

REHABILITATION FOR STREAM STABILITY & IMPROVED STREAM & RIPARIAN FUNCTIONS

JUNE 18-22, 2012

This free workshop is sponsored by the U.S. Army Engineer Water Operations Technical Support (WOTS) Program & U.S. Army Corps of Engineers New England District.

New England College will provide classroom facilities at the Center for Education Innovation (CEI)



STREAM & RIPARIAN WORKSHOP

Objectives: To conduct a tutorial workshop on restoration and management of streams/rivers and associated riparian areas to prevent non-point source pollution such as eroded sediments in streams, rivers, and reservoirs; and consideration for methods that provide for a broad range of physical and ecological functions, including water quality improvement, flood storage capacity, habitat and movement corridors, and aesthetics. This workshop will also introduce the methodologies and procedures for initiating, planning, analyzing, and ultimately designing long-term sustainable river and stream stabilization or restoration projects. Innovative, environmentally sensitive, and cost-effective approaches to restoration will be discussed. Comprehensive case studies will be presented.

Instructors: **Dave Derrick**, Research Hydraulic Engineer with the U. S. Army Corps of Engineer's Engineering Research and Development Center (ERDC)'s Coastal & Hydraulics Laboratory (ERDC-CHL); **Dr. Rich Fischer**, Research Wildlife Biologist, ERDC-Environmental Laboratory; and **John Magee**, Fish Habitat Biologist, with the New Hampshire Fish and Game Department.

Classroom location: New England College, Center for Education Innovation, first floor conference room, 24 Circle Street, Henniker, NH 03242.

Field Trip Sites: We will visit two future restoration sites: Azalea Park in Henniker, NH on the Contoocook River; & the Blackwater River @ Little Hill Road, Salisbury, NH where the stream banks are failing. We will tour the Mill Brook stream, riparian & wetland restoration project also in Salisbury, NH (built in June of 2010). Both the Little Hill Road and the Mill Brook sites are located on the US Army Corps, Blackwater Dam Flood Control Project.

HENNIKER, NH. - DAY 1: MONDAY, JUNE 18, 2012

11:30 – 11:45	Sign-in
11:45 – 12:00	Welcome-Workshop participants and Instructor Introductions; Orientation, Housekeeping & Workshop Objectives- Derrick
12:00 – 1:00	Philosophy of Restoration - Goal and Function Based Design, Project Planning, Project Monitoring, How Streams Dissipate Energy, & Self-Adjusting Bank & Grade Stabilization – Derrick
1:00 – 3:00	Channel Evolution Model (CEM) & Environmentally Compatible Grade Control – Includes Vegetation & Fish Passage – Derrick
3:00 – 3:30	BREAK
3:30 – 4:45	Bioengineering Philosophy & Planting Vegetation with Large Yellow Machines - Derrick <ul style="list-style-type: none">• Harvesting Adventitious Poles• Slit Trench & Slit Brush Layering• Willow Poles & Willow Curtains• Transplants• Half Drowned Bushes• Traffic Control Stones

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HENNIKER, NH. - DAY 2 TUESDAY, JUNE 19, 2012

8:00 – 9:15	Importance of Stream and Riparian Corridors, Riparian Area Impacts, Issues, and Current Status – Fischer
10:15 – 10:30	BREAK
9:30 – 10:30	Riparian Buffer Strips and Corridors - Importance, Types, Designs, How they Function- Fischer
10:30 – 11:30	Identifying the ecological Functions of Buffer Strips-Importance to Birds, Mammals, and Herpetofauna - Fischer
11:30 – 12:00	CASE STUDIES – Derrick <ul style="list-style-type: none"> • Goodwin Cr., Batesville, MS. - Jungle Growth • Haw Creek, Pike Co., MO. - Engineered Floodplain Bench • Caz Cr., Buffalo, NY- Bioengineering for a Concrete Lined Channel • Bushkill Cr., Pocono Mts., PA - Soil-Choked Riprap in a high-energy stream
12:00 – 1:00	LUNCH
2:00 – 2:45	Riparian Ecosystem Restoration Opportunities- Programs, Actions, and Case Studies involving buffer strips- Fischer
2:45 – 3:00	BREAK
3:00 – 4:00	Riparian Area Management – Prescribing Designs of Buffer Strips and Corridors for Multiple Functions – Fischer
4:00 – 4:45	CASE STUDY – Mill Brook Ecosystem Restoration – Stream, Wetlands, & Riparian Enhancement - Derrick
5:30 – 8:30	Optional Dinner/Ice-breaker (Location TBD)

HENNIKER, NH. - DAY 3: WEDNESDAY, JUNE 20, 2012

8:00 – 9:45	Field Trip – Site 1: Contoocook River @ Azalea Park, downtown Henniker, NH. – All Instructors
9:45-12:30	Field Trip – Site 2: Blackwater River @ Little Hill. Road Relocation & Environmentally Sensitive River Stabilization – All Instructors
12:30 – 1:00 Time approx.	LUNCH – Streamside Brown bag
1:00 – 4:00	Field Trip – Site 3: Mill Brook Ecosystem Restoration – Stream, Wetlands, & Riparian Enhancement
4:00 – 4:45	Return to New England College

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HENNIKER, NH - DAY 4: THURSDAY, JUNE 21, 2012

8:00 – 9:00	<p>RECENTLY DEVELOPED INNOVATIVE TECHNIQUES</p> <ul style="list-style-type: none"> • Show the 18-Mile Creek Restoration Video & Updated Pix • Do No Harm & Dead Things Are Good Things • Locked Logs • Living Dikes • Hydraulic Cover Stones • Building Pools
9:00 – 9:15	BREAK
9:15 – 11:15	<p>Resistive & Continuous Bank Stabilization Methods - Derrick</p> <ul style="list-style-type: none"> • Show the Duck Creek Construction Video • Longitudinal Peaked Stone Toe Protection (LPSTP) • Longitudinal Fill Stone Toe Protection (LFSTP) • Keys, Filters, Stone, <p>Case Studies – Red Banks; Grand River @ Rt. A; Duck Creek; Elton Cr.; Missouri River @ Vermillion, SD.</p>
11:15 – 12:00	<p>REDIRECTIVE METHODS</p> <ul style="list-style-type: none"> • Bank Barbs & Rock Vanes • J-Hooks • Bendway Weirs <p>CASE STUDIES – Little Blue River; Chautauqua Cr.; Neosho River; Catt Cr; Sulphur Cr.</p>
12:00 – 1:00	LUNCH
1:00 – 2:00	The Use of Instream Wood by Brook Trout in the Nash Stream Watershed - John Magee
2:00 – 3:00	Using Research to Restore Brook Trout Habitat - John Magee
2:00 – 3:15	BREAK
3:15 – 3:45	PROJECT CONSTRUCTION
3:45 – 4:45	<p>CASE STUDIES – Derrick</p> <ul style="list-style-type: none"> • Caz Creek – Bioengineering for a Concrete Lined Channel • Bushkill Cr - Soil-Choked Riprap in a high-energy stream
4:45 – 5:00	Course Wrap-Up

Lectures will be on the ERDC Coastal and Hydraulics Laboratory web site after July 1, 2012. The direct link is: <http://chl.erd.c.usace.army.mil/SSEP>
 When the site opens click on the blue bar in the center that says

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Map & Location info:



Directions from Manchester airport:

- Head east on John E Devine Dr toward S Willow St
- Take the 1st right onto S Willow St
- Turn right to merge onto I-293 N/NH-101 W toward Concord/Bedford
- Slight right onto I-293 N (signs for Manchester/Concord) Partial toll road
- Merge onto I-93 N Toll road
- Take the exit onto I-89 N
- Take exit 5 on the left for US-202 W/NH-9 toward Henniker/Keene
- Continue straight
- Continue straight onto NH-9 W/US-202 W/Franklin Pierce Hwy W
- Take the exit toward NH-114 S
- Turn left onto NH-114 S
- Turn right onto Circle St

Directions from I-89:

- Head southeast on I-89 S toward Exit 5
- Take exit 5 for U.S 202/NH-9 toward Hopkinton/Henniker
- Turn left onto NH-9 W/US-202 W/Franklin Pierce Hwy W
- Merge onto NH-9 W/US-202 W/Franklin Pierce Hwy W via the ramp to Henniker/Keene
- Take the exit toward NH-114 S
- 6. Turn left onto NH-114 S 1 mile
- Turn right onto Circle St

STREAM & RIPARIAN WORKSHOP

Local Hotels:



we love having you here.*

Hampton INN*, Bow, NH

515 South Street

Bow, NH 03304

Tel: (603) 224-5322



Holiday INN*, Concord, NH

172 N. Main Street

Concord, NH 03301

Tel: (603) 224-9534

Please make reservations early; June is a busy recreational month for this area of New Hampshire.

*Hotels Honor the Government Rate

STREAM & RIPARIAN WORKSHOP

“STREAM EROSION & PROTECTION: Lectures, Case Studies, Methods, & More”, then open DERRICK-STUFF, then WORKSHOPS.

Register Early! Space is limited!

Registration Form

Name: _____

E-Mail _____

Agency/Affiliation _____

Address: _____

Phone: _____

**Submit Registration via e-mail to
Martin.J.CURRAN@USACE.ARMY.MIL
Questions? Please call Marty Curran @ 978-318-8301**

CEU's for professional Licenses for all the New England States and New York will be available upon completion of the class.