in for several years now and the area is a dedicated outdoor use space for the facility. [Click here](#) for the article.



Upcoming Conferences

2016 TNSA Annual Conference "Go with the Flow"

October 18-20, 2016 ~ Fall Creek Falls, Pikeville, TN

Early registration ends August 31st!

Join us at Fall Creek Falls State Park in Pikeville, Tennessee, as we explore challenges and discover solutions to the ever-changing world of stormwater management in Tennessee. This year's theme is "Go with the Flow".

This year's Keynote Speaker is Dr. David Etnier, a Professor of Ecology & Evolutionary Biology at the University of Tennessee. Dr. Etnier has been teaching some form of zoology professionally since 1965 and is a legendary figure in the Ichthyological community of East Tennessee, and beyond.

[Click here for Registration](#)

[Click here for Sponsorship Form](#)

Thank you to [ADS](#) and [Belgard](#) for already committing to Sponsorship!

For additional information or if you have questions please contact [Charlene DeSha](#) 865-386-6917.



UT Municipal Technical Advisory Service INSTITUTE FOR PUBLIC SERVICE



We wanted to inform the TNSA about a training program that MTAS will be hosting. This summer, MTAS is partnering with TDEC to offer a training workshop on the National Flood Insurance Program. We'll be offering six of these sessions across the state during the month of August.

The sessions will last for 4 hours and will cover various topics of floodplain management including flood maps/studies, elevation certificates, and recent legislation affecting flood insurance. All of the sessions are **FREE**. Participants need to register on the MTAS website in order to attend.

[Click Here for NFIP Flyer](#)

[Register Here!](#)

If you have any questions about the program, please contact Dr. Chris Shults at 865-974-8964 or chris.shults@tennessee.edu. For more information about registration, please contact Patrick Mills at 865-974-9833 or patrick.mills@tennessee.edu

Knoxville's inaugural
Tennessee River
Runoff 5K
& Cheers to Clean
Water Celebration!



Join us to raise
awareness about
protecting
Tennessee's streams
& raise a glass to
clean water!

Friday, June 2nd, 2017
Race registration begins at 5pm, race at 6pm
Cheers to Clean Water Celebration 6pm - 9pm

UT Gardens at the University of Tennessee
2518 Jacob Dr, Knoxville TN 37996

\$35

Full Registration
(race and celebration)

\$25

Race Only

\$15

Celebration Only

Register now!

Visit runsnap.com/race/TN/Knoxville/TNRiverRunoff5K or scan
for more information and to sign up!

Questions? Please email stephanie.carlson@knoxcounty.org



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6 issues per year

Prices

¼ page: \$50

½ page: 75

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¼ page: \$35

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Contact:

Jennifer Watson

jennifer@tnstormwater.org

615-418-7284

Lowhead Dam Project Received Legacy Project Recognition

The Lowhead Dam Removal and Restoration Project in Franklin received the [National Fish Habitat Partnership's](#) 10-year Anniversary **Legacy Project Award!**

On June 15, 2016, the Southeast Aquatic Resources Partnership (SARP) nominated Harpeth River Lowhead Dam Removal and Stream Restoration Project which was recognized as one of the **National Fish Habitat Partnership's (NFHP) 10 "Waters to Watch" Legacy projects** for its significant impact on fish habitat conservation!



In 2010, the [Harpeth River Watershed Association](#) (HRWA) secured \$350,000 from collaborative funding programs of the U.S. Fish and Wildlife Service, Southeast Aquatic Resources Partnership, and the National Fish Habitat Partnership for activities that improve fish habitat and remove barriers to fish passage.

This project removed the only barrier on the Harpeth River, a lowhead dam,

and eliminated a 1.7-mile-long impoundment in order to reconnect 36 miles of river and restore riffle/run aquatic habitat that was submerged.

The project was a collaboration between HRWA, the City of Franklin, the TN Department of Environment and Conservation (TDEC), the Tennessee Wildlife Resources Agency (TWRA), and other state and federal agencies, businesses, and non-profit partners that contributed another \$70,000 toward the total project cost of \$750,000.

Soak Creek Named Tennessee's First Scenic River in 15 Years

[TDEC news](#)

Soak Creek, a tributary of the Piney River in East Tennessee, has been named Tennessee's newest Scenic River – the first designation since 2001.

After unanimous bipartisan approval by the State House and Senate, Tennessee Gov. Bill Haslam has signed legislation adding Soak Creek to the list of 15 state waterways designated as Scenic Rivers. Winding through Bledsoe, Cumberland and Rhea Counties, a specific segment of Soak Creek – from its junction with Georgia Branch near Stinging Forks State Natural Area to its intersection with the Piney River near Piney Falls State Natural Area – received the designation.

"This scenic river designation will preserve and protect the pristine ecology and waters of Soak Creek," said Deputy Commissioner of Parks and Conservation Brock Hill. "It will also provide a high-quality outdoor experience on the water or hiking trails on the adjacent Justin P. Wilson Cumberland Trail State Park. The opportunities for place-based economic development from tourism in the area have the potential to be significant."

The push for designation came about from the support of local landowners and with the assistance of The Nature Conservancy, American Whitewater, and the Tennessee Parks and Greenways Foundation. The Tennessee Department of Environment and Conservation assisted in

preparing the bill filed by The Nature Conservancy. Senator Ken Yager and Representative Ron Travis introduced SB2520/HB2566. The State Scenic River designation provides protection to the river without impacting property rights. The designation also promotes public awareness about river stewardship and long-term protection of the river and the river corridor.

"As a landowner along Soak Creek and a father of kids who love nature, I am thrilled to see this amazing piece of wilderness receive the recognition it deserves," said George Lindemann, one of the property owners who supported the project. "I believe we protect the places we experience and it just makes sense to set aside some of these incredible creeks and rivers so everyone has the chance to experience this part of Tennessee."

This free-flowing creek serves as critical habitat in an area recognized as one of the country's best remaining examples of a major biotic community. Wildflowers – including the native dwarf milkwort and spotted geranium – are in abundance as well as old growth forests and picturesque waterfalls.

Soak Creek is also known as a mecca for whitewater recreational kayaking. Kayakers rate this wilderness paddling route as one of the premier class III-IV runs in the Cumberland Mountains.

"The Soak Creek Scenic River classification will help promote the region as an outdoor recreation area," said Rob Bullard, director

of The Nature Conservancy's Tennessee/Cumberland Rivers Program. "We hope it will serve as a catalyst for future recreational eco-tourism in East Tennessee."

The popular Cumberland Trail, which follows a line of pristine high ridges and deep gorges for approximately 185 miles, is proposed to parallel about four miles of Soak Creek. This section of the trail would connect hikers to Stinging Fork Falls State Natural Area, Piney Falls State Natural Area and the 2,000-acre Piney River Resource Management Area of the Cumberland Trail.

"Soak Creek is a remarkable scenic river corridor," said Jane Polansky, administrator of Tennessee's Scenic Rivers Program. "Here you can enjoy the peaceful sound of free-flowing water while watching a great blue heron fly by. We encourage visitors to enjoy Soak Creek and the more than 400 miles of waterways in Tennessee."

Click here for more information about [Tennessee's Scenic Rivers Program](#).



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2016 Governor's Environmental Stewardship Awards Announced

TDEC News

Tennessee Gov. Bill Haslam and Tennessee Department of Environment and Conservation Commissioner Bob Martineau today announced the winners of the 2016 Governor's Environmental Stewardship Awards. The awards recognize exceptional voluntary actions that improve or protect the environment and natural resources with projects or initiatives not required by law or regulation.

"It is important that we pause to recognize the people and organizations that work so hard to protect our environment while teaching others about sustainability," TDEC Commissioner Bob Martineau said. "These winning efforts will help pave the way for future ideas on how we can further protect our natural resources."

2 Winners of note:

Category: Natural Heritage

50K Tree Day – A Project of the Tennessee Environmental Council

The Tennessee Environmental Council's 2015 50K Tree Day event involved 92 out of 95 counties and helped to bring social, environmental, and economic benefits to Tennessee. As part of the event, 52,000 native trees were distributed at no cost to 1,921 Tennessee residents. More than 3,000 volunteers helped plant 47,000 of those 52,000 trees.

Future benefits include: mitigating potential air pollution over the 50-year lifetime of the trees, 543-million pounds of carbon dioxide sequestered over a 50-year lifetime once the trees reach maturity, and 823 million gallons of rainfall intercepted in the tree canopy which reduces stormwater runoff and downstream flooding. Additionally, the Council engaged underserved communities in the tree planting event supporting environmental justice in these areas.

Category - Pursuit of Excellence

Lipscomb Academy Elementary: Making a Difference Locally and Abroad – Pursuit of Excellence

In 2015, Lipscomb Academy Elementary School further expanded its environmental education program to include practical applications of renewable energy production and environmental remediation.

The environmental remediation project:

Green Team members also worked to improve water quality and ecosystem health in a local creek after noticing that there was no life in the stream. With assistance from Metro Water Services, a significant public water leak that was providing up to 70 percent of the creek's flow was identified and stopped. Working with several partners including Tennessee Division of Forestry, the Cumberland River Compact, GroWild Native Plant Nursery, and Monroe Harding, the students then completed a riparian buffer restoration that has brought more life to the stream area improving the overall condition of the watershed.

For more information on the Governor's Stewardship Awards, please [click here](#).

The Cumberland River is excited to introduce you to their newest educational outreach program – Creek Critters

Seeking Interested Schools for 2016!

Creek Critters is an interactive educational program for elementary school students, where we bring the creek to you! The goal of our Creek Critters program is to get kids interested in science and in our precious water resources at a young age.

In the Creek Critters program, we arrange to visit a local school (churches or community groups are also welcome to host if interested) and teach 3-4 classes about water issues and aquatic organisms. The program is targeted at 4th grade but should be suitable for kids from 2nd grade to 5th grade. In a typical set up, we try to cycle through an entire grade during that grade's science period. A typical presentation lasts about an hour per class, but can be varied to suit your schedule.



Students interacting with Compact's Stormwater Model



The program is completely free to interested schools – all we ask for is a space to host it (libraries have worked well, as have outdoor classrooms!) We can also host a Creek Critters event at our offices in downtown Nashville for smaller schools that may have less space for hosting.

Creek Critters is made possible by the generous volunteer efforts of Annie Goodhue, a retired TDEC Aquatic Biologist who is leading the program for us!

We vary the program depending on the time available, student ages, and teacher requests, but some of the elements we've used have included the following: A short introduction where we talk about what the Compact does and why it's important to protect our streams and rivers.

- A brief lesson using a model of a watershed that teaches the kids about watersheds and the effect of urban development on pollution and flooding.
- A brief lesson on where water is found (oceans, ice caps, lakes) and how we depend on a tiny fraction of this water to sustain us.
- A short lesson on aquatic biology and

how we capture our creek critters for study!

- Some interactive games that teach children about the aquatic animals and the web of life (pictured).
- And most importantly, the CRITTERS, an interactive component where we have live and preserved aquatic animals (fish, crayfish, aquatic insects) available for the kids to look at. These critters are collected at a local creek so the kids can see what kind of aquatic organisms are in their neighborhood.

If you'd like the [Cumberland River Compact](http://CumberlandRiverCompact.org) to do a Creek Critter show at your school, please contact Alec Norman at alec.norman@cumberlandrivercompact.org to arrange a time for a visit.



Students investigate a tray of live critters from Browns Creek

Quarterly Stormwater Professional Spotlight: Mark Heinzer

Continued from page 1



Johnson Street Redevelopment
TNSA President Crystal Bishop has this to say about Mark:

"I am lucky to work in the same building as Mark. He is always willing to discuss stormwater ideas and chew on issues we encounter as public servants. He's a very smart and humble person, and I'm glad to have him as a stormwater ally."

Mark is married with two wonderful daughters. He enjoys cycling, hiking, camping, and eating!

Congratulations Mark for being our Quarterly Stormwater Hero! We appreciate what you do for the City of Chattanooga and for

the Tennessee stormwater community. Mark may be reached via phone: (423) 643-6023 or email: mheinzer@chattanooga.gov



Archived Webinars

1. Value of Water Communication

On June 28, the Value of Water Coalition Communications Director Abigail Gardner lead a Communications Bootcamp webinar to guide participants through best practices for communicating the value of water, educating and engaging community stakeholders, and winning support from public officials for rate proposals and water projects. This webinar will guide participants through best practices for developing a

strategic communications plan, earned and social media strategies, and message decks, using the Value of Water messaging deck as a model.

2. Greening Your Backyard: Water Efficiency and Stormwater Solutions for Homeowners and Communities

This webcast combines the power of two successful EPA water programs and their partner organizations to bring homeowners and communities some of the latest tools

and information on water efficiency and stormwater solutions.

Featured speakers are from EPA's Water-Sense program and Texas A&M, who will discuss their efforts to encourage outdoor water conservation, and from EPA's Soak Up the Rain program and the Massachusetts Watershed Coalition, who will highlight the importance of public awareness and action on preventing stormwater runoff.

[Watch this webcast on YouTube](#)



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Meeting your Public Education Minimum Measure: Join the Tennessee Association of Broadcasters: TAB Program!

TNSA is continuing to work with the Tennessee Association of Broadcasters (TAB) and Stormwater Consultant, Tom Lawrence, P.E., to provide the TAB Stormwater Education Program for the 2016-2017 year.

The program works with TAB to distribute professionally developed radio and television Non-Commercial Sustaining Announcements (NCSAs) to television and radio stations throughout the State. TAB has over 330 television and radio station members in Tennessee.

Due to TNSA's relationship with TAB, all participating MS4s will be provided with NCSA airtime reporting, which can be

included in your annual report as credit toward your stormwater education and outreach program. TAB states that the return-on-investment in the average NCSA program can deliver 4 to 10 times the annual expenditures! **Annual playtime this past year was equal to over \$500,000 in radio airtime!**

The cost of participation is based on the population within the MS4 (see table below). TAB uses the money received from TNSA for distribution, promotion, and tracking of the NCSAs. TNSA pools the money from the individual MS4s to contract with TAB for the program to negotiate additional airtime at lower costs.

Chris Masin, Shelby County MS4, enthusiastically promotes TAB: "Of course Shelby County MS4 would like to participate in the TAB program for 2015. The exposure that the radio ads give the stormwater program is invaluable. The effort level to receive TDEC accepted public education credits is as simple as approving the invoice and downloading the efficiently-sent, timely reports. And the amount of value that the airtime is worth compared to the minuscule cost is absolutely mindblowing. Count me in!"

If you would like to get an invoice for the TAB Program and receive monthly airtime reports, please contact Tom Lawrence (901-237-4819) or Charlene DeSha (615-



Tier Level	Population	Yearly Rate	Tier Level	Population	Yearly Rate
1	25,000 or less	\$400	4	100,000 or less	\$1,600
2	50,000 or less	\$800	5	Greater than 100,000	\$2,000
3	75,000 or less	\$1,200			

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Release of the National Wetland Condition Assessment 2011 Report

EPA is pleased to announce the release of the National Wetland Condition Assessment 2011 Report. This report is the culmination of a significant partnership between EPA, states, tribes, and other partners. The NWCA report is posted at <http://www.epa.gov/national-aquatic-resource-surveys/nwca> along with data used in the assessment.

Key findings from the report include the following:

- Less than half of wetland area (48%) is in good condition; 32% is in poor con-

dition and the remaining 20% is in fair condition.

- Physical disturbances to wetlands and their surrounding habitat such as compacted soil, ditching, and removal or loss of vegetation, are the most widespread problems across the country. Wetlands with high levels of compacted soil are about twice as likely to have poor plant communities.
- Nonnative plants are a problem across the country, particularly in the interior plains and west. 46% of wetland area in the interior plains and 72% of wetland

area in the west have high or very high levels of stress from nonnative plants.

Thanks to everyone who contributed to the NWCA from planning through implementation and finally development of this report.

If you have any questions, please direct them to Gregg Serenbetz (Serenbetz.gregg@epa.gov 202-566-1253) or Sarah Lehmann (Lehmann.sarah@epa.gov 202-566-1379)

Tennessee needs greater emphasis on conservation

Reprinted from the Tennessean:

E.O. Wilson, one of Earth's most articulate, renowned Pulitzer Prize-winning authors and an Harvard entomologist, says the prescription to stopping mass extinction is to save half the planet in reserves. He's written a great book on the subject, and on May 31, he's hosting a party in New York City to launch this effort to save "Half Earth."

Why save half? Consider HIPPO, an acronym to remember the greatest threats facing life on the planet, in order of importance: habitat destruction (includes loss due to climate change), invasive species (that crowd out and bring disease to native life), pollution (especially in fresh water), population growth and overharvesting. HIPPO threatens our beautiful world.

It's a race to save life on the planet from the sixth great extinction that creates a new epoch because of man's destruction: the Anthropocene. Scientists predict that half of Earth's life will be extinct by the end of this century. What took evolution millions of years, humans will extinguish in the blink of a geologic eye. Unless we save half the Earth.

Larger reserves are needed now and are our best hope for Earth. We get our food, water and air from the natural world and all of the service that Earth's diversity provides. Wildlife needs room to roam. Headwater streams need vegetative buffers, and larger reserves can best defend life from the threats of exotic invasive pests and other pollution.

In Tennessee, we've conserved about 11 percent of our land and water, mainly in our national parks. That's a pretty good start, but not near enough! We are the most biologically rich inland state in North America. We have more species of trees than throughout all of Europe and the richest freshwater in the United States. And we are already conserving land in corridors where life is the most abundant. We are on our way to realizing the dream of Half Earth.

The Tennessee Parks and Greenways Foundation's mission is to conserve natural treasures (waterfalls, bluffs, caves). Unless isolated parks are linked to larger reserves, life will decline. So our vision is to create corridors of conserved land that link natural treasures together.

Decide to do your part. Elect politicians who care about climate change, energy efficiency and saving life on the planet. Support land conservation groups like Tennessee Parks and Greenways Foundation (TennGreen), who are conserving corridors. Let Congress know you care about the Land and Water Conservation Fund. Join with friends and neighbors who care about conservation funding in our state and support Forever Green Tennessee, the campaign to protect our state funding for land and water. Replace exotic plants in your yard with native plants and provide a little habitat where you live.

Outdoor recreation contributes more than \$6.3 billion annually to Tennessee's economy and supports 67,000 jobs across Tennessee, generating \$297 million in annual state tax revenue and producing \$4.6 billion annually in retail sales and services across Tennessee.

Support policies that are good for people, for our pocketbook and are good for the planet!

Kathleen Williams is senior adviser to and founding director of TennGreen (Tennessee Parks and Greenways Foundation). She may be reached at TennGreen.org or 615-329-4441.

One Simple, Cheap Trick To Make Cities Better: Plant More Trees

Trees are one of the best dollar-for-dollar investments a city can make.

By Ben Schiller, [Co. Exist](#)

When [cities plant trees](#), they do [more than make the place look nice](#). They also help cut energy use (by [reducing the need for air conditioning](#)), [store carbon dioxide](#), [trap airborne pollutants](#), and [intercept rainfall](#). Oh, and raise property prices: As any real estate agent will tell you, ["leafy neighborhoods" are more valuable than non-leafy ones](#).

Working off data from California, a [new paper](#) tallies up all these benefits and reaches some very large numbers. It says the state's 9.1 million street trees have an annual value of \$1 billion, or \$111 per tree. That includes A/C savings equivalent to the electricity use of 530,000 California households, and the equivalent CO2 emission savings of removing 120,000 cars from the road.

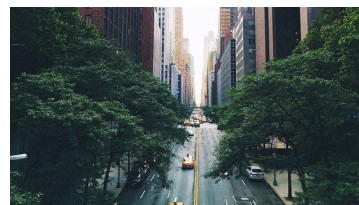
Which all sounds like good news, except that the paper, published in the journal [Urban Forestry & Urban Greening](#), says the state could be doing much better. The number of trees has increased a lot from the 5.9 million identified in 1988. But, because the number of streets has increased faster than that, there are fewer trees now per square foot than back then.

"California has approximately 9.1 million street trees, about one for every four city resident," the authors say. "To fill the vacant street tree sites would require planting 16 million trees. Assuming that 50% of these are readily plantable, it appears feasible to nearly double the state's street tree population through planting of another 8 million vacant street tree sites."

The negative conclusion of the paper is a bit surprising, because there are a lot of

efforts to map and quantify the [value of trees in cities](#). OpenTreeMap software, for instance, is now used in [several major cities](#). And Portland State University has [another initiative](#). But perhaps the planting of trees hasn't caught up to the new economic analysis tools.

From the latest paper, it really seems like a no-brainer that cities would plant as many trees as possible (while maintaining diversity to protect against disease). Even after an average maintenance cost of \$19 per tree, cities can reap returns of \$5.82 for every \$1 spent, it says—which is a pretty good ratio for any investment.



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Purpose

The mission of the Tennessee Stormwater Association (TNSA) is to assist local government entities in their efforts to comply with State and Federal clean water laws and Stormwater Regulations promulgated by the Environmental Protection Agency and the Tennessee Department of Environment and Conservation; and through such assistance, to protect and improve the quality of the waters of Tennessee. This mission will be accomplished through TNSA members' exchange of information and knowledge regarding the design, construction, maintenance, administration and operation of stormwater facilities. The TNSA will promote the dissemination of information in stormwater control measures and the adoption of improved practices in stormwater administration.

Members

TNSA membership is composed of designated Municipal Separate Storm Sewer Systems (MS4s) including local governments (city and county), universities, military installations, and other entities such as TN Department of Transportation (TDOT). Associate members include environmental advocacy groups, non-profits, Tennessee State, sub-state or federal government entities consultants. Private sector membership is available to for-profit engineering, scientific and management firms or other organizations with an interest in stormwater.

EPA Releases Final Technical Guidance for Assessing Environmental Justice in Regulatory Analysis

EPA issued final technical guidance to help our analysts evaluate potential environmental justice (EJ) concerns associated with EPA regulatory actions. The Technical Guidance for Assessing Environmental Justice in Regulatory Analysis (EJ Technical Guidance) directs analysts to assess whether environmental justice concerns exist prior to the rule-making and whether such concerns are exacerbated or mitigated for each regulatory option under consideration. By providing direction on how environmental justice should be taken into ac-

count, the EJ Technical Guidance complements final guidance issued in May 2015 on when to do these analyses. The results of EJ analyses are just one of the factors that go into the decision-making process.

Developed with input from the public and EPA's Science Advisory Board, the EJ Technical Guidance reflects EPA's strong commitment to transparency and to grounding its decisions in the highest quality science. It also represents the last commitment made under Plan EJ

2014, EPA's strategic plan for integrating environmental justice into all EPA programs.

By improving the agency's ability to conduct strong, consistent analysis of environmental justice in regulatory actions, the EJ Technical Guidance marks an important milestone in EPA efforts to ensure environmental justice is considered in all aspects of the agency's work.

LEARN MORE:

Read the [EJ Technical Guidance](#).

Video: A green solution for wastewater discharge

Medford, Ore. faced a problem common for cities nationwide. Upon treating sewage from nearly 200,000 people, the city's wastewater treatment plant discharges an average of 17 million gallons of clean — but warm — water to the Rogue River every day. To comply with

its NPDES permit, the city had to offset the impact of its warm-water discharge, and The Freshwater Trust offered a natural solution: Plant trees.

VIDEO: Five years in, meet the engineers, conservationists, land-owners and other partners help-

ing make the Medford water quality trading program a success.

Want to dig deeper? Read our [case study and technical FAQs](#).



UNC Finance Center: Stormwater Wetlands & Watersheds

Great website with useful info and materials: [UNC Stormwater Wetlands](#)

The EFC works with organizations, governments and tribes to promote sustainable finance for

stormwater utilities, wetlands, and watersheds. Past work included conducting surveys, developing a stormwater model ordinance, developing a stormwater fees dashboard and organizing a stormwater implementation group. Trainings

publications and other resources developed by the EFC assist in administering and financing stormwater programs.