Landscape Hydrology

Date December 4, 2024

Location UF/IFAS Plant Science Research and Education Unit
2556 Co Hwy 318, Citra, FL 32113

Instructors Travis Richardson, MS, CPSS
T. Richardson Soils and Environmental
Travis@RichardsonSoils.com

Rex Ellis, PhD
Soil Scientist

About The primary focus of this course will be to provide participants hands on experience determining the seasonal high water table based on soil morphology. Landscape position is generally the primary driver of hydrology at the local scale. Landscape position is a result of geologic formations and prior climatic conditions. Developing a general understanding of geologic formations and the resulting landscapes enables a broader understanding of water movement across and through the landscape. Understanding landscapes and water movement is critical for numerous structural, public health, and environmental applications. Onsite sewage treatment and disposal systems and stormwater systems rely on accurate identification of groundwater saturation to provide the appropriate level of treatment prior to reaching the groundwater. Because the water table can fluctuate many feet, the goal is to identify where saturation and anaerobic conditions occur during normal wet season conditions. This is achieved through identification of soil morphologies that result from repeated saturation and drying.

CEUs Florida Registered and Master septic tank contractors are awarded (tbd) contact hours for this training. Individuals certified under s. 381.0101, *FS* are awarded (tbd) contact hours for this training.

Instructor Credentials

Travis Richardson, MS, CPSS

T. Richardson Soils and Environmental

Travis Richardson is a Certified Professional Soil Scientist (CPSS) and holds a MS in Soil and Water Science from the University of Florida. From 2002 to 2017, Richardson was employed with St. Johns River Water Management District and progressed from an Environmental Scientist II (5 yrs), to a Soil Scientist (7 yrs), to a Technical Program Manager (3 yrs). In all of these roles Richardson utilized his education in Soil and Water Science to classify soils, identify hydric soils, identify the seasonal high water table, and understand water movement across the landscape. During this time, Richardson, provided guest lectures for multiple courses at the University of Florida focusing on soil formation, hydric soils, and wetland delineation: Soil, Water, and Land Use (SOS 4231C), Hydric Soils (SWS 5247), Environmental Law, and Environmental Science Lab (EVS3000L). Richardson also provided annual hydric soil and wetland delineation trainings for Water Management District staff. In addition, Richardson has multiple publications relating soil morphology to specific hydrologic conditions. Richardson has been recognized as an expert soil scientist and provided expert testimony in three hearings.

In February of 2017 Richardson started his own consulting firm T. Richardson Soils and Environmental. He focuses on soil evaluations for onsite sewage and treatment systems, wetland delineation, site feasibility studies, environmental permitting, providing soil and wetland training, and expert testimony.

Rex Ellis, PhD

Rex Ellis is a soil scientist (pedologist) with MS and PhD degrees in Environmental Pedology. Rex headed a large, soils-focused research program as a professor in the Soil and Water Science Department at the University of Florida for ten years.

Most Florida-based insights of soil morphology as related to hydrology were developed through research, teaching, and extension activities by Wade Hurt, Victor Carlisle, and Mary Collins at the University of Florida. These concepts were refined and formalized in the late 1990s to early 2000s, during which Rex trained under these faculty. Today Rex is dedicated to curation and dissemination of this knowledge through teaching and extension activities at UF. Since 2008, Rex has led the FFA/4-H Land Judging contest, a soils-based career development event for middle and high school students. This program teaches students to apply soil morphological interpretations to make wise land use decisions. Determining depth to seasonal high water table in both sandy and clayey soils is a central part of this event.

In addition to these research and extension activities, Rex has also taught several UF soils courses during his time as a graduate student and a professor at UF. Most notably, Rex has been continuously associated with the undergraduate/graduate level class Hydric Soils (SWS 4932/5247) since 1999. First as a student teaching assistant and then as the lead professor, Rex has taught this soils and hydrology-focused course with the aim of providing proper training for students, many of whom have gone to work in wetland regulatory and OSTDS areas in both private and government roles.

Rounding out these activities, Rex is a regular lecturer and field instructor for the annual Florida Association of Environmental Soil Scientists Hydric Soils Workshop. This workshop trains both wetland and OSTDS professionals about proper interpretation of soil morphology as related to hydrology.