Surface Water Identification and Training Course (SWITC)

Tuesday, June 7 - Friday, June 10, 2022

Class Location:
Biltmore Hills Park
Shelter Number 7
2615 Fitzgerald Drive
Raleigh, NC 27610

Registration Fee:
$790 per person, NC Association of Environmental Professionals (NCAEP) member
$815 per person, non-NCAEP member

Conducted by:
John R. Dorney, Sandy Smith, and Larry Eaton
Axiom Environmental, Axiom Environmental, and Eaton Scientific, 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 http://portal.ncdenr.org/web/wq/swp/ws/401/waterresources/streamdeterminations. 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) all 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 definitive 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 who are interested in continuing education credits must notify us by email well in advance of the class so appropriate arrangements can be made.

Instructors:

John R. Dorney was employed by Moffatt & Nichol from March 2014 to March 2021 after working three years with another private consulting firm and working with the Water Quality Section of the N.C. Division of Water Quality for about 29 years and he now works at Axiom Environmental. At Axiom Environmental, he is responsible for doing environmental permitting as well as being involved in stream and wetland functional assessment. When Mr. Dorney started at the Division of Water Quality, he spent 3 years working on water quality standards. After that he was the supervisor of the Special Projects Group in Water Quality Planning for three additional years. From 1990 to 2004, Mr. Dorney was responsible for the 401 Water Quality Certification Program and was supervisor of the Wetlands/401 Unit that is responsible for regulatory review of development projects to ensure compliance with the State's wetland and buffer regulations. From 2004 to 2011, Mr. Dorney was in charge of the Wetlands Program Development Unit which is responsible for developing and implementing new or modified wetland regulatory policies including developing policy for cumulative and indirect impact as well as FERC permitting and watershed monitoring. Previously Mr. Dorney worked for environmental consulting firms in Wisconsin and Ontario, for local governments and a Native American tribe doing land use and recreational planning and at a research lab at NCSU.

Sandy Smith has a Bachelor of Science in Biology from Davidson College (1983) and a Master of Science in Marine Biology from UNC-Wilmington (1988). For 33 years he has worked as a private environmental consultant in North Carolina, for both small and large firms. He has experience with both private and public clients and has managed over 200 ecological assessments and/or natural systems reports including Section 404 jurisdictional area delineations, riparian buffer determinations, protected species surveys, wildlife surveys, preparation of documents that conform to SEPA and NEPA formats, and permitting in support of transportation corridor alignments, commercial and private developments, and

municipality expansions. Mr. Smith was actively involved in the development of the North Carolina Wetland Assessment Method (NC WAM) and the North Carolina Stream Assessment Method (NC SAM), has co-authored several papers on the methods, and has taught courses in the methods for the past 11 years. He took the Surface Water Identification Training and Certification (SWIT) class in August 2010 and has since been using it regularly.

Larry Eaton moved to North Carolina in 1988 from Florida. He chased bugs all over North Carolina to assess water quality by collecting and identifying macroinvertebrates with the DWQ Biological Assessment Unit for 15 years. In 2003 he moved over to the Wetlands/401 Unit to work on small streams (identifying stream origins in the ecoregions in the southeastern US in addition to developing small stream biocriteria and metrics as well as stream restorations, and stream buffers, and watershed plans, and teaching). Larry moved back to the Biological Assessment Unit in 2013, where he rediscovered his affection for stoneflies, most of which don't live in headwater streams, and then retired. His second attempt at retirement in 2016 was more successful and he now amuses himself by chasing bugs for local municipalities, teaching occasional stream classes and doing yard work.

Logistics: The lecture portion of the course will be conducted at Biltmore Hills Park, Shelter #7 at Biltmore Hills Park in Raleigh, NC (a figure will be sent to students shortly before the class depicting the shelter location). Lunch on Wednesday and Friday will be on your own along the way between field sites. For the field trips on Thursday lunch will be provided at a local sandwich restaurant. Tuesday lunch will be provided in class. All field trips will depart from the Biltmore Hills 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 and drinking water, Tuesday and Thursday lunches, maps of field sites, soil augers, nets and sorting pans to be used during class. You may bring your own auger and macrobenthos sampling gear, if you prefer. Liability waivers must be signed upon your arrival to class.

Registration: Class enrollment is set at a minimum of 25 registrants and a maximum of 30 registrants. Please submit your completed registration on or before June 3, 2022, to the NC Association of Environmental Professionals http://www.ncaep.org/event-4765534. Registration fees must be received by NCAEP no later than June 3, 2022. Cancellations prior to June 3, 2022 will receive a full refund. Cancellations after June 3 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 after June 3, 2022 will be charged an additional $100.00.

Tentative Course Agenda

Tuesday – June 7. Biltmore Hills Park, Shelter 7. Personal vehicles to field sites.

8:30 – 9:00	Check in
9:00 – 9:10	Welcome and Introductions (*John Dorney*)
9:10 – 9:30	SWITC Course; Background, Objectives and Overview (*John Dorney*)
9:30 – 10:00	Stream Networks and Hydrological Functions (*Sandy Smith*)

10:00 – 11:00 Geomorphology and the NC Stream ID Method (*John*)

11:00 – 12:00 Role of Aquatic Biology in Stream ID (*Larry Eaton*)

12:00 – 12:30 Lunch provided at the facility

12:30 – 1:00 Stream Maps (*Sandy*)

1:00 – 2:15 Methodology for ID of Intermittent and Perennial Streams (*John*)

2:15 – 5:00 Field Site – Umstead State Park Stream Sites (in own cars)

5:00 – 6:30 Procedure for Field ID of Macrobenthos (*Larry*) in parking lot at Umstead Park

Wednesday – June 8. Biltmore Hills Park, Shelter 7. Personal vehicles to field sites.

8:00 – 8:30 Headwater Streams (*Sandy*)

8:30 – 8:45 Riparian Zones: Definitions and Functions (*John*)

8:45 – 9:30 Overview of NC Buffer Rules: I and II (*John and Sandy, respectively*)

9:40 – 9:45 Break

9:45 – 10:05 Forestry and the Buffer Rules (*John*)

10:05- 10:30 Stormwater Management and the Buffer Rules (*John*)

10:30 – 10:45 Break

10:45 – 11:15 Urban Streams (*John*)

11:15- 11:45 Buffer Documentation and Permitting (*Sandy*)

11:45 – 12:00 Compliance & Enforcement of the Buffer Rules (*John*)

12:00 – 1:00 Lunch (on own)

1:00 – 4:45 Field sites – Urban Stream Sites in and around Raleigh

5:00 – 6:00 Dinner (on own) (proceeded or following by optional beer summit at local brewpub including optional review session)

Thursday – June 9. 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 Godbold Park in Cary – urban streams

12:30 – 1:15 Lunch in field at Jimmy John's (provided)

1:15 – 5:00 Field sites – NCSU Experimental Station in Clayton; Rolling Coastal Plain streams

5:00 – 6:00 Dinner (on own)

6:00 - ? Study for test!

Friday – June 10. Start at Schenck Forest off Reedy Creek Road in Raleigh. Meet near front entrance gate. (maps and address 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 – 11:0 Field test – urban

11:40 – 12:30 Travel to rural test sites and field lunch on own between field sites.

12:30 – 2:00 Field test – rural

Message Regarding Coronavirus – Updated May 2022

It is difficult to say what the status of the COVID-19 pandemic will be in June 2022. The statement below assumes that the status of the pandemic will remain the same as it stands at the time of writing in May 2022.

It is our top priority to look after the safety of our instructors and workshop participants during the COVID-19 Pandemic. The facility at Biltmore Hills Park is a covered pavilion with picnic tables in an open-air setting. This space is large enough to accommodate the workshop and allow for adequate social distancing. Wearing of masks or face coverings is required when social distancing is not possible. Participants will be asked to drive company or private vehicles to our outdoor field trips to minimize exposure. Hand sanitizer will be made available to workshop participants. Registered participants are asked to abstain from international or domestic air travel for two weeks prior to the start date of the workshop. We ask that if you or any member of your household has exhibited COVID-19 related symptoms or received a positive COVID-19 test within two weeks of the start date of the workshop to please notify us and a refund will be issued. If it is determined by the NCCAEP or the instructors that the workshop cannot safely proceed, participants will be offered a refund, or their registration will be saved for a later workshop when the pandemic situation has become safer.