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REPORT
SUMMER 2011

**Turning garbage
to gold at
“Rocket” speed**

**Preparing for
sea level rise in
New Jersey
communities**

**2011 Planning
Grant awards
announced**

THE ROCKET®



Director's Report

Clean energy programs cut in NJ

On May 26, Governor Christie announced that New Jersey would no longer participate in the Regional Greenhouse Gas Initiative (RGGI), the ten-state cap and trade program aimed at curbing production of greenhouse gases. RGGI's goal is a ten percent reduction in carbon dioxide (CO₂) from electric generators by 2018. The program set a cap on CO₂ emissions from utilities, requiring purchases of allowances when the utilities exceeded the cap. The participating states have held several auctions for the allowances, with the proceeds going for energy programs as decided by the individual states.

Since 2009, the participating states have received hundreds of millions of dollars to invest in energy efficiency and renewable energy projects. RGGI found that evaluations of several of the states' energy programs show \$3-\$4 in benefits for every \$1 they have invested.

In pulling out of RGGI, Gov. Christie questioned the program's effectiveness in reducing CO₂ emissions. However, the program has hardly had an adequate chance to succeed. To provide a predictable market and regulatory certainty, RGGI is phasing in its implementation, so initial reductions in CO₂ have been modest. Add to that, in Fiscal Year 2011, New Jersey diverted \$65 million – more than half the RGGI proceeds that year – into the general fund, to help plug the budget gap. Christie is criticizing a program that he has not allowed to succeed.

What does the withdrawal from RGGI mean to municipalities? Under the *NJ Global Warming Solutions Fund Act*, ten percent of RGGI proceeds were to help local governments reduce greenhouse gas emissions. (Last year that would have been over \$10 million.) The *Act* said local governments were to use one third for energy efficiency, one third for renewable energy, and the remainder for distributed energy and land use planning projects that result in a measurable reduction in energy consumption. At a time when municipal budgets are stretched so thin, towns probably will not foot the bill for energy conserving projects without State incentives, even though payback in reduced energy costs would save them considerable dollars long into the future.

To make matters worse, other municipal incentives for energy efficiency programs have also disappeared. The assistance in the form of block grants to municipalities funded by the federal Stimulus Act has been depleted. In addition many of the New Jersey Clean Energy Program incentives have been reduced or eliminated, including certain rebates and the Community Partners program, which supported energy education initiatives by municipalities.

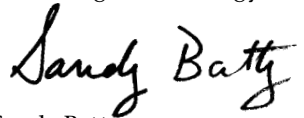
Under the Governor's newly revised *Energy Master Plan (EMP)*, most components of the Clean Energy Program will be phased out. The Clean Energy Program is one of the programs funded by the Societal

Benefits Charge on utility bills. The *EMP* proposes to eliminate the grant and rebate programs and instead accomplish energy efficiency measures through a revolving loan fund.

The new version of the *EMP* also sets a lower goal for the amount of electricity generated by renewable sources at 22.5 percent by 2021, down from 30 percent in the previous version. It also warns that the State's goal of reducing energy consumption by 20 percent by 2020 may be modified based on "top-down reassessment of program efficacy." And it recommends a new nuclear power plant and greater dependence on natural gas for electric power generation.

What is left for municipalities to do? There is time to influence the decisions on RGGI and the *Energy Master Plan*. The State has already notified RGGI that it will not participate in the auctions after December 31, 2011. But the Governor could change this action. And the *EMP* is still in draft form. Hearings will be held July 26, August 3 and 11 and municipalities and individuals may comment. Visit the website www.nj.gov/emp to view the plan or find

out more. Contact ANJEC for assistance or to let us know your thoughts on energy.



Sandy Batty
Executive Director

In This Issue:

- 2** Director's report
- 4** Acting locally
- 8** Turning garbage to gold at "Rocket" speed
- 11** ANJEC's 2011 Environmental Congress
- 12** Planning Grants awarded
- 14** Preparing for sea level rise in New Jersey communities
- 17** Smart planning updates
- 19** The value of urban trees
- 21** Secrets to a successful green team
- 23** Saluting environmental champions
- 24** Eco-friendly pool care makes a splash
- 26** Check your county's wastewater management plans
- 27** What we're reading
- 30** ANJEC salutes our 2010 donors
- 31** A warm thank you

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REPORT

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566 MUNICIPALITIES ONE ENVIRONMENT

Executive Director Sandy Batty
Editor Julie Lange Groth

The Association of New Jersey Environmental Commissions is a private, non-profit educational organization serving environmental commission and open space committee members, concerned individuals, non-profits, and local officials. ANJEC's programs aim to promote the public interest in natural resource preservation, sustainable development and reclamation and support environmental commissions and open space committees working with citizens and other non-profit organizations.

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On the cover: Gerardo Soto, Managing Director, NATH Sustainable Solutions, feeds food waste to The Rocket food composter at Chatham High School. Photo by Peter Craig

Acting Locally



By **Stephen Carroll**, ANJEC volunteer; **Michele Gaynor**, ANJEC Resource Center; **Helen Manogue**, Coordinator, Hoboken Quality of Life Coalition, Inc.; and **Cheryl Reardon**, ANJEC Project Director

Identifying vernal pools in Upper Deerfield

On April 6, the Upper Deerfield Environmental Commission hosted a 2½ hour training session on vernal pools. Mike Hogan, habitat and volunteer coordinator for the South Jersey Land & Water Trust, led the training session that drew over 60 environmental commissioners, area residents and students interested in learning to identify and report vernal pool locations.

Volunteers were trained to identify amphibian habitats so that site information can be forwarded to the New Jersey Department of Environmental Protection (DEP) to be used for mapping, certification and protection. Identifying vernal pools can be successfully accomplished with minimal training and is an enjoyable and rewarding experience for people of all ages.

Vernal pools (also known as vernal ponds) are short-lived wetlands that fill with water in the spring and usually dry out completely in the fall, or draw down to very shallow levels unsuitable for sustaining fish. They come in an array of forms, including isolated depressions within upland forests, seasonally flooded meadows, floodplain swamps, abandoned gravel pits or quarries.

These seasonal water bodies provide ideal conditions for many amphibians to



Vernal pool training on April 6 hosted by the Upper Deerfield Environmental Commission. Photo by Sandy Morrissey

lay their eggs without the threat of fish eating their eggs and larvae. Because these ecosystems provide habitat to many plants, insects, reptiles and other wildlife, it is important to identify and protect them as an essential element of Southern New Jersey's biodiversity.

The DEP protects certified vernal pools by mapping them and refers to these maps when reviewing applications for building permits. In this way, proposed projects that are likely to disturb vernal pools may be redesigned to avoid a negative impact upon these habitat hotspots. Only identified and certified pools are protected.

For more information on the NJ DEP Vernal Pool Program visit www.state.nj.us/dep/fgw/ensp/vernalpool.htm.

—Cheryl Reardon

Public-private effort brings trees to Hoboken

Hoboken's Quality of Life Coalition (QLC) has a lot going on in a city of just over one square mile. One of its many green initiatives is the addition of 200 trees to city streets. It was a coordinated effort between a mobile restaurant business in Hoboken called Taco Truck and the QLC's Committee for a Green Hoboken.

Taco Truck donated enough funds to purchase 50 trees so that QLC, a nonprofit citizen group, could plant them around schools as part of its School Sustainability Program. The effort seeks, among other goals, to influence the perception of children about their urban environment through efforts that include improved recycling, reduction in trash on streets and respect for trees, new and old, throughout the city. The children of Calabro School were so impressed with the planting of a new tree in an abandoned tree pit in front of their school that the third graders gave it a name, April. They will watch over their adopted tree for years to come.

To get the 50 trees installed, the QLC's Committee for a Green Hoboken gained the support of Hoboken's all-volunteer Shade Tree Commission, which made a list of empty tree pits and identified site planting conditions. The Hoboken Environmental Services department



A variety of trees were planted on the streets of Hoboken in April by the Quality of Life Coalition's Committee for a Green Hoboken. Photo by Frances Jennings

provided (and continues to provide) special support by assisting with the purchase and planting of appropriate tree types from the NJ Tree Foundation. Mayor Dawn Zimmer added to the excitement and energy of this public-private arrangement by authorizing a match of 50 additional trees to be planted in May with another 100 later in the year.

Next time you're in Hoboken, look for the Taco Truck and its green-appointed restaurant on Newark Street. The food is as good as its dedication to attain an ever greener Hoboken.

Other QLC projects include:

- Drafting green building ordinances focusing of redevelopment zones;
- Hosting free screenings of environmental documentary films;
- Green tours of a LEED-certified green building;
- Starting a municipal CO₂ audit.

— Helen Manogue

Wyckoff advances its green agenda

With the collaboration of the Environmental Commission and a newly formed Green Team, the Wyckoff Green movement is in full swing.

The Wyckoff Green Team, made up of over 40 residents, divided into five task forces to help Wyckoff attain Sustainable Jersey Certification and work with residents to promote sustainability.

The Commission is promoting its Nifty-Fifty recycling project to encourage residents to increase their recycling rate from 29 percent to a goal of 50 percent. They have been providing information about single stream recycling, electronic recycling and recycling of large household items and how these measures will help save taxpayers thousands of dollars a year. Every pound recycled generates savings for Wyckoff. The campaign also encourages composting and donating old items.

To help spread the word about the Nifty Fifty program, the Commission held their first paper shredding day for the Township in April and distributed information. And

the annual Team Up to Tidy Up event this spring brought several hundred residents out to help collect trash and recycling items. More than 25 sites around the town were cleaned up, filling about 64 bags with discarded trash.

The Commission also coordinated the appearance of Township officials on the Eisenhower TV Program at Wyckoff Middle School each morning during the town's "Green Week." The officials informed students and staff about town programs to promote a "green, sustainable and healthy community." The segments are also posted on YouTube.

During the 2nd Annual Wyckoff Days in June the Commission also had a booth that promoted energy conservation and Nifty Fifty. They hosted an ANJEC training earlier this year and have initiated contact with environmental commissions in nearby communities to get together and discuss regional issues, share ideas and best practices. —Michele Gaynor

Getting the word out

The Monroe Township (Middlesex) Environmental Commission held its first green fair last fall and created a booklet full of tips to help residents continue to enjoy a green lifestyle long after the fair was over.

The book, sponsored by the Commission and Township library, was written by the local chapter of the League of Women Voters along with two residents. The *Green Tips Book* was handed out at the green fair and will be included in the welcome

package given to new residents. It offers information on green ways to clean, proper recycling procedures, energy efficiency, idling facts, living a healthy lifestyle and rain gardens, and it includes a list of important websites to turn to for much more information.

The Township considers the Green Fair a huge success with over 2000 people stopping by to check out the vendors, visit the kid-friendly Enviro-mobile, and learn about the benefits of rain gardens and native plants. Residents were also able to bring documents for shredding, learn ways to reduce energy costs and recycle their used compact fluorescent bulbs. A local LEED-certified school ran tours that displayed the use of daylighting, solar energy and graywater treatment.

—Michele Gaynor

Princeton's new hospital will use CHP

A new hospital being built by Princeton Health Care System will use energy produced by combined heat and power (CHP). The new, energy-efficient University Medical Center of Princeton at Plainsboro (UMCP) will replace the current hospital in the center of Princeton and will be located on Route 1 near the Millstone River. It will have 237 single-patient rooms and is scheduled for completion early in 2012.

The hospital's CHP plant will be built and managed by NRG Thermal, LLC, a subsidiary of Princeton-based NRG Energy,



Monroe Township's kid-friendly Enviro-mobile was on hand at the Environmental Commission's first green fair.

Inc. CHP projects are small, efficient plants that simultaneously produce steam and electricity. Combined production of heat and electricity is approximately twice as efficient as producing each separately. High temperature and high pressure from a boiler and super heater first produces electricity by passing through a turbine. Then steam discharged from the turbine provides energy for building heating.

The new Princeton facility is expected to provide 4.6 MW. Its power plant will use natural gas to make electricity and use the heat generated as a byproduct to create steam that will heat the building, sterilize equipment and provide cooling. The plant's systems will be monitored and controlled through a digital system that optimizes the center's utility costs and carbon footprint.

Both cost and emissions savings are expected to result. Cost savings of hundreds of thousands of dollars are projected with a payback of less than five years. And the CHP system will allow the hospital to reduce its carbon footprint by an estimated 25 percent, the equivalent of taking 1,555 cars off the road.

An added benefit for UMCP will be increased reliability of electricity supply, a key requirement for hospitals. Normally a hospital has two sources, power supplied by the utility grid and emergency generators. But UMCP will have access to power generated by three sources: its own gas turbine generator, a dual-feed redundant supply from the utility grid and limited

backup power to crucial areas of the hospital from emergency generators.

—Stephen Carroll

New guide makes recycling simple

The Bordentown City Environmental Commission (BCEC) has distributed a very helpful recycling resource guide to its residents. It not only lists the recycling opportunities provided by the city, but takes it a step further by providing a comprehensive guide to how citizens can recycle those items that the City does not accept.

The guide refers owners of unused refrigerators and freezers to the New Jersey Clean Energy program where they can arrange free pickup and a \$50 rebate, while disposers of compact fluorescent light bulbs, cell phones and televisions are directed to retail stores that accept and recycle those products at no charge.

Similarly, BCEC identifies free recycle sites for rechargeable batteries, printer ink cartridges, #5 plastic containers, other plastic containers and even bottle corks and packaging materials. The guide also lists a variety of institutions that will accept books for reuse. And the guide also pinpoints recycling opportunities for which there is a charge, such as used tires. Lastly the guide references ways to reuse disposable items, such as the Freecycle Network (www.freecycle.org), Craigslist (www.craigslist.org), TerraCycle (www.terracecycle.net) and Goodwill.

—Stephen Carroll

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Resource Center



Turning garbage to gold at “Rocket” speed Food waste composting program launched in Chatham Township

By **Julie Lange Groth**, ANJEC Report Editor

Take a bucket of garbage. Add a bucket of wood chips. Pour it into a sleek, cylindrical metal contraption and wait two weeks. Out comes dark, rich organic compost that's ready to add life to the garden, green to the grass and vitality to the school curriculum.

That's the formula being applied in the School District of the Chathams since the inauguration of *The Rocket*® Composter, a surprisingly simple food waste recycling system that began eating kitchen scraps and lunch leavings on Thursday, May 19. It is the first *Rocket* to be installed in New Jersey and the first to operate in a public school in the entire US.

With the ability to process 180 gallons of waste per week with minimal human effort, the composter is expected to produce enough compost to save up to \$6,000 in mulching and landscape fees for the school system each year.

Unlike most backyard composters that can take months to fully break down food waste, *The Rocket* is fast. After food waste is poured into one end of the 9.8-foot cylinder, a wooden paddle that runs the length of the tank automatically makes two rotations every 45 minutes, slowly pushing the contents inside the heated composter toward the opposite end, where it emerges after 14 days as crumbly, black compost.

The ability to process meat

and dairy products sets *The Rocket* apart from other composters that only accommodate vegetative waste. While the outside of the tank remains cool to the touch, the internal temperature reaches up to 158 degrees Fahrenheit, speeding the decomposition process and killing any pathogens in the food.



Chatham High School Principal Darren Groh and Earth Science Teacher Missy Holzer demonstrate how to separate lunchtime waste so that food scraps go into the Brute barrel for composting. Photo by Peter Craig

Present at the launch of the Chatham Township food waste composting system at Chatham High School (CHS) are, from left, Bob McBreen, CHS Food Service Supervisor; Peter A. Marcalus, CEO, Marcalus Management Corp.; Pat Collington, PM, Chatham Township Environmental Commissioner;



John Cataldo, Supervisor of Buildings & Grounds, School District of the Chathams (SDOC); Gerardo Soto, Managing Director, NATH Sustainable Solutions; and Gasper Major, SDOC Maintenance Department Head. Photo by Peter Craig

Low costs, big rewards

Operating the new composter costs very little. It consumes just 21 kilowatt hours per week to turn the inside paddle. The only maintenance required is applying grease to certain points once a month and rinsing out the filter where fluids drain from the composter on a weekly basis. All of the wood chips will come from municipal and school properties and from vendors that service those properties.

Chatham Township Environmental Commission member Pat Collington, who wrote the successful \$25,000 grant proposal to purchase the composter for the school district and educational materials for Township residents, says she's happy about the way the program has brought together people from the Borough and Township as well as various departments in the joint school district to think about and change the way food waste is handled. "How many projects let you reap the benefits in just two weeks?" she boasts.

Among the greatest benefits of the program is reducing the municipalities' carbon footprint. The Chatham Township Environmental Commission performed one of the State's first municipal greenhouse gas inventories in 2008. The school composting program is one of several

steps the Township has been taking to trim its carbon footprint.

The composter will cut down on greenhouse gases from trucking food waste to landfills as well as the methane emissions from those landfills.

Americans discard enough food waste each day to fill 6,300 garbage trucks, according Gerardo Soto, a representative of NATH Sustainable Solutions, marketers of *The Rocket*. The greenhouse gas reduction from composting that much waste would be equivalent to taking 4.5 million cars off the road.

The food service company that prepares meals for the District's schools already has a program in place to minimize food waste, which it weighs daily. One of the school District's kitchens – located in the high school in Chatham Township – currently produces about 15 quarts of food scraps per day, which, when combined with the wood chips, will yield 50 to 80 gallons of compost every two weeks. This kitchen prepares meals for several of the District's schools and the students in the high school add their lunch scraps too. After the initial implementation phase, all six of the schools in the District will be fully participating in this new school food waste program.

An educational tool

The Rocket is part of a larger educational effort in the Chatham County to raise awareness and change behaviors with regard to waste disposal. On the day the composting program was inaugurated, High School Principal Darren Groh was standing behind three large waste containers outside the school cafeteria, guiding students to properly dispose of paper, cans and bottles – and especially lunch leftovers. A big red barrel emblazoned with the moniker “The Brute” was there to accept the food waste.

Earth Science Teacher Missy Holzer says the new composter is “an excellent learning tool for our students.” Curriculum materials are being incorporated throughout the District, including lesson plans with hands-on experiments that kids can do.

Among the possibilities, Holzer said she envisions demonstration plantings with and without compost on school grounds and experiments with putting compostable plates and cutlery into the composter to see

whether they truly biodegrade as advertised and how quickly they break down.

The high school’s environmental club created signs that were posted around the facility and also worked with the school’s TV production department to produce a video public service announcement featuring student “actors” that premiered during the homeroom period. They also posted the video on SchoolTube, a moderated video sharing website used by K-12 schools and endorsed by leading education associations.

Adults in the community are also learning about the benefits of composting. Last year the Township’s Environmental Commission launched their “Save It to Spade It” program, which included a series of free composting workshops for residents. They also offered low cost backyard composters that are now in use throughout the town by residents, schools, Scouts, local Master Gardeners and other organizations. This spring at another free composting workshop, 50 interested Chatham Township residents received free

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- leadership in trying times
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- cumulative impacts mapping and planning
- what's happening in Trenton



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backyard composters, paid for by the same grant that purchased *The Rocket*.

up to \$20,000 for colleges and universities that want to establish campus food waste

Seed money

Funding for the Chatham Township school food waste composting program came from a grant supplied by Walmart through the Sustainable Jersey Small Grants Program in 2010. A new round of Sustainable Jersey grant funding was announced in early June with an application deadline of July 22, 2011. For more information visit www.sustainablejersey.com/resources.php.



*One day's food scraps from the Chatham High School Cafeteria that will be fed to **The Rocket** along with wood chips to be turned into rich, dark compost.* Photo by Peter Craig

The New Jersey Department of Environmental Protection Bureau of Recycling and Planning has developed a recycling demonstration program that provides matching grants of

recycling systems. This program is funded through the Recycling Tax established in the *Recycling Enhancement Act*, which includes a provision for funding recycling research and demonstration projects at New Jersey colleges and universities. For more information visit www.state.nj.us/dep/dshw/recycling/demo%20grant%20program%202011.pdf.

For more information about the Chatham Township On-Site School Food

Composting Program, contact Pat Collington at ctec@chathamtownship.org or call (973) 635-4600.

2011 ANJEC grants to help towns plan sustainably

By **Kerry Miller**, ANJEC Assistant Director

ANJEC has awarded 2011 Sustainable Land Use Planning Grants to 19 New Jersey towns with environmental commissions. The funding program, underwritten by the Geraldine R. Dodge Foundation of Morristown and now in its tenth year, provides matching reimbursement grants to help cover the cost of planning projects that facilitate resource-based, sustainable land use. This year's grantees bring the total number of projects sponsored through the program to 222. More than one third of New Jersey's towns have received ANJEC grants since 2002!

Environmental Resource Inventories

Eight of the 2011 grants will help environmental commissions develop an Environmental Resource Inventory (ERI), a foundation document that provides a factual basis for municipal land use plans and policies. Some commissions will be creating their town's first ERI, sometimes known as a Natural Resource Inventory (NRI), and others will be updating an older ERI. While features like geology and soils don't change much over a few decades, other environmental features can change a lot due to development, land preservation and regulation. Because the State has made available so much new digital data, newer ERIs commonly contain 20 to 40 maps, and can include lot lines or show conservation easements, wellhead areas and other information that was not included in the past. GIS software now makes it possible to combine various features on one map, as desired.

Compiling an ERI is a core task for an environmental commission. The State

enabling legislation says that a commission should keep "...an index of all open areas... in order to obtain information on the proper use of such areas..." Once the commission prepares an ERI for the municipality, it is entitled to receive and comment on development applications. Equally important, through the process of working on an ERI, commission members learn a great deal about their town's natural features and systems, becoming even more qualified to give input on land use issues.

Envisioning the future

The commissions from Chester Township and Chester Borough will carry out a joint project – a trails plan that will connect significant open space, environmental, cultural, commercial and historic features in the two adjacent municipalities. The commissions were able to obtain contributions for the project from two local nonprofits, one historic and one environmental, in addition to matching funds from the towns' open space trusts. The project will yield more than just a network of trails. It also aims to incorporate historic, art, agricultural and other features. And by educating users about their communities' ecosystems, it may increase stewardship of natural resources.

Fairfield Township (Cumberland) received a 2009 ANJEC grant to conduct a buildout analysis. This study helped the community to envision what Fairfield would look like, and what impact future development would have on its resources, if the town reached buildout under its current zoning. The exercise was a bit of a wake-up call for the rural community. With

The 2011 Grantee Towns

Chatham Bor. (Morris) – complete streets plan
Chester Bor. and Twp. – bi-town trails plan
Cresskill Bor. (Bergen) – ERI
Fairfield Twp. (Cumberland) – master plan/zoning
Franklin Twp. (Gloucester) – ERI
Frelinghuysen Twp. (Warren) – ERI and open space update
Haworth Bor. (Bergen) – sustainability element
Hightstown (Mercer) – ERI
Kinnelon Twp. (Morris) – open space update
Leonia Bor. (Bergen) – sustainability plan
Medford Twp. (Burlington) – sustainability element
Mendham Twp. (Morris) – ERI
Millburn Twp. (Essex) – ERI
Montgomery Twp. (Somerset) – solar ordinance
Roseland Bor. (Essex) – ERI
Union Twp. (Hunterdon) – conservation easement inventory
Warren Twp. (Somerset) – ERI
Willingboro Twp. (Burlington) – sustainability element


Board want to encourage renewable energy, but also want to protect their sensitive lands and productive agricultural soils. With a 2011 ANJEC grant, the Township will develop a comprehensive energy facilities ordinance that prioritizes specific locations/criteria where solar facilities are appropriate, stressing reuse of developed surfaces for solar facilities, and discouraging solar facilities on critical slopes, stream corridors and floodplains.

Chatham Borough will use its grant to develop a municipal complete streets policy and plan. This project builds on previous programs carried out by the Borough and Board of

additional funds from the William Penn Foundation, Fairfield's 2011 ANJEC grant will help them create a coordinated land use strategy (master plan/zoning) that includes conservation design zoning for rural and sensitive areas, and design guidelines for growth areas. Fairfield's Planning Board and Environmental Commission are committed to crafting sustainable land use ordinances that are consistent with the community's vision for the future.

Montgomery Township, like many other towns, has been grappling with the rapid expansion of solar energy generation. The Environmental Commission and Planning


Education that encourage children to walk and bike to school. The project will yield new master plan components for the circulation element, performance standards, guidance documents for the land use boards and town staff, and educational materials for the public.

As in 2010, most of this year's grantee towns are first-time Sustainable Land Use Planning Grant recipients. All are participating in the Sustainable Jersey program. The towns' environmental commissions will either carry out the projects themselves, or serve on the project team. 

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Preparing for sea level rise in New Jersey communities

By **Jody Carrara**, ANJEC Project Director

In a state surrounded by ocean, river and bay, New Jersey coastal residents are becoming keenly aware of full moon tides, Nor'easters and impassable roadways. Storm events create erosion and flooding of our barrier island and bay communities. Storm damage has been occurring more frequently and the costs of restoration and cleanup are rising. Experts conservatively predict that sea level will rise between seven and 14 inches in the next century. What can be done to mitigate the current and future damage to homes, businesses and the environment?

ANJEC and three partners explored this question in a workshop held on April 11, entitled: "Sea-Level Rise: Are We Getting Wet Yet?" Discussing sea level rise impacts, State assistance to pilot towns along the coast and the biological necessity of New Jersey's salt water and tidal marshes were Dr.

Norbert Psuty, Rutgers University author and Director of the Sandy Hook Cooperative Research Program /Marine and Coastal Sciences; Dorina Frizzera, NJDEP Coastal Zone Management Program; and Danielle Kreeger, PhD, Partnership for the Delaware Estuary, with assistance from Lisa Auermuller of the Jacques Cousteau National Estuarine Research Reserve.

There are many federal, state and non-profit programs designed to assist coastal

municipalities as they plan for the future. For example, the Federal Emergency Management Agency (FEMA) is currently fostering coastal storm resilience policies by updating outdated Flood Hazard Maps and expanding them to include data from tidal gauges.

Coastal impacts of sea level rise

The second largest fishing port on the East Coast is Cape May, where approximately 80 percent of the local fish and invertebrate species spend part of their lifetimes in the saltwater/ tidal marshes for food and protection. These tidal marshes are being lost to erosion, storms and sea level rise and are not recovering at a rate sufficient to sustain them. These losses impact the fishing industry.

As sea level rises, drinking water supplies in coastal aquifers can become saline and saltwater can also penetrate upstream into coastal areas making surface water supplies too salty for residents and agriculture. This condition is exacerbated during drought conditions when freshwater flow decreases and the salt front can move inland. Over withdrawal from the aquifers and drought in some areas, like the Potomac-Raritan-Magothy Aquifer, have allowed saltwater to move into the aquifer (Camp Dresser and Mckee, 1982).

Almost 60 percent of New Jersey residents live in coastal communities and the coastal counties generate approximately \$2 billion in tourism revenues.



Coastal flooding impacts more than the environment.

Southern Cape May County now has a desalination plant and homes have been placed on public supply as their private wells have gone salty. (<http://pubs.er.usgs.gov/usgspubs/sir/sir20095187>)

Salt intrusion also threatens drinking water supplies from the Delaware River as sea level rises. Recent droughts have reduced the freshwater flow of the Delaware and allowed the tidal salt water to travel further than ever upriver. This also causes changes to the ecosystems in the water body and the fish breeding areas.

Thompson's Beach and Sea Breeze, two Delaware Bay communities, have been abandoned and the homes bought by the State of New Jersey. Unfortunately for the homeowners, the cost of maintaining marsh roadways became cost prohibitive. Small municipalities have small budgets for road maintenance and the frequent floods and storms took their toll. The State, however, will not be able to fund purchase of the entire coastal region.

What commissions can do

These are but a few of the facts concerning the effects of sea level rise in New Jersey. Extensive studies are available and some links are provided at the end of this article. But beyond information gathering, what can environmental commissions do to help prepare their towns for the future? How can towns protect the safety and welfare of businesses, residents and the fishing industry? There are no easy

answers and each town will need a combination of tools to accomplish this. Our future and the health of our ecosystems depend upon balanced and farsighted planning. Here are some first steps.

- Get maps of your town which show predicted storm tides with different sea level scenarios.
 - Contact the New Jersey Department of Environmental Protection (NJDEP)


Coastal Zone Management program for Inundation and Vulnerability Mapping of your town and applicable CAFRA regulations. Look for the new publications: "Getting to Resilience" and "Cookbook of Mapping Protocol." New bulkheads are a stopgap measure at best and public works employees will tell you they retain storm water. Plan for policies and ordinances that allow the tidal marshes to migrate inland, and consider implementing "rolling easement" policies in high hazard areas. http://coastalmanagement.noaa.gov/initiatives/shoreline_ppr_easements.html

- Contact FEMA for their new Flood Hazard Maps and change your ordinances to adhere to FEMA requirements for new construction. Most FEMA maps for New Jersey will be updated by 2012. FEMA also has guidelines to assist your town with "risk assessment." Many municipalities have already begun the process of complying with FEMA policy. www.fema.gov/plan/prevent/fhm/rm_main.shtm and www.rampp-team.com/nj.htm
- Investigate mitigation measures to restore wetland habitats.
 - Wetlands protect the coast from flood/tidal waters and provide critical habitat for fish. The Partnership for the Delaware Estuary and other non-

profit organizations have had excellent results with marsh restoration. www.delawareestuary.org

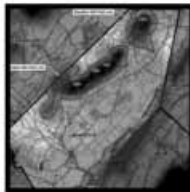
- Educate residents with factual mapping and science about the necessity of planning ahead.

For further information

- ANJEC Resource Center, info@anjec.org, (973) 539-7547
- Climate Change and the Delaware Estuary, Partnership for the Delaware Estuary – www.delawareestuary.org/pdf/Climate/ExecSummary_Climate%20Change%20and%20the%20Delaware%20Estuary_PDE%2010-01.pdf
- Coastal Hazards Toolkit, Rutgers Institute of Marine and Coastal Sciences – <http://marine.rutgers.edu/cousteau/education/coastaltraining/coastal-hazards/toolkit.html>
- NJDEP Coastal Management Program – www.state.nj.us/dep/cmp/czm_hazards.html
- Coastal Vulnerability Along the Delaware Bay: A Pilot Study for NJ Coastal Communities, NJDEP Coastal Management Office, Jan. 31, 2011 – www.delawareestuary.org/pdf/Summit11/talks/Session%204/6_PDE_Presentation.pdf
- NJ Coastal Community Resilience Demonstration Project, NJ Sea Grant Consortium, Dec. 2010 – www.njmsc.org/pdfs/Extension/New-Jersey-Coastal-Community-Resilience-Demonstration-Project.pdf
- The NJOEM Mitigation Program: Reducing the Risk from Natural Hazards – www.state.nj.us/njoem/opb_mitigation.html
- Vulnerability of New Jersey's Coastal Habitats to Sea Level Rise, Richard G. Lathrop Jr. and Aaron Love, January, 2007 – www.crssa.rutgers.edu/projects/coastal/sealevel/report/Vulnerability_of_New_Jersey_coastal_habitats_v4.pdf 

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Smart Planning Updates



By **Sandy Batty**, ANJEC Executive Director

State strategic planning process

The Office of Planning Advocacy, which staffs the State Planning Commission, is developing recommendations for a *Strategic Plan* to guide land use planning in New Jersey. The emphasis of this new planning initiative is on economic growth and redevelopment. It will focus on actions of State government – legislation, regulations and capital investments – to see where agencies need to eliminate conflicting actions to achieve a concerted effort to create sustainable growth.

At this point, the *Strategic Plan* process is supplanting efforts to revise the *State Plan*, which was last adopted in 2001 and is several years past the legislated deadline for re-adoption. Under the Corzine administration, the State Planning Commission drafted a new *State Plan* and had scheduled adoption for January 2010. However, with the transition to Christie administration, the vote was never taken. The new administration considered the draft *State Plan* to be overly complex, to leave unresolved conflicts between various State rules and regulations and to fail to prioritize economic growth.

To develop the *Strategic Plan*, the Office of Planning Advocacy organized a process to work with stakeholders within and outside State government to gain feedback on what needed to be changed to meet the goal of sustainable economic growth. ANJEC advocated that protection of natural resources should be a topic for discussion, because these resources are critical to our economic and public health. ANJEC coordinated a stakeholder session on our “Natural Infrastructure” and invited environmental groups to meet with State planning staff to explain how environmental protection and

a strong economy are dependent on each other.

The Office of Planning Advocacy web site (www.state.nj.us/state/planning/sspp.html) explains the goals of this planning process:

- Identify high-value growth sectors and future trends to leverage those trends for economic growth;
- Identify the fiscal and community costs that come from the existing planning framework;
- Identify smart growth areas where the growth sectors can flourish, expand or emerge while keeping fiscal and community costs as low as possible;
- Identify strategic planning issues within State government that stand in the way of sustainable economic growth; and,
- Evaluate the current State planning framework and budget realities and provide an assessment, highlighting its strengths and weaknesses.

In late June, the Office of Planning Advocacy will submit a report to the Governor, including a final assessment and implementation recommendations. Suggestions will include legislative and regulatory remedies and actions the Governor can take swiftly. The report will be made public in the fall.

Celebrating the Delaware Bay

On May 9, over 200 people from around the world gathered at the Bayshore Discovery Project (BDP) in Bivalve, NJ, to celebrate the Delaware Bay’s pivotal role in sustaining the world’s population of migrating shore birds. The occasion was the 25th anniversary of the Bay being declared a Site of Hemispheric Importance by the Western Hemisphere Shorebird Reserve Network (WHSRN). Through WHSRN, hundreds of people

throughout the world are working in an amazing collaboration to preserve the habitat and food source for the migrating shorebirds.

Scientists and volunteers had a feast on the docks in Bivalve, with many languages swirling through the air. The celebration was hosted by the BDP, Citizens United to Protect the Maurice River and its Tributaries, and the South Jersey Bayshore Coalition with its members.

The Delaware Bay is critical to the survival of many shorebirds, including red knots, which migrate in the Western Hemisphere every spring. The Bay is the breeding grounds for the horseshoe crab and the “stopover” for thousands of shorebirds. Each May, the eggs of the Bay’s horseshoe crabs (see related book review on page 26) serve as a critical food source so that the birds can refuel as they fly north nearly 9,300 miles from the tip of South America to breed in the Arctic. The speakers at the celebration included officials representing the span of the shorebirds’ flight – from Rodrigo Azócar of Chilean National Petroleum Company, which has preserved wetlands in Tierra del Fuego, Chile, to Lillian Trapper of the Moose Cree First Nation in the Canadian Arctic.

Species in decline

The speakers focused on the plight of the red knot, a species in serious decline. In the

past, tens of thousands of red knots stopped at Delaware Bay beaches to feast on horseshoe crab eggs. Locals could not walk on the beaches covered with vast numbers of mating crabs. But the crab population has been decimated by over-harvesting by fishermen who use them as bait.

Although the Atlantic States Marine Fisheries Commission has put restrictions on horseshoe crab harvesting over the past decade, no evidence of recovery of the population is apparent. This year a decrease of at least 5,000 red knots was observed at wintering grounds at Tierra del Fuego from the year before. The current total population for the shorebird is now estimated at less than 25,000.

Soon after the celebration, a group of conservation organizations issued a statement calling on the U.S. Fish and Wildlife Service (FWS) to take immediate steps to list the red knot under the Endangered Species Act. A listing would initiate the development of a recovery plan and require federal agencies whose actions affect red knots to consult with the FWS. A listing would also require the Atlantic States Marine Fisheries Commission, housed under the National Marine Fisheries Service, to consult with the FWS on the regulations it establishes for the horseshoe crab fishery. With this action, hopefully 25 years hence we will be celebrating the species recovery instead of marking its demise. 🌿



People from around the world gathered at the Bayshore Discovery Project in Bivalve, NJ, to celebrate the Delaware Bay's pivotal role in sustaining the world's population of migrating shore birds.

Photo by Laura S. Johnson

ANJEC in the City

The value of trees in the urban landscape

By **Kerry Miller**, ANJEC Assistant Director



People are drawn to cities for their concentration of cultural opportunities, mass transit, commerce and people, not for nature. The paradox is that urban areas need to invest in green infrastructure to be successful. Trees are a critical ingredient for a livable city, whether in a downtown shopping area, a low-income residential neighborhood or an industrial district.

Trees are cool

One of trees' most-touted urban benefits is their ability to moderate the summer "heat island effect" in developed areas. Cooling the air not only keeps people more comfortable, but can help to cut the number of "unhealthy" ozone air ratings on summer days, reducing asthma attacks and other health flare ups. Shaded parking areas and streets emit less evaporative hydrocarbons from parked cars, and less volatile components from asphalt surfaces than unshaded ones.

The cooling effect of trees comes not only from shade but from evaporation of

the water coming from the leaves. The total effect can lower surrounding temperatures by 5 or more critical degrees. A large deciduous tree shading the sunny side of a building or trees in a roof garden can cut air conditioning costs measurably.

Take a deep breath

Trees contribute to better air quality by actively taking in polluting gases including carbon monoxide, sulfur dioxide, ozone and nitrogen dioxide through the leaf pores. A tree's surfaces also physically intercept airborne particles, much like a filter. Particles collect on leaves and branches until rain washes them off or they fall to the ground. In neighborhoods with high particulate levels, incremental reductions in these respiratory irritants can make a difference.

The social and psychological impacts of city trees are harder to measure, but may be just as significant. Street tree plantings, particularly when they involve participation by residents, can be a turning point in a stark neighborhood. Merchants benefit, too; people visit more often and stay longer when commercial districts install street trees and other greenscaping. Property values are higher in neighborhoods with mature trees.

Survival in the city

Trees are a boon to urban areas, yet in many city settings there is barely a tree in sight. Why? Well, trees take planning, maintenance, money and patience. An urban life is a tough life for a tree; survival to maturity is highly uncertain. Bad stock, improper planting and lack of water are the reasons many die in their first two years.

Compacted and depleted soils, collisions with bicycles and cars, vandalism, lack of access to outdoor spigots and “dog sprinkling” are some of the other challenges for a sapling trying to make it in the city.

But tree planting is still worth the effort. The USDA Forest Service calculates that for every \$1 invested in urban forest management, there is a return of \$1.89 in benefits. For residents, merchants and property owners, the positive community effects can be priceless.

For the past decade, the New Jersey Tree Foundation (NJTF) has been concentrating its planting efforts in urban areas, installing nearly 17,000 trees along streets and in public locations in places such as Camden, Newark, Jersey City, Neptune, Passaic and Plainfield. The organization’s philosophy is that trees “planted by residents, not for them” promotes environmental stewardship among residents and unifies communities.

NJTF has trained thousands of residents as treekeepers, enlisting them in the planning and installation of new trees, and obtaining their commitment to care for the trees after planting. The result is an impressively high survival rate, partly due to proper planting and actual maintenance, but also to the sense of community ownership and protection that is “planted” along with the trees. The number of trained urban volunteers actually exceeds the number of trees installed, and that’s a significant contingent of stewards in the neighborhoods, looking out for their trees.

Trees may fend for themselves in the forest, but in a developed area they require ongoing observation and maintenance to coexist with people, utility equipment and other entities that occupy public areas. A city cannot just plant trees. It must commit funds and staff to monitoring, tending, pruning and removing trees to minimize danger and protect its green infrastructure investments.

This is a substantial commitment, and the State strongly encourages local governments and their shade tree commissions and public works departments to develop

five-year Community Forestry Management Plans (CFMP) to insure responsible management of tree resources. NJTF has assisted cities by working with their tree boards and staff to craft CFMPs. An approved CFMP can help a municipality gain greater liability protection for damage caused by trees.

Green infrastructure

Trees serve as green stormwater infrastructure by intercepting precipitation as it falls, slowing and lowering the amount of runoff into storm sewers and swollen waterways. However, in cities it can be difficult to sacrifice enough sidewalk area to provide an adequate-sized planting bed for a large tree. As part of its Green City Clean Water Program, Philadelphia is investing in stormwater tree trenches for some new plantings to address two urban problems at once – onsite stormwater treatment, and providing enough space for large root systems without compromising aboveground surface stability.

Tree trenches, which are large, strong, underground cages, provide support for the surface treatment (sidewalk, parking lot, plaza), offer uncompacted root growth areas, and direct local stormwater into the bottom of the trench where it can be absorbed by roots or percolate downward. Like most long-term infrastructure, the initial cost is high. But if a large tree is thought of as an investment in stormwater and air quality as well as a carbon sink and economic and social asset that can serve for 50 or more years, it may start to sound like a bargain. Making cities and centers attractive to the masses will require these kinds of commitments.

Resources:

- ANJEC Resource Center – resourcecenter@anjec.org, (973) 539-7547
- NJ Tree Foundation – www.newjerseytreefoundation.org
- NJDEP Community Forestry Program – www.nj.gov/dep/parksandforests/forest/community
- Green City Clean Water Program (tree trenches and other green stormwater techniques) – www.phillywatersheds.org



Green Team Times



Secrets to a successful green team

By **Lori Braunstein**, Founder & Executive Director, Sustainable Cherry Hill

Forming a green team is a first step in establishing a community's participation in Sustainable Jersey, a certification program for municipalities that want to go green, save money, and take steps to sustain their quality of life over the long term. According to the Sustainable Jersey

web site, green teams leverage the skills and expertise of team members to develop plans, implement programs, and assist with educational opportunities that support the creation of a sustainable community. They can be called by any name, but the role of the green team is the same: lead and coordinate the sustainability activities of the community.

What many people do not realize is that a successful green team must be built upon a foundation of strong leadership, clarity of purpose, strategic planning, communication and more. Through several years of working with Cherry Hill and the green teams of many of my neighboring communities, I have identified 12 secrets to a successful green team.

1. Create a mission statement. Everyone involved should have a clear sense of the purpose, roles and the responsibilities of the group. A mission statement is best



Cherry Hill Township Green Team learning about green purchasing from Dr. Kevin Lyons of Rutgers University.

developed as a group exercise with input from diverse interests. (See the Cherry Hill Green Team mission statement at [www.sustainablecherryhill.org/.](http://www.sustainablecherryhill.org/))

2. Pick a strong leader. The green team should have a clearly defined leader, whose roles and responsibilities

have been determined and documented. Having leaders from both the municipal and community sides of the team is particularly effective.

3. Divide the work. While strong leadership is vital to the success of your green team, it is helpful to assign other group members to tasks such as scheduling meetings, creating agendas, arranging rooms, sending out emails, taking minutes, updating spreadsheets, uploading documents, writing communications, etc. This helps avoid leader burnout and enables other group members to take ownership of their roles on the team.

4. Make a plan and visit it often. Achieving Sustainable Jersey certification can take several years. Having a strategic plan with long- and short-term goals helps to keep the green team focused and moving forward. Revisit the plan at each meeting to keep on track.

5. Schedule regular meetings. Choose a regular meeting time and stick with it. Creating a yearly meeting schedule and communicating it to members can make the difference between a successful effort and one that gets “fit in” when convenient.

6. Be clear about how decisions are made. Meeting and decision making procedures should be clearly defined and understood by the group. Transparency can eliminate power struggles and hurt feelings.


7. Think diversity! Take an honest look at who is on your green team. Does it include representatives from municipal government, residents, businesses, faith groups, schools, etc.? Does the group reflect the overall demographics (race, income, age, etc.) of the town? The more diverse voices at the table, the more robust and authentic the effort will be.

8. Get municipal support. Sustainable Jersey is administered by the municipality, so your green team cannot succeed without implicit and explicit municipal support. Does the team have access to municipal staff or consultants in areas such as planning, engineering, legal matters, purchasing? Be mindful of how partisanship might influence the decisions or progress of the group.

9. Communicate...and then communicate some more! – Regular, formal communications should go out to green team members, municipal leadership and the community. Keeping everyone informed helps the team celebrate progress and involves others in the process.

10. Hone your community organizing skills. It is vital for the community at large to be aware of and support the efforts of the green team. Develop a community outreach plan that includes building email lists; sending out regular communications using all available media (digital/social /print, hosting); holding at least two education/outreach events per year and eventually hosting a community visioning event.

11. Don't do it all yourself! Most communities have existing initiatives, resources and programs that may count towards Sustainable Jersey certification. Having an environmental commission – and many projects undertaken by commissions – can earn points toward certification, such as creating an environmental resource inventory, open space plan or easement stewardship program. Does your town have a shade tree commission, an environmental club at the high school or a civic association that has a “Buy Local” program? Research, document and celebrate these efforts.


12. Network, network, network. Every community has groups like Rotary Clubs, PTA's, swim clubs and civic associations that have their own resources. Visit these groups, ask them to send out your information to their email lists, have a table at their events and look for every opportunity to connect with assets that already exist in your town. 

Lori Braunstein is founder and executive director of Sustainable Cherry Hill and coordinator of the Sustainable Jersey Pilot South Jersey Green Team Mentoring Program. She can be reached via email at Lori.braunstein@sustainablecherryhill.org.

Post your events on the ANJEC web site

Planning a green fair, environmental film festival, trail walk or other local happening? ANJEC will post announcements of events hosted by NJ environmental commissions, green teams, open space committees and other groups that are ANJEC members.

Just email a description of 75 words or less to info@anjec.org. Include the event name, date, time, location and either a web site link, email or phone number where people can seek further information about the event.

ANJEC reserves the right to edit submissions before posting. 

Saluting environmental champions

Celebrating Jane Nogaki's 33 years at NJEF


By **Cheryl Reardon**, ANJEC Project Director

After 33 years of environmental stewardship, Jane Nogaki has retired from the New Jersey Environmental Federation (NJEF). She is a founding NJEF board member and subsequent longtime board chair, as well as NJEF's pesticide campaign coordinator and South Jersey organizer.

For the past six years, Jane also served as the Federation's representative to the South Jersey Bayshore Coalition (SJBC), which is coordinated by ANJEC. All SJBC members agree that Jane's knowledge, enthusiasm and dedication will be sorely missed.

Some of Jane's achievements include: the adoption of State policy banning aerial spraying of Sevin for gypsy moth control and substituting the use of Bt; passage of New Jersey's *School Integrated Pest Management (IPM) Act*; and creating local "Pesticide Free Zones" (especially where children are

most likely to be exposed and their health compromised, such as schools, parks, and playing fields). She also helped pass environmental protection mandates on a larger scale, including: the New Jersey's *Clean Water Enforcement Act*; the State's Right to Know program; New Jersey's *Private Well Testing Act*; halting the deepening of the Delaware River; saving Petty's Island; and strengthening Superfund and local cleanup of the Ellis Site and Gems Landfill.

We wish Jane and her husband Roger the very best! 



Jane Nogaki


Suzanne McCarthy retires from DVRPC

By **Kerry Miller**, ANJEC Assistant Director

On February 28th, friends, co-workers and environmentalists gathered at Auletto's in Almonessen to wish Suzanne McCarthy a happy retirement from the Delaware Valley Regional Planning Commission (DVRPC). But it is certain that no one was happy to see her go! Suzanne left her professional mark on South Jersey over the ten years she worked at the bi-state metropolitan planning organization, overseeing 55 environmental resource inventories, open space and farmland preservation plans, conservation elements, and other planning documents for towns from Monmouth to Salem County.

The quality of the documents she helped to create speaks for itself. Equally valuable was Suzanne's interaction with environmental commissions, open space committees and other municipal boards, as she

helped them to understand and protect their natural systems, and to articulate their community vision. She has truly changed the landscape and the future of the towns where she worked.

Happily, Suzanne will continue to have a positive impact on the environment in South Jersey as she continues in her long-time volunteer positions as Chairman of the Franklin Township (Gloucester) Environmental Commission, and President of the South Jersey Land and Water Trust. Happy "retirement," Suzanne! 



Suzanne McCarthy

Good Earthkeeping

Information commissions can duplicate to use in their communities

Eco-friendly pool care makes a splash

By **Lucy Halse**, Contributing Writer, Vanguard Energy Partners

Backyard swimming pools can be an oasis from summer's relentless heat. But they can also lead to higher electric bills, costly maintenance, and a heavy carbon footprint. Fortunately, pool owners can take some simple actions to dramatically reduce their pools' strain on the environment.

Reduce the chemical load

Pool chemicals, such as chlorine, are among the most environmentally unfriendly ingredients in most residential pool water. Owners must carefully manage the discharge of chemically treated water, because the improper disposal of chlorinated water can not only damage the environment but also cost the homeowner fines for environmental damage.

Chemicals used to treat pool water need to be added frequently as they evaporate. Fortunately, chlorine-free pool cleaners,

such as saltwater, are becoming more commonplace. Saltwater has slightly lower evaporation rates than chlorinated water, poses minimal harm to the environment when discharged, and is gentler on skin and the respiratory tract.

A major benefit of saltwater systems, says Rob Cox, president of the Virginia-based PoolCenter (www.poolcenter.com), is that "there is no buying, transporting, handling or storing of hazardous chlorine chemicals." Cox also notes "there is less production and transportation of chlorine products in plastic buckets, which creates waste and pollution."

Certain pool lining materials can also reduce the need for algaecides and excessive amounts of chlorine. Gunite, perhaps the most popular pool liner material, has crooks and crevices that create a perfect habitat for algae and encourage its growth. Vinyl liner has a smoother surface than gunite, but still has some seams that foster algae growth. Gunite and vinyl cost more to maintain and require the use of more chemicals to eradicate the algae that grows in crevices. Fiberglass liners, with their seam-free surface, are the most environmentally friendly choice on the market today. The smooth surface discourages algae growth and reduces maintenance time and chemical use.

Save energy

Pool owners are also looking for ways to save on energy costs and reduce fossil fuel dependence. Pool heaters fueled by natural gas or propane have historically



Pool owners can save significant amounts of water with simple changes.

been the heating choice of pool owners. Heat pump pool heaters, another popular option, are generally more energy efficient than gas, but use more energy in cooler outside air temperatures and rely on electricity to capture and distribute heat throughout pool water.

Low-maintenance solar heaters, cheaper than the others and pollution-free, are rising in popularity as a pool heating method. Furthermore, New Jersey's residential pool owners who install solar pool heaters are eligible for State rebates. For further information and current rebate amounts, visit the New Jersey Clean Energy Program's site at (www.njcleanenergy.com/residential/programs/warmadvantage/water-heaters). Reducing your pool's temperature and heating it fewer months per year will also reduce energy use.


Another simple, effective way to reduce your pool's energy use is to keep it covered. Depending on location and weather conditions, 50 to 70 percent of water may be lost due to evaporation. Covers and solar blankets help pools retain heat, thereby reducing heating costs and evaporation rates.

For ultimate energy savings, Cox recommends running your pool pump less or installing a two-speed pump. Keeping pool equipment such as filters, sweepers, and pumps well maintained increases their efficiency and lifespan. Electric demand (and cost) is at its highest during peak hours, when most utility companies must source their electricity from older, dirtier, and less efficient generators to meet customer demand. Running your pool filter and sweeper during off-peak hours (in New Jersey from 9 pm to 7 am) will reduce strain on the electric grid, save energy, and lower your electricity cost.

Save water

Finally, pool owners can save significant amounts of water with simple changes. Effective and efficient pool draining and refilling can save thousands of gallons of water. Traditionally, pools are cleaned by draining existing water, acid-washing the liner, and refilling with thousands of

gallons of new water. More pool cleaning companies today are adopting new filtering methods to simply filter, clean, and re-use old pool water, and many companies are producing innovative, environmentally friendly pool maintenance products to meet clients' growing demands.

Installing a new pool filter is another great way to reduce water waste. Cartridge filters, says Cox, don't require backwashing and save significant amounts of water. He recommends checking for leaks, which "can save hundreds of gallons per day of heated, treated pool water." According to The Pool Center, a one-inch drop in water level equates to a loss of up to 500 gallons of water. Signs of leaks include recurring algae growth and water-saturated soil in the area around the pool, pumps, and plumbing. 

For more information:

www.tenttowns.org/10t/factshet.htm


www.consumerenergycenter.org/home/outside/pools_spas.html

www.eia.doe.gov/emeu/recs/recs2001/enduse2001/enduse2001.html

Tax break on charitable donations from IRAs

If you are at least 70½ years of age, you can make a contribution to ANJEC directly from your IRA account and help satisfy your Required Minimum Distribution (RMD). This constitutes an extra tax break, because RMD amounts up to \$100,000 that you donate directly to a charity can be excluded from your taxable gross income.

Since there is no tax deduction involved, even those who don't itemize deductions may participate.

Don't wait to take advantage of this opportunity – it's only available through Dec. 31, 2011. If you will be 70½ by the end of this year, talk to your IRA plan administrator about transferring IRA funds directly to ANJEC as a charitable contribution. 


Check your county's wastewater management plans

By **Jody Carrara**,
ANJEC Project Director

As required by the Water Quality Management Planning Rule, (N.J.A.C. 7:15), most New Jersey counties have submitted updates to their wastewater management plans. (Bergen, Passaic, Union and Warren have declined to plan.) Municipal and county maps must designate both Sewer Service Areas (SSA) and areas designated for septic systems for review by the public and New Jersey Department of Environmental Protection.

Sewer construction is limited to areas appropriate for intense development and should not be extended to critical environmental sites such as wetlands, stream corridors, forests and farmland. Some additions or changes to your SSA may be happening now. Proposals for more sewers are being negotiated at the State level as private citizens or developers ask for sewer service on their properties.

Find out where sewer systems are proposed for your town. Before extensions are made, it is important for environmental commissions and other municipal officials to review the studies on sewer plant capacity, buildout and water supply.

For more information on the status of plan updates, see the "County WMP Status Report" available at www.nj.gov/dep/watershedmgt/. 



A.J. Meerwald Sails

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Check the ANJEC web site (www.anjec.org) for details of each sail.

To register or for further information,
email ANJEC at (info@anjec.org)
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AJ Meerwald sails are co-sponsored by ANJEC, the Tenafly Nature Center and the Fort Lee Common Sense Society. Each trip is limited to 45 people and reservations must be paid in advance (check-in at the dock). A portion of ANJEC's ticket sales directly benefit our mission and is tax-deductible to the extent provided by law.

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Book Reviews



What We're Reading

The American Horseshoe Crab

By Carl N. Shuster, Jr., Robert B. Barlow, and H. Jane Brockman

Reviewed by Peter Craig, ANJEC trustee

The American Horseshoe Crab is a remarkable volume dealing with the enigmatic and perhaps intimidating creature, *Limulus polyphemus*. This animal is not dangerous to humans, and is a "living fossil" whose reproductive cycle is tightly entwined with the planet-spanning migratory patterns of shorebirds like the red knot and the sanderling.

However there is more of great interest in this book; much, much more.

It was written and edited by 20 scientists who have devoted much of their careers to the study of *Limulus*. Although the volume ranges widely in content, there are three major themes:

- the crab itself: anatomic structures and physiologic functions, behavioral characteristics, feeding, reproduction and evolutionary lineage;
- relationships between *Limulus* and its environment, including a close look at the important link with migratory species of seabirds, a now-famous link virtually unknown before the 1960s;
- the considerable benefits that man has derived from the study and exploitation of the horseshoe crab.

The benefits of this species include bits of real scientific drama:

Although the horseshoe crab has ten eyes, the prominent lateral pair is unusual in that each eye consists of about a thousand large photoreceptor units that are amenable to scientific inquiry because of their size. In the 1920s H. Keffer Hartline realized this fact at the Woods

Hole Marine Laboratory, and proceeded in subsequent decades to reveal the "...basic mechanisms of vision common to all species, including humans..." Hartline received the Nobel prize for his work in 1967. A young Robert Barlow was one of his students at Rockefeller University. The horseshoe crab has only one kind of blood cell, the "amoebocyte," that becomes amoeba-like when exposed to certain biologically potent bacterial toxins, quickly spilling large quantities of a protein called LAL that coagulates, immobilizes and neutralizes the toxins. That protein has become the basis for an extremely sensitive bioassay for the toxins. Untold amounts of human grief have been avoided through the use of this bioassay.

Perhaps the most depressing use of the horseshoe crab is as a commodity, applied as a fertilizer for agriculture or used as bait in commercial eel and conch fisheries (see Chapter 14). If you're thinking that there must be a better way, there is (see Chapter 15).

The high-quality color plates in this book are a unique and invaluable resource. While the book is relatively costly, all those who are fascinated by the amazing diversity of the creatures of this planet should save their pennies and add *The American Horseshoe Crab* to their personal libraries. It will be worth every penny in the years to come.

Eaarth

By William McKibben

Reviewed by Stephen Carroll, ANJEC volunteer and member, Chatham Township Environmental Commission

There has been a significant shift in emphasis among knowledgeable people who write about climate change. Prior to


2010 the focus has been on mitigation of climate change – concentration on the steps necessary to prevent damage to our world from fossil fuel emissions. The focus has shifted to recognition that – while mitigation efforts must still be pursued to avoid the worst consequences of global warming – we must also learn to adapt to the significant damage to the planet that has already occurred. *Eaarth* is at the forefront* of this view. Early in the book McKibben reflects on the earth as viewed by astronauts forty years ago and concludes:

“But we no longer live on that planet.... The world hasn’t ended, but the world as we know it has – even if we don’t quite know it yet. We imagine we still live on that old planet, that the disturbances we see around us are the old random and freakish kind. But they’re not. It’s a different place. A different planet. It needs a new name. Eaarth.”

Unlike most climate change specialists, McKibben accepts that “peak oil” is imminent and identifies two perils – that

there will be a propensity to substitute coal for oil and increase our carbon footprint and that recurring oil price spikes will frequently depress the economy thereby limiting our capacity/ability to create a new renewable energy infrastructure.

His suggested solution is localized food and energy production. He makes a convincing case, but it is hard to believe that anything short of catastrophe would bring about such a social reorganization.

McKibben’s stark elucidation of how much climate change is already affecting us makes this a must read. It is not only a problem for our grandchildren; it is one for us. 

**Preparing for Climate Change* by Michael D. Mastrandrea and Stephen H. Schneider is another highly recommended book that makes this argument.

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To be presented at the
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Environmental Congress
Saturday, October 15**

Brookdale Community College,
Lincroft

**Deadline: Must be received by
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38th Environmental Congress
Brookdale Community College, Lincroft

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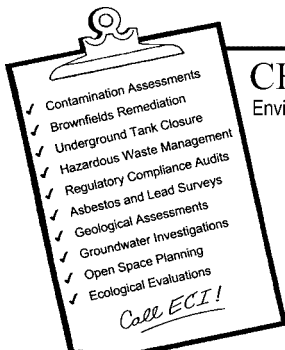
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