



WATER PAGES

*A Quarterly Newsletter Produced by the Rutgers Cooperative Extension
Water Resources Program: Creating Solutions for Water Quality Issues in NJ*

*Winter 2010
Edition*

One Barrel at a Time Co-op

The New Jersey Department of Environmental Protection, the Rutgers Cooperative Extension Water Resources Program, and Lucid Graphics are coordinating the "One Barrel at a Time Co-op," where artists beautify rain barrels to be auctioned off to the public. The goal of the "One Barrel at a Time Co-op" is to help the environment by having residents statewide bid on beautiful rain barrels that help conserve water and reduce stormwater runoff from entering the storm drain system, thereby preventing flooding and pollution from entering New Jersey's lakes and streams. By engaging local artists, we hope to make rain barrels more appealing to the general public while bringing local art to a wider audience. A rain barrel is a 55-gallon recycled food-grade container that is placed at the downspout of a roof to collect rainwater. The water collected can be used to water flowers, lawns, shrubs and trees. The collected rainwater can also be used to rinse hands/feet, tools, or muddy shoes.

Rain barrels can also be a canvas for artists to create beautiful works of art. Through the "One Barrel at a Time Co-op" Rutgers will partner with New Jersey artists that apply and are selected to paint rain barrels. Once rain barrels are painted and returned in late January, the finished rain barrels will be on display in the following towns: Trenton, Livingston, Belmar, Egg Harbor Township, Rahway, and East Greenwich where prospective buyers can get a glimpse of them from February 2010 through April 2010. Potential display venues include libraries, stores, and other popular spots in these towns. They will also be displayed on the Rutgers Cooperative Extension Water Resources Program website at www.water.rutgers.edu.

With the help of Lucid Graphics, the barrels will then be auctioned off via eBay® until April 30, 2010 to the highest bidder with the profit going back to the artist. We hope this project will greatly contribute to the public's understanding of New Jersey's need for water conservation while furthering the art community's creative reach.

The application closing date was December 18, 2009, and we are happy to report we exceeded our expected number of entrants! It has been a pleasure meeting the artists when they have come to pick up their barrels; they are all very enthusiastic about our program. We are all looking forward to seeing the beautified barrels!



Start with a food grade, converted barrel



Design, paint and voila! Joan Horn's creation.

Pervious Surfaces Save the Day

Parking lots, roads and driveways are some of the impervious surfaces that receive rainwater and shuttle the runoff directly to a catch basin in the side of a road. Once the stormwater is in the catch basin, it is routed to the nearest stream causing sudden increases in the volume and the velocity of the stream. These connected impervious surfaces keep the rainwater from infiltrating into the groundwater where it can become a source of aquifer recharge and serve to maintain the baseflow of streams. One solution to the runoff problem caused by traditional parking lots, roads and driveways is to install pervious systems, such as porous pavers and porous asphalt.

The Water Resources Program has recently completed two implementation projects involving the installation of pervious surfaces in the Troy Brook Watershed in Parsippany-Troy Hills, New Jersey. The funding for these projects is provided by a 319(h) grant from the New Jersey Department of Environmental Protection with pass through funding from the U.S. Environmental Protection Agency. The purpose of the 319(h) grant is to provide federal leadership to address nonpoint source pollution by providing grant money to states, territories and Indian tribes for a wide variety of activities including technical assistance, financial assistance, education, training, technology transfer, demonstration projects, and monitoring to assess the success of specific nonpoint source implementation projects. Implementation projects to address water quality and water quantity issues were identified in the Troy Brook Regional Stormwater Management Plan produced by the Water Resources Program in 2007.

One recommendation in the Regional Stormwater Management Plan was to reduce the total amount of impervious surfaces in the watershed by replacing sections of low traffic parking lots with a pervious surface. Pervious surfaces such as porous asphalt or porous pavers are a new technology that have not yet been widely applied. Retrofitting an entire parking lot with pervious pavers could be cost prohibitive, so creative alternatives were adopted for the two implementation projects in the Troy Brook Watershed.



Parsippany-Troy Hills

At the Normandy Real Estate Partners on Cherry Hill Road in Parsippany, select sections of a 58,000 sq. ft. parking lot were retrofitted with porous pavers. The sections of the parking lot selected for retrofitting were located at the low points of the parking lot and surrounded the catch basins. The project at the Parsippany Public Works site involved the installation of cross hatched pavers on a fire road where grass was planted in the openings of the cross hatched pavers. This road receives a great deal of runoff that was flooding nearby buildings. Since these pervious paver systems have extremely high infiltration rates (300 to 1,000 in/hour), the runoff generated from much larger areas of impervious surfaces can be routed to these smaller sections where these sections will provide temporary storage of the runoff and eventual infiltration into the groundwater system.

Thanks to the participation of the Township of Parsippany and Normandy Real Estate Partners, the pervious pavement projects that were installed will serve to infiltrate the rainwater where the rainwater falls, as well as receive runoff from upland areas and will help to recharge groundwater supplies well into the future.

www.water.rutgers.edu



It's Almost Here: The Cohansey Watershed Restoration and Protection Plan

With funding from the New Jersey Department of Environmental Protection (NJDEP), the RCE Water Resources Program has been working with RCE of Salem and Cumberland Counties and the Cumberland-Salem Conservation District to address water quality problems in the Upper Cohansey River Watershed (Cohansey Watershed). Results of water sampling efforts and recommendations on how to correct water quality problems will soon be put forth in the Upper Cohansey River Watershed Restoration and Protection Plan coming this spring.

The Cohansey River Watershed is 31 square miles, includes 32 miles of river and streams, and one major surface water body, Seeley Lake. The Upper Cohansey River Watershed is comprised of sections of Hopewell, Stow Creek, and Upper Deerfield Townships, Cumberland County and Alloway Township and Upper Pittsgrove Township, Salem County. The watershed is dominated by agricultural land uses, including row crops, field nurseries, sod farms, container nurseries, pastureland, orchards and vineyards, and confined animal feed operations.

A Total Maximum Daily Load (TMDL) for fecal coliform bacteria was developed for the Cohansey River in 2003. The TMDL stipulates that a 66% reduction in fecal coliform bacteria loading to the Cohansey River is needed to achieve water quality standards. Unfortunately, fecal coliform contamination is still present in the Cohansey Watershed. Using fecal coliform as an indicator solely shows the potential of fecal pollution and does not identify the source(s) of fecal pollution. Therefore, the challenge in the Cohansey Watershed was to distinguish the sources of bacterial contamination. Prior to any targeted remediation strategy, it is imperative that potential sources of pollution be identified.

Adding to the issue is that several possible sources are located within the Cohansey Watershed. With the majority of the Cohansey Watershed using septic systems, failing systems are a potential source of fecal contamination and for

those areas serviced by wastewater facilities, failing infrastructure could result in bacterial contamination. Other sources throughout the watershed include wildlife (deer, raccoons, muskrats, ducks, Canada geese, snow geese) and agricultural practices including the spreading of manure and its use as a fertilizer. Livestock access to waterways can also lead to direct impact on streams; locations where livestock have access to surface waters have been identified. Domestic pet waste is also a potential source of pathogen pollution when not properly disposed.

Microbial source tracking (MST) techniques were used in the Cohansey Watershed to sort through the variety of potential sources. MST involves finding genetic markers within the bacteria and using those to determine if the sources are primarily made up of human or bovine bacteria. This information will be used to properly target restoration efforts in the Cohansey Watershed.

The full report will describe the sources of water quality problems from within the Cohansey Watershed and provide potential solutions to improve these problems. For more information on the Upper Cohansey River Watershed Restoration and Protection Plan, please visit the Water Resources Program website at www.water.rutgers.edu.



Pastureland with cows in the Upper Cohansey River Watershed

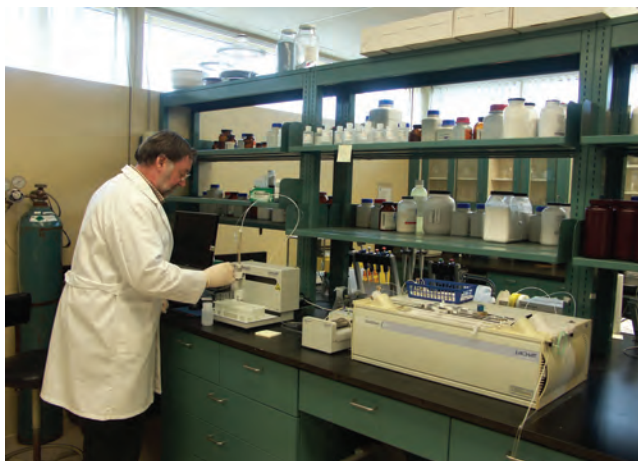
Did you know NJAES Has A Water Testing Laboratory?

Welcome, Jeremiah Bergstrom!

The NJAES Water Testing Laboratory, a New Jersey Department of Environmental Protection (NJDEP) certified laboratory, provides surface water quality testing services for nutrient, bacteria, and inorganic parameters. On-site evaluations, data analysis and interpretation, and equipment rental services are also available. The laboratory is a resource for New Jersey residents, volunteer monitoring groups, non-profit organizations, researchers, and government agencies. Along with providing technical assistance to New Jersey stakeholders, the Water Testing Laboratory is dedicated to promoting environmental solutions for water resources through collaborative research, education and outreach efforts.

The NJAES Water Testing Laboratory is centrally located at the Rutgers EcoComplex in Bordentown, NJ. The EcoComplex serves as a university-based resource hub for the State's environmental and renewable energy issues. The Water Testing Lab serves as a key component of the Rutgers EcoComplex's mission to provide viable solutions to New Jersey's water resources issues.

For more information, visit the Water Testing Laboratory at
<http://ecocomplex.rutgers.edu/watertestinglab>
or drop them a line at
watertestinglab@aesop.rutgers.edu.



Jeremiah Bergstrom joined the Water Resources Program in December 2009 as a Senior Project Manager. Jeremiah is a licensed Landscape Architect with a background in ecological restoration, watershed planning, stormwater best management practice design, native plant materials, GIS and data management. He has extensive experience in inventory and analysis of natural, recreational, historic and scenic resources in regional and watershed planning. Jeremiah has been responsible for design development, environmental permitting, construction documents, technical specifications, cost estimating, public bidding, and construction administration of multiple landscape design and ecological restoration projects. Jeremiah frequently facilitates planning and design efforts for multi-discipline collaborations and implements a majority of his work in partnership with nonprofit, academic, municipal and county entities. To contact Jeremiah, please call 732-932-9800 ext. 6126 or email him at jbergstrom@envsci.rutgers.edu

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