Society for Ecological Restoration (SER) Mid-Atlantic Chapter
9th Annual Conference: March 20-22, 2014
"Ecological Restoration: How Well Does It Work?"
Temple University Ambler Campus

Plenary Speaker Abstracts and Bios

Opening Remarks: Temple University, School of Environmental Design, Department of Landscape Architecture & Horticulture

Pauline Hurley-Kurtz, Department Chair, Associate Professor, Landscape Architect
Mary Myers, Associate Professor, Landscape Architect
John Munro, Assistant Professor, Applied Ecologist

Vision and Outcomes: Establishing a Professional Landscape Architecture Program with a Concentration in Ecological Restoration, *Pauline Hurley-Kurtz & Mary E. Myers, Ph.D.*

In 2013, Temple University's Master of Landscape Architecture (MLA) program became the first professionally accredited landscape architecture program in the US. The Temple University MLA program educates landscape architects to understand and value ecology and applying the science of ecological restoration in all aspects of their design. Pauline and Mary will describe the process and outcomes of establishing a graduate program that integrates ecological restoration with design. Mary will describe the steps involved in visioning, developing, and implementing the program and address how a working knowledge of ecological restoration shapes students' approaches to design in meaningful ways. Examples of a few projects will be presented to illustrate the work students have been doing.

Pauline Hurley-Kurtz holds a Bachelor of Science in Horticulture from University College Dublin, Ireland, and a Master of Landscape Architecture from the University of Pennsylvania. She is currently Associate Professor and Chair of the Department of Landscape Architecture and Horticulture (School of Environmental Design, College of Liberal Arts). She teaches an Urban Community Planning and Design Studio in the MLArch program and is a Capstone Advisor.

Mary Myers, Ph.D., earned her Bachelor of Science in Landscape Architecture from the University of Wisconsin, a Master of Landscape Architecture from Harvard, and a Ph.D. from Heriot Watt University, UK. She is currently an Associate Professor of Landscape Architecture and is responsible for spearheading the development of the Temple University Master of Landscape Architecture Program. Mary teaches several courses within the curriculum, including a Woodland Design Studio, Ecological Aesthetics, and co-teaches the Capstone Studio.

John Munro, Ecologist, Temple University, earned his undergraduate degree in Biology from Eastern University. He joined the Temple University Department of Landscape Architecture and Horticulture in 2010 as a full-time instructor in the new Master's Degree program in Landscape Architecture after teaching for three years as an adjunct instructor with the Department. He brings to the curriculum 30 years of ecological restoration and applied ecology related to terrestrial, wetland, and waterway restoration projects, with extensive work in wetland delineation, wetland mitigation design, and oversight of installations of major design projects. He is one of only a few who has worked extensively in large-scale vegetation salvage work and has invented highly specialized equipment for this purpose.

This year's conference is supported by Temple's Department of Landscape Architecture & Horticulture.

Session I: Plenary Speakers

Reclaiming the Reclamation

John McLaughlin, Director of Ecological Services, Bureau of Environmental Planning & Analysis, New York City Department of Environmental Protection

Mike Feller, Chief Naturalist, New York City Parks

During the multiple administrations of master builder Robert Moses, between 1934 and 1968, the City of New York destroyed approximately 90% of its wetlands. Robert Moses called this program of filling wetlands with solid waste to create parks, highways, public housing, and other infrastructure "reclamation". Since 1992, McLaughlin and Feller have collaborated on innovative large-scale wetland and upland ecological restoration projects that have, in effect, been reclaiming the Reclamation for the next generation. Their talk will describe the collaborative process, art and science, successes and failures, and lessons learned from three decades of work and hundreds of acres "reclaimed".

John K. McLaughlin is the Director, Office of Ecological Services, New York City Department of Environmental Protection (DEP). He has always taken a "hands on approach" in the ecological restoration field for over 26 years, 21 of those years with NYCDEP. Managing a technical staff of five in the fields of botany, ecology, geology and marine biology, he prioritizes natural resources projects and the implementation of innovative ecological restorations and green infrastructure sustainability projects. A particular focus is placed on Jamaica Bay and other sensitive environmental areas to develop protective strategies and environmental stewardship initiatives that reduce habitat loss and align local funding opportunities to leverage federal and state funding for improved effectiveness. He also manages diverse consultant technical teams that include water quality scientists, environmental engineers, landscape architects, and natural resource planners examining a variety of central environmental issues, including the development of comprehensive watershed protection plans and sustainability.

Prior to coming to NYCDEP, he worked at the Fresh Kills landfill and was part of a team of professionals charged with restoring lost environmental function of the site. In addition to the innovative and sustainable restoration of inactive hazardous waste sites, he has developed, implemented and collaborated on many large-scale ecological designs for freshwater and tidal wetlands, coastal woodlands and grassland restorations. He also directed the development of the ecological and water quality strategies of the Jamaica Bay Watershed Protection Plan and has managed the piloting and evaluation of several aquatic pilot studies and innovative nutrient removal strategies. John holds degrees in Ornamental Horticulture and Biology.

Michael J. Feller was the Chief Naturalist of the New York City Department of Parks & Recreation, Natural Resources Group until retiring at the end of February after 31 years at Parks. He has a degree in Anthropology from SUNY-Albany and has done graduate work in Archaeology, Ethnobotany, Entomology, and Cultural Ecology. Mr. Feller supervised natural resources protection throughout New York City and has overseen hundreds of acres of freshwater and salt marsh, grassland, and forest restoration. Mike is the recipient of the Municipal Arts Society's Stubbs Davis Award and the EPA Region 2 Environmental Quality Award.

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Creating Constituency, Continuity and Conservation for Recovering Urban Ecosystems: Lessons from Baltimore and Other Urban Places

William Burch, Emeritus Faculty Advisor, Urban Resources Initiative, Yale School of Forestry & Environmental Studies

Bill Burch will give us a preview of some of his current thinking related to two books he is in the process of co-authoring. His presentation builds on a paper presented at the International Conference on Alishan Centenary Forestry in Chiayi, Taiwan in 2011. Bill introduces the scholarly concept that presently there is no restoration of ecosystems without human community revitalization/human actions being integral within that place. He investigates the paradigm that all forestry-related activities of this day and age are actually restoration ecology and uses examples from here and abroad. For instance, in developing countries such as Nepal, restoring the high Himal forests is an act of restoration ecology and without including the local people it is not possible, nor is it sustainable. Using examples closer to home, Bill will draw upon restoration ecology work done in Philadelphia, Baltimore and New Haven.

William Burch, Frederick C. Hixon Professor Emeritus of Natural Resource Management and Senior Research Scientist, Yale School of Forestry & Environmental Studies, has held research and management positions with the USDA Forest Service, USAID, Connecticut DEP and the National Park Service. His work on wildland recreation behavior was among the earliest, and has expanded to include parks, biosphere reserves, and ecotourism regions in Asia, South and North America, and Europe. His recent work on protected areas has been in Nepal, Bhutan, and the parks and open spaces of Baltimore. Professor Burch is principal investigator of a six-year monitoring and evaluation project on the $26 million restoration of Philadelphia's Fairmount Park system. Some of his original work on community/social forestry systems continues in Nepal, Thailand, China, and inner cities across the US. In 1988 he became a co-principal investigator of an EPA/NSF-funded water and watersheds project and an NSF-funded Long Term Ecological Study (LTER) in the Baltimore/ Chesapeake region. His research in developing a unified ecosystem management approach that fully includes human behavioral variables has been applied in three watersheds in Baltimore, and is now carried forward by LTER research nationally. In 2000, he was awarded a John Eadie fellowship by the Scottish Forest Trust to work in the United Kingdom on community forestry and urban ecology issues. William obtained his B.S. and M.S. from the University of Oregon and a Ph.D. from the University of Minnesota.

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Session II: Plenary Speakers

Hybrid Living Shorelines: A Systematic Approach to Maximized Coastal Resiliency and Ecology
Doug Janiec, Senior Project Scientist at Cardno ENTRIX
William E. Young, RLA, PWS, Sr. Ecologist, Young Environmental, LLC and Adjunct Professor, University of Pennsylvania & Temple University

To date there has been no consistent qualitative or quantitative definition applied to the term 'resilience'. Superstorm Sandy made it abundantly clear that our natural systems tended to fare better than man-made features and structures. Therefore, most agree that a significant part of our coastal resiliency is directly tied to the preservation and protection of our natural areas. If we attenuate the erosive energies contacting our coastlines, we could build in resilience by implementing living shorelines and protecting existing natural systems. Help may be available through the application of a Hybrid Energy Attenuation System. The cornerstone of the system is the initial energy attenuation that disperses the brunt of wave energies prior to contacting the coastline. This system transforms an area of high erosion to an accretion zone. In addition, this system offers unprecedented resilience, and is a valuable tool in the coastal resilience toolbox.

Douglas Janiec has been investigating, assessing, restoring, and monitoring natural resources for more than a quarter of a century. His experience ranges from ecological risk assessment, to toxicology, to regulatory issues that impact terrestrial, aquatic, fresh water and tidal systems, and climate change. He has a unique flair for applying innovative technology and simple solutions to complicated problems. Douglas has worked on a number of high-interest technologies for coastal restoration and resilience involving living shorelines and wave energy attenuation. Taking this a step further, he has merged the technologies into a spin-off technology called 'hybrid living shoreline systems', which is emerging as one of the premier technologies for sea level rise resilience. He is working extensively with National Estuary Programs, local, state, and federal agencies, and in the private sector.

William E. Young, RLA, PWS, Young Environmental, graduated with a B.S. from SUNY College of Forestry at Syracuse in Environmental Sciences/Landscape Architecture and earned a M.S. in Urban Design from Pratt Institute in Brooklyn, NY. Bill is president and founder of Young Environmental, Jackson, NJ, and has built, managed, designed and monitored over 350 acres of wetlands in New York, New Jersey and Pennsylvania. He now teaches Ecology at the University of Pennsylvania and Temple University. Bill is a Professional Wetland Scientist, Registered Landscape Architect in New York and Florida, and a member of the Society for Ecological Restoration, Society of Wetland Scientists, the Partnership for NJ Plant Conservation, NJ Native Plant Society, Ecological Society of America, and the Association of Energy Engineers.

The Potential Role of Wetland and Conservation Mitigation Banks in Ecological Restoration and Ecosystem Resilience in an Era of Climate Change and Funding Challenges
Jennifer A. DiLorenzo, M.S., C.F.M, Dir. of Environmental Management, Ecological Resources Group, LLC

Wetland mitigation banks have been utilized in various states in the US as a way to ensure that the national goal of "no net loss" of wetlands is achieved. Similar to wetland mitigation banks, the US Fish and Wildlife Service approves a specified number of credits that bank owners may sell if they permanently protect land and manage it for endangered, threatened, or at-risk species. This presentation discusses the Oxford Wetland Mitigation Bank, located in northwest New Jersey, its design and credit potential, and the banking process at the state and federal levels. It also discusses the potential for wetland and conservation banks to serve as green infrastructure, as a technique for ecological restoration, and as providers of ecosystem resilience, and the role of wetland and conservation banks as a potential mechanism for addressing climate change and private sector investments.

Jennifer DiLorenzo is the Director of Environmental Management for Ecologic Resources Group LLC., a company formed to create wetland mitigation banks. She has held positions as the Bureau Chief in the Division of Watershed Management, NJDEP and as a Technology Program Manager for the New Jersey Office of Maritime Resources. In the policy arena, Jennifer worked as a marine and environmental scientist for the New York and New Jersey state legislatures. In the private sector, she worked on environmental restoration research projects for Najarian Associates, Environmental Connection, and Dewberry. She most recently served as Senior Policy Advisor for President Obama's Hurricane Sandy Rebuilding Task Force under the U.S. Department of Housing and Urban Development and as Coastal Engineer for FEMA's Community Recovery Assistance Program, and holds an adjunct faculty position at Monmouth University's School of Science.

Session III: Concurrent Sessions (See Concurrent Session Document)

Session IV: Plenary Speakers

Mined Land Restoration: Soil Matters
Richard Stehouwer, Professor, Environmental Soil Science, Penn State University

Land disturbance from surface mining results in major disruptions of many ecosystem processes and services once provided by the mined area. Because soil is critical to these ecosystem processes and services, their restoration cannot be achieved without restoration of soil function. Soils are dynamic bodies that result from weathering and synthesis reactions in parent rock and organic materials, occurring (usually) over vast time scales, and influenced by climate, landscape and biotic factors. The premise of this paper is that restoration of drastically disturbed soils must consider and build on these natural soil formation processes and factors. Creating conditions that closely mimic these factors will have the greatest chance of restoring soils and landscapes to their pre-mining condition. However, disturbance also presents an opportunity to transform landscapes to post-mining uses that may not have been possible on the undisturbed land. In such cases, restoration plans must consider whether soil formation factors can be sufficiently altered to result in formation of soil with characteristics and properties suitable to the desired land use. These concepts will be illustrated with reference to mine restoration projects and experiments in the Appalachian coal mining region.

Dr. Richard Stehouwer has been on the faculty at Pennsylvania State University since 1997 and served as the State Extension Specialist in Environmental Soil Science until 2012. His extension program covered soil-based recycling of by-product materials, compost production and the utilization/recycling of urban and suburban organic materials back to agricultural soils, manufactured topsoils, mine reclamation, and remediation of contaminated soils. Richard teaches Introductory Soil Science to more than 500 students each year, and a course on Forest Soil Management, while maintaining an active applied research program in environmental soil science. Present and recent research projects include organic carbon and nutrient dynamics in abandoned mined lands reclaimed with manure; production of biomass crops on reclaimed mined lands; use of spent foundry sands and composts as components of manufactured topsoil; and nutrient flux from mined lands reclaimed with biosolids and spent mushroom substrate. He received his Ph.D. in Soil Science from Ohio State University, a M.S. in Agronomy from Cornell University and a B.S. in Biology from Calvin College.

Effective Soil Restoration: Examples from Unconventional Gas Development to the Urban/Suburban Interface

Dr. Patrick Drohan, Associate Professor of Pedology, APSS, Department of Ecosystem Science & Management, Penn State University

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Dr. Patrick Drohan's research examines people's use of landscapes and the accompanying changes in soil function across the larger ecosystem, addresses basic science questions, and demonstrates how new knowledge can be used in applied research to improve land management and ecosystem stability. He has taught over 24 different courses in the natural and physical sciences, and currently teaches urban soils; soil genesis and classification; field interpretation of soil properties; and a study-abroad course in Scotland on soil and society's co-evolution through time. Currently, his research focuses on addressing changes in dynamic and inherent soil properties across time scales. He is an Associate Editor for *Soil Use and Management*, a member of the Soil Science Society of America's (SSSA) Council of Soil Science Examiners, and past SSSA Pedology Division chair. He is a co-founder of the Smithsonian Soil Exhibit Project "Dig It", and in recognition of his work in support of Dig It, he received a President's Citation for Outstanding Service from the Soil Science Society of America. Dr. Drohan received a Ph.D. in Soil Science, Pennsylvania State University, a M.S.in Environmental Pollution Control, Pennsylvania State University, and a B.S. in Natural Resource Management, Cook College-Rutgers University.