WATER PAGES

Produced by the
Rutgers Cooperative Extension
Water Resources Program

Creating solutions for water quality issues in New Jersey

SPRING 2011

4-H RAIN BARREL ART EDUCATION PROGRAM

Ellen Williams, Expressive Arts 4-H Agent, Rutgers Cooperative Extension

A Rain Barrel Art Workshop held by the Rutgers Cooperative Extension in Essex County, New Jersey, March 2011.

The Rain Barrel Art Education Program, co-sponsored by the Water Resources Program and the Expressive Arts 4-H Programs, engages youth in experiential learning which promotes water conservation and artistic self-expression. Artists who had designed rain barrels for the "One Barrel at a Time Co-op" program serve as 4-H volunteers, teaching youth about visual arts, as well as water conservation. The rain barrel, a vessel which collects water for future use, also becomes a canvas for self-expression. Rain barrel artists conduct "hands on workshops" with youth and conduct in-service training workshops for teachers. In addition, family workshops enable guardians to learn how to install a rain barrel in their own homes. The Rain Barrel Art Education Program promotes environmental stewardship and visual arts education. Each workshop includes a lesson provided by a Water Resources Program staff member and rain barrel art design leadership by one or more Rain Barrel Artists.

Since its inception in 2010, the Rain Barrel Art Education Program has offered two programs for the Zimmerli Museum. As part of the museum's fall 2010 Water Theme exhibit, Rain Barrel Artists offered a workshop entitled "Making Rain Barrel Art – Conserving Our Water, Celebrating Our Creativity" for the museum's Passport to Art Saturday family program. A museum in-service training workshop was offered for Piscataway school art teachers, as well. Also, two county 4-H programs have benefitted from the Rain Barrel Art Education Program; as a result of workshops conducted with youth in the Gloucester and Essex County 4-H programs, rain barrels will be installed at the Rutgers Cooperative Extension offices in those counties. Evaluations obtained from participants in the museum and 4-H club workshops reveal that the environmental and art education information is being absorbed, with plans for application of that knowledge. The following are quotes from participants:

"I learned good art techniques,"

"I learned how a rain barrel works and how it helps the environment," "You can use themes, symbols or designs to decorate the rain barrels. Rain barrels collect the rain when it falls instead of letting it flow to the gutter as waste. We plan on making a rain barrel at home."

The rain barrel artists are available to work with youth from grades K-13 in 4-H programs throughout the State and to conduct staff in-service programs for 4-H staff, volunteers and school faculty. To request more information on the 4-H Rain Barrel Art Education program, contact Ellen Williams, Expressive Arts 4-H Agent; Rutgers University, Waller Hall Room 113, 59 Lipman Avenue, New Brunswick, NJ 08901; (732)932-9214 (phone); (732)932-8956 (fax); williams@njaes.rutgers.edu. (e-mail).

THE RAIN GARDEN MANUAL OF NJ WINS AWARD

The Rutgers Cooperative Extension Water Resources Program and the Native Plant Society of New Jersey have been awarded the New Jersey American Society of Landscape Architecture (NJASLA) Merit Award for Landscape Architecture Communications for the *Rain Garden Manual of New Jersey* publication. The award was presented to Rutgers Cooperative Extension Water Resources Program and the Native Plant Society of New Jersey at the NJASLA Award Ceremony on January 31, 2011 at Trump Taj Mahal Casino, Atlantic City, New Jersey.

Rain gardens are an easy way for everyone in New Jersey to help protect our State's precious water resources and add to the health and diversity of our native habitats and landscapes. These shallow landscaped depressions are able to intercept, treat, and infiltrate stormwater at its source, helping to protect the quality of our lakes, rivers, and streams and recharge our groundwater. Every drop of water kept out of our storm drains reduces flooding, mitigates pollution, and improves base flow in our waterways. Using native plants in rain gardens is also an important way to promote biodiversity and preserve native species.

The *Rain Garden Manual of New Jersey* was originally published in April 2005 and was adapted primarily from out-of-state materials. During the Fall of 2009, project partners leading rain garden efforts and programs

A rain garden designed and installed by the Water Resources Program at the Holy Nativity Lutheran Church in Wenonah, New Jersey

throughout the State acknowledged that the Rain Garden Manual needed to be updated and that a New Jersey specific guidance document was needed. This document would address the unique challenges of constructing rain gardens in New Jersey and would also reflect the unique native plant communities and species of the State. The partners collaborated throughout 2010 to compile the most up-to-date materials to include in the new manual and to complete the effort so that residents and communities will now have a technical resource for developing, installing, and maintaining rain gardens in their landscapes.

Through a collaborative effort including landscape architects, engineers, scientists, and educators, the project partners have prepared detailed guidance for planning, installing, and maintaining rain gardens throughout New Jersey. The design of a rain garden involves understanding several interrelated principles including: the hydrologic cycle, nonpoint source pollution, natural resources conservation, hydrology, soil chemistry, horticulture, ecology, landscape architecture, and more. A multi-discipline team of professionals was needed to seamlessly integrate the content for an easy-to-understand guidance document with step-by-step instructions and illustrations.

The *Rain Garden Manual of New Jersey* is intended to provide residents and community leaders the step-by-step procedures needed to create a beautiful and sustainable rain garden in their landscapes. Rain gardens are something everyone can participate in, and this manual guides residents with the tools and answers needed to create and sustain a rain garden on their property.

Rain gardens are one of the simplest and most cost-effective tools homeowners, municipalities, and schools can use to reduce stormwater runoff, improve groundwater recharge, and trap nonpoint source pollutants. While the United States Environmental Protection Agency defines stormwater runoff as the number one threat to water quality, rain gardens are one of the quickest and easiest methods available to mitigate the impacts our developed communities and disturbed landscapes have on the environment. Beyond their function, aesthetics, and ecological benefits, rain gardens also encourage environmental stewardship and community pride.

THE RAIN GARDEN OUTREACH MANUAL NOW AVAILABLE FOR DOWNLOAD!

www.njaes.rutgers.edu/nre/raingarden-manual.asp

The goal of the *Stormwater Management in Your Backyard* program is to empower volunteers to educate their communities about the benefits of rain gardens. The purpose of this Rain Garden Outreach Manual is to provide volunteers, such as Master Gardeners, Environmental Stewards, Master Naturalists and community environmental groups with the materials needed to provide community level outreach. This manual focuses on the "How Are We Going to Clean Up Messy Town?" and "How to Install a Rain Garden at Your Home" programs for children and adults, respectively.

Volunteers using this manual should have a basic understanding of nonpoint source pollution, stormwater management, and rain gardens. Using their knowledge of gardening and the environment, volunteers have the capability to effectively communicate to their communities the importance of stormwater management. The training materials include:

- Tips on coordinating Rain Garden Education Programs
- Lesson Plans for Grades 1-3 and 4-7
- Scripted PowerPoint Presentation for high school and adult audiences
- Program Evaluations for youth and adult audiences
- Program Publicity Materials
- Templates for demonstration rain garden fact sheets

The materials are also available as a CD-ROM. To obtain a copy, please fill out the order form on the webpage. Due to limited grant funding, only one CD-ROM will be made available to each organization. Please allow 2-3 weeks for delivery of the Rain Garden Outreach Manual CD-ROM.

For more information about this manual, please contact Madeline Flahive DiNardo at flahive@njaes.rutgers.edu.

Students from Haddonfield's Central Elementary School's Environmental Club create planting designs for two rain garden installed at their school in April 2011.

NJWRRI HOSTS A SUCCESSFUL POSTER SESSION

The New Jersey Water Resources Research Institute (NJWRRI) hosted a Poster Presentation Session on February 10, 2011 at the Cook Campus Center. Grant recipients from New Jersey's colleges and universities were invited to present results from a variety of water-related research from FY 2006-2010. This session was a tremendous opportunity to demonstrate how a "starter" grant from the NJWRRI helped produce results that benefit New Jersey's water resources. Twenty five people were in attendance.

For more information on future programs, please contact Diana Morgan, njwrri@aesop.rutgers.edu

WHAT YOU NEED TO KNOW ABOUT THE 2011 NEW JERSEY FERTILIZER LAW, A2290

The New Jersey Fertilizer Law, A2290, was created to help protect surface and ground waters from impairment by setting limits for the application of both nitrogen and phosphorus fertilizers on turf areas. This law requires professional fertilizer applicators to undergo training to become certified. The law limits the time that fertilizer can be applied and prohibits fertilizer application during or just before heavy rainfall, onto impervious surfaces and frozen ground. It restricts the amount of nitrogen used per application, as well as the total for the year. It restricts fertilizer content, stipulates that the fertilizer bag label language follows AAPCO standard for turf fertilizer, and establishes buffers. It does, however, exempt commercial farms and golf courses as long as they have a certified professional applicator or a person trained to apply fertilizer. Finally, this law sets fines for the industry for noncompliance. For more information about the 2011 New Jersey Fertilizer Law, go to http://snyderfarm.rutgers.edu/quickfacts.html.

The Village Elementary School's summer rain garden, shortly after installation, Fall 2010.

The Village Elementary School project team receives the Environmental Enhancement Award. Shown here, left to right: Brian Friedlich, Omni Environmental LLC; Amy Boyajian, Water Resources Program; Jeremiah Bergstrom, Water Resources Program and Erica Sollberger, President, NJASLA.

HOLMDEL RAIN GARDENS WIN AWARD

The Water Resources Program and Omni Environmental have been awarded the New Jersey American Society of Landscape Architecture (NJASLA) Environmental Enhancement Award for the Holmdel Village Elementary School Rain Garden Program. The award was presented to the Water Resources Program and Omni Environmental at the NJASLA Award Ceremony on January 31, 2011 at Trump Taj Mahal Casino, Atlantic City, New Jersey.

A series of four (4) rain gardens were designed and constructed in an interior courtyard at the Village Elementary School in Holmdel, New Jersey as part of a Watershed Implementation Plan for the Ramanessin Brook Watershed. The courtyard is located in the center of the school, and the vacant, abandoned space was no longer programmed or being actively used for school activities. The project partners and design team proposed to transform the space into an outdoor learning center functioning as a stormwater best management practice (BMP). This stormwater BMP treats runoff from 10,000 square feet of surrounding rooftop with the purpose of improving water quality and reducing runoff volume from the site. Inside the courtyard all existing gutters and roof drains had been directly connected to the storm sewer system contributing to the erosion and nonpoint source pollution impacts documented in the Ramanessin Brook. Project designers proposed to disconnect the gutters and roof drains from the storm sewer and discharge them into four rain gardens installed to capture, treat, and infiltrate the roof runoff. The entire 18,000 square foot courtyard was renovated as part of the design which included removal of 5,000 square feet of impervious asphalt. Engaging the school staff and students into the project was critical to its success. The project landscape architect and designers collaborated with scientists and educators to facilitate an enrichment program for all staff and students at the school, providing a hands-on opportunity to learn about the functions and benefits

of rain gardens and their positive contributions to the environment. Each of the pre-K through 3rd Grade classes at the school learned about watersheds, stormwater, and the impact human activities have on water quality through a "Messy Town" educational exercise using an EnviroScape® Watershed model. Following the classroom exercise, students then went outside into the courtyard and participated in planting the rain gardens. Under the direction of landscape architects, designers, environmental professionals, and volunteers, each student had the opportunity to install at least one native plant in one of the four rain gardens. In total, over 800 students participated in the educational activity over a three-day period. Funding, coordination and execution of the project involved all levels of community partnership from the New Jersey Department of Environmental Protection, to the County Planning Board, Municipal Environmental Commission, Board of Education and local volunteers.

The Village Elementary School rain gardens design brought structure, function, and education to an otherwise abandoned space. The school now revels in having a "Park Oasis" within its walls providing seasonal interest, beauty, and opportunities for enriched learning experiences. The previously flat, blank canvas of turf and asphalt has been transformed into an organized space with depth, drama, and topographic relief. The courtyard design includes outdoor educational gathering areas, a rain barrel, canopy trees, and four rain gardens. The rain gardens are organized around a central raised berm leaving four unique corner spaces for formal or informal gathering. Each rain garden consists of an individualized palette of native plant species which provides interest during a specific season of the year. The "Winter" rain garden contains species with winter seeds, berries, and bark; the "Spring" rain garden is planted as a wildflower meadow; the "Summer" rain garden provides butterfly habitat; and the "Fall" rain garden consists of native warm season grasses and autumn blooming forbs.

Cooperating Agencies: Rutgers, The State University of New Jersey, U.S. Department of Agriculture, and County Boards of Chosen Freeholders. Rutgers Cooperative Extension, a unit of the Rutgers New Jersey Agricultural Experiment Station, is an equal opportunity program provider and employer.

Water Resources Program
Rutgers, the State University of New Jersey
14 College Farm Road
New Brunswick, NJ 08901

RUTGERS
New Jersey Agricultural Experiment Station
Water Resources Program