

# EcoStream 2018 - Stream Ecology & Restoration Conference

*Evolving from Two Decades of Lessons Learned to Meet Future Challenges*

MONDAY, AUGUST 13, 2018

6:00-9:00 pm SOCIAL at Pack's Tavern, 20 S Spruce St, Asheville, NC 28801

TUESDAY, AUGUST 14, 2018

8:15 am-12:00 pm

GENERAL SESSION

## Grand Ballroom

Moderator *Barbara Doll, NC Sea Grant*

8:15 - 8:30 Conference Welcome - **Barbara Doll**, Extension Assistant Professor, NC State University, and Extension Specialist, NC Sea Grant

8:30 - 9:00 Three Decades of Stream Restoration: Lessons Learned and Future Challenges - **Dave Rosgen**, Wildlands Hydrology Consultants

9:00 - 9:30 Ten-Year Anniversary of the Mitigation Rule: Changing Policies, Perceptions and the Path Forward - **Palmer Hough**, US EPA

9:30 -10:00 Community Catch-22 - Inspiring Involvement - **Eve Brantley**, Alabama Cooperative Extension & Auburn University

10:00 -10:30 Break

10:30 -11:00 Hurricane Harvey - What Have We Learned? - **Lee Forbes**, SWCA Environmental Consultants

11:00 -11:30 Addressing Flooding and Extreme Weather with Restoration Efforts - **Brian Bledsoe**, University of Georgia

11:30 -12:00 Resilient by Design - **Charles "Chuck" Flink**

12:00 - 1:20 Lunch

1:20 pm - 3:00 pm

CONCURRENT SESSION 1

## Salon A

## Salon B

## Windsor Ballroom

Session Title *Fish Passage and Dam Removal*

*Nutrient Removal & Crediting for Stream Restoration*

*Design Approach and Process Innovations*

Moderator *Eric Somerville, US EPA*

*Greg Melia, NC DMS*

*Michael Adams, Stantec*

1:20 -1:40 (1) Fish Passage Analysis at Highway Culverts - **Elizabeth Kanner**

(6) Regenerative Stormwater Conveyance: Monitoring and Analysis in the Piedmont Region of North Carolina - **Simon Gregg**

(11) Naturalizing Performance Standards for Urban Channel "Restoration" - **David Bidelspach**

1:40 - 2:00 (2) Dam Removal and River Restoration: Milburnie Dam on the Neuse River in Raleigh, NC - **Wes Newell**

(7) Stream Restoration as a Cost-Effective Technique to Meet TMDL Water Quality Goals - **Amy Longcrier**

(12) Navigating to Flexible Projects: Making Implementation of Design Build Stream Restoration in North Carolina a Reality for Publicly Funded Projects - **Ian Jewell**

2:00 - 2:20 (3) Hoosier Dam Removal Project: Restoring Habitat for the Endangered Cape Fear Shiner - **Angela Allen**

(8) Developing the First Nutrient Bank Through Stream Restoration in Virginia - **Kip Mumaw & Chris Tomsic**

(13) Making Stream Restoration More Sustainable - **Robert Hawley**

2:20 - 2:40 (4) Fish Passage Barrier Removal on Densons Creek: Triple Bottom Line Solution - **Greg Jennings**

(9) Comparing Water Quality Functional Uplift Outcomes from Common Models and Direct Measurement Using the NC Stream Function Quantification Tool - **Lin Xu & Greg Melia**

(14) Less is More: Sustainable Strategies for Stream Restoration Design and Construction - **Amy Reed and Colin McGill**

2:40 -3 :00 (5) Milburnie Dam and the Future of Mitigation Through Dam Removal - **George Howard**

(10) Comparing Reach Scale Nitrate Removal of Instream Restoration Techniques - **Erich Hester**

(15) Iowa River Restoration Toolbox: A Collaborative Approach to Develop Tools to Protect and Enhance Streams for Iowa - **George Athanasakes**

3:00 - 3:30 Break

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3:30 pm - 4:50 pm			
Salon A		Salon B	Windsor Ballroom
<i>Session Title</i>	<i>Macroinvertebrate Assessment</i>	<i>Streambank Erosion Assessment &amp; Monitoring</i>	<i>SPECIAL SESSION 1</i>
<i>Moderator</i>	<i>David Penrose, Penrose Environmental</i>	<i>Melonie Allen, NC DMS</i>	<i>Erin Shanaberger, City of Charlotte</i>
3:30 - 3:50	(16) Final Update of Seeding of Benthic Macroinvertebrates by Use of HabiTubes as a Habitat Restoraiton Technique - <b>James Barber &amp; Peter Schneider</b>	(20) The Self-Recovery of Stream Channel Stability in Urban Watersheds Due to BMP Implementation, Carroll County, MD - <b>Lisa Fraley-McNeal &amp; Byron Madigan</b>	(24) Climate Change Implications for Stream Restoration: Learning from the Past to Prepare for the Future <b>Joel Nipper</b> , CMSWS, <b>Ken Kunkel</b> , NOAA, <b>Sandra Clinton</b> , UNC-Charlotte, <b>Will Wilhelm</b> , Kimley-Horne and Associates, and <b>Greg Jennings</b> , Jennings Environmental
3:50 - 4:10	(17) Correlating Species Diversity, Species Traits and Stream Habitat Quality to Better Inform Restoration Practices - <b>Anthony Roux</b>	(21) Process-based Modeling and Measurement of Streambank Retreat in a NC Piedmont Stream - <b>Periann Russell</b>	
4:10 - 4:30	(18) Urban Bioassessments Indicate Increased Benthic Tolerance - <b>Chris Ruck</b>	(22) TMDL Reduction Credit for Stream Restoration - Case Studies and Comparison of Several Methods - <b>Bryan Dick</b>	
4:30 - 4:50	(19) Urban Stream Mitigation: Negotiations, Daylighting, Bridges and Bugs - <b>Ward Marotti &amp; Jay Squires</b>	(23) App for that? Of course! Bank Erosion Hazard Index (BEHI) and Near Bank Stress (NBS) Analysis Field Data Collection Using Mobile Operation Systems - <b>Josh DeMaury</b>	
5:10-7:00 pm POSTER PRESENTATIONS & EXHIBITOR RECEPTION at Exhibit Hall (Salon C)			
WEDNESDAY, AUGUST 15, 2018			
8:00 am - 5:00 pm			
FIELD TOURS & SPECIALTY WORKSHOP			
8:00 - 3:00	<b>Tour 1:</b> River Bank Enhancement and DuPont State Forest Stream with Waterfall Hiking or Mountain Biking		
8:00 - 12:00	<b>Specialty Workshop 3:</b> Advanced Modeling for Stream Restoration, Dam Removal, and Fish Passage Workshop		
8:15 - 3:30	<b>Tour &amp; Workshop 4:</b> Drone Technology		
8:30 - 12:30	<b>Tour 2:</b> Urban and Rural Agricultural Stream Restoration Combination Tour		
10:00 - 5:00	<b>Tour 5:</b> Ivy River Bank Enhancement with Zipline or Rafting on the French Broad River		
1:15 - 5:00	<b>Tour 6:</b> Tour de Asheville: Urban Stormwater Bike Tour		
1:30 - 5:00	<b>Tour 7:</b> Brewery, Low Impact Development and Stream Restoration		
6:00 - 9:00 pm SOCIAL at the Smoky Park Supper Club, 350 Riverside Dr, Asheville, NC 28801			

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Thursday, AUGUST 16, 2018			
8:10 am - 9:50 am CONCURRENT SESSION 3			
	Salon A	Salon B	Windsor Ballroom
<i>Session Title</i>	<i>Riparian Buffers and Wood in Streams</i>	<i>Watershed Approaches to Urban Stream Restoration</i>	<i>Urban Stream Restoration and Infrastructure Considerations</i>
<i>Moderator</i>	<i>Lin Xu, NC DMS</i>	<i>Eve Brantley, Auburn University</i>	<i>Todd Bowers, EPA</i>
8:10 - 8:30	(25) Get the Rock Out - <b>Kevin Nunnery</b>	(30) Stream Mitigation Design and Construction for an Over-Widened Bedrock Channel - <b>Ken Barry, Michael Pannell, &amp; Brent Wood</b>	(35) Making the Connection: Linking Urban Streams and People - Case Studies in Urban Stream Restoration and Greenway Projects in Charlotte, NC - <b>Will Wilhelm &amp; Brian Sikes</b>
8:30 - 8:50	(26) Assessing Large Woody Debris to Improve Stream Projects - <b>Thomas Barrett</b>	(31) A Decade of Lessons Learned and Applied Using Adaptive Management and Design - South Buffalo Creek Restoration Initiative - <b>Jennifer Murphy &amp; David Phlegar</b>	(36) When Manholes Go Missing: Stream Solutions for Municipal Sanitary Systems - <b>Tim Schueler</b>
8:50 - 9:10	(27) What is Stream Restoration Vegetation Success? It Depends. - <b>Meghan Fellows</b>	(32) Restoring Hunnicutt Creek: Results and Perspectives from a University Campus Restoration Project - <b>Calvin Sawyer</b>	(37) Effective Stream Restoration Construction Management within Piscataway Creek - <b>Paul Le Bel</b>
9:10 - 9:30	(28) Incorporating Wood in Urban Systems - <b>Mike Adams</b>	(33) Moore Money, Moore Problems: Fluidly Transitioning Phases of the Moores Creek Watershed Restoration Project - <b>Alex James</b>	(38) Using Stream Enhancement in Urban Settings to Protect Valuable Infrastructure and Prevent Potential Water Quality Impacts from Infrastructure Failure - <b>Daren Pait &amp; Jason Diaz</b>
9:30 - 9:50	(29) Why Greensboro's Stream Banks Have "Grown Up"? The Development of Riparian Stream Buffers in Greensboro, NC - <b>David Phlegar</b>	(34) Reedy Creek Stream Restoration Project: Applying Design-Build Methodologies for Stream Restoration in a Headwater Watershed - <b>William Harris &amp; Emily Reinicker</b>	(39) Watershed BMPs Reestablish Downstream Baseflows and Attenuate Peak Flows to Improve Stream Integrity - <b>Nora Korth &amp; Kurt Cooper</b>
9:50 - 10:20	<i>Break</i>		
10:20 am - 11:40 am CONCURRENT SESSION 4			
	Salon A	Salon B	Windsor Ballroom
<i>Session Title</i>	<i>Habitat and Species Focused Restoration</i>	<i>Mitigation Lessons Learned</i>	<i>Advancing Technology for Restoration</i>
<i>Moderator</i>	<i>Casey Haywood, NC DMS</i>	<i>Jeff Jurek, NC DMS</i>	<i>Periann Russell, NC DMS</i>
10:20 - 10:40	(40) Benthic Invertebrates as an Indicator of Stream Restoration Success in the Coastal Plains - <b>Andy Dortch &amp; Dave Penrose</b>	(44) Stream Restoration on Mining Impacted Watersheds, West Virginia - <b>Timothy Denicola</b>	(48) 15 Years of Challenges, Failures, Successes and Future Hope for 3D Natural Channel Design - <b>David Bidelspach &amp; Brad Fairley</b>
10:40 - 11:00	(41) Stream Restoration and Fish Habitat Banking In Canada - <b>Brad Fairley</b>	(45) No Net Loss in the Army Corps Savannah District - <b>Katie Hill</b>	(49) Designs that Drive the Success of Stream Mitigation Banks - <b>Nathan Ober</b>
11:00 - 11:20	(42) Habitat Use Preference of Trout in Hatchery Creek: Kentucky's First Sustainable Trout Fishery - <b>Brady McPherson</b>	(46) Learning from Restoration Mistakes is the Key to Restoration Success - <b>Jessica East</b>	(50) From the Cloud to the Stream...of Decision-Support: Taking GIS Beyond the Map - <b>Scott Gregory</b>
11:20 - 11:40	(43) Combining Species Distribution Models and High-Resolution Habitat Mapping to Prioritize Restoration for an Endemic Fish - <b>Joseph Famularo</b>	(47) A Maturing In-Lieu-Fee Program's Role in Design and Construction of Restoration Projects - <b>Jessie Boles</b>	(51) Using Aerial LiDAR to Assess Stream Restoration Project Sites - <b>Marla Denicola</b>
11:40 - 12:40	<i>Lunch</i>		

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12:40 pm - 2:00 pm			
CONCURRENT SESSION 5			
	Salon A	Salon B	Windsor Ballroom
<b>Session Title</b>	<b>Watershed &amp; Water Quality Assessment</b>	<b>Communicating with Stakeholders</b>	<b>Sediment Sources and Modeling</b>
<b>Moderator</b>	<i>Callie Moore, Hiwassee River Watershed Coalition</i>	<i>Wendi Hartup, Town of Kernersville</i>	<i>Jonathan Page, NC State University</i>
12:40 - 1:00	(52) Determining the Likelihood of Detecting Change in Water Quality Resulting from Stream Restoration Practices Over Mitigation Time Frames - <b>Gregory Melia &amp; Casey Haywood</b>	(56) Reap What You Sow: Cultivating a Mitigation Site and Delivering it Through Project Implementation - <b>Chris Roessler</b>	(60) Benefits of 2D Modeling for Proposed Bank Stabilization - <b>Jake Maschoff &amp; Stephanie Roberts-Bowman</b>
1:00 - 1:20	(53) Tools for Better, Faster, Cheaper Restoration Planning - <b>Campbell McNutt</b>	(57) From Buyout to Restoration: The Chantilly Ecological Sanctuary at Briar Creek - <b>Aaron Earley &amp; Crystal Goode</b>	(61) 2D Hydraulic Modeling, Steering Stream Restoration Design - <b>Matthew Gramza</b>
1:20 - 1:40	(54) Triassic Lowlands, a Unique Region in the Piedmont: Implications for Stream Restoration, Bioassessment and Stormwater Management - <b>LeAnne Astin</b>	(58) Getting Our Feet Wet at Every Stage: Optimizing the Restoration of Urban Streams - <b>Kelly Mattfield</b>	(62) Using 2D Hydraulic and Sediment Transport Modeling to Evaluate Species-Focused Restoration - <b>Robert Stewart</b>
1:40 - 2:00	(55) Above and Beyond - Quantifying Exceptional Watershed Management Strategies - <b>Hunter Freeman</b>	(59) Conservation Projects in the Ivy River Watershed - <b>Jessica Hocz</b>	(63) Spivey Mill Dam - Incorporating Sediment Analysis with 2D Hydraulic Modeling to Predict Potential Dam Removal Outcomes - <b>Kyle Greene</b>
2:00-2:20	Break		
2:20 pm - 3:40 pm			
CONCURRENT SESSION 6			
	Salon A	Salon B	Windsor Ballroom
<b>Session Title</b>	<b>Learning as We Go</b>	<b>SPECIAL SESSION 2</b>	<b>Wetland Stream Complexes and the Role of Beaver</b>
<b>Moderator</b>	<i>Rachel Smith, NC Division of Soil &amp; Water Cons.</i>	<i>Paxton Ramsdell, EDF</i>	<i>Anita Goetz, US Fish &amp; Wildlife Service</i>
2:20 - 2:40	(64) Challenges of Swimming with the Fishes or Loving Your Stream To Death! - <b>Wendi Hartup</b>	(68) Connecting Science and Policy using the Stream Quantification Tool <b>Will Harman</b> , Stream Mechanics; <b>Will McDow</b> , Environmental Defense Fund; <b>Sara Donatich</b> , NC State University; <b>Vena Jones</b> , Tennessee DEC; <b>Eric Somerville</b> , US EPA	(69) The North American Beaver and Stream Restoration - Don't Believe Everything you Think - <b>Scott McGill</b>
2:40 - 3:00	(65) Experiential Learning in Lilly Branch - <b>Jon Calabria</b>		(70) 2D Modeling and Design for Resilience and Sustainability - <b>Arthur Parola</b>
3:00 - 3:20	(66) Setting the Stage - <b>David Woodie</b>		(71) To Beaver, or Not To Beaver - <b>Josh Gilman</b>
3:20 - 3:40	(67) Successful Smaller Projects - Backyard Stream Repair - <b>Mitch Woodward</b>		(72) Challenges & Alternatives to Traditional Wetland Mitigation in an Urban Environment: The Charlotte Case Study - <b>Erin Shanaberger</b>
3:40 - 4:00	Break		
4:00 pm - 4:40 pm			
GENERAL SESSION			
	Grand Ballroom		
<b>Moderator</b>	<i>Greg Jennings, Jennings Environmental &amp; NC State University</i>		
Panel Discussion	(73) Effective Project Management for Ecosystem Restoration	<b>Will Wilhelm</b> , Kimley-Horn and Associates, Inc. <b>Anita Goetz</b> , US Fish & Wildlife Service <b>Shawn Wilkerson</b> , Wildlands Engineering, Inc. <b>Alan Walker</b> , USDA-NRCS <b>Will Harman</b> , Stream Mechanics	
4:40 - 4:50	Closing Remarks and Drawing for \$500 Gift Card and Click Game Gift Baskets - <b>Barbara Doll</b>		
4:50 pm	Conference Adjourned		