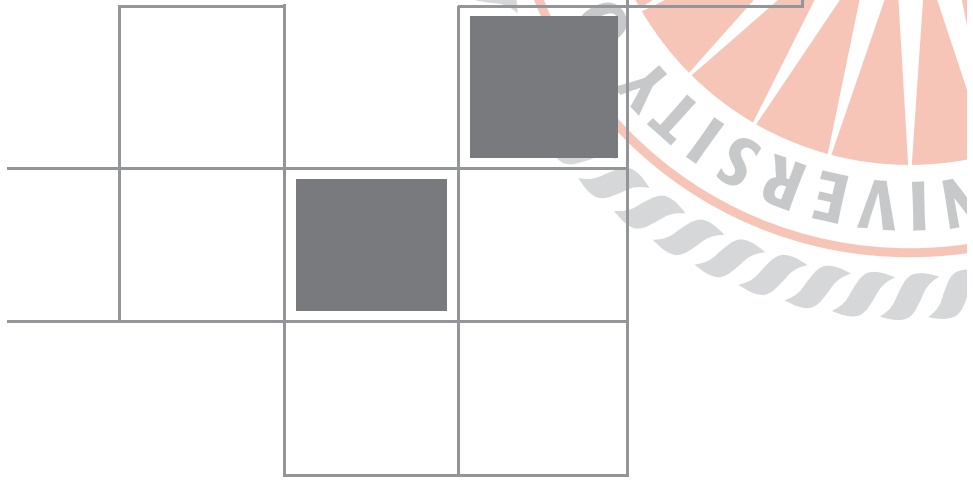


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## Pond Design, Management and Maintenance

May 1, 2009

## Hydrology of Wetlands

May 5, 2009

See inside for additional upcoming courses, such as  
**Freshwater Wetland Construction Techniques**

Office of Continuing Professional Education

## Pond Design, Management and Maintenance

May 1, 2009

Course Code: EW0315CA09

\$285 before 4/17/2009; \$295 after; \$275 multiple

This one-day class will help you properly design, maintain and manage your pond to minimize water quality problems while maximizing aesthetics and function. Starting with design, learn how to build a pond, including recommended water depths, volume and flushing relationships, shoreline shape, integration of aquascaping benches, and optimal design of outlet structures.

### LEARN HOW TO:

- Design a pond
- Measure and maintain proper water quality conditions
- Control unwanted invasive aquatic weeds and algae
- Design a dredging project
- Determine how to select and install an aeration system
- Maximize the quality of fish habitat

As part of the course, experts will review applicable environmental permitting issues to assist you in avoiding regulatory agency snags in the design, maintenance and management of your pond.

### AQUASCAPING AND BIOENGINEERING

The combination of landscaping and evolving engineering solutions to correct eroded shorelines is an intricate element of a successfully designed pond. This course will show you how to create a vegetative shortline using native, non-invasive, easy to maintain, yet attractive species, whether your goal is:

- Creation and enhancement of fish habitat
- Stabilization of undercut banks
- Creation of buffers for nutrient and pollutant removal
- Implementation of vegetative goose control strategies
- Enhancement of pond aesthetics

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### CARE AND MAINTENANCE OF YOUR DAM

Participants will review proper measures for building an earthen embankment - including what to do with a "leaky" pond. Permit requirements and periodic inspection concerns will also be discussed.

### ADDITIONAL COURSE TOPICS

- Proper selection and use of algicides and aquatic herbicides
- Alternative, environmentally-friendly weed/algae control techniques
- When, how and what sediments as part of dredging projects
- How to stock your pond with game fish

### FACULTY COORDINATOR

**Dr. Stephen Souza**, President of Princeton Hydro, LLC., has over 20 years experience managing and restoring lakes, including extensive work with lake associations. He is the Past President of both the North American Lake Management Society as well as the Pennsylvania Lake Management Society, and an ad-hoc member of NJ's Lake Advisory Task Force.

Pond Design, Management and Maintenance has been submitted for the following recertification credits:

#### Pesticide Applicators

New Jersey - Cat. 5 - 13 units	Maryland - Cat. 5, 10 - 6 credits
New York - Cat. 5a - pending	Delaware - Cat. 5a - 6 credits
Pennsylvania - Cat. 9, 18 and 23 - 5 credits	

#### Landscape Architects

New Jersey - pending	New York - 7 hours (CL)
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#### Other New Jersey Credits

Land Surveyors - pending	Real Estate Appraisers - pending
Health Officers/REHS - 0.7 CE units	
Certified Public Works Managers - 3 Technical, 3 Management	

This course is approved for 0.7 CEUs towards the NALMS Certified Lake Manager/Certified Lake Professionals Program.

Please call Kristyn Saunders at (732) 932-9271 x.643 for more information.

Office of Continuing Professional Education

## Hydrology of Wetlands

May 5, 2009

Course Code: EH0302CA09

\$285 before 4/21/2009; \$295 after; \$275 multiple

How important is learning hydrology? Who ever heard of a dry wetland!

By understanding the hydrology, you will understand the distribution and circulation of water in a wetland. If you are planning to delineate, manage, or construct a wetland, you will need to be able to identify and assess the movement of water through the wetland.

This introductory one-day course with **Dr. Claude Epstein** combines classroom instruction with a hands-on field visit to provide you with a basic understanding of how wetlands are created and sustained. In the morning, you will review the connection between soil, water, and vegetation which creates a wetland. After lunch, gain practical experience using a soil auger to investigate hydrologic evidence for wetland delineation, water table depth and evaluation, and Hydrogeomorphic Models (HGM's) identification.

### FEATURED TOPICS

- Saturated conditions
- Geochemical nature of wetlands
- Wetland soils and vegetation
- Wetland aeration zone
- Texture of muck soils
- Surface runoff accumulation
- Poned and perched wetlands
- Unconfined ground water discharge
- Confined (Artesian) ground water discharge
- Hydrogeomorphic models (HGM's)
- Field evidence for HGM-type diagnosis

### FACULTY COORDINATOR

**Dr. Claude Epstein**, is a Professor of Environmental Studies at The Richard Stockton College of New Jersey. He has vast experience as a hydrogeological consultant, with research interests in wetlands hydrology, land use and floodplain morphology and coastal plain hydrology.

## Additional Courses of Interest

### NJ's Regionalized Water Budget Manual Training

April 2 and 3, 2009

Successful wetland mitigation efforts rely upon accurate hydrologic characterization of a mitigation site; however, it can be difficult to calculate the necessary balance of water inflows and outflows that make up a wetland's hydrologic cycle. The NJDEP's *Regionalized Water Budget Manual for Compensatory Wetland Mitigation Sites in New Jersey* provides data on the principal components of compensatory wetland mitigation projects - from the evaluation of hydrological characteristic to on-site data collection and the preparation of a water budget. Expert instructor, **Dr. Gary Pierce**, will guide you through the techniques and offer assistance in the practical application of these procedures.

### Freshwater Wetland Construction Techniques

April 21, 22, and 23, 2009

A wetland construction project requires extensive knowledge and years of experience. Gain that knowledge and consult an expert who has the experience with both successful and unsuccessful construction projects. With instructor **Dr. Gary Pierce**, you will have not only earned an education but also invaluable consulting time. Learn the techniques of successful wetland mitigation planning and construction recommended by the National Research Council and the US Army Corps of Engineers. A visit to a constructed wetland complex in central New Jersey will highlight the "real world" application of concepts presented in the classroom.

### Introduction to Wetland Identification

May 19, 2009

When you delineate wetlands without the proper training or experience, you run the risk of regulatory and career repercussions. This one-day combination classroom/field course will teach you the basics of wetland identification and introduce you to the practice of wetland delineation. Wetland expert **Ralph Tiner**, will provide the essential background information needed for further study in the field of wetland delineation.

## Wetland Delineation Certificate Series

The Wetland Delineation Certificate is awarded to participants who attend and successfully complete assignments for both Vegetation Identification and Methodology for Delineating Wetlands. When enrolling in the series, you should complete the Vegetation Identification course prior to attending the Methodology for Delineating Wetlands course.

### Vegetation Identification for Wetland Delineation Choose between North OR South session.

Plants are the most obvious clues to wetland boundaries. You cannot delineate a wetland without experience identifying wetland plants. In this two-day field course, USDA-NRCS instructors, **Timothy Dunne** and **Christopher Miller**, will teach you how to draw a wetland line by identifying a variety of upland and wetland species.

#### Northern Session - May 28 and 29, 2009

Featured topics include: Limestone Fens, Upland Deciduous and Mixed Forest, Lake Edge, Disturbed Upland, Floodplain and Emergent Wetland to Upland Transition, Upland and Wetland Forest

#### Southern Session - June 10 and 11, 2009

Featured topics include: Oak/Pine, Red Maple and Pitch Pine Lowlands, Cranberry Bogs, Impoundments, Cedar Swamp, Cedar Savanna, Pine Barrens Lake Edge, Pitch Pine Lowland, Maple Cripple, Cedar Swamp

### - FOUR 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](http://www.cpe.rutgers.edu) for information.

## Methodology for Delineating Wetlands

May 18 - 21, 2009 (or) June 17 - 20, 2009

Learn the methods of the experts! This four-day course will introduce you to delineating wetlands using the Federal Interagency Wetland Delineation Manual, which is required for use in NJ. The techniques presented will also be applicable to individuals interested in using the 1987 Corps of Engineers Wetland Delineation Manual.

Experts, **Ralph Tiner** and **Peter Veneman**, will teach you how to recognize key indicators of wetlands (hydrophytic vegetation, hydric soils and other signs of wetland hydrology) and how to use them to follow the delineation methods outlined in the manual. You will immediately apply criteria learned in the classroom while performing wetland determinations during team field exercises.

### FEATURES OF WETLAND INDICATORS

- Vegetation: Analyze plant communities and identify dominant plants 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

**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 about these supplements, please register for **Advanced Wetland Delineation**, to be held May 2009. *Call for details.*

**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 this course 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** - Unless otherwise specified, 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.