

# STREAM INVESTIGATION & DESIGN WORKSHOP

*With an emphasis on innovative approaches to:*

Stream Stabilization and Restoration  
Including Bioengineering, Longitudinal Peaked Stone Toe Protection,  
and Redirective Methods

**NEW JERSEY  
7-9 MARCH 2016**

*Presented by:*



*Sponsored by:*



## STREAM INVESTIGATION & DESIGN WORKSHOP

### Concepts and techniques for stabilizing streams that help you meet your project goals

Streams all around the state are in need of attention – threatening infrastructure and valuable property. Action needs to be taken, and your team needs to come up with a plan. Let Dave Derrick show you his techniques for reading a stream, analyzing the forces at work, and developing stream stabilization and restoration designs that stand the test of time! Innovative, environmentally sensitive, and cost-effective approaches to restoration will be explained in detail. Comprehensive case studies will be presented. Field trips will give participants the opportunity to observe how practices perform and to develop conceptual designs for future projects. Workshop goals are to:

- Develop a philosophy of bank & bed stabilization design by seeing the stream as a complex system that responds to both local and system-wide processes.
- Develop project goals & objectives to address everyone on your team.
- See innovative bank protection methods and learn how to apply these techniques to potential project sites.
- Learn how to analyze bed & bank erosion from an experienced practitioner and practice how to read a stream.
- Apply the concepts of the Channel Evolution Model (CEM) and Regime Theory to know when you need grade control.
- Understand the importance of project constructability, monitoring, & maintenance
- Apply concepts in the field incorporating project goals, analyzing flow regimes and erosional process, and developing stabilization plans that will perform!

**Instructor: Dave Derrick, Potomologist, Stream Stabilization Specialist & Vice President of River Research & Design, Inc., Vicksburg, MS.** Mr. Derrick retired with 35+ years of experience as a Research Hydraulic Engineer with the Corps of Engineer's Engineering Research and Development Center's Coastal & Hydraulics Laboratory (ERDC-CHL). Google [derrick-lectures](#) to get into the ERDC-CHL website for 4 gigs of Dave's METHODS & CASE STUDIES PPT's.

**Classroom Location:** Rutgers Snyder Research Farm, 140 Locust Grove Rd, Pittstown, NJ 08867. Hunterdon County. More information and directions at <http://snyderfarm.rutgers.edu/>

**Continuing Education Credits:** A certificate of completion will be provided for your records. Professional Engineering credits will be offered. See the registration form.

## WORKSHOP REGISTRATION

\$350 for 3 full days!

*Register Early! Space is Limited!*

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Affiliation: \_\_\_\_\_

Address: \_\_\_\_\_

City/State/Zip: \_\_\_\_\_

Phone: \_\_\_\_\_

Email: \_\_\_\_\_

- Check if you would like to be on the North Jersey RC&D email list. We will keep your information to ourselves!*
- Check if you are a NJ Professional Engineer interested in receiving Continuing Education Credits*

### **PAYMENT OPTIONS**

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- Enclosed is my check for \$350 payable to North Jersey RC&D. Mail registration form and check to:  
North Jersey RC&D  
10 Maple Ave  
Asbury, NJ 08802
- I will pay \$350 in cash or check at the door and I promise to attend. Email registration form to reserve your seat to:  
[gmessinger@northjerseyrcd.org](mailto:gmessinger@northjerseyrcd.org)

*For more information, contact Marcus Gray at 908-441-9191 or 908-574-5368*

<b>AGENDA DAY 1</b>		<b>MONDAY, MARCH 7</b>
7:45 - 8:00	REGISTRATION	
8:00 - 8:15	WELCOME – Introductions & Workshop Overview	
8:15 - 9:40	<b>DERRICK'S PHILOSOPHY OF RESTORATION</b> <ul style="list-style-type: none"> <li>• Design Goals, Objectives, &amp; Function</li> <li>• Stream Regimes</li> <li>• How Streams Dissipate Energy</li> <li>• Project Luxuries &amp; Monitoring</li> <li>• Why Stream Projects Fail</li> <li>• Self-Adjusting Structures</li> <li>• How to Keep the Mowers Out</li> </ul>	
9:40 - 9:55	BREAK	
9:55 - 12:00	Channel Evolution Model (CEM) and Headcut Video Environmentally Compatible Grade Control	
12:00 - 1:00	LUNCH	
1:00 - 2:30	<b>RESISTIVE &amp; CONTINUOUS BANK STABILIZATION METHODS</b> <ul style="list-style-type: none"> <li>• Duck Creek Construction Video</li> <li>• Longitudinal Peaked Stone Toe Protection (LPSTP)</li> <li>• Longitudinal Fill Stone Toe Protection (LFSTP)</li> <li>• Keys, Filters, &amp; Stone</li> <li>• CASE STUDIES</li> </ul>	
2:30 - 2:45	BREAK	
2:45 - 3:50	<b>BIOENGINEERING PHILOSOPHY</b> <ul style="list-style-type: none"> <li>• Planting Vegetation with Large Yellow Machines</li> <li>• Harvesting Adventitious Poles</li> <li>• Slit Trench Plantings</li> <li>• Slit Brush Layering</li> <li>• Willow Poles &amp; Willow Curtains</li> <li>• Transplants Large &amp; Small</li> <li>• Half Drowned Bushes</li> <li>• Traffic Control Stones</li> </ul>	
3:50 - 4:05	THE FUNNEL METHOD FOR BRIDGE PROTECTION	
4:05 - 4:25	CASE STUDY: Floodplain Bench - LPSTP - SSBW	
4:25 - 4:30	WRAP-UP: Field information for Day 2	

<b>AGENDA DAY 2</b>		<b>TUESDAY, MARCH 8</b>
8:00 - 5:00	<b>FIELD DAY – ALL DAY</b> Analyze the performance of an existing project site that was completed five years ago. Develop concept design for two additional reaches that will be used in future plans and specs. Construction of the design sites may be a follow-up workshop in 2017! Bring your own lunch and water bottle! Dress Appropriately!	
8:00 - 12:00	Meet at Mine Brook Park in Flemington, NJ	
12:00 - 12:30	LUNCH BREAK - BYO	
12:30 - 2:30	DESIGN TIME – Analyze & Design Upstream Reach of Walnut Brook	
2:30 - 5:00	DESIGN TIME – Analyze & Design Downstream Reach of Walnut Brook	

<b>AGENDA DAY 3</b>		<b>WEDNESDAY, MARCH 9</b>
8:00 - 8:15	Meet at Rutgers Snyder Research Farm in Pittstown, NJ	
8:15 - 10:00	A Potomology & Fluvial Geomorphology Lecture (that is not boring) How to Read a Stream	
10:00 - 10:30	FIELD TRIP – Travel to Lopatcong Creek	
10:30 - 12:00	SITE 1: Analyze & develop concepts for Site 1	
12:00 - 1:00	LUNCH BREAK – BYO lunch and water bottle	
1:00 - 3:45	SITE 2: Walk and talk along a tributary to Lopatcong Creek.	
3:45 - 4:00	WRAP-UP and tearful goodbyes!	