Tobiah (Toby) Horton is providing his Design/Build Studio students a unique opportunity this spring semester. The class is “Transforming Blighted Housing into Valued Community Environmental Amenities”.

Often when a residence is purchased with Blue Acres funding, the municipality is uncertain what to do (Continued on page 2)
with the property; resulting in the removal of the structure and a turf lawn requiring maintenance. This does little to add to the true value of the community or to the potential flood mitigation.

In Parsippany, Blue Acres funding has been used to purchase homes in the Lake Hiawatha section of Parsippany. The Blue Acres Program is a component of the Green Acres Program within the New Jersey Department of Environmental Protection (NJDEP). Since Superstorm Sandy, NJDEP’s Superstorm Sandy’s Blue Acres Buyout Program will spend $300 Million to provide homeowners the option to sell Sandy-damaged or homes damaged in previous storms. In Parsippany, Hurricane Irene dropped 7 inches of rain and some residents had to be rescued with rowboats. The Lake Hiawatha section of Parsippany was especially hard hit.

One such residence will be the project site for this innovative class that will bring Rutgers students, faculty, and community together for deconstruction, salvage, rebuild, green infrastructure and restoration. The Landscape Architecture Design/Build studio will guide the transformation of a vacant house and lot into a park featuring green infrastructure, habitat restoration and community amenities. The studio will demonstrate deconstruction practices, led by a professional Deconstruction Specialist, showing that taking apart structures for reuse and increase recycling can be preferable to landfiling demolition wastes. Material salvaged in deconstruction will be used to build stormwater management features such as rain gardens, bioswales and planters – and potentially in edu-

(Continued from page 1)
cation signage and access structures, community amenities such as raised beds, seating, fencing, paths, walls. Choice of features and their design will be a collaborative process between Rutgers Landscape Architecture students and community/administration. It is proposed that the cleared site manage stormwater on the upland site and feature habitat restoration on the riparian (or flood-prone) edge. Green infrastructure and restoration would meet on the site in a beautiful garden park that would serve as a model of practice and a valued community meeting place. Future maintenance burdens will be coordinated between Rutgers Cooperative Extension and community partners, ensuring that the project continues as a cared for community space.

Tributary to the Rockaway. During high flows this water can’t flow into the Rockaway River and backs up to the surrounding neighborhood. Photo Credit: Pat Rector.
“Jack jumped up and dressed himself and went to the window. And what do you think he saw? Why, the beans he had thrown out of the window into the garden had sprung up into a big beanstalk which went up and up and up until it reached the sky.”

- Jack and the Beanstalk, Old English Fairy Tale

Like the beanstalk, vertical gardens are seemingly bursting on the gardening scene and, like Jack, many people are starting to understand, practice, and reap their benefits, but on a much more manageable scale. Vertical gardening is the cultivation of plants on an upright surface or wall. The plants grown can be decorative (for example, a green wall; Figure 1) or produce used for consumption. The upright surfaces can vary from a solid wall, to an old bookshelf, to a PVC pipe with holes for the pants to grow through, to metal poles that climbing vines and plants can use.

The benefits to using vertical gardening are many, but the biggest is that they allow a grower to maximize limited space especially when it is at a premium in a very tiny area. This is especially advantageous in urban areas where gray spaces usually outnumber green spaces. A traditional community garden in an urban area can range from a few hundred square feet to a few thousand square feet. A vertical garden, on the other hand, can be as small as a few square feet and still provide environmental and health benefits from getting fresh produce.

What is Happening in Ocean County?

Without any cows to trade for magic beans, the underserved and vulnerable communities in Ocean County are particularly susceptible to health issues associated with poor access to nutritional food choices, making areas of the county a food desert. The United States Department of Agriculture (USDA) defines food deserts as “urban neighborhoods and rural towns without ready access to fresh, healthy, and affordable food. Instead of supermarkets and grocery stores, these communities may have no food access or are served only by fast food restaurants and convenience stores that offer few healthy, affordable food options.”

https://agclass.nal.usda.gov/mtwdk.exe?

(Continued on page 5)
Vertical gardens.. continued

(Continued from page 4)

s=1&n=1&y=0&l=60&k=glossary&t=2&w=food+deserts

To try to counter this situation, educators from many organizations conduct programs such as mini-lessons on healthy food choices at schools. However, school districts face the challenges of limited funds for project-based learning and a decreasing amount of green spaces for growing produce that could supplement these efforts. Staff at Rutgers Cooperative Extension in Ocean County collaborated to assist in correcting this situation through the “Growing Healthy in a Food Desert: Vertical Garden Education Program.” This unique collaboration in Ocean County spans the three departments within Rutgers Cooperative Extension (Agricultural & Resource Management Agents [ARMA], 4-H Youth Development [4-H], and NJ Supplemental Nutrition Assistance Program-Education [NJ SNAP-Ed]) to implement a vertical garden educational program. Rather than utilize a traditional school garden, the project partners will work with two schools to plan, plant, and maintain a vertical garden in their classrooms. The program will assist schools with addressing the challenges they face by bringing vegetable gardens into the classroom and providing hands-on educational opportunities on horticulture and healthy eating.

So far, SNAP-Ed educators have provided four educational classes to Lakewood Middle School and the Hugh J. Boyd Elementary School (Seaside Heights, NJ) on topics such as smart choices for healthy eating and which parts of the vegetables grown are edible. This winter, Ocean County staff and Rutgers Master Gardeners will install the two mobile vertical garden units and teach students to grow their own produce. Students, and participating teachers, will be trained on proper care of plants, maintaining soil health, and proper watering of produce. In addition, students will monitor the growth of their plants and how much produce is grown in each vertical garden. This information will be used to help improve the use of vertical gardens as the program expands to other schools in the future.

By involving educators and students in active education on issues at hand for underserved communities, they become invested in the future sustainability of local resources. The program hopes to help the diverse population in Ocean County adapt to a changing landscape while improving their lives with an educational and action-oriented process that uses science-based knowledge to improve their health and well-being.

Figure 2: Rutgers Master Gardener of Ocean County volunteers construct one of the vertical gardens. Photo Credit: Susan Servidio, Ocean County Horticulturist
Lake Shoreline Restoration in Middlesex County Park
By Michele Bakacs Rutgers Cooperative Extension, County Agent II/Associate Professor

Manalapan Lake in Middlesex County’s Thompson Park received an ecological makeover this past fall when 600 feet of bare shoreline were planted with native plants. This shoreline buffer was established to prevent soil from eroding into the lake and improve habitat.

Manalapan Lake is part of the Manalapan River Watershed which flows from Monmouth County north into Middlesex County eventually connecting with the South River and then emptying into the Raritan River. The project was conducted by the Freehold Soil Conservation District in partnership with Princeton Hydro and Middlesex County (including Rutgers Cooperative Extension, and Parks and Recreation). Funding was provided by the NJ Department of Environmental Protection 319(h) program.

Shoreline erosion often occurs when the banks of a lake or pond are bare and the soil is exposed. Over time soil is eroded from the shoreline and deposited in the lake. Soil that has been deposited in a lake, river or other waterbody is then referred to as sediments. Shoreline erosion is a problem at Manalapan Lake because the area is mowed, is heavily used by people visiting the lake, and because Canada Geese congregate by the lake. Canada geese prefer open lawns next to waterbodies and they will often eat shoreline vegetation at the lake.

Other causes of shoreline erosion can be waves and ice hitting the banks or rainwater runoff from the land.

Water quality is affected by erosion because sediments can carry with it nutrients leading to algal blooms. Heavy metals and other pollutants attached to sediment decreases water

(Continued on page 7)
Shoreline restoration... continued

(Continued from page 6)

quality. Excess sediment increases the water’s turbidity and can also fill up the lake leading to expensive sediment removal.

The shoreline buffer established at Manalapan Lake incorporates native plants and biodegradable erosion control materials to stabilize the soil and stop erosion. A variety of trees, shrubs, and herbaceous perennials were utilized, many of which are adapted to the wet conditions along the shore of a lake. Over time, the plant roots will form a network that will stabilize the soil. Eventually, the erosion control materials will decompose allowing the plants to do most of the work.

A healthy vegetated buffer protects the shoreline, soaks up pollutants, and provides beneficial habitat for many different species. In addition, Canada geese avoid areas where they don’t have a direct line of sight to the shore, so a shoreline buffer may also help reduce goose populations at the lake.

The shoreline buffer project is part of an ongoing restoration effort within the Manalapan Brook watershed that also includes naturalizing detention ponds to soak up stormwater runoff, and building floating wetland islands at the lake. These projects are in the Township of Monroe and Manalapan. Two videos are available on YouTube that tell the story of this ongoing restoration effort:

Restoring the Manalapan Brook Watershed- An Introduction
Floating Wetland Islands: Installation and Maintenance

A third video in this series is under development document the shoreline buffer. For more information about this effort please contact Michele Bakacs, County Environmental Agent with Rutgers Cooperative Extension of Middlesex County at (732) 398-5274 or mbakacs@rutgers.edu.
AmeriCorps Watershed Ambassadors Program Begins 17th Year
By Jim Hansen and Katee Meckeler, AmeriCorps Watershed Ambassadors

On September 8, 2016 a new group of AmeriCorps Watershed Ambassadors were welcomed to the program. This 2016-2017 term marks the 17th year of the program, which is run by AmeriCorps and hosted by the New Jersey Department of Environmental Protection (NJDEP). This year there are nineteen Watershed Ambassadors serving throughout the state of New Jersey; encouraging environmental stewardship through community based activities, educational presentations, and stream health assessments.

These nineteen young men and women are stationed in one of nineteen Watershed Management Areas (WMA’s), enabling them to reach a diverse audience, from High Point State Park to the beaches of Cape May. The goal of the program is to promote the use of citizen science through free presentations and workshops for all ages. Local community groups and organizations are often partners for projects like cleanups, invasive species pulls, rain barrel workshops, and rain garden plantings. Local people interested in stream health can come to Volunteer Monitoring Workshops (VMW’s) where they learn how the state monitors streams. VMW’s are a great opportunity for exposure to various stream assessment protocols as well as a unique hands-on experience. If citizens would like to learn more, they can then attend Stream School, which is sponsored by the NJDEP in the spring and fall. At Stream School, individuals are trained in performing biological

(Continued on page 9)
and visual stream assessments. Once trained, they can join other groups performing assessments and report their data to the NJDEP.

The Ambassadors have already been busy this year, participating in multiple tree & dune grass plantings, cleanups along beaches and rivers, many presentations to school age children from K-12. In the upcoming months, the ambassadors are hosting rain barrel workshops where you can make your own rain barrel and take it home to reduce storm-water runoff. Invasive species pulls are being organized to help restore New Jersey to its natural habitat. If you are interested in participating in any of these activities, or have any questions, refer to the list below to find your local Watershed Ambassador. With our environment constantly changing, it is important to take any action we can to help our world stay healthy. Contact your local Watershed Ambassador and get started in your area. Every citizen will make a difference with just a few hours of volunteering.

For more information on the program, please visit: http://www.nj.gov/dep/wms/bears/americorps.htm

For other information such as upcoming events, please go to our Facebook page at https://www.facebook.com/NJWAP/

To find the contact of your respective Watershed Ambassador, please go to this link at http://www.nj.gov/dep/wms/bears/docs/americorps_flyer.pdf
AmeriCorps... continued

Rain Barrel training at the Forest Resource Education Center. Photo Credit: Katee Meckeler.

Massive Dune Grass planting at Island Beach State Park. Organized by Danielle Fadeski (WMA 13). Over 70,000 grasses were planted. Photo Credit: Katee Meckler.
Purpose:
The Green Knight editors introduced the Photography Corner in our last issue, to help us represent and celebrate the New Jersey environment through digital imagery. We are accepting submissions from amateur photographers on a rolling basis in three categories:

Exceptional scenic/wildlife photographs:
These images should represent the varied environmental areas of New Jersey and the flora and fauna which abounds in this great state. New Jersey photographs only.

Environmental “problem” photographs:
Education is key and awareness is crucial. Great photographs of what is “wrong” with explanatory captions are sought. After deliberation the editors have concluded that names/addresses of the offending party(ies) are not appropriate.

Photographs of Solutions:
New Jersey has been at the forefront of environmental solutions since before the “Acts” (Clean Water, Clean Air, Endangered Species, ... Acts). We are eager for contributions of photographs of New Jersey as the state working on solutions to our environmental problems.

Rules:

- All photographs must be the work of the person entering the submission.
- Images that have been significantly altered with filters or special effects using software such as Photoshop and Lightroom will not be accepted.
- Photographers retain original rights, but the editors shall be granted rights to use the photographs in promotional or educational publications, or scholarly submissions.
- Please submit photographs in JPEG, PNG, or TIFF format, minimum resolution of 300 dpi. For larger files send electronic transfer such as Dropbox.
- We will only accept electronic images.
- A separate word document MUST accompany the photograph with caption and photo credit.
- The photograph must not have borders or watermarks.

(Continued on page 12)
A single photograph may only be submitted for one category.

Proper permission for photographs that include people must be obtained with photograph and the photographer retains all responsibilities. For recognizable persons a model release must be obtained, for subjects under 18 express permission of the parent/guardian must be obtained.

Submissions will be judged on the following criteria:

- **Technical mastery**: the determination of the judges that the submission shows a superior level of mastery of the mechanical abilities and/or lighting manipulation skills to create the image including focus, background and depth of field.

- **Artistry**: Evidence of creativity, composition and visually appealing image that are not significantly altered.

- **Alignment with category**: How well does the image achieve the aim of the caption and the category?

- **Impact**: The effect, beyond the aforementioned criteria, that embodies an image with an ability to be moving, stirring or impressive.

Decisions of the judges are final.

There will be awards given as First Place, Second Place and Third Place for each category. There will be only one First Place, Second Place and Third Place winner in each category. In the event the Judges feel that no submission qualifies as exceptional, the First Place slot for that category will remain vacant for the year.

Winners will be announced in the August Green Knight edition. First Place winners will receive a Green Knight Award Plaque, Second and Third Place winners will receive Green Knight Award Certificates. The first full cycle will be completed with the submissions in the May 2017 issue and winners will be announced in the August 2017 issue. All winning photographs will be displayed in the August issue.
Category: Wild and Scenic New Jersey

Caption: Photo was taken in Hope, New Jersey, Warren County. Property belonged to Longmeadow farm, located west off of Hope Blairstown Road. Picture was captured early in the evening, as the sun dipped below the horizon and the haze was began to settle.

Photo Credit: Rachel DeFlumeri
Rain Garden Workshop 2017
For Residents of Hillsborough

Rain gardens are an easy way to help protect our precious water resources. They are shallow landscaped depressions able to capture, treat, and infiltrate stormwater at its source (your yard and home) helping to protect the quality of our lakes, rivers, and streams and recharge our groundwater.

Where: Hillsborough Library
       Program Room B
       379 S Branch Road
       Hillsborough, NJ 08844

When: Education Session, March 23, 7-8pm
       *Design Session, March 25, 12-3pm
       (*by appointment)

Must attend both sessions

Cost: FREE

To Register:
http://somerset.evanced.info/signup/Calendar
Questions:
saramellor@envsci.Rutgers.edu

During the Workshop you will learn the benefits and the basics of rain garden installation

After the workshop, you will be able to:
• Set up a free consultation with Rutgers design professionals to plan and lay out your garden
• Install your garden
• Get up to $450 back
EXPLORING NEW JERSEY'S CLIMATE VARIABILITY AND CHANGE
March 9 @7pm – 8pm Free

Environmental Education Center, Basking Ridge  908 766-2489

New Jersey's State Climatologist, Dr. David Robinson, presents data and his scientific interpretation of trends in our state's weather.

New Jersey has recently experienced some of its wettest and warmest years in 120 years of observations, along with a number of extreme weather events.

New Jersey's weather follows a global pattern attributed to significant human influences that are amplifying natural climate variations.

Dr. Robinson discusses our current climate, including what may lie ahead to challenge NJ residents from the Highlands to the Great Swamp to the Shore.
4-H Teen Science Cafe, February, March, and April, 2017, New Brunswick, NJ

- The Science of Love & Heartbreak
- Bee Conservation: Why Bother?
- The Science and Engineering of Space Exploration

For more information, download the flyer:
http://rcompanion.org/Public/Tumblr/2017_02/RU_16xx_TeenScienceCafe_R1.pdf
New Jersey Flower & Garden Show Motor Coach Trip, Feb. 24, 2017, Vineland, NJ

Join the Master Gardeners of Cumberland County for this unique and hands on experience; speak with businesses and professionals that provide a huge variety of products, and services. Attend seminars covering a wide range of gardening topics, and information.

Small in Scale, Yet Generous in Features

Celebrate a festive year of flowers

Date: Friday, February 24, 2017
Leave Vineland Ramada Inn Parking Lot (Rear) at 8:00 am
Pick up at Woodcrest Station at 8:30 am
5:00 pm Return
Cost: Nonrefundable $45.00 pp, includes bus fare, driver tip, and admission to show

For more information, download the flyer:
http://rcompanion.org/Public/Tumblr/2017_01/NJFlowerShowFlyer2017.pdf
New Jersey Climate and Health Profile Report (Draft), 2017

Visit:
Dundee Island Preserve Passaic River Cleanup, April 22, 2017, Clifton, NJ

For more information, download the flyer:
http://rcompanion.org/Public/Tumblr/2017_02/DundeeDayFlyer.pdf
Build-your-own Rain Barrel Workshop, May 9 and May 18, 2017, Clifton, NJ

For more information, download the flyer:
http://rcompanion.org/Public/Tumblr/2017_02/Rain_Barrel.pdf
Free Entrance Days for U.S. National Parks and Public Lands, 2017

Every year, the Interior Department and other land-management agencies make it easier to visit these special places by offering free admission to the public lands that charge an entrance fee.

Take in the great scenery of our natural landscapes, learn about our nation’s rich history, and enjoy the great outdoors – our nation’s public lands have so much to offer!

For free dates, visit: https://www.doi.gov/blog/free-entrance-days-public-lands-2017
Learn the process of maple sugaring from start to finish.

Identify and tap maple trees, collect sap, and make syrup over a wood-fired evaporator. Taste-test different delicious syrups, including syrup made at the Great Swamp OEC. Rain or shine.

Maple Sugaring Demos -
Weekends 1/14 to 2/26
January 14, 2017 1:00 pm - February 26, 2017 3:30 pm
Great Swamp OEC

Dates: January: 14, 15, 21, 28, 29 & February: 4, 11, 12, 18, 19, 25, 26
Time: 1 p.m. - 2 p.m. or 2:30 p.m. - 3:30 p.m.
Location: Great Swamp OEC, 247 Southern Blvd., Chatham Township
Cost: $3 per person age 3 & up
Contact: 973.635.6629.

No registration is required, but seating is first come, first served. All ages welcome.
Washington, D.C.

Mission Statement
The March for Science champions publicly funded and publicly communicated science as a pillar of human freedom and prosperity. We unite as a diverse, nonpartisan group to call for science that upholds the common good, and for political leaders and policymakers to enact evidence-based policies in the public interest.

https://twitter.com/Mrch4ScienceBOS/with_replies

Who can participate: Anyone who values empirical science. That’s it. That’s the only requirement.
Led by Phil Witt, NJ Audubon Associate Naturalist Workshop 6 will focus on techniques used to photograph wildlife, especially birds.

In addition to reviewing equipment selection and use, the topics of time of day, weather, composition and light will be covered.

Students will be introduced to critical variables to control in bird/wildlife photography, such as exposure and shutter speed.

Phil will cover typical camera settings useful for bird/wildlife photography.

Cost & Registration: $12 members; $25 non-members. Please call 908-396-6386 to register by February 17th, 2017
University of Florida Osprey Nest Live Cam

http://www.wec.ufl.edu/extension/ospreycam/
******** NEWS AND UPCOMING EVENTS ********

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 provider and employer.

Rutgers Cooperative Extension educational programs are offered to all without regard to race, religion, color, national origin, ancestry, age, sex, sexual orientation, gender identity and expression, disability, atypical hereditary cellular or blood trait, marital status, civil union status, domestic partnership status, military service, veteran status, and any other category protected by law.