Surface Water Identification and Training Course (SWITC)

Tuesday, June 11 - Friday, June 14, 2024

Class Location:
Worthdale Park (off Cooper Road)
Large Meeting Room
35.76283, -78.58773
Raleigh, NC

Registration Fee:
$800 per person, NC Association of Environmental Professionals (NCAEP) member
$825 per person, non-NCAEP member

Conducted by:
John R. Dorney, Nikki Duprey (Thomson), Jennifer Burdette, and Greg Price
Axiom Environmental, Sage Ecological Services, Natural Resource Consultants, and The Swamp School, respectively

Through the NC Association of Environmental Professionals in coordination with the NC Division of Water Resources

Introduction: This 4-day lecture and field course will focus on the standard North Carolina methodology (V. 4.11, Sept. 1, 2010) that is used statewide by the Division of Water Resources (DWR) and many local governments for identifying intermittent and perennial streams and their origins. Environmental consultants, federal and state agency personnel, and local government staff members who deal with regulatory programs related to streams are encouraged to attend. Emphasis will be on Piedmont streams with a portion of the field work being conducted on coastal plain streams. For more information on the stream identification methodology, see the DWR website at https://www.deq.nc.gov/about/divisions/water-resources/permitting/401-buffer-permitting/application-forms-help-documents under Stream Determinations. During the course, we will visit streams of various conditions in three of the Level IV Piedmont ecoregions (Northern Outer Piedmont, Triassic Basin, and Rolling Coastal Plain) in or near Raleigh.

This course is offered in coordination with the DWR and follows the same curriculum as the course taught by DWR instructors. The course will include a written and field test. Staff within DFR, DWR, or local delegated programs who take the course and pass the written and field tests will be certified to make official determinations of stream origins subject to the buffer rules. Individuals other than those authorized for certification who take the course and pass the written and field tests will receive a "Certificate of Training" that can be used with delegated or designated local governments. Though the method is specific to North Carolina, this course will also be useful for professionals who work in other states, such as Tennessee, Georgia, and Virginia. In the past, continuing education credits have been requested and approved for Foresters (SAF), Engineers (NCBELS), Landscape Architects (NCBOLA), Erosion & Sediment Control (CPESC), and Storm Water Quality (CPSWQ). In addition, others can be sought upon request. Applicants interested in continuing education credits must notify us by email well before the class so appropriate arrangements can be made.

Instructors:

John R. Dorney: Senior Environmental Scientist, Axiom Environmental and retired from NC Division of Water Quality, Wetlands and Stormwater Branch. Mr. Dorney worked with the Division of Water Quality for over 29 years, was actively involved in developing the Riparian Buffer Protection Rules and the NC Stream Identification Method and has taught courses in the method for over 15 years. He is an expert in wetland and stream functional assessment and isolated wetlands as well as wetland and stream permitting.

Nikki Duprey (Thomson), PWS: Senior Environmental Scientist, Sage Ecological Services, Inc. Ms. Duprey has more than 24 years of experience in natural resource identification, environmental regulation, and permitting. She has worked primarily as an environmental consultant in the transportation industry but also worked as an NC Department of Transportation (NCDOT) Project Coordinator for the NC Division of Water Resources (DWR). Ms. Duprey is an expert in stream and wetland identification, delineation, assessment, Clean Water Act Section 404/401, and riparian buffer permitting.

Jennifer Burdette, PWS: Senior Environmental Scientist, Natural Resource Consultants. Ms. Burdette has over 30 years of experience in surface water and wetland regulation. She has been an environmental consultant in the private sector for most of her career. For a time, Ms. Burdette worked at the US Army Corps of Engineers and was the 401 & Buffer Coordinator for the NC Division of Water Resources (DWR). At DWR, she taught the NC Stream Identification Method. She has developed extensive experience in stream and wetland delineation, assessment, and regulation including Clean Water Act Section 404/401 and riparian buffer permitting.

Greg Price, PWS: Instructor, The Swamp School. With over three decades of environmental consulting experience in North Carolina, Greg Price has established himself as an expert in the field. His career spans two decades with key state departments, including the NC Department of Transportation, the Division of Water Quality, and the Division of Environmental Management. Additionally, he spent a decade as a private environmental consultant. Mr. Price's extensive expertise includes preparing Clean Water Act Sections 404 and 401 Water Quality permit applications, producing and reviewing various environmental documents, and conducting detailed natural resources investigations. His work also involved ambient water quality and stormwater monitoring, as well as stream biological assessments involving benthic macroinvertebrate collection and identification. Beyond his consulting work, Greg has dedicated 20 years to academia as a part-time college instructor, teaching courses in General Biology, Environmental Science, Botany, Natural Resources Assessment, and Ecology.

Logistics: The lecture portion of the course will be conducted at **Worthdale Park (off Cooper Road)** in the large meeting room. A selection of sandwich box lunches will be provided on Tuesday in class. Lunch on Wednesday and Friday will be on your own along the way between field sites. On Thursday, lunch will be provided at a local sandwich restaurant for the field trips. All field trips will depart from **Worthdale Park** unless otherwise announced in class. Field trips are conducted in all weather conditions except unsafe weather. If field trips cannot be conducted due to weather, the class or a portion thereof will be rescheduled. Knee boots or hiking boots will be adequate for the field trips.

The registration fee includes the SWITC manual, course notebook, drinking water, Tuesday and Thursday lunches, maps of field sites, soil augers, nets, and sorting pans to be used during class. If you prefer, you may bring your own auger and macrobenthos sampling gear. Liability waivers must be signed upon your arrival to class.

Registration: Class enrollment is set at a minimum of 28 registrants and a maximum of 32 registrants. Register on or before June 3, 2024 with the NC Association of Environmental Professionals at https://www.ncaep.org/event-5652530. Registration fees must be received by NCAEP no later than June 3rd. Cancellations before June 3rd will receive a full refund. Cancellations after June 3rd will receive a refund of the registration fee less a $100 administrative fee. Paid registrations may be transferred to another individual upon written request. No refunds will be given after the start of the class. Registrations may be accepted after June 3rd with an additional charge of $100.00.

Tentative Course Agenda

Tuesday – June 11. Worthdale Park (off Cooper Road), Large meeting room (35.76283, -78.58773). Personal vehicles to field sites.

8:30 – 9:00	Check-in
9:00 – 9:30	Welcome and Introductions (*Nikki*)
9:30 – 10:00	SWITC, Background, Objectives and Overview (*John*)
10:00 – 10:40	Stream Networks and Hydrological Functions (*Nikki*)
10:40 – 10:50	Break
10:50 – 11:30	Geomorphology and the NC Stream ID Method (John)

11:30 – 11:45	Soil Based Evidence of Seasonal High Water Table (Jennifer)
11:45 – 12:15	Riparian Zones: Definitions and Functions (*John*)
12:15 – 12:45	Lunch provided at the facility
12:45 –1:45	Role of Aquatic Biology in Stream ID (Greg)
1:45 – 2:00	Field Prep
2:00 - 5:00	Field Site – Umstead State Park Stream Sites (in own cars)

Wednesday – June 12. Worthdale Park (off Cooper Road), Large meeting room (35.76283, -78.58773). Personal vehicles to field sites.

8:00 – 10:00	Buffer Rules Basics I and II (Jennifer and Nikki)
10:00 – 10:15	Break
10:15 – 11:15	Origins, Transitions and Modifications (Nikki)
11:15- 11:30	Stormwater Management and the Buffer Rules (*Jennifer*)
11:30 – 11:45	Forestry and the Buffer Rules (*Nikki*)
11:45 – 12:00	Field Prep (Wednesday and Thursday sites)
12:00 – 1:00	Lunch (on own)
1:00 – 3:30	Field sites – Urban Stream Sites at Worthdale Park
3:30 – 5:00	Procedure for Field ID of Macrobenthos (*Greg*)

Thursday – June 13. Start at Lake Crabtree County Park. Personal vehicles to field sites.

8:00 – 8:30	Travel to field sites in Lake Crabtree County Park
8:30 – 10:30	Field sites – Triassic Field sites in Lake Crabtree County Park
10:30 – 10:45	Travel to Godbold Park in Cary
10:45- 12:30	Goldbold Park in Cary – urban streams
12:30 – 1:15	Lunch at Jimmy John's (provided)
1:15 – 5:00	Field sites – NCSU Experimental Station in Clayton; Rolling Coastal Plain streams

Study for test!

Friday – June 14. Start at Schenck Forest off Reedy Creek Road in Raleigh. Meet near front entrance gate. (Maps and addresses will be provided.) Personal vehicles to field sites.

8:00 – 8:15	Review any final questions
8:15 – 9:45	Written test in shelter at Schenck Forest
9:45 – 11:00	Field test – rural
11:40 – 12:30	Travel to rural test sites and field lunch on own between field sites.
12:30 – 3:00	Field test – urban