

2010 Schuylkill Watershed Congress



Saturday, March 13th
Montgomery County
Community College,
West Campus

101 College Drive,
Pottstown, Pennsylvania

Schuylkill River. Photo: Faith Zerbe, Delaware Riverkeeper Network

Presented by

The Delaware **RIVERKEEPER**® Network

in association with:

Academy of Natural Sciences of Philadelphia • Alliance for a Sustainable Future • Alliance for Aquatic Resource Monitoring • Ambler EAC • Ambler Tree Tenders • Bucks County Planning Commission • Center in the Park Senior Environmental Corps • Cadastral Consulting • Clean Water Action • Department of Civil and Environmental Engineering, Villanova University • Eastern Pennsylvania Coalition for Abandoned Mine Reclamation • Friends of Manayunk Canal • Friends of Mingo Creek • Greater Pottstown Watershed Alliance • Hay Creek Watershed Association • Hawk Mountain Sanctuary • Hopewell Big Woods Partnership • Landscape Architecture Program, Philadelphia University • League of Women Voters of PA WREN Project • Lower Merion Conservancy • Maiden Creek Watershed Association • A.D. Marble & Co. • Montgomery County Community College • Montgomery County Conservation District • Montgomery County Lands Trust • Montgomery County Planning Commission • Octoraro Native Plant Nursery, Inc. • Pennsylvania Department of Conservation and Natural Resources • Pennsylvania Environmental Council • Pennsylvania Sea Grant • Perkiomen Watershed Conservancy • Philadelphia Water Department • Reading Area Community College • Schuylkill Action Network • Schuylkill Canal Association • Schuylkill Headwaters Association • Schuylkill River National and State Heritage Area • Stell Environmental Enterprises • Streamline Organizational Services • Stroud Water Research Center • United States Fish and Wildlife Service • Valley Forge Trout Unlimited • West Chester Fish, Game & Wildlife Association • Wissahickon Valley Watershed Association

Financial Supporters



The 2010 Schuylkill Watershed Congress is made possible in part by a grant from the Pennsylvania Department of Conservation and Natural Resources, Bureau of Recreation and Conservation's Keystone Recreation, Park and Conservation Fund.



Congress Information

Why Attend?

With a focus on networking across disciplines and a goal of presenting new information about watershed restoration, the annual Schuylkill Watershed Congress has become a highly anticipated event for watershed citizens interested in understanding, protecting, and restoring their local streams. The 2010 Schuylkill Watershed Congress features concurrent and poster sessions covering a broad range of watershed topics and exhibits by watershed organizations, environmental consulting firms and government agencies.

Whether you are a volunteer dedicated to improving your watershed, a municipal official who cares about water resources, a conservation professional charged with protecting our waterways, a teacher who wants to inform others about watersheds, or a student who wants to know more about stream functions, the Schuylkill Watershed Congress offers something for you.

Who Should Attend?

Agency representatives, including local, state and federal • Municipal officials, both elected and appointed • Environmental consultants and contractors • Watershed organizations • Community groups • Educators and students • Members of the general public.

Keynote Presentation: *How to Challenge a Stormwater Permit and Win: A Look at the Crum Creek Neighbors Decision*

Michele Adams, *Meliora Environmental Design*, **James A. Schmid, Ph. D.**, *Schmid & Company, Inc., Consulting Ecologists*, and **John Wilmer**, *Environmental Attorney*, will tell the story behind the recent successful legal challenge to a stormwater permit given to a developer in an Exceptional Value designated watershed in Delaware County.

2010 Program

This year's program features 28 concurrent sessions and 7 poster sessions covering a broad range of watershed topics. Please note: *The speakers, topics and times are correct at the time of printing. The Program Committee reserves the right to alter, delete or replace items in the Schuylkill Watershed Congress program in the event of unforeseen circumstances.*

One-on-One Nonprofit Coaching and Consultation Sessions

Dianne Russell, Executive Director with the Institute for Conservation Leadership and presenter of *Fundraising in a Down Economy*, will be available for just **four, 30-minute, one-on-one nonprofit coaching and consultation sessions**.

Would you like to talk about an organizational issue you are currently facing? Do you have questions about:

Strategic Planning?	Membership?	Staff Management?
Board Development?	Volunteer Leadership Development?	Collaboration and Partnerships?
Fundraising?	Leadership Transition?	Other Organizational Development Topics?

If so, then be among the first four to sign up during the Congress for one of these valuable consulting/coaching opportunities. **These sessions are available on a FIRST-COME, FIRST-SERVED basis.** Look for sign-up forms at the Congress Registration Desk.

Displays

Unstaffed exhibits, displays and information tables will be open for viewing by Congress participants from 8:00 am through the close of the program at 4:00 pm. Displays are located in the corridors of South Hall providing high visibility throughout the day. Exhibits may be table-top or free standing. Half table (30" x 30") or full table (30" x 60") display spaces are available on a **FIRST-COME, FIRST-SERVED BASIS**. Limited access to electricity is available upon advance request. Please indicate your display space requests on the Registration Form.

Door Prize Drawing

Our annual door prize drawing, with goodies donated by Congress organizers and participants, is always a highlight. The drawing will be held at 3:30 pm in the Community Room. You must be present to win. Do you have a door prize to donate? Call 215-369-1188, ext. 109, or email chari@delawareriverkeeper.org.

More Congress details available online at www.delawareriverkeeper.org

Continuing Education Credit

You may be able to receive continuing education credits for attending the Schuylkill Watershed Congress. At the time of this printing, continuing education credits were being pursued for **educators** (through Montgomery County Community College), for **recreation and park professionals** and **landscape architects** (through Pennsylvania Recreation and Parks Society), and for **attorneys** (through Pennsylvania Continuing Legal Education Board). For current information about the availability of continuing education credits, call 215-369-1188, ext. 109, or email chari@delawareriverkeeper.org.

Sponsorships and Scholarships

Despite rising costs to organize the Schuylkill Watershed Congress, the registration fee for this highly anticipated annual event is still only \$40 (\$50 for registration received after February 26th), which is unchanged since 2003. The Congress is a great value, but even the low \$40 registration fee may be too much for some to pay. We need your help to ensure that cost is not a barrier to those interested in protecting and restoring their local streams.

Consider supporting a scholarship for someone who needs help to attend the Congress. Or consider becoming a financial sponsor of the 2010 Schuylkill Watershed Congress. Donations will be used to ensure that we can continue to offer the high-quality event our audience has come to expect and still keep the cost to participants low. Sponsorships will also support scholarships, acquire resources and enhance the Congress program.

Underwrite the cost for one person to participate for as little as \$40. Congress sponsorship opportunities are also available at the \$250, \$500, and \$1,000 levels. Call 215-369-1188, ext. 109, or email chari@delawareriverkeeper.org or go online to www.delawareriverkeeper.org for more information about Congress sponsorship opportunities.

Directions to the Montgomery County Community College

The **Montgomery County Community College - West Campus** is located in **Pottstown, Pennsylvania**. The Schuylkill Watershed Congress is presented in **South Hall, at 101 College Drive**, two blocks south of the intersection of High and Hanover Streets.

The campus is accessible by car and public transportation. For more detailed directions available online, go to: www.mc3.edu/aboutUs/directions/wc.aspx

Consider Carpooling

Carpool to the Congress. Use the group created for the Congress at <http://swc2010.erideshare.com>. Enter the group password, SWCCarpool, to view ride postings. Use the links at the top of the page to register, add a listing, or view listings. Become an eRideShare member (it's free!) and place your own listing for rides offered or wanted.

Smoking Policy

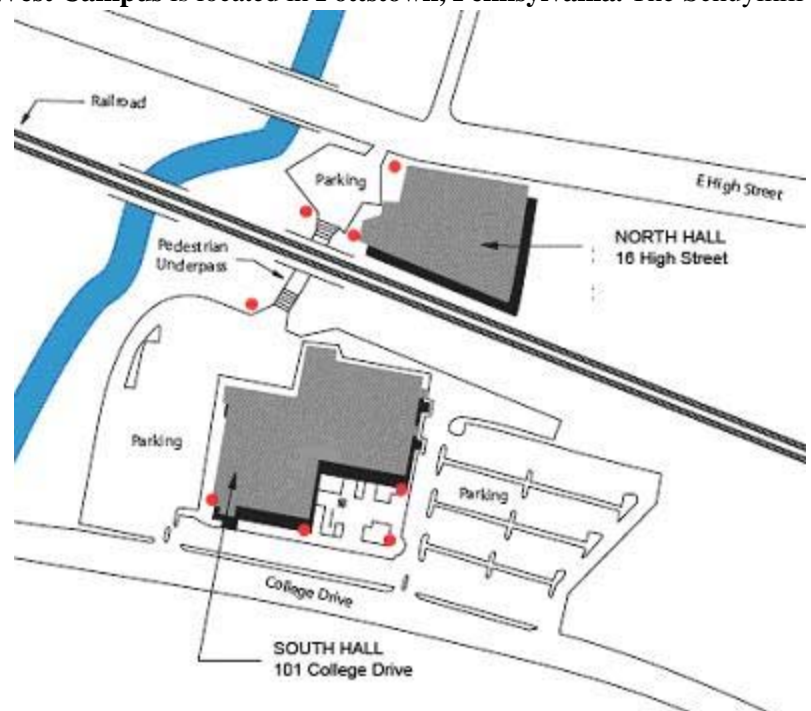
The **Montgomery County Community College - West Campus** is a non-smoking facility. The Schuylkill Watershed Congress is smoke-free.

Recording Policy

Any recording (audio, video, still-photography, etc.) of the keynote presentation or concurrent and poster sessions is prohibited without the express written permission of the presenters. This applies to all intended uses including personal use, distribution, publication, or copyright. Additionally, reprinting photographs in print or electronic publications is prohibited without the written permission of the people photographed. For more information, call 215-369-1188, ext. 109, or email chari@delawareriverkeeper.org.

Questions?

Call Chari Towne, the Delaware Riverkeeper Network's Schuylkill Watershed Specialist, at 215-369-1188, ext. 109. Or email chari@delawareriverkeeper.org.



The Schuylkill Watershed Congress is a Rain, Snow or Shine event.

2010 Schuylkill Watershed Congress Program At-A-Glance

8:00 am – 8:30 am	Registration, Community Room
8:30 am – 9:00 am	Welcome and Opening Comments, Community Room
9:00 am - 10:00 am	Keynote Panel, Community Room Michele Adams, <i>Meliora Environmental Design</i> James A. Schmid, Ph. D., <i>Schmid & Company, Inc., Consulting Ecologists</i> John Wilmer, <i>Environmental Attorney</i> Keynote Title: How to Challenge a Stormwater Permit and Win: A Look at the Crum Creek Neighbors Decision
10:10 am - 11:10 am	A. Local Drinking Water Protection in the Upper Perkiomen Watershed , Matt Genchur, <i>PA Rural Water Association</i> , and Grant Boyer, <i>East Greenville Borough</i> B. Lower Crabby Creek Restoration: Good and Not As Good , Pete Goodman and Rich Bauer, <i>Valley Forge Chapter of Trout Unlimited</i> , and Chuck Marshall, <i>Valley Creek Restoration Partnership</i> C. Choosing Native Plants: Improving the Home Landscape , Linda Ingram, <i>PA Department of Conservation and Natural Resources, Nolde Forest Environmental Education Center</i> D. Are “Special Protection” Waters Getting the Protection They Deserve? Stephen P. Kunz, <i>Schmid & Company, Inc., Consulting Ecologists</i> E. Stormwater and Conservation Design , Sheila Fleming, <i>Brandywine Conservancy</i> , and Barry Lewis, <i>GreenTreks Network, Inc.</i> F. DCNR is “Greening” its Grants Program: Urban Project Examples , Fran Rubert, <i>PA Department of Conservation and Natural Resources</i> , Glen Abrams, <i>Philadelphia Office of Watersheds</i> , Barbara McCabe, <i>Philadelphia Department of Recreation</i> , Carl Saldutti, <i>Borough of Lansdale</i> , and Mark Flaherty, <i>Metz Engineers</i> G. Into the Future: Sustaining Your Efforts Through Education , Estelle Rupert and Amy Hill, <i>Pennsylvania Department of Conservation and Natural Resources, State Parks</i>
11:20 am - 12:20 pm	H. Developing Watershed Management Strategies through use of a Water Quality Database for the Maiden Creek Watershed , Lori Burkert, <i>Spotts, Stevens and McCoy, Inc.</i> I. Vegetation and Erosion: A Primer for Restoration Practitioners , Todd Moses, <i>Skelly and Loy, Inc.</i> J. Addressing Major Stewardship Threats: Deer, Invasives and Edge . . . Oh My! Drew Gilchrist, <i>Natural Lands Trust</i> K. Assessing Pennsylvania’s Antidegradation Program: Legal, Regulatory, and Scientific Perspectives , Elizabeth Koniers Brown, <i>Delaware Riverkeeper Network</i> L. Aquatic Invasive Species, a.k.a. Aquatic Supertramps: Coming to a Watershed Near You? Ann Faulds, <i>Pennsylvania Sea Grant</i> M. Make Your Parking Lots Sustainable and Environmental Assets for Your Community , Barry Jeffries, <i>Montgomery County Planning Commission</i> N. Fundraising in a Down Economy , Dianne Russell, <i>Institute for Conservation Leadership</i>
12:30 pm - 1:45 pm	Lunch, Lounge
Poster Sessions	1. The Impact of Outdoor Lighting on Watershed Health , Stan Stubbe, <i>Pennsylvania Outdoor Lighting Council</i> 2. This Ain’t Your Daddy’s Soil Survey! A Technological Jump Into the 21st Century , John D. Chibirka, <i>USDA-Natural Resources Conservation Service</i> 3. Vascular Flora and Community Assemblages of the Coastal Plain Forest in Bucks County , Lauren Spitz, <i>Morris Arboretum of the University of Pennsylvania</i> 4. Case Study of the Darby Creek Watershed , Carl Dupoldt, <i>Green Building Solutions and Supplies</i> 5. BMPs for Homeowners and Rain Garden Construction , Eric Konzelmann and Kate O’Brien, <i>Berks County Conservation District</i> 6. BMP Retrofits Improve Stormwater Management in Urban Areas , Liz Feinberg and Paul Racette, <i>Pennsylvania Environmental Council</i> 7. Bucks County Watershed Protection Education and Community Awareness Project , Rea Monaghan, <i>Bucks County Planning Commission</i>
1:50 pm - 2:50 pm	O. Nutrient Removal in Waste Water , Jenifer Fields, <i>Pennsylvania Department of Environmental Protection</i> P. Mapping the Zone: Improving Flood Map Accuracy , Wendy Lathrop, <i>PLS, CFM, Cadastral Consulting, LLC.</i> Q. An Innovative Approach to Watershed Restoration: A Look at SAN Priorities , Tom Davidock, <i>Partnership for the Delaware Estuary</i> , and Lyn O’Hare, <i>Spotts, Stevens and McCoy, Inc.</i> R. Water Monitoring and the Marcellus Shale , James Shallenberger, <i>Princeton Hydro, LLC.</i> , with Faith Zerbe, <i>Delaware Riverkeeper Network</i> S. Exploring Stream Critters to Discover Water Quality , Nicole Rahman, <i>South Branch Watershed Association</i> T. Designing Landscape and Buildings to Change Lives and Enhance Classroom Education , David Ade, <i>AIA, LEED AP, SMP Architects</i> , and Tavis Dockwiler, <i>ASLA, Viridian Landscape Studio, Inc.</i> U. Watershed Education: In and Out of the Classroom , Gin Ranly, <i>Schuylkill Center for Environmental Education</i>
3:00 pm - 3:30 pm	V. Comparing and Quantifying Reductions in Phosphorus Associated Phosphorus and Non-Phosphorus Lawn Fertilizers , Fred Lubnow, Ph.D., <i>Princeton Hydro, LLC.</i> W. Creation of a Functioning Floodplain Wetland Complex at Angelica Creek , David Osgood, Ph.D., <i>Albright College</i> X. The Appalachian Regional Reforestation Initiative in Practice in Schuylkill County , Megan Blackmon, <i>OSM/Vista, Schuylkill Conservation District</i> Y. Sacrificing Water for Gas: Drilling for Natural Gas in the Marcellus Shale , Tracy Carluccio, <i>Delaware Riverkeeper Network</i> Z. Biological Indicators of Watershed Health in Southeastern Pennsylvania , Kristy Hoffman and Bradley Mescavage, <i>The ELM Group</i> AA. Case Study: Using Urban Green Techniques to Limit Stormwater Runoff When Redeveloping an Urban Site , Kevin Murphy, <i>Berks County Community Foundation and Funders Network for Smart Growth and Livable Communities</i> BB. Teach It in Song: Songs of Stormwater Management and Earth Stewardship , Jan and John Haigis, <i>Darby Creek Valley Association</i>
3:30 pm - 4:00 pm	Closing Comments & Door Prizes, Community Room

Keynote Panel Discussion

9:00 am - 10:00 am

How to Challenge a Stormwater Permit and Win: A Look at the Crum Creek Neighbors Decision

Keynote Panel: Michele Adams, *Meliora Environmental Design*
James A. Schmid, Ph. D., *Schmid & Company, Inc., Consulting Ecologists*
John Wilmer, *Environmental Attorney*

This panel discussion will provide insight into this recently decided, successful challenge to a DEP stormwater permit granted to a developer in Crum Creek, an Exceptional Value watershed.

In response to a challenge by Crum Creek Neighbors, the Environmental Hearing Board (EHB) recently remanded an NPDES stormwater discharge permit back to the Department of Environmental Protection for further consideration because DEP analyzed the site as a nondischarge site when in fact there would be a direct discharges to an Exceptional Value stream. CCN, represented by John Wilmer, argued that the infiltration basins were not large enough to hold large-storm stormwater volumes and would overtop and pollute the EV stream and that the structures on site would diminish the volumes needed to supply the EV stream. This successful action represents the intersection of citizen advocacy, ecological studies, legal action, and stormwater management. The stormwater arguments were strengthened by Crum Creek's EV designation, pushed for by Dr. Schmid. Legal action relied upon the commitment of private citizens and the extensive stormwater management expertise of Michele Adams. This panel discussion will provide an opportunity to learn about the interaction of these components from those directly involved with the challenge.

The legal significance of this case is both far reaching and a part of a very long path to protect our best streams. Prior case wins have forced DEP to recognize that harm can come from diminution in the water quantity (Oley Township -- fighting a bottled water withdrawal; the Perrier matter in South Coventry Township), that antidegradation regulations and analyses need to be applied in various situations (Blue Mountain – erosion and sediment control permits, Pine Creek Valley Watershed Association -- sewage modules, etc.) and this case, CCN, in which the EHB told DEP that it could not simply have developers check off boxes and believe they have done a real world analysis of potential harm to special protection watersheds.

Keynote Speaker Bios:

Michele Adams is a Principal Engineer and founder of Meliora Environmental Design. For more than 23 years, her work has encompassed environmentally sensitive site design and sustainable water resources engineering. Building on a multi-disciplinary approach, her work includes both master planning and design for campuses, urban restoration projects, commercial and residential installations, public facilities, and environmental education centers. In all her work, Ms. Adams seeks to combine sound engineering science with an understanding of natural systems. She is a frequent lecturer and educator on the topics of water and sustainability, and has provided technical expertise to clients ranging from watershed advocacy organizations to corporations.

James Schmid, Ph.D., was educated in biogeography and plant ecology at Columbia and the University of Chicago. He taught ecology and environmental science at Barnard College and Columbia University. Dr. Schmid was introduced to environmental consulting and brought to Pennsylvania by the late Jack McCormick. Since 1980 the contract work of Schmid & Company has included more than 1,000 projects in New Jersey and Pennsylvania, not to mention work in New York, Maryland, Indiana, Texas, and California. The firm's diverse clientele includes major corporations, utilities, developers of residential, industrial, and commercial real estate, land brokers, banks, government agencies, attorneys, engineers, architects, watershed associations, conservation groups, and individuals. Schmid has served as an expert witness at countless public hearings on proposed construction as well as in the state and federal courts.

Dr. Schmid's principal professional interest lies in the analysis of urban vegetation and in the design and establishment of functioning ecosystems in the form of new wetlands, reclaimed landfills, and other vegetated spaces in the increasingly human-dominated environment. Dr. Schmid has written nine books on urban vegetation and on the flora of the Mid-Atlantic States. His publications have received broad critical acclaim from his peers. He has published numerous articles on environmental subjects, and he reviews books and articles for several professional journals.

John Wilmer is a sole proprietor and has practiced in the area of environmental law and litigation since 1980, representing public interest groups, municipalities, and individuals. His recent work has involved water law, including stream and wetlands protection, stormwater matters, water quality losses from mining, and water resource issues. He also is General Counsel for the Raymond Proffitt Foundation, an environmental organization. His previous work experience includes over six years with the Pennsylvania Department of Environmental Resources; several years with private law firms; and one year with the New Jersey Public Interest Research Group. He graduated from both Temple University and Temple University Law School. Mr. Wilmer has served as Legal Chair for the Pennsylvania Chapter of the Sierra Club, as Vice President of the Pennsylvania Department of Environmental Protection Southeastern Regional Citizens' Roundtable and as Program Co-Chair for the Delaware Valley Environmental American Inn of Court. In 1997, he was named Conservationist of the Year by the Southeastern Group of the Sierra Club.

Concurrent Session Descriptions

10:10 am - 11:10 am

A. Local Drinking Water Protection in the Upper Perkiomen Watershed

Presenters: Matt Genchur, *Pennsylvania Rural Water Association*, and Grant Boyer, *East Greenville Borough*

Level: Introductory/Intermediate

Abstract: In Pennsylvania, drinking water protection efforts have seen varying levels of success. In very few cases, water systems have enough internal capital to support significant activities and even full-time personnel to address their greatest risks (see Philadelphia Water). However, the reality is that most systems rely heavily on volunteers or must stretch the time of already existing employees to see their efforts result in real progress. This session will highlight the many efforts of one system in Montgomery County that did it via the route of the latter scenario. With a surface water intake as their primary source supporting a watershed area of 36 square miles, this system faced many challenges. Highlighted efforts include a successful grant project that mapped their protection areas, many educational and project efforts with local schools, a solid partnership with a local conservancy group, and the establishment as a local environmental leader. By attending this session, you will learn how the efforts of few can affect many and you will also take back ideas to apply to your own community. The concept of protecting drinking water is simple, but the execution takes effort and this system is a stellar example to follow.

B. Lower Crabby Creek Restoration: Good and the Not As Good

Presenters: Pete Goodman and Rich Bauer, *Valley Forge Chapter, Trout Unlimited*, and Chuck Marshall, *Valley Creek Restoration Partnership*

Level: Advanced

Abstract: Crabby Creek is one of 31 sub-basins of Valley Creek watershed. The Valley Creek Restoration Partnership decided to restore the lower part of Crabby Creek as part of an integrated water resources approach that would include stormwater infiltration in the upper sub-basin and restoration at the bottom. The Partnership received a grant from the William Penn Foundation to conduct this work. LandStudies, Inc., recommended a sequence of sections of Crabby to be restored. Rettew Associates was hired to design the restoration for the worst section. Upon studying lower Crabby, the Partnership realized that the stream had actually been forced by a clogged culvert to change its course. The new course was through highly erodible soils and was carrying many cubic yards of soil into Crabby Creek and Little Valley Creek. The need for remedial action was urgent because, in that course, the stream was also undermining a sanitary sewer line. The Partnership moved 600 feet of Crabby back to its original course and restored another 650 feet of two stream sections. The relocation project has many vanes, J-hooks, deflectors, and armored banks to control the high shear stress that occurs in this high-gradient portion of Crabby Creek. The construction was completed in October 2008. A year's worth of heavy rainfall has tested even the strongest of these stone structures. This presentation will describe what has worked and not worked on this project. There are lessons learned in this project that will be useful to the Partnership in future work as well as being useful to other watershed groups contemplating this type of restoration.

C. Choosing Native Plants: Improving the Home Landscape

Presenter: Linda Ingram, *Pennsylvania Department of Conservation and Natural Resources, Nolde Forest Environmental Education Center*

Level: Suitable for awareness or introductory level, but providing solid content.

Abstract: The presentation encompasses themes that will be focused on independently, but which will also be woven together for a holistic program. *Bringing Nature Home*, by Douglas W. Tallamy, a landmark publication on this subject, will be referenced and recommended. This provides attendees with a text for their own home landscape conversions.

Organizing themes: Intact plant communities and how they function; understanding the geology, geography, climate, and soil characteristics of your property and their interrelationships; biodiversity as a functional landscape concept; native plant diversity; negative impact of non-native invasive species.

Utilizing a slide format all points are illustrated with real-life examples from the presenter's own backyard and additional native plantings in southeast PA locations. While the value of native plants for wildlife and wildlife viewing will be emphasized, the benefits for the environment i.e. using less water, eliminating chemicals, controlling run-off, will be clearly stated. Handouts with key message points and resources will be provided.

D. Are "Special Protection" Waters Getting the Protection they Deserve?

Presenter: Stephen P. Kunz, *Schmid & Company, Inc., Consulting Ecologists*

Level: Intermediate/Advanced

Abstract: A very small percentage of streams and wetlands in Pennsylvania, those designated either High Quality or Exceptional Value, are considered to be special protection waters under existing Pennsylvania Chapter 93 regulations. As such, they are supposed to be afforded the highest level of regulatory protection from the impacts of land development projects. A recent experience involving a 60-unit residential project proposed adjacent to a public water supply reservoir in Schuylkill Township, Chester County, serves as an illustration of loopholes and other deficiencies in the Pennsylvania regulatory process that is allowing certain special protection waters to be destroyed with little or no review by state or federal agencies. This presentation will identify specific inadequacies within the regulatory structure and then offer possible solutions to help ensure that special protection waters are correctly identified and given the protections Pennsylvania regulations intend.

10:10 am - 11:10 am (continued)

E. Stormwater and Conservation Design

Presenters: Sheila Fleming, ASLA, *Brandywine Conservancy*, and Barry Lewis, *GreenTreks Network, Inc.*

Level: Intermediate

Abstract: For over 20 years, the Brandywine Conservancy has been an advocate of stormwater Best Management Practices (BMP's) through its Conservation Design program. BMPs are an important method of mitigating the impact of development on water quality and runoff quantity, and help to improve the quality of water in our rivers and streams. The Pennsylvania Department of Environmental Protection's Stormwater Best Management Practices Manual provides planners and engineers with technical information on how to design and construct stormwater management facilities. It also provides advocates and municipal decision-makers with a recommended low impact development process that is aimed at helping to improve stormwater planning. Stormwater is now one of the primary considerations in planning for new development. StormwaterPA and the Brandywine Conservancy have developed a new tool that moves planners through an interactive, low impact stormwater design process. This presentation features the new stormwater design process instrument and illustrates the design process with StormwaterPA's newest case study video on Cherry Creek: A Conservation Design.

F. DCNR is "Greening" its Grants Program – Urban Project Examples

Presenters: Fran Rubert, *Pennsylvania Department of Conservation and Natural Resources*, Glen Abrams, *Philadelphia Office of Watersheds*, Barbara McCabe, *Philadelphia Department of Recreation*, Carl Saldutti, *Borough of Lansdale*, and Mark Flaherty, *Metz Engineers*.

Level: All Levels. The case examples will be technical enough for advanced audiences.

Abstract: This session will provide information on how the Pennsylvania Department of Conservation and Natural Resources is promoting the use of greening tools in the C2P2 grants program and ranking projects against green and sustainable criteria. Applicants are being asked to self-evaluate their projects using a "Green Scorecard" and address how their project conserves water resources, uses natural landscaping, uses green design and construction practices, conserves energy, and connects people to nature.

A panel will discuss three urban greening projects and lessons learned: Glen Abrams, Philadelphia Office of Watersheds, will describe stormwater management techniques used in Liberty Lands Park in the Northern Liberties neighborhood of Philadelphia, including directing street stormwater runoff into a naturalized stormwater basin and cisterns to provide water for park landscaping in concert with new, natural, community gathering facilities. Barbara McCabe, Philadelphia Department of Recreation, will describe greening techniques used in Jefferson Square, one of William Penn's original squares located in South Philadelphia, which included extensive use of native plant beds with graded stormwater infiltration, landscaped water filtration trenching, all being maintained by a park friends group. Carl Saldutti, Director of Parks and Recreation, Borough of Lansdale will discuss the Wissahickon Creek Infiltration & Riparian Corridor Project which involved restoring a riparian buffer and retrofitting a stormwater outfall on public parkland at the headwaters of the Wissahickon Creek in the center of Lansdale.

G. "Into the Future"...Sustaining Your Efforts through Education

Presenter: Estelle Ruppert and Amy Hill, *Pennsylvania Department of Conservation and Natural Resources, State Parks*

Level: Introductory/Intermediate

Abstract: Education changes behavior. How is your organization addressing formal and informal education strategies as key components for sustaining your watershed efforts? The work of conservation organizations needs to include strategic and sustained educational planning to make connections to the public and to your communities. Watershed and land conservation organizations need to determine the community behaviors that protect natural resources and build an educational strategy that focuses on your goals while building volunteers. This session will focus on reviewing the new trends in education such as service-learning and help participants connect to tools, grants, and partnerships that advance education on multiple levels. The session will provide participants with free resources and information on successful statewide programs such as PA Land Choices and Watershed Education and involve participants in developing an educational implementation framework.

11:20 am – 12:20 pm

H. Developing Watershed Management Strategies Through use of a Water Quality Database for the Maiden Creek Watershed

Presenter: Lori A. Burkert, *Spotts, Stevens and McCoy, Inc.*

Level: Intermediate/Advanced

Abstract: The Reading Area Water Authority (RAWA) Source Water Protection Plan (SWP), developed in 2007, recommended that RAWA develop a watershed-wide water quality sampling program. RAWA uses Lake Ontelaunee as its source of drinking water. The water quality of the lake is affected by the Maiden Creek and its tributaries. Treatment costs to convert the raw lake water to potable drinking water are impacted by contaminants entering the lake.

RAWA implemented a water quality sampling program in June 2008 at eight sampling locations. The sampling program provides the background information necessary to identify areas with degraded water quality and ultimately guide RAWA's watershed management strategy. A water quality database was developed to catalog the incoming data. Since its inception, five agencies have partnered with RAWA to share their own water quality data. The database allows access to up-to-date reports, charts, and graphs of the monitoring data. Using Geographic Information System (GIS) mapping software, the data is linked to the respective monitoring locations, and allows users to visualize spatial relationships between healthy and impacted streams. This session will provide an overview of the partnership strategy and database information, and will demonstrate how others can use similar tools to guide watershed management decisions.

I. Vegetation and Erosion: A Primer for Restoration Practitioners

Presenter: Todd Moses, *Skelly and Loy, Inc.*,

Level: Advanced

Abstract: An understanding of the fundamental interrelationships between vegetation and erosion is the sine qua non for successful stream and watershed rehabilitation. Yet many practitioners, including those well grounded in biology, have an incomplete understanding of basic vegetation and earth surface process interactions and the effects that these factors have on the landscape and slope stability. Vegetation-earth surface process interactions fall under the discipline of "biogeomorphology." The importance of biogeomorphic insights is underscored when one considers that thriving natural communities cannot be restored and water quality cannot be substantially improved until the land itself is more or less stable.

This session will provide useful background information on these vegetation-erosion interactions, both in the context of upland erosion and streambank retreat. Discussion will focus on 1) geomorphic process types and domains; 2) the diverse influences of both living and dead vegetation on local hydrology, microrelief, and sediment transport on hillsides; 3) the effects of vegetation on both stabilizing and destabilizing streambanks; 4) the modern manifestations of the historical human interference with these interactions (legacy effects); and 5) some of the applications of this knowledge to restoration practice.

J. Addressing Major Stewardship Threats: Deer, Invasives and Edge...Oh My!

Presenter: Drew Gilchrist, *Natural Lands Trust*

Level: All Levels

Abstract: Our rapidly suburbanizing landscapes have created human-induced impacts on our natural systems that reduce biodiversity and disrupt environmental processes and services on which we are dependent. Major stewardship issues affecting our natural areas include the proliferation of invasive species, the overabundance of deer, and habitat fragmentation. This interactive session is designed to provide practical hands-on advice, techniques and guidelines for addressing these threats, drawing on both the presenter's and audience's experiences. Topics for discussion will include establishing meadows that encourage native plant and wildlife species; native species selection for afforestation and riparian buffer projects; minimizing edge effects; controlling invasive plant species; and methods for protecting plantings from deer damage.

K. Assessing Pennsylvania's Antidegradation Program: Legal, Regulatory and Scientific Perspectives

Presenter: Elizabeth Koniers Brown, *Delaware Riverkeeper Network*

Level: Intermediate

Abstract: The Clean Water Act requires states to establish and implement an antidegradation policy. Pennsylvania's current program dates back to the early 1990's, and appropriately so to protect Pennsylvania's 86,000 miles of streams and rivers.

In Pennsylvania, watershed groups frequently petition the Department of Environmental Protection to upgrade the status of local streams and a long line of streams await decisions. Some cases are appealed, and courts make decisions that impact antidegradation application in the context of other lawsuits. This session will provide an overview of the legal and regulatory framework of the Pennsylvania antidegradation program and will review and discuss recent relevant administrative and judicial decisions.

Strengths and weaknesses identified in Pennsylvania's antidegradation program will also be discussed. From January 2008 to December 2009, the Delaware Riverkeeper Network (DRN) undertook review of Pennsylvania's antidegradation program, including an examination of new, additional, or increased point source discharges to High Quality (HQ) or Exceptional Value (EV) surface waters to evaluate how well Pennsylvania's program was functioning in practice. Recommendations developed as a result DRN's review will also be presented. Attention will also be given to aspects of water quality monitoring in EV and HQ streams.

11:20 am – 12:20 pm (continued)

L. Aquatic Invasive Species, a.k.a Aquatic Supertramps: Coming to a Watershed near You?

Presenter: Ann Faulds, *Pennsylvania Sea Grant*

Level: Introductory

Abstract: What do the water chestnut, Chinese mystery snail, purple loosestrife, zebra mussels and Japanese knotweed have in common? They are a few of the many aquatic supertramps that threaten wetlands and waterways in the Schuylkill watershed. Like other parts of the country, aquatic invasive species (AIS) pose a great threat to biodiversity contributing to the decline of over 40% of endangered and threatened species. Damage and control efforts to combat purple loosestrife, zebra mussels and sea lamprey alone are estimated to cost our nation \$365 million annually. And the pace of new invasions is expected to accelerate!

Successful prevention and control of AIS depends on the ability of concerned individuals to spot invasive species and block their spread. This presentation will identify the common characteristics, introduction pathways, and impacts and control methods of some of the worst AIS to provide educators and watershed volunteers with a better understanding of how to prevent the spread of aquatic supertramps.

M. Make Your Parking Lots Sustainable and Environmental Assets for Your Community

Presenter: Barry W. Jeffries, ASLA, *Montgomery County Planning Commission*

Level: Intermediate

Abstract: Traditionally-designed surface parking lots create large areas of impervious space and cumulatively create adverse environmental impacts contributing to stormwater run-off and flooding; increasing the urban heat island effect; and creating visual eye-sores. Recently with the growing concern over global warming, peak-oil, climate change and greenhouses gas emissions, a new concern and focus has shifted to sustainability in the built environment, including parking lots and roof-tops. Surface parking lots present an opportunity to create a more sustainable environment and to mitigate some of the adverse impacts of the conventionally designed parking lots. The integrated approach for stormwater management within the parking lot area, porous pavement systems, and the generous provision of shade can become key elements for improving your community's parking lots and green infrastructure. We will examine various case studies where surface parking lots have incorporated these sustainability principles and practices into their parking lots and the surrounding landscape to make surface parking areas into environmental assets. The presentation will conclude with an examination of how communities are up-dating and improving their local parking lot codes, requirements, and guidelines to make their requirements environmentally friendly and more sustainable.

N. Fundraising in a Down Economy

Presenter: Dianne Russell, *Institute for Conservation Leadership*

Level: All levels

Abstract: Staying close to your donors and developing new ways to increase your donor base is more important now than ever. In this workshop, participants will examine recent fundraising trends, hear about what ICL is seeing in its work with groups across the U.S., and learn seven important tips for fundraising in a down economy. Use this workshop to think creatively about fundraising for the next year, and develop an action plan to help increase and diversify your income.

Poster Session Descriptions

1:00 pm - 1:45 pm

1. The Impact of Outdoor Lighting on Watershed Health

Presenter: Stanley Stubbe, *Pennsylvania Outdoor Lighting Council*

Level: Introductory

Abstract: Since the beginning of time, plants, insects, and animals--including man-- have evolved under periods of light and periods of darkness during every daily cycle. However, in recent times much of our watershed has become bathed in 24 hours of light. This perpetual state of lightness has had an often overlooked but negative impact on man and the environment within our watershed. With the advent of more powerful light sources, ever-increasing numbers of lighted commercial parking lots, floodlit architectural features, continuous lighting of roads, and over-lighted areas under gas station canopies, to name a few, our watershed continues to take on an unhealthy nighttime glow. This presentation explores the causes and impact of light pollution on man and the natural environment in our watershed and the solutions to arrest and hopefully reverse this unwanted and detrimental trend.

2. This Ain't Your Daddy's Soil Survey! A Technological Jump Into the 21st Century

Presenter: John D. Chibirka, *USDA-Natural Resources Conservation Service*

Level: Intermediate/Advanced

Abstract: The Web Soil Survey, a free service available through an internet browser, is operated by the USDA-Natural Resources Conservation Service (NRCS) and provides access to the largest natural resource information system in the world. NRCS has soil maps and data available online for more than 95 percent of the nation's counties and anticipates having 100 percent in the near future. The site is updated and maintained online as the single authoritative source of soil survey information.

Soil surveys can be used for general farm, local, and wider area planning. Onsite investigation is needed in some cases, such as soil quality assessments and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center or your NRCS State Soil Scientist.

3. Vascular Flora and Community Assemblages of a Coastal Plain Forest in Bucks County

Presenter: Lauren Spitz, *Morris Arboretum of the University of Pennsylvania*

Level:

Abstract: While the shores of the Delaware River throughout Pennsylvania used to be lined with coastal plain forests, this unique ecological habitat has since diminished due to human development and disturbance. Today, very little coastal plain forest remains in Pennsylvania. Delhaas Woods is a 181-acre wooded wetland coastal plain forest managed by Silver Lake Nature Center in Bristol Township, Pennsylvania and has been called the largest and best example of remaining coastal plain forest in Pennsylvania by The Nature Conservancy. Site visits were conducted at Delhaas Woods throughout the summer and fall 2009 to compile a vegetation list which includes over 350 plant species, 30 of which are identified by the Pennsylvania Natural Heritage Program (PNHP) as rare, threatened, endangered, or tentatively undetermined in Pennsylvania. Vegetation transects, which included the point-quarter method for tree canopy analysis and the area-plot method for shrub and herbaceous layer analysis, were conducted, and the resulting data were used to describe and delineate the different community assemblages present in Delhaas Woods. Location of the PNHP plant species were mapped and Best Management Practices were suggested in order to preserve the integrity and diversity of this unique landscape.

4. Case Study of the Darby Creek Watershed

Presenter: Carl DuPoldt, *Darby Creek Valley Association*

Level:

Abstract: The Darby Creek Valley Association is in the process of celebrating its 25th Anniversary (1984 through 2009). Over the past 25 years, the Darby Creek Valley Association has been involved in advocacy for improving the watershed health through the promotion of riparian forest buffers, back yard conservation, continuous greenways, flood mitigation, reduction of impervious surfaces, and other environmental preservation measures throughout its 77 square-mile watershed.

There are 31 municipalities within the watershed. There are 4 counties in the watershed: Chester, Delaware, Montgomery and Philadelphia. Many of the communities within the lower portion of the watershed have implemented measures that temporarily detain flood waters to help to minimize flood damage. Some of these measures include the implementation of riparian forest buffers, greenways, and trails such as the ones that are in place along portions of the Darby and the Cobbs Creeks.

Other municipalities have implemented off-line flood water detention. These off-line flood water detention areas are large areas, usually recreation areas that allow flood waters to be stored temporarily to reduce flooding on adjacent properties. Several of the communities within the lower watershed have implemented these off-line flood detention measures.

This session will present a photo inventory of the Darby Creek watershed together with short narratives on the evolution of watershed management in the Darby Creek watershed over the 25 year history of the Darby Creek Valley Association.

1:00 pm - 1:45 pm (continued)

5. BMPs for Homeowners and the Rain Garden Construction

Presenters: Eric Konzelmann and Kate O'Brien, *Berks County Conservation District*

Level:

Abstract: The poster session will cover various Best Management Practices (BMPs) that homeowners can install to make their homes and land more environmentally friendly. Some BMPs include rain gardens; rain barrels; tree, meadow, and wildflower planting; riparian restoration and protection; downspout disconnects; composting and soil amendments and aeration; bird and bat boxes; etc. There will be an emphasis on proper rain garden construction, and different applications and recommendations on where rain barrels should and shouldn't be installed. Common reasons for rain garden failure and how to avoid them will also be covered along with maintenance procedures.

6. BMP Retrofits Improve Stormwater Management in Urban Areas

Presenters: Liz Feinberg and Paul Racette, *Pennsylvania Environmental Council*

Level: Introductory/Intermediate

Abstract: This presentation will showcase highlights from the multi-faceted process of designing and constructing stormwater management Best Management Practices (BMP) retrofit projects at 3 different sites in the Cobbs Creek Watershed. These projects were initiated under PEC's Urban BMP Retrofit Demonstration Program in 2004 with funding from a PADEP/NOAA Coastal Zone Grant and Growing Greener Grant and support from the William Penn Foundation and the Philadelphia Water Department. PEC, with support from a strong design team, facilitated the development of BMP retrofit conceptual designs at over 15 sites; these 3 sites in the Cobbs Creek watershed are recent accomplishments of this program. The presentation will provide site-specific information on the design of 3 subsurface storage-infiltration BMPs at two urban parks and one municipal parking lot as well as bioinfiltration BMP retrofits at each site. Due to site constraints and conditions in older urban areas, there is a need to be creative, open-minded, and persistent with respect to creating new stormwater management infrastructure and adding stormwater capacity in built-out urban communities and developed sites. By sharing these designs and providing a virtual tour of the project sites through a power point presentation, the audience will come away with more ideas and information about structural subsurface and bioinfiltration BMPs and a broader perspective on tackling some of the challenges of urban stormwater retrofits. The presentation will focus on BMP design features and functions for the 3 demonstration sites. The discussion will highlight operation and maintenance associated with these BMPs with an eye toward facilitating implementation of similar projects around the region. The presentation will outline funding and compare project costs and benefits, and will share lessons learned and entertain questions.

7. Bucks County Watershed Protection Education and Community Awareness Project

Presenter: Rea Monaghan, *Bucks County Planning Commission*

Level: Introductory/Intermediate

Abstract: This project showcased a comprehensive method to address nonpoint source (NPS) pollution. A multimedia approach was utilized in order to reach a large segment of the Bucks County community.

A guided bus tour for municipal and elected officials, board and committee members, and engineers showcased various Best Management Practices (BMPs) which have been successfully implemented throughout Bucks County. Tour participants heard presentations given by landscape managers, engineers, conservationists, and others directly involved with the design, implementation, maintenance, and stewardship associated with each facility. The project highlighted the collaborative efforts among citizens, local government officials and private organizations in developing and implementing water resource protection criterion.

The project's objectives are to increase understanding of planning principles by encouraging greater awareness of the impact of NPS pollution. Project leaders hope to encourage environmentally beneficial changes in habits and behaviors through a better understanding of water resources.

The educational materials include a comprehensive approach to stormwater management by highlighting stormwater BMPs that accommodate site-specific conditions and mimic the natural hydrologic system. The project reflects established planning principles that are organized in a manner that makes access readily available to residents, elected officials, and planning professionals alike.

Concurrent Session Descriptions

1:50 pm – 2:50 pm

O. Nutrient Removal in Waste Water (Activated Sludge Process)

Presenter: Jenifer Fields, *Pennsylvania Department of Environmental Protection*

Level: Intermediate

Abstract: DEP has developed a training program for wastewater treatment plant operators, which uses combined sensory stimulation to transmit knowledge. This training program has resulted in higher passing rates for licensing exams. Training concepts have been reduced to images that are easier to remember than text, song clips to trigger access to the knowledge and repetition and layering to cement the learning process. An excerpt of the training program will be presented here and is worthwhile for those interested in either nutrient removal in waste water with activated sludge, or examining this training style for use in other situations where training programs need to be adapted for learning styles or disabilities.

P. Mapping the Zone: Improving Flood Map Accuracy

Presenter: Wendy Lathrop, PLS, CFM, *Cadastral Consulting, LLC*.

Level: Advanced

Abstract: The National Research Council released the FEMA- and National Weather Service-commissioned report by this title in the spring of 2009 after more than a year of research and careful deliberation by a diverse committee of scientists, economists, geospatial analysts, engineers, surveyors, and floodplain managers. The presenter, a member of that committee, will provide an overview of the report's findings and recommendations affecting resource allocation decisions for flood hazard mapping and possible future directions for flood risk communication. Technical and social aspects of accurate flood hazard mapping are integral elements of this discussion. Both county and community officials who must regulate by FEMA-issued mapping and property owners who try to understand the mapping to determine their risks will gain insight into the complexity of the search for an ideal regulatory and communication tool.

Q. An Innovative Approach to Watershed Restoration: A Look at SAN Priorities

Presenters: Tom Davidock, *Partnership for the Delaware Estuary*, and Lyn O'Hare, *Spotts, Stevens, and McCoy, Inc.*

Level: Intermediate

Abstract: Over the past five years, the Schuylkill Action Network (SAN) has completed over 40 projects addressing some of the biggest threats to source water in the Schuylkill River Watershed. This work includes installation of agricultural management practices on 20 farms, the daily treatment of 6.5 million gallons of abandoned mine drainage, construction of innovative stormwater practices, plus many other activities addressing the restoration and protection of the watershed. Members of SAN will present the 2010 strategies for its new stormwater, agriculture, AMD, and land protection initiatives. The presentation will focus on exciting new priorities and will identify project-related resources for watershed partners. Some of the key SAN initiatives include a prioritized watershed buffer program for schools, targeted land protection in high-friction watershed areas, innovative approaches to AMD remediation, an agriculture BMP installation strategy, and a new focus on web-based communication and outreach. The presentation will also report on SAN's prioritized approach to watershed restoration and will highlight the importance of maintaining a coordinated and cooperative effort throughout the watershed. Additionally, potential partners and stakeholders will be given an opportunity to connect with SAN and become involved in its issue-specific workgroups.

R. Baseline Water Monitoring Strategies and the Marcellus Shale

Presenters: James P. Shallenberger, P.G., *Princeton Hydro, L.L.C.*, and Faith Zerbe, *Delaware Riverkeeper Network*

Level: Advanced

Abstract: The Marcellus Shale Formation and comparable Devonian-period shale rocks underlie more than three-quarters of Pennsylvania's land area. Some forecasters predict that Marcellus natural gas wells could be spaced as close as one well every 40 acres. Drilling and "hydraulic fracturing" a natural gas well in Marcellus Shale requires millions of gallons of water that is mixed with a plethora of chemicals and physical additives. Each well generates hundreds of thousands to millions of gallons of waste fluids that must be treated prior to release into streams, and some wastewater also remains underground and is not recovered. The waste that is produced from the Marcellus Shale gas fields cannot be treated with conventional processes; therefore, new and specialized treatment facilities are needed. Natural gas hydro-frac development poses the greatest threat to our water resources and natural habitats since coal surfaced in Pennsylvania.

This presentation will focus on monitoring efforts in active and future gas field regions to safeguard sensitive habitats and vulnerable water resources from pollution from the industry. Princeton Hydro's project experience involving Marcellus gas in Pennsylvania will be highlighted including: baseline potable well sampling; lake and stream chemistry evaluation; aquatic macroinvertebrate surveys; and technical review of a proposed waste water treatment facility. The Delaware Riverkeeper Network will share efforts on how trained volunteer monitors in the Lackawaxen watershed are collecting stream data and watch-dogging the natural gas industry as it enters this special protection watershed.

1:50 pm – 2:50 pm (continued)

S. Exploring Stream Critters to Discover Water Quality

Presenter: Nicole Rahman, *South Branch Watershed Association*

Level: Introductory

Abstract: One way to monitor the health of a watershed is to sample the macroinvertebrate life present in its streams and rivers. These bugs have a story to tell about the quality of the water where they are found. This session will present hands-on activities and handouts about macroinvertebrates, how to identify them, and what their presence or absence means.

Natural history information about common macroinvertebrates will be discussed while viewing slides and simple identification keys will be used to identify preserved specimens. Participants will then learn ways they can sample for macros in the field with their students and analyze a sample of paper macroinvertebrates to determine the water quality of a stream.

The effects of environmental stressors on macros will be simulated through a game of tag outside. Finally, we will conduct a site assessment of a stream to try and determine what some of these environmental stressors may be. Overall, the objective of this workshop is for the participants to understand why healthy watersheds are important and how macroinvertebrates can help us to determine the water quality within a portion of a watershed. Participants will also receive other handouts and materials.

T. Designing Landscape and Buildings to Change Lives and Enhance Classroom Education

Presenters: David Ade, AIA, LEED AP, *SMP Architects*, and Tavis Dockwiler, ASLA, *Viridian Landscape Studio*

Level: Intermediate/Advanced

Abstract: The green building movement has proven successful in reducing operating costs through high performance envelopes and systems. The sustainable site design movement has proven that best management processes can be ecologically sound. The team of SMP Architects and Viridian Landscape Studio has recently succeeded in taking the green movement past performance and to the next level by designing buildings and landscapes that also teach about environmental stewardship.

Through PowerPoint slides and shared discussion, the presenters will share their experiences in designing and constructing these didactic facilities. The discussion will feature three recently completed projects: Germantown Friends School, George School, and The Albert M. Greenfield School. While covering a variety of didactic design opportunities, the sustainable strategies common to all three projects will be compared and contrasted among renovation and new construction, as well as urban and suburban sites. Strategies highlighted will include stormwater swales, rain gardens, native vegetation, green roofs, rainwater cisterns, geo-exchange energy, photovoltaic arrays, daylighting, natural ventilation, and resource efficient building materials. The developments of the projects will be illustrated through animated graphics, construction progress and completed photos. Featured throughout the presentation will be examples of how the institutions' educational programs have embraced the sustainable strategies.

U. Watershed Education – In and Out of the Classroom

Presenter: Gin Ranly, *The Schuylkill Center for Environmental Education*

Level: Intermediate (for attendees who have experience in education programs)

Abstract: Watershed education can take place formally or informally; inside the classroom or out of doors. The Schuylkill Center for Environmental Education works with groups of varying ages from diverse backgrounds. During this session the presenter will share many of SCCE's tactics and ideas for engaging students in watershed studies. Hands-on activities and lesson outlines with participation from the audience will prepare and inspire you to take your watershed message into schools, to community groups or any gathering of students – young and old.

Learn how watershed education can grow from a one-time excursion into a yearlong focus of study. Gin works with students on a weekly basis from Green Woods Charter School, located at The Schuylkill Center, as well as with students from kindergarten to graduate school across the region. Learn how watershed studies can be integrated across a curriculum and tied into service-learning projects and works of art.

3:00 pm – 3:30 pm

V. Comparing and Quantifying Reductions in Phosphorus Associated Phosphorus and Nonphosphorus Lawn Fertilizers

Presenter: Fred S. Lubnow, Ph.D., *Princeton Hydro, LLC*

Level: Introductory/Intermediate

Abstract: A U.S. Environmental Protection Agency Targeted Watershed grant was awarded to the Lake Hopatcong Commission to reduce the phosphorus loads that enter Lake Hopatcong, Sussex and Morris Counties, New Jersey. As part of this project, a study and sampling program was designed to quantify the phosphorus loads that are generated from residential lawns when both phosphorus and non-phosphorus fertilizers are applied. In 2008 phosphorus fertilizers were applied to three lakeshore lawns and runoff samples were collected and analyzed. Similar sampling was conducted in 2009 except that non-phosphorus fertilizers were applied to the same lawns. The resulting analysis of the lawn runoff samples clearly identify that using non-phosphorus fertilizers result in a substantial reduction in the phosphorus runoff loads relative to phosphorus fertilizers.

W. Creation of a Functioning Floodplain Wetland Complex at Angelica Creek

Presenter: David Osgood, Ph.D., *Albright College*

Level: Advanced

Abstract: Maintaining proper function of headwater wetlands has taken on increasing importance in efforts to improve water quality throughout the watershed. Riparian wetlands, however, are often inadequately assessed following restoration and their ecological function improperly cataloged. We describe the restoration of a 7 ha floodplain on Angelica Creek, a first order tributary of the Schuylkill River. Hydroperiod, wetland sedimentation, and in-stream sediment load were measured pre- and post-restoration. Floodplain surface nitrogen concentrations were measured post-restoration. Flooding frequency increased substantially in one of two floodplain wetlands. Sedimentation during storm events averaged $94.7 \text{ g m}^{-2} \pm 49.7 \text{ s.e.}$ in the less frequently-flooded wetland where sedimentation was concentrated at particular locations. Sedimentation was relatively ubiquitous throughout the more frequently-flooded wetland, averaging $89.0 \text{ g m}^{-2} \pm 32.6 \text{ s.e.}$ Sedimentation rates were significantly correlated with water table elevation within the more frequently flooded wetland although sedimentation did not fully explain surface nitrogen concentrations. Adaptive management of one of the two wetlands may be required and could involve manipulation of surface water inputs. Improved floodplain sedimentation has reduced pre-restoration sediment loading rates for Angelica Creek ($0.2 \text{ kg s}^{-1} \pm 0.06 \text{ s.e.}$) which were significantly higher relative to post-restoration loading rates ($0.045 \text{ kg s}^{-1} \pm 0.004 \text{ s.e.}$).

X. The Appalachian Regional Reforestation Initiative in Practice in Schuylkill County

Presenter: Megan Blackmon, *OSM/VISTA and Schuylkill Conservation District*

Level: Intermediate

Abstract: The Appalachian Coal Country Watershed Team (ACCWT) is a partnership between AmeriCorps Volunteer in Service to America (VISTA) and the Office of Surface Mining (OSM). There are over fifty OSM/VISTA members serving throughout Appalachia, several of whom are in the Delaware watershed, working to increase the capacity of watershed groups. The ACCWT has partnered with the Appalachian Regional Reforestation Initiative (ARRI), a program with that returns mine lands to native hardwood forests as opposed to the common practice of heavily compacting the soil and planting grasses. The ARRI approach offers additional environmental benefits such as reducing soil erosion, improving wildlife habitat, increasing carbon sequestration, and creating more options for recreation. On May 1st, 2009, OSM/VISTAs working with the Schuylkill Conservation District and the Schuylkill Headwaters Association carried out the Anthracite region's first ARRI pilot project. This presentation will provide an overview of this project and the steps taken to make it successful; including communication with the coal operator, site preparation, planting techniques, and community involvement. The ultimate goal of this initiative is for coal operators to adopt the ARRI approach for reclamation. Two more ARRI projects are being planned in Schuylkill County for 2010.

Y. Sacrificing Water for Gas: Drilling for Natural Gas in the Marcellus Shale

Presenter: Tracy Carluccio, *Delaware Riverkeeper Network*

Level: Introductory

Abstract: You've probably seen commercials touting natural gas as an environmentally-friendly, clean-burning fuel that will help wean us from foreign oil. This isn't the whole story, just a very small piece of it. Natural gas drilling has ravaged natural resources and wreaked havoc in communities across the country and now natural gas extraction is at the Delaware River's door. Natural gas drilling could transform our forested headwaters to an industrial landscape if gas drillers have their way. Gas companies are signing leases with landowners in the Upper Delaware River watershed as well as anywhere in Pennsylvania underlain by the Marcellus Shale. The process and the scale of natural gas development in the watershed is a major threat to the River—the water supply for 15 million people—and our natural resources.

This session will review, from cradle to grave, the impacts on watersheds of natural gas drilling including: erosion and sediment concerns; massive water withdrawals; proprietary brews of toxic chemicals; deep aquifer contamination; contaminated drilling process water; the need for industrial waste treatment plants; and high levels of total dissolved solids being discharged to our waterways. Marcellus Shale, which underlies about one-third of the Delaware River watershed and much of Pennsylvania, may just be the first shale to be tapped. Other shales in the region are also being eyed long-term for natural gas production.

3:00 pm – 3:30 pm (continued)

Z. Biological Indicators of Watershed Health in Southeastern Pennsylvania

Presenters: Kristy A. Hoffman and Bradley J. Mescavage, *The ELM Group*

Level: Advanced

Abstract: Monitoring stream quality is useful for evaluating overall watershed condition and is necessary for the development of sustainable watershed management plans and strategies. Successful monitoring and management programs require a comprehensive understanding of the physical, chemical, biological, and social parameters that can directly influence their success; however, funding availability often limits the extent of assessment that is practical or possible. Therefore, in order to develop realistic goals/objectives for a focused assessment and successful watershed management, it is important to understand these parameters and how they are adversely or beneficially affected by local/regional land use patterns, including existing and future development plans, geologic conditions such as soil types and underlying formations, and stream order. A case study using physical, chemical, and biological data collected from five low-order streams in southeastern Pennsylvania with varying land use patterns, riparian conditions, and geology will be used to demonstrate this relationship. This case study will also touch on the holistic concepts inherent in watershed management such as stakeholder support, political associations/boundaries, and perceived value or costs/benefit analysis.

AA. Case Study: Using Green Techniques to Limit Stormwater Runoff When Redeveloping an Urban Site

Presenter: Kevin K. Murphy, *Berks County Community Foundation and Funders Network for Smart Growth and Livable Communities*

Level: Introductory

Abstract: In 2009 Berks County Community Foundation built and occupied the first LEED-certified office building in the City of Reading. As part of the LEED-certification process, the architects designed the building with stormwater management in mind. Specifically, the building has a 5,000-gallon cistern that is used to collect rain water that drains from the main roof down a large pipe in the center of the lobby. The water from the cistern is used to flush the toilets, the main water use in an office building.

In addition to the cistern, the building has three green roofs that contain native vegetation to help reduce, and potentially eliminate stormwater run-off. Any storm water that does make its way through the green roofs is carried away on decorative rain chains.

Finally, the urban site had been a macadam parking lot for more than 20 years, with little to no green space. Today, the site has landscaping with native vegetation. The foundation also discovered that some of the water management ideas it wanted to add to the building were prohibited or discouraged by local zoning.

BB. Teach it in Song: Songs of Stormwater Management and Earth Stewardship

Presenters: Jan and John Haigis, *Darby Creek Valley Association*

Level: These songs may be enjoyed and utilized at all levels

Abstract: Why do so many of us know the theme from Gilligan’s Island and while so few of us can recite the Preamble to the Constitution? Part of the answer is that music is processed in a different part of the brain than speech. There is a reason we use music to teach ABC’s to children and anatomy to doctors; lessons conveyed by music are more easily assimilated and remembered. John and Jan Haigis began to write these Songs of Earth Stewardship while coordinating the Annual Watershed-Wide Clean-Up for the Darby Creek Valley Association. Using familiar tunes, the songs present lessons that stick and stay and can become a valuable addition to the teacher’s tool kit. In an engaging presentation, John and Jan will talk about how and why the songs were created and how they can be utilized in classroom instruction.

Sponsorship Opportunities

Please consider becoming a financial sponsor of the 2010 Schuylkill Watershed Congress. Your sponsorship dollars will help ensure that we can continue to offer the high-quality event our audience has come to expect and still keep the cost to participants low. Sponsorships will also help to support scholarships, acquire resources, and grow the Congress program.

<u>Sponsorship Levels</u>	<u>Sponsor’s Benefits</u>
Associate Sponsors (\$250)	1 complimentary Congress registration Recognition in Congress materials and during the event as an Associate Sponsor
Supporting Sponsor (\$500)	1 complimentary Congress registration Complimentary display space Recognition in Congress materials and during the event as a Supporting Sponsor
Major Sponsor (\$1,000)	2 complimentary Congress registrations Complimentary display space Recognition in Congress materials and during the event as a Major Sponsor

Donations to the Delaware Riverkeeper Network in support of the Schuylkill Watershed Congress are tax-deductible. **Please return your contribution by February 19, 2010, to ensure your listing in Congress materials.**

Concurrent and Poster Presenters:

Glen Abrams is the Urban Watersheds Planner with the Philadelphia Office of Watersheds, which is responsible for planning and undertaking stormwater management projects throughout the City's neighborhoods and public lands that focus on using best management practices for infiltration of stormwater runoff.

David Ade is currently the principal-in-charge of the Sustainable Urban Science Center at Germantown Friends School, as well as the principal-in-charge of the new Hamilton Family Children's Zoo at the Philadelphia Zoo. He is certified by the U.S. Green Building Council as a LEED Accredited Professional and is a member of the Delaware Valley Green Building Council. He has presented at a number of national green building conferences, including Greenbuild, EnvironDesign, and Global Engineering. He serves as an Adjunct Instructor at Drexel University, and has also served as a professional advisor in the Philadelphia AIA's Architecture in Education Program.

Megan Blackmon is an Office of Surface Mining/AmeriCorps Volunteer in Service to America (OSM/VISTA) with the Appalachian Coal Country Watershed Team who is serving with the Schuylkill Conservation District. She is from North Carolina and has a B.S. in Environmental Studies with a concentration in Environmental Management and Policy from the University of North Carolina at Asheville. As an OSM/VISTA, she works to build the capacity of the Schuylkill Conservation District and local watershed groups through grantwriting, fundraising, volunteer recruitment, water monitoring, community outreach and education.

Richard Bauer is a board member of Valley Forge Trout Unlimited. After 39 years as a research chemist, his retirement avocations, when not playing with his grandchildren, include stream monitoring, trying to sort out which aspects of stream restoration technology work and which don't, and of course spending more time pursuing the catch and release of wild trout.

Grant Boyer has been an employee of East Greenville Borough for a number of years and most recently has served as its primary water system operator. When the Borough received a source water protection grant from the Pennsylvania Department of Environmental Protection, Mr. Boyer was the committee chair of the effort. During this time, he made many valuable contacts and led or assisted a number of projects in an effort to better protect the source waters for East Greenville Borough. In addition to his water system duties, Mr. Boyer also serves as the Borough's volunteer fire chief and is involved in the Perkiomen Watershed Conservancy.

Elizabeth Koniers Brown is a senior attorney at Delaware Riverkeeper Network, representing DRN in litigation and overseeing the River Resources Law Clinic staffed by law students from Temple University and the University of Pennsylvania. Her past experience includes internships with the U.S. Environmental Protection Agency, Delaware River Port Authority and Chesapeake Bay Foundation, and three years practicing environmental and complex commercial litigation with a New Jersey law firm. Ms. Brown received a J.D. from The George Washington University Law School and a B.S., magna cum laude, in biology and German language and literature from Muhlenberg College. She is admitted to practice in Pennsylvania and New Jersey.

Lori A. Burkert is a geologic specialist at Spotts, Stevens and McCoy, Inc. (SSM) in Reading, PA. Ms. Burkert currently focuses on hydrogeologic modeling and stream time-of-travel modeling in preparation of source water protection plans for the DEP Source Water Protection Technical Assistance Program (SWPTAP). Prior to working at SSM, Ms. Burkert was a Water Supply Specialist in the Pennsylvania Department of Environmental Protection Drinking Water Program. She received her Bachelor's degree in Environmental Science from Elizabethtown College and her Master's degree in Earth and Environmental Studies from Lehigh University. Ms. Burkert's technical background is in geochemistry, and she has conducted research on arsenic in groundwater in Pennsylvania.

Tracy Carluccio is an inspirational leader who has been organizing and working with grassroots groups for twenty years. She has served on numerous community, government, and service group boards including a current appointment to the Highlands Council in NJ. She served as Executive Director of Del-AWARE Unlimited, organized to stop an ecologically damaging interbasin transfer. The movement culminated in voters overturning a county government that insisted on supporting the project despite a majority referendum for its cancellation. She was then offered the county position of Executive Director of the Neshaminy Water Resources Authority that owned the controversial project, a position she held for 4 1/2 years. Ms. Carluccio has a B.A. in Sociology from the University of North Carolina and coursework in Environmental Science at Rutgers University Cook College.

John D. Chibirka is a Resource Soil Scientist with USDA-NRCS responsible for maintenance, interpretation, and distribution of soil survey information; providing technical assistance to NRCS offices, conducting information and education activities related to soils and soil survey; providing training to NRCS employees and other technical specialists; providing support to users of soil survey information; assisting with conservation planning, environmental assessment, and natural resource management activities; and providing technical review, and guidance in the application of soil survey information throughout the eastern Pennsylvania.

Mr. Chibirka has been employed with NRCS for 21 years during which time he has served in 4 states and authored 4 soil surveys; Bucks (1992), Chester (2006), Northampton (2007), and Montgomery (2008) Counties. He has also served on interagency and interdisciplinary teams on: Wetlands and hydric soils (Mid-Atlantic Hydric Soils Committee); Hydrologic Regulation of Dissolved Organic Matter Biogeochemistry from Forests through River Networks (Kaplan, SWRC, 2005); Organized The Rodale Institute ©

Regenerative Agriculture Tour for the 2006 World Congress of Soil Science through the IUSS, Philadelphia, PA; and Modeling Soil Hydraulic Properties as a Function of Morphological Features and Land Use (Lin, PSU, 2007).

Tom Davidock works for the Partnership for the Delaware Estuary as the Coordinator for the Schuylkill Action Network. Mr. Davidock's prior experience includes serving as the Program Director for Delaware Valley Earth Force and as the Natural Resource Specialist for the Schuylkill Conservation District.

Tavis Dockwiler is a leader in ecological planning and landscape architecture design. Her current work includes projects for Penn State University, University of Pennsylvania, George School, and Hershey Gardens. Ms. Dockwiler's past work includes the Schuylkill Center for Environmental Education and the Cusano Environmental Education Center at the John Heinz National Wildlife Refuge. She is a Fellow of the Design Trust for Public Space of New York and is a volunteer for the Community Design Collaborative of Philadelphia. She is a regularly lectures at conferences and symposiums such as National ASLA, Metro Hort Group New York, Chesapeake Bay Gateway Network, EnvironDesign8, and Land Ethics Symposium.

Ann Faulds is an aquatic biologist with more than 20 years of experience in science instructing and aquatic resource education. Before working as Pennsylvania Sea Grant's Associate Director, Ms. Faulds' taught in the Biology Department of West Chester University where she received her Master's degree. Her areas of interest include wetland, stream, and lake ecology with a graduate research focus on wetlands beetles.

Liz Feinberg has a B.S. and M.S. in Environmental Science from the University of Massachusetts and Johns Hopkins University respectively. Ms. Feinberg has been working as a planner in the environmental field for 20 years with a focus on water resource management for the last 8 years. In Montgomery County, Maryland working with the Department of Environmental Protection, Liz directed compliance technicians in the performance of inspections and monitoring in conjunction with water quality, pollution prevention, and watershed restoration programs. Since in Pennsylvania, she has worked at the regional and local levels with government officials, non-profit organizations, and volunteers to develop and implement plans, projects and policies that support stormwater pollution control and watershed restoration. Ms. Feinberg works with several clients in southeast Pennsylvania, including the Pennsylvania Environmental Council, supporting municipal NPDES compliance efforts.

Jennifer Fields is the Water Program Manager for the Southeast Regional Office of the Department of Environmental Protection (DEP), responsible for sewage planning, NPDES and water quality permitting, along with operational compliance and enforcement. After graduating from the University of Delaware with a Bachelor of Civil Engineering degree, Mrs. Fields entered the U.S. Army, serving 11 years in both active and reserve units, overlapping her time with DEP. She is a licensed engineer in Pennsylvania. Mrs. Fields has been working to improve wastewater operator training curriculum, to remove impediments due to learning styles and disabilities.

Mark Flaherty has been an employee of Metz Engineers since 1985 and is currently a Project Manager in charge of design engineers, engineering technicians, and field survey corps. Mr. Metz is responsible for initiation, coordination, design, and planning of various municipal, commercial, industrial and private land title, subdivision and topographical surveys; residential, commercial and industrial subdivision and development- improvement projects, including planning and design of facilities layout, site grading, drainage, streets, parking, utilities, stormwater management facilities and agency permitting; municipal public streets and drainage improvement projects.

Sheila Fleming joined the Brandywine Conservancy Environmental Management Center in 1999. She holds a Bachelor of Landscape Architecture from the University of Guelph (1982) and a post-graduate degree in Natural Resource Policy and Management from Cornell University (1997). Ms. Fleming is highly proficient in Conservation Design and community planning. She has achieved repeated success in finding the proper design balance that protects a property's most sensitive natural and historic resources, preserves scenic views, and satisfies township ordinance requirements, while meeting economic development goals. She actively promotes Conservation Design and stormwater Best Management Practices as a planning consultant for various townships in Chester County.

Matt Genchur has worked as a Source Water Protection Specialist for the Pennsylvania Rural Water Association for nearly 6 years. In this time, he has guided dozens of community water systems through the various aspects of protecting their drinking water sources. With a comprehensive background in geography and watershed management, Mr. Genchur has created an extensive partnership network across the Commonwealth to better serve the systems that he guides. In addition, Mr. Genchur is also the chair of the Lower Susquehanna Regional Water Resource Committee for the ongoing Act 220 process, which is continually updating and revising our own State Water Plan.

Drew Gilchrist, Natural Lands Trust, Director of the Center for Conservation Landowners, began his employment with Natural Lands Trust in 1987 at the newly-established, 230-acre Gwynedd Wildlife Preserve in Montgomery County. As Preserve Manager, Mr. Gilchrist was charged with converting farmland into a diversity of natural habitats as well as battling invasive species, planting thousands of native trees and shrubs, and developing a public use program. Mr. Gilchrist also served as the Regional Director of Land Protection, working with landowners and municipalities to protect land adjoining NLT preserves and other targeted landscapes in eastern Pennsylvania through fee acquisitions and easements.

Pete Goodman was born in Philadelphia in 1945. He attended Haverford High School and Temple University. He served as an enlisted man in the U.S. Army. For the past 36 years, Mr. Goodman and his wife Judy have lived in the same house on the north valley ridge in Malvern. After retiring from a career in a family-owned elevator business he became active in the Valley Forge Chapter of Trout Unlimited, serving as president and board member. Pete has served on the board of the Great Valley Nature Center and serves on the board of the Open Land Conservancy.

Jan and John Haigis are singer/songwriter/teacher/historian/storytellers using familiar music to teach about subjects as diverse as Groundhog Day, trolleys, road rage, legal ethics, and dinosaurs. Delaware Creek Valley Association (DCVA) members since 1987, they have presented their songs of Watershed Stewardship at DCVA functions and for the Pennsylvania Horticultural Society at the Environmental Fair at Temple-Ambler and a Members Day at the Navy Yard, showing that education does not have to be dull. Jan Haigis has a MA in English from Teachers College at Columbia and John Haigis is a recovering attorney. They live in a circa 1734 home near Darby Creek. Their web site is www.pasttimespresent.com.

Amy Hill works for the Department of Conservation and Natural Resources' Bureau of State Parks as a Natural Resource Program Specialist. She coordinates a variety of statewide programs including *Watershed Education*, *Pennsylvania Songbirds*, interpretive planning and more. She is a graduate of the College of William and Mary and has been working for the Commonwealth of Pennsylvania since 2002.

Kristy A. Hoffman has over six years of environmental consulting experience in water resources planning, including watershed assessment and management, stream restoration, wetland delineations and mitigation, environmental permitting, and biological surveys. Ms. Hoffman has a B.S. in Natural Resources / Aquatic Ecology from the University of Vermont. She regularly attends courses related to natural stream channel design, wetland delineation, permitting, benthic macroinvertebrate sampling, and other components of watershed management. She is a Certified Associate Ecologist, has completed all four levels of Rosgen training in Natural Stream Channel Design, and is a member of the North American Benthological Society, the Society of Wetland Scientists, the Keystone Stream Team, and the Springfield Township Environmental Advisory Council.

Linda Ingram has 25 years experience as an environmental educator for Pennsylvania Bureau of State Parks, and an even longer history of home landscaping, transitioning from typical southeast Pennsylvania 1950's plantings to creating a native enriched backyard habitat. Changes initiated at the Nolde Forest worksite include the renovation of the formal mansion garden, establishing naturalized native plantings, and initiating numerous public and educator workshops, all designed to create an enhanced environment for wildlife and people by utilizing native plants. Travel to remote areas of the world viewing intact natural plant communities provides Ms. Ingram with inspiration.

Eric Konzelmann is the Erosion & Sediment Control (E&S) Program Coordinator at the Berks County Conservation District. He is responsible for leading the E&S team, conducting E&S plan reviews and inspections, issuing Department of Environmental Protection (DEP) permits, providing technical assistance and educational programs. Mr. Konzelmann has been involved in construction industry related work for over 12 years. During his professional career, Mr. Konzelmann has obtained numerous certifications, including: Certified Professional in Erosion & Sediment Control (CPESC), Certified Professional in Storm Water Quality (CPSWQ), Certified Engineering Technician through NICET, and has obtained a DEP Waste Water Treatment Plant Operators License.

Stephen P. Kunz has been a private-sector environmental consultant for more than 30 years. He has extensive experience in the technical analysis and regulatory review of development projects. His primary focus is on wetland delineation, impact assessment, and regulatory analyses. Mr. Kunz routinely deals with state and federal wetland and water quality issues in Pennsylvania, New Jersey, and New York. He is certified as a Senior Ecologist by the Ecological Society of America (ESA) and as a Professional Wetland Scientist by the Society of Wetland Scientists (SWS). He has served on the Schuylkill Township (Chester County) EAC for the past 16 years.

Barry Jeffries is a senior design planner at the Montgomery County Planning Commission in Norristown where his work focuses on site design and planning, park planning and design, and development of the county's parks, trails, and Schuylkill riverfront. A native of Durham, NC, he received his undergraduate degree from The University of North Carolina at Chapel Hill and a Master's degree in landscape architecture from the University of Georgia in Athens, GA. Mr. Jeffries completed a post-graduate professional internship in urban forestry at the Morris Arboretum of the University of Pennsylvania where he continues to volunteer and serves as the vice-chair of the Lower Merion Township Environmental Advisory Council.

Wendy Lathrop, PLS, CFM is licensed as a Professional Land Surveyor in New Jersey, Pennsylvania, Delaware, and Maryland, and as a Professional Planner in New Jersey. She is also a nationally Certified Floodplain Manager through the Association of State Flood Plain Managers. Ms. Lathrop represented the American Congress on Surveying and Mapping on the Technical Mapping Advisory Council to the Federal Emergency Management Agency for the full five years of that advisory group's appointment (1996- 2000). In 2009 the research committee for the National Research Council/National Academy of Science on which she served published "*Mapping the Zone: Improving Flood Map Accuracy.*"

Barry Lewis is Executive Director of GreenTreks Network, Inc., an award-winning Philadelphia-based nonprofit that uses communications to create environmental change. Throughout his career, Mr. Lewis has been responsible for conceiving, developing,

and managing a wide range of communications initiatives, including print publications, television programs, web campaigns, and interactive museum exhibitions. He has written on health, sports, and environmental issues for audiences ranging from children to policy makers. Mr. Lewis spent a dozen years as a writer, editor, photographer, and video producer before joining the Academy of Natural Sciences Environmental Research Division in 1994. Mr. Lewis first learned of GreenTreks in his role as the Academy's Director of Communications, and joined the organization in 2002.

Fred S. Lubnow, Ph.D., is the Director of the Aquatic Programs at Princeton Hydro, and is the office manager of the Exton, Pennsylvania office. Dr. Lubnow received his Bachelor's of Science in Biology from Susquehanna University (1988), his Master's degree in Environmental Sciences (1992) from the University of California Davis and his Ph.D. in Limnology (1994) from the University of California Davis.

Chuck Marshall is an environmental scientist and worked for an environmental consulting firm for 25 years. Mr. Marshall was a co-founder of the Valley Forge Chapter of Trout Unlimited. He also is the Restoration Coordinator for the Valley Creek Trustee Council.

Barbara McCabe is a Parks Coordinator with the Philadelphia Department of Recreation. Ms. McCabe oversees the planning and development of park rehabilitation projects throughout the City's neighborhoods and manages projects funded by the Department of Conservation and Natural Resources in partnership with the City.

Bradley J. Mescavage has over nine years of environmental consulting experience in natural resource management and permitting, hazardous waste management, site remediation, and property revitalization. Recent experience includes watershed assessment and permitting for a stream and riparian buffer restoration project along Paunacussing Creek in Bucks County and grant writing to fund this project. In addition, Mr. Mescavage coordinated and presented at the first annual Municipal Watershed Workshop that included several municipalities surrounding Solebury Township, Congressman Patrick Murphy's office, and other government agencies and citizens. Mr. Mescavage draws on a diverse background of education including a B.S. in Environmental Science from Slippery Rock University and a M.S. in Environmental Pollution Control from Penn State University. Mr. Mescavage is a Registered Environmental Manager (REM) and is a member of the American Water Resources Association, NJ Section Stream Restoration Committee and of the City of Allentown EAC.

Rea Monaghan holds a M.S. Degree in Community and Regional Planning and joined the Bucks County Planning Commission in 2006. Serving on the Bucks Employees Green Initiative (BEGIN) Committee, she formulates work programs and implements recommendations to the county to establish greener operations. Ms. Monaghan works with municipalities, government agencies and non-profit organizations on watershed planning and outreach efforts. She reviews municipal land development plans, and prepares compressive and open space plans along with other planning-related projects. She also works on county-wide environmental and community planning projects. Ms. Monaghan served as the lead on the Bucks County Watershed Protection Education and Community Awareness Project which received the 2009 Pennsylvania Planning Association Planning Excellence Public Outreach Award.

Todd Moses is a Geomorphologist and Senior Restoration Specialist for Skelly and Loy of Harrisburg. Beginning with his work on the Boulder Creek project in Colorado in 1986, Mr. Moses has worked on the assessment of watershed and stream conditions and the design and construction of stream and hillside rehabilitation projects in Pennsylvania, Oregon, Washington, Idaho, Alaska, and California.

Kevin K. Murphy joined the Community Foundation as its first employee in 1994. During his time as president, the Community Foundation has grown to manage more than \$37 million in assets and distribute more than \$2 million in grants each year. As president, Mr. Murphy is chief executive officer of the corporation, supervises the business and operations of the foundation and serves on the Board of Directors. In 2008, Mr. Murphy was named chair of the board of The Funders Network for Smart Growth and Livable Communities, where he previously served as secretary. Mr. Murphy also served two terms as president of Community Foundations for Pennsylvania. He also serves on the board of directors of The Council on Foundations, and on its community foundation leadership, executive, and governance committees.

Kate O'Brien is the Watershed Specialist/Environmental Educator at the Berks County Conservation District. She attended Ursinus College and graduated with a B.A. in Environmental Studies and English in 2005. After graduating from Ursinus, Ms. O'Brien attended the University of Delaware and received her Master's degree in Environmental and Energy Policy with a Specialization in Water Resource Management and Policy. She worked at the Delaware Department of Natural Resources and Environmental Control as an Environmental Scientist and Watershed Coordinator. During that time, she supervised projects including: riparian-buffer reestablishment, pollution-prevention techniques, and other low-impact-development practices. She also performed public education/outreach on local water-quality and watershed issues by giving classroom and public presentations. Ms. O'Brien joined the Berks County Conservation District in December 2009.

Lyn O'Hare, a Water Resource Specialist with Spotts, Stevens and McCoy, Inc., serves on the SAN planning committee and chairs its agriculture workgroup. Ms. O'Hare has over 16 years of environmental management experience, including 6 years serving as the Assistant Manager of the Berks County Conservation District.

David Osgood holds a Ph.D. in Environmental Science from the University of Virginia and has spent over 15 years studying coastal and floodplain wetland systems. His areas of specialty include wetland hydrology, invasive plant species ecology, wetland

restoration, and applications of Geographic Information Systems in watershed studies. Dr. Osgood has been on the faculty at Albright College since 2001 where he directs the Environmental Sciences Program and teaches courses in ecology, watershed hydrology, wetlands ecology, conservation biology, pollutants, and environmental science of Latin America.

Nicole Rahman has 11 years of experience as an environmental educator. She received a B.A in both Biology and Environmental Studies from Gettysburg College and is currently pursuing an M.S. in Environmental Science from Drexel University. Ms. Rahman has worked in environmental education roles at Strawberry Hill Nature Center and Preserve and at Kings Gap Environmental Education and Training Center, PA Department of Conservation and Natural Resources, Bureau of State Parks. Ms. Rahman joined the South Branch Watershed Association in July 2004 as the Program Director of Education and Outreach. Her duties there include coordinating the environmental education program, the volunteer biological monitoring program, and the annual spring River Clean-up.

Gin Ranly is the Director of Education at The Schuylkill Center for Environmental Education in Philadelphia. She has worked at The Schuylkill Center as an educator and Watershed Programs Coordinator since 2004. Ms. Ranly previously worked with the Philadelphia Water Department as an aquatic biologist and with several other non-profit environmental organizations in the region. She earned a Bachelor's degree in Environmental Science from the University of Notre Dame and a Master's in Environmental Studies at the University of Pennsylvania. She is a fellow with the Environmental Leadership Program's Eastern Region.

Estelle Rupert is a Natural Resource Program Specialist with the Pennsylvania DCNR Bureau of State Parks and is the statewide coordinator of Pennsylvania Land Choices, an educational initiative involving place-based, service-learning. Other duties include the development and coordination of DiscoverE, the statewide youth program conducted in Pennsylvania state parks, coordination of youth development for Exploring Careers Outdoors, state liaison with Trail to Every Classroom, and part of the team that co-authored the award-winning Watershed Education. Estelle has her Master's of Science Education from Lebanon Valley College and is an adjunct professor.

Dianne Russell is Executive Director of the Institute for Conservation Leadership (ICL) and leads the fundraising, financial management, and oversight of program design and delivery. Ms. Russell has worked with local, state, and regional activists and groups in the environmental and conservation community since 1985. In her 21 years at ICL, Ms. Russell has worked with over 1,400 groups across North America on leadership, organizational development, strategic planning, campaign development, and fundraising. Previous staff positions included work with Americans for the Environment, Union of Concerned Scientists, and Committee for a Sane Nuclear Policy (SANE). A native of the Great Lakes region, Ms. Russell earned a double degree in Religion and Sociology from Wittenberg University (Ohio).

Carl Saldutti is the Director of the Lansdale Department of Parks and Recreation. Mr. Saldutti oversees all aspects of the parks and recreation department for the Borough of Lansdale. He is responsible for the development and delivery of a well-balanced, comprehensive program of recreation, leisure, and cultural activities for all segments of the community. He administers and manages a 20 site park system consisting of active, passive, and natural areas. He superintends the acquisition, planning, development, and maintenance of recreation and park facilities including the recently completed Stony Creek Park improvement project (a 2008 Montgomery County Land Development Award winner) and the Wissahickon Creek Infiltration Basins And Riparian Corridor Project. He manages a full-time staff of six and a seasonal staff of 130, and manages an annual operating budget of \$1.2M.

James Shallenberger, a Pennsylvania-licensed Professional Geologist, has a B.S. in Geosciences (Pennsylvania State University, 1993) and an M.S. in Environmental and Forest Biology (State University of New York – College of Environmental Science and Forestry, 2001). Mr. Shallenberger is a senior project manager at Princeton Hydro with nearly 15 years experience as a consulting geologist and ecologist with emphasis on water resource applications and ecological risk assessment.

Lauren Spitz is the Eli Kirk Price Flora of Pennsylvania Intern at the Morris Arboretum of the University of Pennsylvania. Ms. Spitz is a May 2007 graduate of Ithaca College where she earned a degree in Environmental Studies with a minor in still photography. She is nationally certified in wetland delineations.

Stanley Stubbe is a lighting consultant to municipalities in Chester, Bucks, Delaware, Montgomery, and Berks Counties assisting in writing lighting ordinances and reviewing developers' submissions and installed lighting for conformance with ordinance requirements. He is past chairman of the North Coventry Township Planning Commission, member emeritus and national committee officer of the Illuminating Engineering Society of North America, member and past president of Green Valleys Association, member of the Federation of Northern Chester County Communities and current president of the Pennsylvania Outdoor Lighting Council, Pennsylvania Section of the International Dark-Sky Association. He understands the municipal process and lighting technology and has a devotion to the importance of watershed environmental protection.

Faith Zerbe oversees DRN's Waterway Watch Program and provides training to grassroots groups through DRN's River Tech program. Ms. Zerbe is responsible for water quality data analysis, monitoring study designs, and recruiting, training, and maintaining a strong citizen volunteer monitor base. She serves on the steering committee for Pennsylvania's Citizens' Volunteer Monitoring Program which works to increase usability and credibility of volunteer data. Ms. Zerbe joined DRN in 1999 after spending three years as an Assistant Staff Scientist with an environmental consulting firm performing Natural Resource Damage Assessments related to oil spills. Ms. Zerbe has a Bachelor of Science in Biology from Ursinus College.



Delaware Riverkeeper Network
300 Pond Street, Second Floor
Bristol, PA 19007

2010 Schuylkill Watershed Congress

Join us as a representative of your local stream!

When: **Saturday, March 13th, 2010**
Where: **Montgomery College Community College**
West Campus
101 College Drive
Pottstown, Pennsylvania

Registration Fee: **\$40 (Early Registration rate)**
Register by Friday, February 26th, 2010, to qualify for the \$40 Early Registration fee. After February 26th, the Registration fee increases to \$50 per person. Registration fees cover participation in Saturday's program, Saturday morning's hospitality set-up, and lunch.

Cancellation Policy: *Cancellations received by March 5th, 2010, may be subject to a \$25 service charge. Registration fees are not refundable for cancellations received after March 5th.*

What are people saying about the Schuylkill Watershed Congress?

"Great program . . . All the speakers were knowledgeable and informative . . . Introduced me to some interesting new people . . . Our group had a pretty lively discussion, which is always the best gauge of success . . . Smoothly run . . . One of the best workshops each year!"

View detailed Congress information online at www.delawariverkeeper.org