

Rain Garden / Bioretention Research and Extension Symposium

May 29th and 30th, 2008

The Heldrich • New Brunswick • New Jersey

An event presented by the Rutgers Cooperative Extension Water Resources Program, New Jersey Sea Grant Extension Program and the USDA CSREES Regional Water Coordination Program for New York, New Jersey Puerto Rico and the Virgin Islands

Introduction

The purpose of the symposium is to cover a wide range of related topics through presentations from the experts in the area of bioretention systems/rain gardens and related stormwater management topics. Researchers will share their latest research findings. Background information about the beginnings of bioretention will be presented along with case studies of implementation and education projects. Panel discussions will explore future research needs and how to bridge the information gaps between researchers, educators and activists.

[Flyer: Rain Garden/Bioretention Research and Extension Symposium](#)

Who should attend?

- Technical professionals
 - Engineers
 - Environmental consultants
 - Landscape and gardening professionals
 - Chemists, biologists, ecologists, horticulturalists
- Educators from higher education, extension and K-12
- Academic and government researchers
- Representatives from state or federal regulatory agencies
- Local government officials or professionals from:
 - Engineering departments
 - Public works
 - Water and sewerage authorities
 - Environmental commissions
 - Planning and zoning boards
- Representatives from non-profit organizations
 - Watershed associations
 - Community groups
 - Environmental policy and advocacy organizations
 - Environmental foundations
- Students in related fields
- And all others interested

Registration

Online: <http://water.rutgers.edu/register.cgi>
Or contact: Cheryl Burdick, Administrative Assistant
(732)932-9800
cburdick@cep.rutgers.edu

Fees

\$250 – Early Registration (on or before May 1, 2008)

\$300 – Standard Registration

\$200 - Student/government/non-profit rate

Partial in-kind scholarships available upon request (explanation of need is required). Contact Cheryl Burdick to submit a request.

All registrations include continental breakfast and buffet lunch for both days and continuous snack and beverage service

Cancellation Policy

In the event that you are unable to attend the conference after you have registered, substitutions with a colleague may be made without penalty. Any cancellation received 2 weeks prior to the event, is subject to forfeiture of all fees.

Agenda

[Click here for a detailed printable version](#)

Thursday, May 29, 2008

8-8:50 AM	Registration/Continental Breakfast
8:50	Opening Remarks
9:20	Session I, Part I Research
10:40	Break
11:00	Part II, Research
12:20	Lunch
1:40 PM	Panel Discussion
2:10	Part III, Research
2:50	Part IV, Research
3:30	Break
3:40	Part V, Research
4:20-5	Panel Discussion

Friday, May 30, 2008

8-9 AM	Registration/Continental Breakfast
9:00	Opening Remarks
9:30	Session II, Part I
10:30	Break
10:45	Session II, Part II
12:05	Lunch
1:20	Session III, Part II
2:40	Break
2:50-3:30	Session III, Part II

Location The Heldrich
10 Livingston Avenue
New Brunswick, NJ 08901
(866) 609-4700
Promo Code 38589 for \$162 rate per night
<http://www.theheldrich.com>

Visitor Information

Transportation

- Directions to the Heldrich (air, train and car) ~ <http://www.theheldrich.com/location/map.asp>
- Link to Amtrak website ~ http://www.amtrak.com/html/stations_A.html
 - Limited stops to New Brunswick Station
 - Major stops at Metropark (to the North) Trenton (to the South) and transfer to New Brunswick Station via New Jersey Transit (\$2.25 one-way from Metropark and \$6.75 one-way from Trenton).
- Link to New Jersey Transit website ~ http://www.njtransit.com/hp/hp_servlet.srv?hdnPageAction=HomePageTo
 - Take the Northeast Corridor Train Line to New Brunswick Station
 - The Heldrich is about 5 blocks south on George Street at the corner of Livingston Avenue.
 - A taxi stand and bus stop is located on the southbound side of the tracks.
- Link to Newark Liberty International Airport website ~ <http://www.panynj.gov/CommutingTravel/airports/html/newarkliberty.html>
 - Use the Airtrain Newark ~ <http://www.panynj.gov/airtrainnewark/> monorail from any Newark Liberty terminal to transfer to New Jersey Transit (\$12.75 one-way total). Take the Northeast Corridor Line to New Brunswick Station (towards Trenton).
 - A Taxi from Newark Airport will cost around \$75.
- Link to Philadelphia International Airport website ~ <http://www.phl.org>
- Rutgers University campus bus service ~ <http://parktran.rutgers.edu/campusbuses.shtml>
 - Free
 - Lines EE and F stop at or near the Heldrich, but only the F stops at the New Brunswick Train Station. The bus stop is on the southbound side of the tracks at the bottom of the north-most end of the train platform (at the corner of George and Somerset Streets).
- Other transportation links ~ <http://nbweb.rutgers.edu/menus/transportation.shtml>

Parking

- Valet Parking at Hotel Entrance (\$29 per night or \$19 for the day)
- Parking garage at the Corner of New and George Streets inside Rockoff Hall ~ <http://maps.rutgers.edu/building.aspx?1082> one block from The Heldrich. The cost is \$1.50 per hour (\$14 maximum per day)
- Metered street parking has a two hour maximum during weekdays but is free weeknights/weekends.
- Link to the New Brunswick Parking Authority ~ <http://www.njnbpa.org/> for information about other parking facilities around town
- Parking at Rutgers University ~ <http://parktran.rutgers.edu/visitors.shtml>

Tourism

- New Brunswick City Market ~ <http://www.newbrunswick.com/>
- City of New Brunswick, New Jersey ~ <http://www.cityofnewbrunswick.org/>
- Explore Rutgers – New Brunswick ~ <http://nbweb.rutgers.edu/visitors.shtml>
- New Jersey ~ <http://www.nj.gov/travel/>
- Pennsylvania ~ <http://www.visitpa.com/visitpa/home.pa>
- Philadelphia ~ <http://www.gophila.com/>
 - Take Amtrak or New Jersey Transit (transfer to the SEPTA at Trenton Station)
 - It is about a one hour drive by car
- New York City ~ http://www.nyc.gov/portal/site/nycgov/?front_door=true

- Take the New Jersey Transit Northeast Corridor Line to New York Penn Station ~
http://www.njtransit.com/sf/sf_servlet.srv?hdnPageAction=TrainSchedulesFrom for Midtown or Transfer to the PATH ~
<http://www.panynj.gov/CommutingTravel/path/html/> at Newark Penn Station for Downtown destinations
- Buses to the Port Authority Bus Terminal at Times Square can be taken from the New Brunswick Train Station bus stop at the corner of Somerset and George Street.

Presenters

Michael Borst, Project Manager, United States Environmental Protection Agency

Presentation Topic: Current research projects at the Urban Watershed Management Laboratory

Michael Borst is a Project Manager with the Urban Watershed Management Research Branch of the National Risk Assessment Laboratory of the Office of Research and Development of the United States Environmental Protection Agency in Edison, New Jersey.

The research focus of the laboratory is on the drainage and treatment systems of the urban environment, the structural integrity of such systems and the effects of discharges to receiving waters. The laboratory researches, develops and demonstrates technologies, systems and methods to manage the risks to public health, property and the environment from wet-weather flow.

http://www.epa.gov/facilities_network/watershed.html

<http://www.epa.gov/ednrmrl/>

Larry Coffman, President, Stormwater Services, LLLP

Presentation Topics:

- Introduction to the bioretention program on May 29th, 2008
- "Bacteria" Optimized "Filterra" Bioretention Media Blend: Discussions of the Benefits, Mechanisms and Efficiencies for Bacteria Removal (with Mindy Ruby)

Larry Coffman was an Associate Director of the Prince George's County, Maryland's Department of Environmental Resource's. He was responsible for the oversight of the County's NPDES stormwater program, flood control program, watershed / environmental restoration programs, stormwater capital improvements program, water and sewer planning and outreach programs. He has over 34 years of experience in stormwater management, water resources protection, and environmental restoration.

Mr. Coffman has conducted numerous Low Impact Development workshops and training seminars on behalf of the LID Center for clients that include: the Department of Defense; ASCE; municipal, county and state governments; regional authorities; universities; watershed protection groups; and private consulting firms. He currently operates his own environmental consulting firm specializing in Low Impact Development technologies training and educational services.

Mr. Coffman has authored numerous papers and articles on stormwater management and was the pioneer of the innovative stormwater management practice Bioretention or "Rain Gardens". He is the principal author and architect of Prince George's County's national award winning "Low Impact Development Design Strategies, An Integrated Design Approach" an alternative "decentralized at the source" approach to stormwater management.

Allen Davis, Ph.D., P.E., Professor, University of Maryland

Presentation Topic: Design optimization metrics and performance with regard to water quality improvement

Dr. Davis is Professor of Civil and Environmental Engineering at the University of Maryland and Director of the Maryland Water Resources Research Center. Prof. Davis has been working on water quality and treatment issues at the University of Maryland for nineteen years, after earning

his Ph.D. degree at the University of Delaware. For over a decade, he has been investigating sources and treatment of pollutants in urban stormwater runoff with a focus on low impact practices, particularly bioretention. He is a licensed professional engineer in the State of Maryland and a Fellow of the American Society of Civil Engineers.

<http://www.ence.umd.edu/~apdavis/apdavis.htm>

Madeline Flahive DiNardo, County Agricultural Agent, Rutgers Cooperative Extension

Presentation Title: *Stormwater Management in Your Backyard: An Extension Education Program for Homeowners* (with Christopher Obropta, Ph.D., P.E.)

Madeline Flahive DiNardo is the County Agricultural Agent and Master Gardener Coordinator for Rutgers Cooperative Extension of Union County. She is currently collaborating with the Rutgers Cooperative Extension Water Resources program to conduct the Stormwater Management in Your Backyard in Union County, NJ, Ulster County, NY and Frederick County, VA with Land Grant project partners.

<http://njaes.rutgers.edu/county/>

Stacey Hutchinson, Ph.D. Associate Professor, Kansas State University

Presentation Title: Ecologically-Engineered Stormwater Management: More than Just Urban Landscaping

Stacy Lewis Hutchinson is an associate professor of Biological and Agricultural Engineering at Kansas State University with teaching and research responsibilities in the area of ecological/natural resources conservation engineering. Her research focuses on the use of vegetated systems for the mitigation of non-point source pollution and the remediation of contaminated soil and water. Dr. Hutchinson is currently working to develop design criteria for sustainable urban stormwater runoff systems and assessing the impact of riparian buffers for improving water quality on military maneuver grounds.

<http://www.bae.ksu.edu/>

William Lord, Area Specialized Agent, North Carolina Cooperative Extension

Presentation Title: Low Impact Development for a Wal-Mart in North Carolina

William Lord has a B.S. in Horticultural Science and a M.S. in Entomology from N.C. State University. He began working for the N.C. Cooperative Extension Service in 1986 as an agricultural extension agent and became an area environmental agent in 1996. Mr. Lord has worked with agricultural nutrient management, agricultural best management practice management, and numerous agricultural watershed water quality improvement and demonstration projects. In the past 7 years his focus has been on urban stormwater management with research and demonstration projects involving stormwater wetlands, bioretention, permeable pavement, and green roofs. As a member of Extension's Neuse Education Team and Watershed Education Network, Mr. Lord teaches short courses in North Carolina and the Eastern U.S. on stormwater BMP design, construction, and maintenance. Current projects include teaching a stormwater BMP maintenance and inspection short course and certification program, and installation of a series of stormwater BMP demonstration and research projects in 3 municipalities and a Wal Mart in the Tar- Pamlico river basin.

<http://www4.ncsu.edu/~wglord/>

William Lucas, Ph.D. Candidate, Griffith University, Australia

Presentation Topics:

- Bioretention applications and case studies
- Nutrient removal performance

Bill Lucas provides advanced stormwater management designs for both new construction and urban retrofits. He wrote Delaware's Green Technology Manual, and is co-chair of the LID Computations Task Committee of the ASCE/EWRI. This committee of national experts is drafting a state-of-the-science synthesis of the processes involved in LID to develop the basis for their

computational approaches. As part of his doctorate research, he is currently investigating bioretention systems formulated for improved nutrient retention.

<http://www.griffith.edu/au>

Mona Menezes, Stormwater Educator, City of Columbia, Missouri

Presentation Title: *ShowMe Yards & Neighborhoods: Creating Environmentally Savvy Consumers & Business Professionals*

Mona Menezes helped build a team to successfully launch ShowMe Yards and Neighborhoods for a Missouri city of 90,000 people. She is also responsible for fulfilling the National Pollutant Discharge Elimination Systems goals of outreach, education and public involvement.

The Show-Me Yards program has had nearly 1000 people participate in watershed-friendly practices since its inception 3 years ago. Mona has a graduate degree in forestry from the University of Missouri, and often uses a total ecology approach to stormwater education.

<http://www.gocolumbiamo.com/PublicWorks/StormWater/index.php>

Christopher C. Obropta, Ph.D., P.E., Assistant Professor, Rutgers University

Presentation Title: *Stormwater Management in Your Backyard: An Extension Education Program for Homeowners* (with Madeline Flahive DiNardo)

Christopher C. Obropta is the Assistant Extension Specialist in Water Resources with Rutgers Cooperative Research & Extension, and he is an Assistant Professor with the Department of Environmental Sciences at Cook College, Rutgers University. He has a doctorate in Civil Engineering from Stevens Institute of Technology, a M.S. in Civil Engineering from New Jersey Institute of Technology, and a B.S. in Civil Engineering from New Jersey Institute of Technology. Prior to joining Rutgers, Dr. Obropta was an environmental consultant for 12 years at Omni Environmental Corporation. Dr. Obropta has a background in watershed management, water quality modeling, hydrologic and hydraulic modeling, and coastal engineering. His specific experience includes watershed restoration, onsite wastewater treatment system design and management, wasteload allocations and TMDL studies, stormwater management, wetland design, effluent dilution analyses, longshore sediment transport, computer-aided design, and Geographic Information Systems (GIS). He teaches Bioresource Engineering Design I & II, where he directs student design teams to develop solutions to complex real-life engineering problems.

Robert Roseen, Ph.D., P.E., Director, The University of New Hampshire Stormwater Center

Presentation Topic: Frost penetration and hydraulic performance, and seasonality of WQ performance

Robert Roseen, is the Director and Co-PI for the Center for Stormwater Technology Evaluation Verification. His responsibilities include coordinating the development of the research facility for the Environmental Research Group at the University of New Hampshire. The development involves permitting and contracting procedures, development of collaborative efforts with manufacturers, site design for stormwater treatment devices, selection of treatment technologies (Best Management Practices), evaluation of site hydrology, and sampling and monitoring design.

Dr. Roseen has broad experience in water resources including hydrology and hydraulics evaluations, restoration and enhancement alternatives, dam removal assessment, groundwater investigations, nutrient and TMDL studies, and remote sensing and GIS applications. He has been working for over 5 years in New Hampshire's Great Bay in groundwater-related projects. Research efforts include: characterization of groundwater discharge to Hampton Harbor, NH; development of GIS application extension for use in delineating groundwater discharge zones; and groundwater mapping. He has lectured on hydrologic monitoring techniques, sediment transport and sampling, velocity profiling, stream restoration, dam removal, river mechanics, open channel flow, fluid mechanics, and environmental systems analysis.

<http://www.unh.edu/erg/cstev/index.htm>

Mindy Ruby, Research and Development Manager, Filterra, Inc.

Presentation Title: Bacteria Optimized Filterra Bioretention Media Blend: Discussions of the Benefits, Mechanisms and Efficiencies for Bacteria Removal (with Larry Coffman)

Mindy Ruby is the Research & Development Manager of the Filterra Stormwater Treatment Products Division. She is responsible for the technical development and investigation of products for Stormwater treatment, as well as producing technical reports and assisting with submissions for approvals.

www.filterra.com

Robert Traver, Ph.D., P.E., Associate Professor, Villanova University

Presentation Title: Green Infrastructure BMPs

Research topic: Hydrologic performance for small volume storms

Dr. Traver conducts research on topics that include modeling of stream hydraulics, urban hydrology, water quality, and measures to mitigate stormwater effects of urbanization. He has created and serves as the Director of the Villanova Urban Stormwater Partnership, which is actively researching a variety of Best Management Practices that have been constructed on campus. <http://www.villanova.edu/VUSP>

...and other invited presenters.

Sponsors

