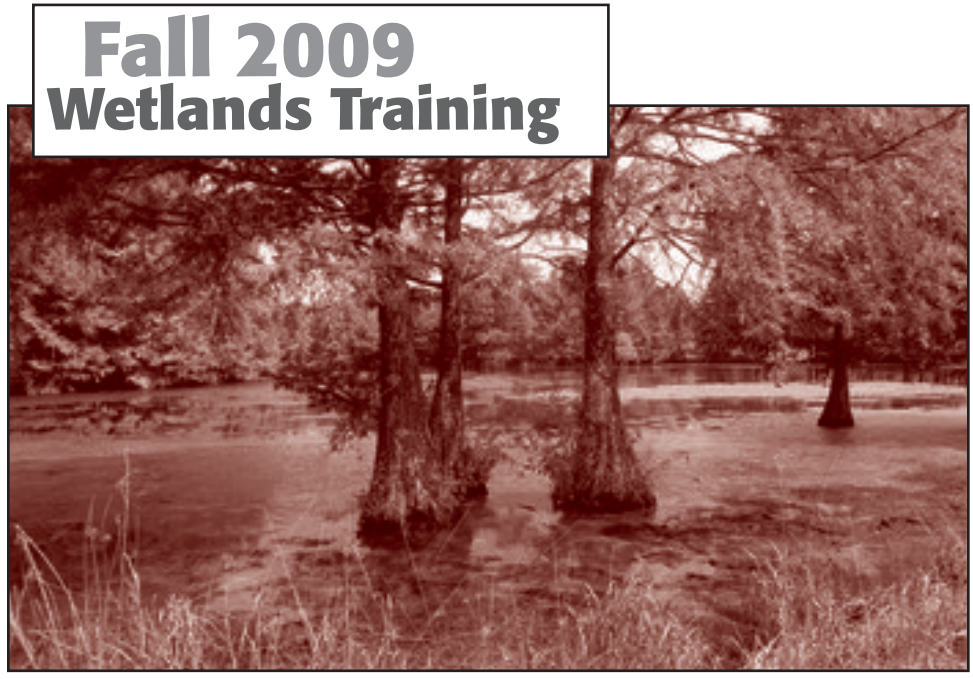


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Wetland Delineation Certificate Series
 Vegetation Identification
 Methodology for Delineating Wetlands

Additional Wetlands Training
 Introduction to Wetland Identification
 Wetland Construction Design

Office of Continuing Professional Education



With changing regulations and active enforcement, wetland delineation credentials are essential. Developers, preservationists, and regulatory agencies all have an interest in real estate development, which fuels the demand for qualified consultants and wetland delineators. We offer several wetland training programs to accommodate your skill and experience level.

The **Wetland Delineation Certificate** is awarded to participants who attend and successfully complete assignments for **Vegetation Identification** and **Methodology for Delineating Wetlands**. You cannot delineate a wetland without experience identifying wetland plants. When you enroll in the series, you should complete the Vegetation Identification course prior to attending the Methodology for Delineating Wetlands course.

VEGETATION IDENTIFICATION - WINTER
November 12 and 13, 2009 Course Code: EH0201CA10
 \$515 before 10/29/09; \$525 after; \$495 multiple

Plants are the most obvious clues to wetland boundaries. This two-day combination classroom and field course will teach you how to draw a wetland line by identifying a variety of upland and wetland plant species. Increase your expertise by learning to identify vegetation in the winter season.

With the right clues and tips on what to look for, you can gain the expertise of winter vegetation identification. Botany experts, **Timothy Dunne** and **Christopher Miller** will teach you basic plant ID groups, plant morphology and botanical terminology.

Required Textbooks
 Newcomb's Wildflower Guide [ISBN 0316604429], \$25
 Wildflowers and Winter Weeds [ISBN 0393316785] L. Brown - \$20

METHODOLOGY FOR DELINEATING WETLANDS
October 27, 28, 29 and 30, 2009 Course Code: EH0401CA10
 \$1,030 before 10/13/09; \$1,050 after; \$990 multiple

Learn the methods of the experts! This four-day combination classroom and field course will introduce you to delineating wetlands using the Federal Interagency Wetland Delineation Manual, which is required for use in New Jersey. Techniques taught will also be applicable to individuals interested in using the 1987 Corps of Engineers Wetland Delineation Manual as well.

Recognize the key indicators of wetlands (hydrophytic vegetation, hydric soils and other signs of wetland hydrology) while instructors **Ralph Tiner** and **Dr. Peter Veneman** show you how to use them in following proper delineation methods. Immediately apply criteria learned in the classroom by performing wetland determinations during team field exercises.

Vegetation: Analyze plant communities and identify dominant plant and indicators of hydrophytic vegetation
Soils: Identify sandy and non-sandy hydric soils based on the National List of hydric soil field indicators
Hydrology: Recognize direct and indirect indicators

Required Textbook
 - Wetland Indicators: A Guide to Wetland Identification, Delineation, Classification, and Mapping [ISBN 0873718925] R. Tiner - \$75

Recommended Textbook
 - Munsell Soil Color Chart - \$125

NOTE: The Corps Regional supplements for the Atlantic Coastal Plain and Northeast Northcentral Regions will not be covered in this class. If you are interested in learning more about these supplements, please register for our Advanced Wetland Delineation class in Spring 2010. Please call for details.

If you are not familiar with wetlands, hydrology, or vegetation, we strongly recommend that you complete **Introduction to Wetlands** prior to the series. Please see inside for course details. If you are looking for more advanced training, please visit our website at www.cpe.rutgers.edu for information about our **Advanced Wetland Delineation** course to be held Spring 2010.

Additional Wetlands Training

INTRODUCTION TO WETLAND IDENTIFICATION

October 28, 2009 Course Code: EH0102CA10
\$285 before 10/14/09; \$295 after; \$275 multiple

When you delineate wetlands without the proper training or expertise, you run the risk of regulatory and career repercussions. Wetlands training can be difficult to grasp if you start your education in an advanced course. Do not make the mistake of jumping into the *Methodology for Delineating Wetlands* course without first being exposed to the basic principles of wetlands identification.

Taught by wetland expert, **Ralph Tiner**, this one-day combination classroom and field course will teach you the basics of wetland identification and introduce you to the practice of wetland delineation. You will review the skills you need to identify freshwater wetlands and their boundaries. This course will also provide the essential background material needed for further study in the field of wetland delineation.

Required Textbook

In Search of Swampland: A Wetland Sourcebook and Field Guide
[ISBN 0813536812], Second Edition, R. Tiner, \$30

WETLAND CONSTRUCTION DESIGN

December 2, 3, and 4, 2009 Course Code: EH0603CA10
\$875 before 11/18/09; \$895 after; \$850 multiple

The depth, duration and timing of water are the controlling factors in determining which plant communities will ultimately inhabit your constructed wetland. The single biggest mistake in botched wetland construction projects is failure to understand the source and quantity of water feeding your site. Through classroom-based instruction, **Dr. Gary Pierce** will teach you NINE different ways to build a wetland. More importantly, you will learn how to calculate the quantity of water going into your water budget for each type during an in-class design project.

Featured Topics

Calculating Water Budgets • TR-55 Runoff Curves • Hydrologic Conditions and Wetland Plants • Direct Precipitation • Groundwater Runoff and Stream Flows • Infiltration Rates • Thornthwaite Method for Evapotranspiration • High-water Points for Ungauged Streams

Additional Environmental Training

SOILS AND SITE EVALUATION FOR SEPTIC DISPOSAL SYSTEMS AND STORMWATER BMP'S

October 19 - 20 and 26 (South) or 27 (North), 2009
\$695 before 10/5/09; \$725 after; \$645 multiple; \$895 both field days
Course Code: ES0301CA10

Learn to identify limitations of soil so that you do not end up "between a rock and a hard place" - let alone a fragipan! This three-day course will provide the necessary tools for determining whether a site meets the suitability requirements for placement of a septic system. See how natural soil factors help or hinder your design and the infiltrative capacity of stormwater runoff Best Management Practices (BMPs). Learn about the soil testing methods for septic systems and updated details on choosing a test method for stormwater BMP design. Soil Scientist, **Marilyn Mroz, PE**, and a team of soil science specialists from around the state will teach you the fundamentals of soil-forming processes and soil water movement, all essential for stormwater management, wetland design, soil remediation and septic installation.

To give you a real feel for the soil, you can choose to extend your training with field trips to the plains of Burlington County or the hills of Morris County, or both! Please be sure to bring your own soil-probing tools, and dress appropriately for hands-on activities in soil pits!

Featured Topics

- Soil Physical Properties: Soil Texture and the Textural Triangle
- Soils and Geology of New Jersey
- New Jersey Regulatory Requirements for Site Evaluation
- Stormwater Best Management Practices (BMPs)
- County Soil Survey Reports and Web Soil Survey
- Soil Physical Properties: Soil Structure, Texture and Color
- Soil Physical Properties: Coarse Fragments and Consistence
- Permeability Testing and Unique Local Soil Formations
- Perched Water and Indicators of Seasonal High Water Tables
- Soil Morphology of Septic Effluent; Soil Suitability and Pit Safety
- Infiltration: What Works and What Doesn't
- Field Determination of Mottling (Redoximorphic Features)
- Horizon Nomenclature / Restrictive Horizons
- Tips for Writing and Reviewing Soil Logs

LAKE MANAGEMENT

November 5 and 6, 2009 Course Code: EW0301CA10
\$345 before 10/22/09; \$375 after; \$325 multiple

From small ponds to large lakes, drinking water reservoirs to fishing lakes - if you want your lake and watershed management efforts to be successful, you need a technically sound foundation to properly investigate and diagnose water quality problems and to develop cost-effective, long-term restoration plans.

This two-day popular course will teach you how to monitor water quality, identify problem algae and aquatic plants, and select the correct types of lake rehabilitation measures needed to protect, enhance or improve the quality of your pond, lake or reservoir. **Dr. Stephen Souza**, President, Princeton Hydro LLC (Past President, PALMS, 1993 and Past President, NALMS, 2001), and other industry professionals, will guide you through the benefits and pitfalls of the most commonly implemented lake and pond management options, including the need for state or federal permits to implement many of these measures.

Featured Topics

- Introduction to the Ecology of Lakes, Ponds and Reservoirs
- Cost-Efficient Water Sampling and Monitoring Programs
- Development of a Lake Restoration Plan
- Dam Inspection, Maintenance and Rehabilitation
- Identification of Problem Aquatic Weeds and Algae
- Proper Use of Algaecide and Herbicides
- Harvesting and Other Physical Means of Weed Control
- Aeration: Options and Benefits
- Dredging: Design, Cost and Implementation
- Aesthetic and Ecological Benefits of Shoreline Aquascaping
- Pros and Cons of Alum Treatments

"From defining diagnosing to choosing a path of action, this course and approach is excellent!" - 2008 Participant

All courses in this brochure have been submitted for recertification credits, as applicable. Please contact Kristyn Saunders at (732)932-9271 x.643 for more information.

www.cpe.rutgers.edu



ARC:GIS INTRODUCTION

November 2, 9, 16, and 23, 2009 Course Code: EG0914CA10
\$825 before 10/19/09; \$845 after; \$795 multiple

Test out your knowledge of Geographic Information Systems with hands-on GIS software application! Focusing on layout and core functionality, this 12-hour evening course offers an overview of ArcGIS components, basic display and map querying functions, metadata browsing and file management, basic analysis techniques, and map layout. Increase your software proficiency with practical, in-class exercises!

Featured Topics

Introduction to ArcCatalog • ArcMap Basics • Table Joins and Thematic maps • Setting Projections • Attribute Selection • Spatial Queries • Basic Geoprocessing • Boolean Logic

4 CONVENIENT WAYS TO REGISTER



Phone: 732.932.9271, M-F 8AM - 4:30PM.
Please have your Visa, Mastercard or AMEX number ready.



Fax: 732.932.8726, 24 Hours. Please include credit card information or copy of your check, money order or purchase order with your fax.



Mail: Registration Desk, NJAES Office of Continuing Professional Education, Rutgers University, 102 Ryders Lane, New Brunswick, NJ 08901-8519. Please make check payable to: **Rutgers University**



Web: Please visit our website at: www.cpe.rutgers.edu for information.

Payment Policy - All students must have prearranged for payment to be admitted to the class (purchase order, check, VISA, Mastercard, American Express or money order).

Refunds - You may withdraw from these courses with a full refund minus a processing fee provided our office is notified at least three (3) full working days prior to the start of the course. Beyond that time, registrants may be responsible for the full registration fee. **Substitutions are welcomed.**

NOTE - Continental breakfast and lunch are included in your registration fee(s). Textbooks are not included. You may obtain copies on your own, or through our office with your registration.