

# ESTUARY NEWS

NEWSLETTER OF THE DELAWARE  
ESTUARY PROGRAM



Volume 14 / Issue 3 Spring 2004

## TAMING THE DELAWARE AT THE TAYLOR WILDLIFE PRESERVE IN BURLINGTON COUNTY

*One man's story of a land he calls home.*

BY VAN RICHARDS

**Sitting on a bench overlooking the Delaware River, I was struck by the sound of rushing water.** This is normally a common sound as the tide drains several acres of marsh and wetlands behind the centuries old dike on which my bench was perched. However, it was high tide in the Delaware--a time when the tide gate should have been shut to control the flow, and the water in the marsh calm. The roar was not unlike the stern of a fast-moving ship at sea. Even more unnerving was the sight of the turbulence caused by the pipe's full 24" diameter, spewing river water backwards into the marsh.

The story behind this unsettling scene begins three years earlier when Suzanne and Syb Taylor, whose ancestors include Joshua Wright, the purchaser of this property in Cinnaminson, New Jersey, began to address concerns they had about the aging and poorly engineered tidal gates that have preserved Taylor's Homestead Farm and Wildlife Preserve for countless decades. (Please see the map on page 15 for location.)

After years of tests, surveying, and permits, the date was set for the estimated two days it would take to cut through the berm at low tide to remove, then install, the pipes involved. The work went along briskly and with no hitch, until it was time to install the 900-pound iron, self-sealing floodgate. It was, at this point, determined that the gate was too small for the job. The contactors left the site leaving a local resident to fashion a temporary valve out of wood, milk crates, and an old truck mud flap. It was this clever contraption that eventually buckled behind an unusually high tide and allowed a deluge of water into the marsh.

The history of this unique piece of land begins with its geology. During the Ice Ages, 100,000 to one million years ago, glaciers that covered North America never reached as far south as Trenton, however the geologic impact on Cinnaminson and the Delaware River was significant. The



*"Working on Headwall" -- A worker has placed special cement that hardens even in wet environments and is placing rocks around the back of the headwall. A wall of dirt on the inland side of the pipe has not yet been removed to allow water to flow through the pipe.*

land that Joshua Wright would eventually purchase in 1720, across from the northeastern part of Philadelphia, would owe its formation to the glaciers.

When the ice sheets formed, the sea level dropped by about 200 feet exposing a great deal of coastal land, including the area around South Jersey and Philadelphia. As the end of subsequent Ice Ages approached, huge amounts of water runoff flowed over these areas and gradually caused the sea level to rise. Deposits of sand and silt were left behind and now mixed layers of clay, sand, and gravel cover solid rock.

The base bedrock, so prominent in northern New Jersey's highlands and mountains, gradually slopes downward the further south it goes, so by the time it reaches the Cinnaminson shoreline, it is about 50 feet below the Delaware riverbed. By the time it reaches Cape May, the base rock is more than 6,000 feet below sea level.

In the 1600s, when the first Europeans arrived, the Unami tribe of the Lenni-Lenape populated the area around the East

*(continued on page 2)*

Riverton shore of the Delaware River. In 1677, the Indians agreed to a deed giving the Europeans use of all unoccupied land between Timber Creek, located just south of the Walt Whitman Bridge, and the Rancocas Creek, located just north of Riverside and Delran. Gradual development of the land continued, including the building of roads that followed early Native American trails. The tidal marshland along the immediate shoreline was sparsely developed in 1720 when Joshua Wright made his purchase.

It is with this backdrop of geological and human history that the Taylor's came to inherit what is now roughly 130 acres of farmland, marsh, meadows, and woods in East Riverton, New Jersey. Intending to provide permanent protection for this land, Suzanne and Syb Taylor donated a conservation easement of 90 acres to the Land Trust of New Jersey. The Taylor family lives on an adjacent 40-acre farm. Today, the easement and the farm are known as the Taylor Wildlife Preserve and the River Side Homestead Farm.

Much of the coastal land of the farm and preserve has been created by the tailings of the dredging of the Delaware River channel, the most recent of which was done in 1957. The farming of this land, done by generations of the Taylor family for three centuries, requires hard work since the area has been prone to flooding. To combat this risk, dikes were built along the river to hold back the tides. These embankments had large pipes running through their base fitted with tide gates at the river end. On the farm side of these dikes, a network of ditches were dug and maintained to allow trapped flood or rainwater to escape through the pipes at low tide. It is at low tide that the gates would be pushed open by trapped water inland allowing the land to drain. At high tide, these gates were pushed shut by the greater weight of the river's heightened water level, thereby keeping water from flooding inland.

The contractors eventually returned to install a properly sized tidal gate. Repairs are being finished on the staging site and berm that was damaged by heavy equipment during the

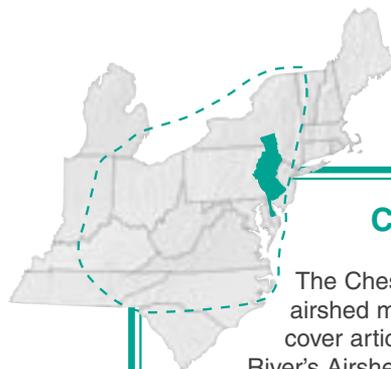
project. New plantings on the site are being added, and by the end of the summer of 2004, the human invasion to repair this vital flood control feature should be all but erased.

The Friends of the Taylor Wildlife Preserve is a group helping to look out for the interests of this land. It's most recent accomplishment, aside from volunteer clean-up days and many other activities, was roughly 2 years ago when they were able to add 47 acres to the refuge, saving a small pond and adjacent land from a developer's plan for a 117-unit housing development.

Though much of the land is still farmed, there are also several families, many with familial ties to the Taylor's lineage, who now reside on the land and who have a vested interest in the protection and maintenance of the area. The completion of this project is not only protecting the surrounding refuge and farm, but is also enabling the communities of Riverton, Cinnaminson, Delran, and beyond to reap the benefits of the wildlife and wilderness it provides.

## More info

*Van Richards is a freelance writer, creative advertising consultant, former teacher, and long-time resident of the River Side Homestead Farm in Riverton, New Jersey. For additional information about the Taylor Wildlife Preserve and the River Side Homestead Farm visit <http://www.state.nj.us/cgi-bin/agriculture/jerseyfresh/search.pl?type=pyo&county1=burlington> and <http://www.state.nj.us/dep/greenacres/harborreef.htm>*



## Clarification

The Chesapeake Bay airshed map used in the cover article, "The Delaware River's Airshed", in the winter 2004 issue of Estuary News, was redrawn from a map developed by R. Dennis (Atmospheric Science Modeling Division, NOAA, NERL and U.S. EPA) and the original map can be found at <http://noaa.chesapeakebay.net/air/noaaweb.jpg>. For more information about nitrogen loading in the Delaware Bay, we encourage our readers to refer to Scudlark, J.R. and T.M. Church. 1993. Atmospheric input of inorganic nitrogen to Delaware Bay. Estuaries 16(4):747-759.

WHERE IN THE ESTUARY ARE YOU?



For the answer, see Page 14.

# UPDATES FROM DELEP

## PUBLIC PARTICIPATION IMPLEMENTATION TEAM (PPIT)

Since 1991, the Delaware Estuary's Minigrant Program has awarded more than 114 grants, totaling more than \$370,000. This year, priority was given to projects that involved habitat restoration, enhancement, and/or protection of the natural resources in the Delaware Estuary.

The purpose of the FY 2004 minigrant program is to provide funding support to groups that advance the implementation of the actions recommended by the Delaware Estuary Program's Comprehensive Conservation and Management Plan (CCMP). The projects or activities funded must implement one or several of the CCMP's 77 action items. Forty impressive proposals requesting more than \$170,000 were submitted by organizations from throughout the Delaware Estuary Region. A total of \$50,571 was approved for distribution to the following organizations:

**Delaware Center for Horticulture** in Wilmington, Delaware was awarded **\$4,799** to partner with Bayard Elementary School and Countryside Garden Club to restore a degraded bog and habitat garden through a newly formed after-school garden club.

**Delaware Native Plant Society** of Dover, Delaware was awarded **\$1,500** for the management of three reforestation sites. In 2003, the DNPS planted more than 28,000 seeds of oaks and hickories in three, old-field habitats that covered nearly 34 acres. This project will install tree tubes around a large percentage of the emerging seedlings, and mechanically remove weedy species that may threaten to overwhelm the oaks and hickories. In addition, where more seedlings are growing than needed, the seedlings will be transplanted to areas where seedlings did not emerge, or to a nearby field.

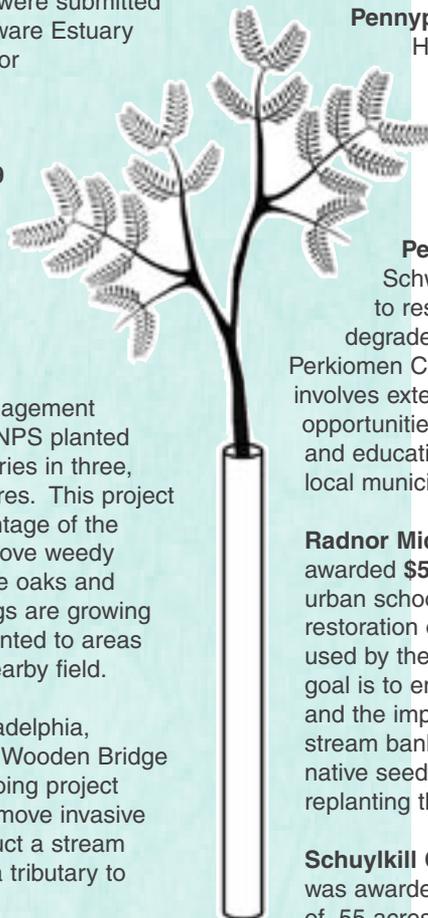
**MaSt Community Charter School** in Philadelphia, Pennsylvania was awarded **\$3,500** for the Wooden Bridge Run Habitat Restoration Project. This ongoing project will collect baseline environmental data, remove invasive species, plant native vegetation, and conduct a stream channel clean up of Wooden Bridge Run, a tributary to Pennypack Creek.

**Montgomery County Conservation District** in Collegeville, Pennsylvania was awarded two grants.

- The Conservation District received **\$4,100** to address two existing stormwater drainage swales on the campus of the Upper Perkiomen High School. Currently these swales are managed as turf grass as they drain athletic fields and parking lots. Native species will be installed to create bioretention areas within the swales. These bioretention areas will slow and filter stormwater before they reach the Green Lane Reservoir. Signage and a community

education campaign will inform those using the campus of the project and recruit their involvement.

- They also received **\$3,700** to create a network of sites around Montgomery County where shrubs are propagated for the purpose of growing live stakes. These stakes will then be available to local community and conservation groups to perform small-scale stream stabilization and wetland enhancement projects. These sites are owned by non-profit conservation and education organizations with a commitment to promoting riparian buffers. Instructional material will be developed for volunteer groups to describe how to prepare and install live stakes.



**Pennypack Ecological Restoration Trust** in Huntingdon Valley, Pennsylvania was awarded **\$4,006** for a Japanese Knotweed Control/Riparian Restoration project that will incorporate college biology department curriculum and hands-on stewardship of riparian lands along the Pennypack Creek.

**Perkiomen Watershed Conservancy** in Schwenksville, Pennsylvania was awarded **\$5,000** to restore and enhance the riparian buffer of a degraded, 500-foot portion of the East Branch of the Perkiomen Creek in Sellersville, Pennsylvania. The project involves extensive volunteer participation, educational opportunities for local secondary and college students, and education and involvement of the landowner and local municipality.

**Radnor Middle School** in Wayne, Pennsylvania was awarded **\$5,000** to involve students from suburban and urban schools, their families, and the community in the restoration of the habitat surrounding the boathouse used by the Philadelphia Adaptive Rowing Program. The goal is to encourage and promote the understanding and the importance of restoring riparian buffers to local stream banks by removing invasive plants, propagating native seeds within classroom nurseries, and finally, replanting the habitat with diverse native species.

**Schuylkill Canal Association** in Oaks, Pennsylvania was awarded **\$4,339** for bank stabilization, enhancement of .55 acres of terrestrial riparian habitat, establishment of shrub and ground cover on steep slopes, creation of aquatic plant habitat, creation of native plant educational areas, and establishment of a designated pathway to a popular fishing area.

The **Village of Ardentown** in Northern Delaware was awarded **\$5,000** to fund professional assistance to help remove the most critical groups of invasive aliens in the Ardentown Woods near Naaman's Creek. The area will be replanted with native species and residents will be trained to remove invasive to protect the woods.

# UPDATES FROM THE DELEP CONTINUED

**W.B. Saul School for Agricultural Sciences** in Philadelphia, Pennsylvania was awarded **\$4,626** to restore a meadow/open field habitat for use by migratory birds and other wildlife.

**Willingboro Environmental Commission** in Willingboro, New Jersey was awarded **\$5,000** for the first phase of a streambank restoration project of two areas at the Willingboro Lakes Nature Preserve.

## \$\$ GRANT ANNOUNCEMENT \$\$

### 2004 Delaware Estuary Grants Program

The Delaware Estuary Grants Program, administered by the National Fish and Wildlife Foundation, provides grants to organizations working on a local level to protect and improve watersheds in the Delaware Estuary, while building citizen-based resource stewardship. The purpose of the grants program is to address the living resource needs of the Delaware Estuary's ecosystem. The Grants Program has been designed to encourage the development and sharing of innovative ideas among the many organizations wishing to be involved in watershed protection activities.

The Delaware Estuary Grants Program seeks to:

- Support communities in developing and implementing watershed management plans;
- Encourage innovative, locally-based programs or projects that restore important habitats and improve water quality within the Delaware Estuary;
- Develop the capacity of local governments, citizens groups and other organizations to promote community-based stewardship and enhance local watershed management;
- Promote a greater understanding of the Delaware Estuary and the interrelationship between the health of the Estuary and the condition of local watersheds; and

- Strengthen the link between communities and the Delaware Estuary Program.

Grant workshops will take place on: Monday, May 3, 2004, 1-3 p.m. at the Delaware Department of Natural Resources and Environmental Control, in Dover, Delaware. (For driving directions, please visit <http://www.dnrec.state.de.us/dnrec2000/Directions.htm>)

Tuesday, May 4, 2004, 1-3 p.m. at the Pennsylvania Department of Environmental Protection - Southeast Regional Office, in Norristown, Pennsylvania. (For driving directions, please visit <http://www.dep.state.pa.us/dep/deputate/fieldops/se/drivingdirections.htm>)

Tuesday, May 4, 2004, 5-7 p.m. at Rutgers University EcoComplex, in Bordentown, NJ, following the Burlington County Stormwater Management Conference. (For driving directions, please visit <http://ecocomplex.rutgers.edu/directions.html>) (For more information on the conference, please visit [www.co.burlington.nj.us/rancocas](http://www.co.burlington.nj.us/rancocas))

Wednesday, May 5, 2004, 10 a.m. -12 p.m. at Rowan University, Rowan Hall Auditorium, in Glassboro, New Jersey (for driving directions please visit <http://www.rowan.edu/pdf/directions.pdf>)

### More info

*For more information, please call Lynn Dwyer at (631) 312-4793 or [lynn.dwyer@nfwf.org](mailto:lynn.dwyer@nfwf.org). For a description of the grant guidelines, please visit [www.nfwf.org/programs/delaware.htm](http://www.nfwf.org/programs/delaware.htm).*

*The meetings of the DELEP Implementation Teams and Advisory Committees occur on a regular basis and are open to the public. For meeting dates and times, please call the individuals listed below:*

#### Public Participation Implementation Team

Kathy Klein  
(800) 445-4935 ext. 16  
[kklein@delawareestuary.org](mailto:kklein@delawareestuary.org)

#### Monitoring Advisory Committee

Edward Santoro  
(609) 883-9500 ext. 268  
[edward.santoro@drbc.state.nj.us](mailto:edward.santoro@drbc.state.nj.us)

#### Estuary Implementation Committee

Peter Evans, DELEP  
(609) 883-9500 ext. 217  
[peter.evans@drbc.state.nj.us](mailto:peter.evans@drbc.state.nj.us)

#### Habitat and Living Resources Implementation Team

Kellie Westervelt  
(800) 445-4935 ext. 15  
[kwestervelt@delawareestuary.org](mailto:kwestervelt@delawareestuary.org)

#### Information Management Advisory Committee

Karl Heinicke, RIMS Coordinator  
(609) 883-9500 ext. 241  
[karl.heinicke@drbc.state.nj.us](mailto:karl.heinicke@drbc.state.nj.us)

#### Fish Consumption Advisory Team

Tom Fiksln, DRBC  
(609) 883-9500 ext. 253  
[thomas.fiksln@drbc.state.nj.us](mailto:thomas.fiksln@drbc.state.nj.us)

#### Toxics Advisory Committee

Tom Fiksln, DRBC  
(609) 883-9500 ext. 253  
[thomas.fiksln@drbc.state.nj.us](mailto:thomas.fiksln@drbc.state.nj.us)

# TIDINGS

## COMING SOON TO A RIVER NEAR YOU: AMERICAN SHAD

**American shad have shown up in the Schuylkill River at Philadelphia.** It won't be long before anglers will be catching future generations of these fish at the base of the Kernsville Dam, up in the headwaters of the Schuylkill, just northwest of the town of Hamburg. (Please see the map on page 15 for location.)

According to biologists with the Pennsylvania Fish and Boat Commission, these shad returning to the River most likely originated as juvenile shad that were stocked three to four years ago. That assessment is based on the recently completed analysis of adult shad collected from the River last spring by fishery workers from the Philadelphia Water Department and Normandeau Associates, a private consultant.

All two-dozen American shad analyzed at the Commission's Benner Spring Fish Research Station were found to have chemical tags indicating that they had been stocked by the Commission in either 1999 or 2000. The Commission began stocking the Schuylkill River with young American shad, called fry, in 1999. Since then, an average of 500,000 fry have been stocked each year.

Eggs for the program were obtained from adult shad collected in the Delaware River and transported to the Commission's Van Dyke Hatchery in Juniata County, Pennsylvania, where fry were reared for ten to thirty days.

All of the stocked fry were tagged with a chemical tag to distinguish them from shad naturally produced in the wild. To tag the fry, shad as young as three days old were immersed in a tetracycline solution that is absorbed into their growing bone tissue. At that early age, the otolith or earstone, is the only true bone present in the fish. All other bones, still in their early stages of development, are comprised of cartilage. The otoliths grow by adding rings, similar to the rings in tree trunks, except that one ring is laid down each day.

Using specially equipped microscopes, researchers are later able to detect the chemical tag in the otolith of adults, and determine if the fish entering the River as part of their spawning migration originated from a hatchery or in the wild. Biologists are also able to confirm the age of the fish because unique tag sequences are applied from year to year.

Of the 24 fish collected from the Schuylkill River in the spring of 2003, 15 were age four, including 14 males and one

female. The other nine fish were age three males, which is a surprising result since few male shad were previously thought to mature as early as three years of age.

The American shad is the largest member of the herring family. Adults commonly reach four to eight pounds. Shad spend most of their life in the ocean and return to freshwater to spawn. Each spring, adult shad migrate to coastal rivers from Florida to Newfoundland. Spawning takes place around dusk at water temperatures from 60 to 65 degrees. A single female shad can produce up to 600,000 eggs, but most average around 250,000 eggs.

The Commission is a national leader in restoring American shad to their natal waters. They have spent a great deal of effort on the Susquehanna River and its tributaries, resulting in the largest such project of its kind. Recently, however, there has been an increased effort on the tributaries to the Delaware River, such as the Lehigh and Schuylkill Rivers.

On the Schuylkill, a series of dams block shad migration. The first of these is Fairmount Dam. Fairmount has a fish ladder, but it is old and somewhat ineffective at passing shad. The Philadelphia Water Department is replacing it with a more modern ladder. The design should be completed in the summer of 2004, with anticipated construction by the U.S. Army Corps of Engineers starting in the summer of 2005, barring unforeseen changes in federal funding. The Pennsylvania Department of Environmental Protection (PA DEP) owns the next two dams, the Flat Rock and Plymouth Dams. A fish ladder is scheduled to be installed at Flat Rock Dam. Plymouth Dam is naturally breaching itself and will eventually be removed. Exelon Energy has agreed to build fish ladders at the next two upriver dams, Norristown and Black Rock. The next pair of dams, Vincent and Felix Dams, are both breaching naturally and will be removed by PA DEP, eventually re-opening nearly 100-miles of habitat to migratory fish. That will clear the way upriver to the base of the Kernsville Dam.



*“According to biologists with the Pennsylvania Fish and Boat Commission, these shad returning to the River most likely originated as juvenile shad that were stocked three to four years ago.”*

### More info

*This article was edited and reprinted from Destinations, a monthly travel and outdoor magazine in Southeastern Pennsylvania. For more information about Destinations, visit [www.destinationsguide.net](http://www.destinationsguide.net).*

# TIDINGS CONTINUED

## WHAT DOES IT MEAN FOR A BUILDING TO BE “GREEN”?

*Pennsylvania DEP employees are using less water and electricity in their new building created with recycled construction materials.*

**BY JOSEPH FERRY, COMMUNITY RELATIONS COORDINATOR, PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION**

Moving 100 vehicles, 300 people, 4,000 boxes of files, and untold pieces of equipment is no easy task. Throw in cold, rainy weather and a tight timeframe in which to accomplish it all, and you have a recipe for disaster.

Not so for Pennsylvania Department of Environmental Protection’s Southeast Regional Office (PA DEP), where the Herculean task of moving from Conshohocken to the new “green” headquarters in Norristown went off without a hitch (well, hardly a hitch), thanks to meticulous advance planning and some old-fashioned teamwork by employees over a weekend. By the time everyone reported for work Monday, February 9, in the new building, telephones were hooked up, computers were humming, and email was flying. (Please see the map on page 15 for location.) Even allowing for the requisite unpacking of boxes, actual work was being conducted Monday morning.

“All in all, things went smoothly,” said Regional Director Joe Feola. “That’s a tribute to a lot of hard work by a lot of people in the office.”

The Southeast Region’s new headquarters is the latest in a growing list of “green” buildings in the Commonwealth. Pennsylvania leads the nation with nine buildings certified by the U.S. Green Building Council under the internationally recognized Leadership in Energy and Environmental Design (LEED) program. Of those, two have been awarded Gold Level certification, three have earned Silver, and four have achieved certified status. Designed to reduce resource consumption while providing a comfortable work place for

*“We’re very happy with the new building,” said Regional Director Joe Feola. “We look forward to serving the public and to being a presence in downtown Norristown for a long time.”*

more than 300 employees, the SERO’s four-story, 85,000-square foot building likely will achieve Gold Level status through the LEED program.

The Rendell administration is promoting environmental consciousness in architectural designs for new buildings. Green buildings use less water and electricity than other buildings and utilize environmentally friendly and recycled construction materials; they promote technology that can preserve resources and save money; and they offer tremendous health benefits.

The most obvious “green” aspect of the building is a 4,000-gallon wooden cistern that is connected to the roof gutters to collect rainwater. The filtered rainwater will be used to flush toilets in the building. In the event of a prolonged drought, the cistern can be filled from the public water system. By the same token, during an unusually heavy rainfall, water can be diverted to the regular storm drain system. The cistern is the focal point of a first-floor atrium that includes hardscaping, plantings, and benches. Employees are already looking forward to having lunch there!

Combined with waterless urinals and other low-flow plumbing fixtures, the building is expected to use 58 percent less potable water (750,000 gallons a year, down to 313,000 gallons), compared to a similarly sized non-green building.

Energy costs are expected to be cut by approximately 35 percent (\$1.12 per square foot down to \$.072 per square foot) compared to a conventional building, thanks to the use of “Green-E” produced electricity, lighting power density that averages less than 0.75 watts per square foot; a daylighting design of the 4-story atrium with photocell-sensored dimming; and high performance split task ambient T-5 indirect lighting and occupant sensors.



*A view of the first floor atrium and 4,000-gallon wooden cistern that collects rainwater from the rooftop at PA DEP’s new facility in Norristown, Pennsylvania.*

Of course, location plays a role in the environmentally friendly nature of the new building. Situated on a former brownfield site, the building is adjacent to a regional rail and bus transportation center that might encourage some employees to leave their vehicles at home. The economic activity generated by the new building should also help in the borough's downtown revitalization efforts.

Employees should be comfortable in their new surroundings. The heating, ventilation and air conditioning system includes an underfloor supply air plenum air distribution system with individual controls for each office and workstation. The floor-mounted air-distribution diffusers provide nearly 100 percent ventilation efficiency, and high performance windows eliminate the need for perimeter heating systems.

Even the construction process was conducted in an environmentally friendly way. The construction management plan diverted more than 75 percent of waste from landfill disposal. More than 20 percent of building materials by cost contain recycled content, and more than 50 percent of building materials were manufactured locally. Workers also used special blended cement in concrete that significantly reduced

CO2 emissions, as well as low-VOC solvent-free paints, adhesives, sealants, and coatings throughout the building.

"We're very happy with the new building," Feola said. "We look forward to serving the public and to being a presence in downtown Norristown for a long time."

## More info

*For more information about PA DEP's new digs, here are the facts: street address: 2 East Main Street, Norristown, PA 19401; new main telephone: (484) 250-5900*

### Other numbers:

*Air Quality (484) 250-5920*

*Environmental Cleanup/Waste Management (484) 250-5960*

*Radiation Protection (484) 250-5950*

*Regional Director (484) 250-5940*

*Water Management (484) 250-5970*

*Water Supply Management (484) 250-5980*

*Records Management Public Review (484) 250-5910*

## MAKING WAVES

### REGIONAL URBAN SUMMIT: MAKING THE CONNECTION

The nation recognizes the unique environmental management challenges facing urban communities. Municipalities are employing diverse strategies to address not only traditional environmental problems, but also historical, cultural and socio-economic issues as well. The Delaware River Watershed serves as an excellent backdrop for exploring the value of the watershed management approach in balancing public health and environmental goals with communities' goals to remain economically viable. Five major cities – Camden, Trenton, NJ; Chester, Philadelphia, PA; and Wilmington, DE - are located along this vibrant river, and its environmental integrity competes with important socio-economic values that must be sustained.

A two and one-half day Summit will take place on September 13<sup>th</sup>–15<sup>th</sup>, 2004 to help make the connections stated above. The Summit will include panel discussions, workshops and a poster session linking land and water management to achievable sustainable goals.

### MAKING THE CONNECTION

The theme, "Making the Connection", is intended to provoke thought and discussion about the numerous linkages to the Delaware River and the ways regional collaboration can guarantee its protection and valuable use.

The River, as a source of drinking water, links millions of people in the urban watershed. The waterfront and other

areas serve as a public treasure for recreation, as well as an economic resource for private and commercial users that depend on local waterways for business.

### CALL FOR ABSTRACTS

The sponsors of the Urban Summit, the US Environmental Protection Agency and the Delaware River Basin Commission, invite members of government agencies, non-governmental organizations, the scientific community, private industry, and stakeholders to submit papers on innovative integrated approaches and/or case studies on the following topics:

- **Sustainable Use –Linking Land and Water:** Discuss ideas to maintain adequate and reliable supplies of quality water to sustain human and ecological needs. Include ideas of land and water resources preservation, while recognizing the community's social and economic relationship to these resources.
- **Waterway Management** Discuss ways to maintain the Delaware River waterway to minimize flood-induced loss of life and property, and support healthy ecosystems.
- **State of the Environment Indicators:** Discuss long-term indicators that allow environmental and health professionals to assess ecological and public health conditions in the urban environment.
- **Urban Influences:** Discuss various health issues associated with poor indoor and outdoor air quality, lead poisoning, waste clean-up sites, industrial facilities and other environmental threats.

# MAKING WAVES CONTINUED

- **Education and Involvement for Stewardship:** Discuss water resource awareness, personal stewardship, professional training and community-based actions.

Abstracts should offer perspectives on institutional coordination and decision-making at all levels of participation. *Case studies can be included in the oral or poster sessions and can be success stories or specific actions taken to accomplish positive changes.*

## Send Hard Copy, Disk, and Cover Letter to:

Ralph Spagnolo – 3WP12  
U.S. Environmental Protection Agency  
1650 Arch Street  
Philadelphia, PA 19103-2029  
Phone: (215) 814-2718  
Or send via email to  
Spagnolo.Ralph@epa.gov

## REQUIRED FORMAT

1. TITLE OF THE ARTICLE (ALL CAPS, Centered)
2. Blank line
3. Author(s), affiliation(s) and address(es)
4. Blank line
5. Body of abstract not to exceed 200 words in 12 point Times New Roman font.  
(please indicate whether your submittal is for a discussion panel, workshop and/or the poster session)

## DEADLINE FOR SUBMITTING ABSTRACTS

Friday, May 28, 2004

## KYW-TV (CBS 3) BECOMES MAJOR DELAWARE WATERSHED PARTNER

BY H. MICHAEL MOGIL, CERTIFIED CONSULTING METEOROLOGIST, NATIONAL WEATHER EDUCATOR/ SCIENCE CONSULTANT

Last fall, KYW-TV (CBS 3) became only the second TV station nationwide to join a growing list of media sites participating in the *Watershed and Television Weather Reporting Project* (WATERSHEDS Project) – “Watersheds, Where The Atmosphere Meets The Earth”. Part of the initiative involves efforts by the American Meteorological Society, working with the National Environmental Education and Training Foundation, to expand the reach of TV meteorologists. After all, on-air meteorologists are probably the only scientists that TV viewers may see on a routine basis. Since these meteorologists are THE science presence, and since weather and the environment are a natural pairing, it made sense to move toward linking the two. There is also

*“If you haven’t yet had a chance to see the CBS 3 watershed web site “in action”, we hope you will do so now. Just go to <http://kyw.iewatershed.com> and try some*

a growing awareness that TV and the Internet collectively may be the best ways to share environmental information with the general public.

In this case, several environmental and communication partners across the nation and in the local area are working with CBS 3 to develop easy-to-understand, yet comprehensive, content material and imagery which can then be distributed to TV station audiences both on-line and on-air.

Kathy Orr and her CBS 3 weather team recognize the importance of this collaborative approach. Asked recently about her interest in environmental issues, Orr noted that “...CBS 3 is excited about joining forces with EPA Region III, the Philadelphia Water Department, the U.S. Forest Service, StormCenter Communications, and others. Our goal is to help educate our viewers about the Watershed in an interactive, exciting way so everyone can learn how to keep our environment cleaner and healthier.”

Not surprisingly, last year, Orr kicked off the CBS 3 WATERSHED Project presence with on-air information and stories about water issues, with a special emphasis on the opening of the Fairmount Waterworks Interpretive Center on the banks of the Schuylkill River, in Philadelphia. She also alerted her viewers that her station’s watershed web site was full of general and specific watershed information, links, and calendar information. Since then, Orr has referenced the web site (<http://kyw.iewatershed.com>) and shown several high-resolution satellite images that have showcased watershed-related issues.

As a reader of this newsletter, you know just how many organizations we have in the Delaware Watershed, all dedicated to helping improve the quality of our environment. Many of these are focused on our smaller local watersheds. Others provide a more global perspective since all the watersheds of the Delaware eventually flow into Delaware Bay. There are non-profits, governmental agencies and scores of others who have varying stakes and functions in different parts or aspects of our Watershed. Now we have an important media partner that can be helpful in getting our messages out in a science-based setting to the people that live in and near our Watershed.

What is especially important is that the Delaware Watershed environmental community supports the CBS 3 effort in the following ways:

- **Watch** Kathy Orr and her CBS 3 weather team and look for the environmental information in their weather broadcasts.
- **Visit** the watershed web site at least once a week, checking out the weekly news stories, calendar events, special animations, Envirocast™ images and real-time data.
- **Provide** feedback at the CBS 3 web site (<http://kyw.iewatershed.com/feedback.php>). This includes, but is not limited to, what you like or dislike, the reason(s) behind your feelings, ideas for news stories, updates to the calendar of events, and modifications to the list of watershed partners (e.g., updated web link, new phone number). CBS 3 would also like to know how the site content was used in educational circles (e.g., authentic reading for high school students, real-time data plotting and analysis). Then, CBS 3 and the project sponsors will assess the feedback and determine how the web site, special images and aspects of the WATERSHED Project may be updated in the future. Although there is no guarantee that any suggestion will be adopted, it is only through such feedback that we can all play a role in making the CBS Watershed web site and its on-air reporting a stronger voice for the benefit of the entire Delaware Watershed.

Another TV station, Minneapolis' KARE-TV, will be embarking upon this watershed journey in the spring of 2004. Other stations in Nevada, Texas, Louisiana and Virginia are in discussions to join the WATERSHED Project later in the year.

## More info

*Although the web pages and special satellite images that appear on the CBS 3 watershed web site have been designed by StormCenter Communications, Inc. (<http://www.stormcenter.com/>), they have been developed in partnership with many organizations. Sponsors include EPA's Region III (<http://www.epa.gov/region3/>), the Philadelphia Water Department (<http://www.phila.gov/water>), and the USDA Forest Service (<http://www.fs.fed.us>). Others, including The Academy of Natural Sciences (<http://www.acnatsci.org/>) in Philadelphia, the National Environmental Education and Training Foundation (<http://www.neetf.org/>), NOAA's National Ocean Service (<http://www.oceanservice.noaa.gov/>) and the U.S. Geological Survey (<http://www.usgs.gov/>) have all provided strong support for the Project. Collectively, the sum of these contributions far exceeds what any individual contributor may have accomplished.*

## GET OUT ON THE RIVER

*Sojourns are an experience to tell your grandchildren about...better yet, bring them along and let them tell the story*

BY THE DELAWARE RIVER SOJOURN

In volume two of my World Book Dictionary, the word sojourn is defined as "a brief stay or a stay that is not permanent". The Delaware River Watershed features three annual river sojourns that can be as long or as short as you like. This year, the Delaware River Sojourn will run from June 7-14, the Lehigh River Sojourn will run from June 26-29, and the Schuylkill River Sojourn will run from June 5-11.

Held each June to commemorate River's Month, sojourns are fantastic opportunities for families to bond as they share a new experience, or for some, a return to create new memories.

The Delaware, Schuylkill, and Lehigh River Sojourns combine canoeing, kayaking, whitewater rafting (on the Lehigh), and camping with educational programs, historical interpretation, and more.

Participants can partake in the entire duration of the sojourns or choose a shorter stint. Sojourners on the Delaware will spend two days in each of the river's sections – upper, middle, lower, and estuary – and take diversions to historical canals, tidal marshes, and scenic tributaries. Lehigh River Sojourners will start paddling in the historic town of Stoddartsville, traverse through White Haven, experience whitewater through the Lehigh Gorge heading to Jim Thorpe, and end the three-day journey in Walnutport. Schuylkill River Sojourners will travel from Schuylkill Haven to Philadelphia, along the way participating in the Port Clinton Fire Company's annual spaghetti dinner, visiting historic Leesburg, and wrapping up their final day at Philadelphia's Boat House Row.

## More info

*Those interested can find more information about these river sojourns on their respective web sites: Lehigh River Sojourn is organized by the Wildlands Conservancy [www.wildlandspa.org/calendar/sojourn.html](http://www.wildlandspa.org/calendar/sojourn.html); Delaware River Sojourn is organized by Delaware River Basin Commission [www.delawareriversojourn.org](http://www.delawareriversojourn.org); the Schuylkill River Sojourn is organized by the Schuylkill River Greenway Association [www.schuylkillriver.org/sojourn](http://www.schuylkillriver.org/sojourn).*



# ESTUARY EXCURSIONS

## OFFERING A CURE FOR SPRING FEVER

*The White Clay Creek Preserve has history, natural beauty and fun times for people of all ages.*

BY JOE MATASSINO, DEPUTY DIRECTOR, PARTNERSHIP FOR THE DELAWARE ESTUARY

**Gone are those winter days of driving snow, bone-chilling winds, and freezing rain. It is spring in the Delaware Estuary, and if we're lucky, the sun is shining and the temperatures have reached into the 60's.** You may find during this season, that your mind and body are uncontrollably drawn to the fresh, warm air; the sounds of the birds; and the sight of blooming daffodils and tulips. That longing is called *spring fever*, and its only cure is to get outside.

May I offer an antidote for your condition? How about if you venture out, and take advantage of the public space that has been preserved all around White Clay Creek in both Pennsylvania and Delaware. Collectively, this land, officially recognized as White Clay Creek Preserve in Pennsylvania and White Clay Creek State Park in Delaware, encompasses 4,500 acres that is saturated in natural beauty and historical interest. Surrounded by mature hardwood forest, the White Clay Creek Valley is a popular choice among hikers, cyclists, birdwatchers, hunters and fishermen. (Please see the map on page 15 for location.)

### So what exactly can you expect...

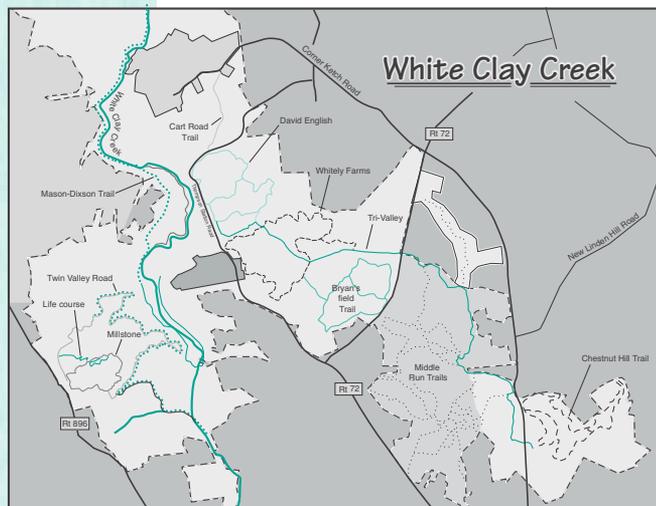
A 15-mile trail segment in White Clay Creek State Park (part of the 190-mile Mason Dixon Trail) has been rated by [www.iexplore.com](http://www.iexplore.com) as one of the top five hiking trails in the Northeast. Beginning at the White Clay Creek State Park's Nature Center parking lot, off of Creek Road, the 2.8-mile trail follows a natural surfaced path along the creek's flood plain to the Pennsylvania state line. At the state line, the trail loops back along the gravel surface of Creek Road, returning to the Nature Center. Educational and interpretative programs are offered at the Nature Center. Those interested in a longer hike can continue on into the White Clay Creek Preserve on a three-mile trail that follows the east branch of the Creek to London Tract Road, where you'll find the London Tract Baptist Meetinghouse. Flat and well marked with posts, the trail is easy to follow and very easy to walk.

The Walter S. Carpenter, Jr. Recreation Area, located off of New London Road (Route 896) is one of the more developed

areas of White Clay Creek State Park. It has more than a dozen miles of marked trails, picnic tables, a pavilion, playground, and disc golf. The Twin Valley Trail within this recreation area will lead you to the Arc Corner Monument (the location where the states of Pennsylvania, Delaware, and Maryland meet). Maps and additional information about these recreational opportunities are available at the nearby Visitor Center.

Also of interest to history buffs is the "Post Mark'd West". This marker was the starting location for the Mason-Dixon survey of the east-west line separating Maryland and Pennsylvania. The marker is accessible from a short side trail off Bryan's Field Trail, which begins in the Possum Hill parking lot off of Route 72.

The White Clay Creek is stocked several times a season and is considered one of the best trout streams in the area. In Pennsylvania, special delayed harvest and artificial lures-only regulations apply to the Middle Branch of White Clay Creek from Good Hope Road south to its confluence with the East Branch. Any bait may be used on the East Branch. Pennsylvania Fish and Boat Commission laws apply. In Delaware, the White Clay Creek is stocked with rainbow and brown trout. The creek is closed, however, to all fishing two weeks prior to the opening day of the trout season. The trout fishing season runs from the first Saturday in April through June 30, and from the first Saturday in October through November 30.



### A little history...

In 1683, William Penn purchased a tract of land from Lenni Lenape Chief Kekelappen. A large portion of this land is now White Clay Creek Preserve. It is thought that Kekelappen lived in Opasiskunk, an "Indian Town" which appears on a survey map of 1699 at the confluence of the Middle and East branches of White Clay Creek.

Opasiskunk was a large settlement, covering several acres, and archeological evidence points to habitation in the area from the early Archaic Period up through the early 18th Century. There are several points of historical interest in the Preserve. The Yeatman Mill House is probably the oldest dwelling in the area. It was the hub of a very prosperous milling and agricultural complex in the 18th and 19th Centuries.

Built in 1729, the London Tract Baptist Meetinghouse is at the intersection of Sharpless and London Tract Roads. In its stone-walled cemetery rest many of the area's earliest settlers including Dr. David Eaton, whose home is in the



The London Tract Meeting House in White Clay Creek Preserve, Landenberg, Pennsylvania.

Preserve, is a classic example of a double door Pennsylvania stone farmhouse. Across the road from the Meetinghouse is the Sexton House, which once housed the caretaker of the Meetinghouse and serves as a great example of *Penn Plan* architecture. Penn Plan houses were inexpensive and simple dwellings, made from local materials. (While some funds have been collected to begin a restoration effort, additional financial and volunteer support is needed to save the Sexton House from deterioration.)

The area surrounding White Clay Creek Park and Preserve saw a tremendous amount of development pressure in the 1980s and 1990s. In 1984, the DuPont Company donated

land to Pennsylvania and Delaware for the purpose of preserving the diverse and unique plant and animal species, and the rich cultural heritage of the area. Other land tracts have been purchased, little by little, over the years, and added to the park system, resulting in the unpredictable park boundary that we have today.

### Making yourself comfortable...

If you're coming from a distance to experience the White Clay Creek Valley, you may want to consider an overnight stay. Bed and Breakfast accommodations can be found nearby. Try the Daybreak Farm Bed and Breakfast in Landenberg, Pennsylvania or the Kennett House Bed and Breakfast in Kennett Square, Pennsylvania. The locals dine at Pop's Diner in Avondale, Pennsylvania, the Half Moon Restaurant and Saloon in Kennett Square, and Klondike Kate's or the East End Cafe in Newark, Delaware.

### More info

*The White Clay Creek State Park office, (302) 368-6900, is near the intersection of Chambers Rock and Thompson Station Roads. The phone number for the White Clay Creek Preserve office is (610) 274-2900. The Park and Preserve are open 8 a.m. to sunset, year-round. Entrance fees may be charged on certain days and times of the year. Do your research ahead of time at [www.destateparks.com](http://www.destateparks.com) and [www.dcnr.state.pa.us/stateparks](http://www.dcnr.state.pa.us/stateparks).*

## SPECIES SPECIFIC

### EARLY BLOOMS ON THE WILD SIDE

#### *Identifying the habitat of some special native flowers*

BY LORRAINE KIEFER, OWNER, TRIPLE OAKS NURSERY

Often the very first blooms of the spring go unnoticed in a secluded woodland spot. Skunk cabbage may unfurl near a swampy pond or creek and hepatica may carpet a woodland area rich in humus, but often there is no one near to appreciate them. These early blooms are often subtle harbingers of the season. Few are showy, and they often take one by surprise in a spot lighted by a ray of spring sunshine

One of the very first to bloom in our region is the delicate little Hepatica (*Hepatica americana*). Evergreen in some areas, this plant often just pops up with snowy white blooms, but sometimes is seen with pink, or even bluey-lavender buttercup like blooms. Called liver leaf, this gem is often the first wild plant to bloom in a shady corner. It will colonize under trees if the soil is moist and woody. One of the easiest wild ones to establish, it self sows if there is enough moisture in the soil.



Hepatica Americana

Most wildflowers should not be dug from the wild unless the area is about to be bulldozed. A serious lack of habitat in many Eastern states has seen the demise of many native plants. Whenever seeds are collected, care should be taken to take only minimal pods so that they are not wiped out in the wild. It is best to either seed them or buy from nurseries that propagate wild plants.

Another early plant to bloom is the wonderfully sunny Celandine Poppy (*Sylophorum diphyllum*). Also a very easy to grow perennial, it is a nice shade or part shade bloomer that flowers from March to May. Unlike most in the poppy family, it likes a moist, humus soil. But this one has done very well in my sandy, oak tree garden environment. An oak leaf mulch benefits both of these plants. If you like poppies, the bright yellow flower of this sunny spring bloomer will delight you.

Trilliums bloom in April and are a favorite wild flower that will adapt well to the shade garden. There are many kinds of Trillium ranging in colors from white to red, yellow, purple and pink. They also like a moist woody soil in which to reseed. Some of our best clumps of trillium have surprised us and come up in very unlikely spots.

An April, a companion to the Trillium, Jack in the Pulpit, makes its appearance (*Arisaema triphyllum*). This perennial is so exotic looking with its unusual bloom that it must be seen to be appreciated. It also needs a moist, woody soil, but again flourishes in my shady gardens under trees as long as I provide water when dry and an oak leaf mulch. Like the others, this one also needs a shady spot in which to flourish. Red berries or seeds are interesting features that last all winter.

Another wonderful spring bloomer that often fills the air with fragrance is the trailing arbutus (*Epigaea repens*). This one however must be sought out in the woods in order to get a whiff of its spring perfume. Arbutus is rarely available in nurseries and often will not grow in a garden. It needs a very specific type of acidic moist soil with leaf mold and humus on top and moist sand beneath in a shady spot. I have propagated this one over the years by making cuttings and keeping them under a mist. It roots and will grow in pots in a shady area, but often disappears after growing in the garden for a few years. Most of the literature on this plant indicates it will not flourish in captivity. So you

*“A good wild flower book and an hour in the woods is the best way to meet and know them.”*

must go on a spring treasure hunt to smell the arbutus, often called Mayflower in our area. It starts to bloom in mid-April. You must get down on your knees to find and smell it as it is a ground cover and really does hug the ground.

There are hundreds more wild plants. A good wild flower book and an hour in the woods is the best way to meet and know them. To all things there is season and often a place called home. Sometimes you don't have the place to grow a wild flower, sometimes you do. But there is no reason to go

through life without ever kneeling in the woodlands to see and smell a delicate arbutus bloom. Happy Springtime!

### More info

*Lorraine Kiefer is the owner of Triple Oaks Nursery and has been a garden writer since 1972. Reach her at [tripleoaks@aol.com](mailto:tripleoaks@aol.com). Visit them at [www.tripleoaks.com](http://www.tripleoaks.com) or at the nursery on South Delsea Drive in Franklinville, New Jersey.*

## TEACHERS' PAGE

### OAK LANE DAY SCHOOL: WHERE EXCELLENT ELEMENTARY EDUCATIONAL PRACTICES AND CUTTING EDGE ENVIRONMENTAL EXPERIENCES MEET

BY DOTTIE BAUMGARTEN, SCIENCE TEACHER, OAK LANE DAY SCHOOL

When I chose to teach science to elementary students after seven years of doing scientific research and another six years of teaching preschool, I never dreamed that I would be privileged to be teaching on 30 acres of diverse habitat, balancing age appropriate activities with sound environmental practices. Of all the careers that I could be in, this one seems the most stimulating and challenging.

Located in Montgomery County, Pennsylvania, Oak Lane Day School is a coeducational, non-sectarian, pre-kindergarten through grade six elementary school on property in Blue Bell that includes a marsh, pond, spring-fed stream, meadow, woods and hedgerow. (Please see the map on page 15 for location.) When I started teaching science here four years ago, I noted the environmental potential of the land, and craved for more environmental information, a more thorough understanding of watersheds, as well as further elementary professional education. Over the years, I have set specific professional developmental goals for myself, and continue to carry them out. By doing so, science education at Oak Lane is becoming increasingly aligned with the school's philosophy, "Children should have the opportunity to learn through meaningful discovery and to construct their own understanding," and "Children should be prepared to appraise

critically the many voices and the vast array of information available to them."

This past summer, I was able to attend a weeklong workshop offered to teachers by the Partnership for the Delaware Estuary and The Academy of Natural Sciences. It was an incredible experience that not only increased my knowledge, but also invited networking among speakers and attendees. Each day we were exposed to new science skills, and were



*During Earth Week in 2002, each class in the sixth grade at Oak Lane Day School planted a tree native to the Delaware Estuary.*

introduced to dedicated staff from organizations who were able to answer questions and point us to helpful resources.

Erika Scarborough from the John Heinz National Wildlife Refuge at Tinicum and Dr. Danielle Kreeger, Assistant Curator of the Wetlands Ecology Group in the Patrick Center, associated with The Academy of Natural Sciences, took us into Tinicum Marsh where we got our boots muddy as we examined a transect. With scientists from The Academy, we netted and released fish in the Wissahickon Creek, examined macroinvertebrates, and tested the chemicals in tributaries of the Wissahickon. Ed Grusheski from the Philadelphia Water Department guided us on the Schuylkill River by canoe from Manayunk to Fairmount Park, while narrating a detailed history of the waterway. Gail Tomlinson, Director of the Fairmount Water Works Interpretive Center, gave us an enthusiastic and comprehensive tour of the Center. Each of the presenters thoroughly knew their material, and displayed their expertise, love of their work, and willingness to go the extra mile to educate others.

The presentation by Glenn Gauvry from the Ecological Research and Development Group on the horseshoe crab population was one outstanding experience that sums up the role that the Partnership for the Delaware Estuary plays for the community. Glenn focused on one solution to a conflict between fishermen and birders. His organization developed a new technology, a crab bait bag, that halves the numbers of horseshoe crabs needed as bait by the fishermen, thereby acknowledging the needs of fishermen while helping to preserve food for migrating birds. This innovation exemplifies the type of work encouraged by the

*“Children should be prepared to appraise critically the many voices and the vast array of information available to them.”*

Partnership. The Partnership is attentive to organizations that operate in the Estuary (fishermen and tourism), and strives to support innovations that provide appropriate solutions to environmental conflicts.

This past fall, one of the lessons I taught was from the Partnership’s workshop. It also was from the book “WOW!: The Wonders of Wetlands”. Metaphors are used as a teaching device. Standing by the edge of our marsh, with our feet a little wet and muddy the children were primed for hearing about the sponge-like wetland. As we crept up to our pond, seeking a glimpse of the quickly hiding green heron that lived there for the summer, the children experienced the wetlands as a breadbasket—a source of food. As we searched for birds’ nests and spiders’ webs, the children understood our land as a baby cradle—a nursery for animals. Metaphors such as these illustrated familiar comparisons for the children to remember, and brought to life their watershed experience.

One of our needs at Oak Lane is to implement practices that make the best use of our property for science studies,

all within the framework of our educational philosophy that children and childhood should be respected and honored. Besides providing expert professional development, the Partnership is supporting our habitat enhancement. While there are about ten projects identified for development at Oak Lane, we are currently focusing on protecting and enhancing our pond. The habitat project we are working on with the Partnership for the Delaware Estuary will address invasive Japanese knotweed, and provide native plants to further develop this area. The Consortium for Scientific Assistance to Watersheds (C-SAW) has assisted us with this project and Chestnut Hill College professor, Dr. Robert Meyer, as well as his students, also plan to assist in this endeavor.

Our property is a valuable community asset for environmental education because of our unique and diverse habitat, and because of our location in rapidly developing Montgomery County. Our primary focus is, and will remain, educating children. However, children do not grow isolated from the larger community, and their need to learn about civic responsibilities and connection to the larger community is equally important. Within this context, I could foresee the benefit of having a nature walk on the school property that would potentially highlight our diverse habitats, provide environmental education, and provide a place for exercise and relaxation for surrounding residential developments and centers of employment. For this to be accomplished, multiple organizations, including our local township, would need to be involved. The nature walk then becomes the backdrop for continued habitat enhancement and community exposure to the great resources of our natural environment.

The Partnership for the Delaware Estuary has been an invaluable resource for me as I increase my knowledge and as I teach. I look forward to future collaborations.

*A fish shocking demonstration at Bells Mill in the Wissahickon Creek Watershed with scientists Rich Horwitz and Tim Nightengale.*



### *Time is running out to register for the 2004 Delaware Estuary Teacher Watershed Workshop*

The Watershed Workshop for teachers will take place this year from July 12 through July 16. This program will take you from the cities to the bayshore and all stops in between as you learn about the Delaware Estuary’s habitat and living resources, current issues, and history and culture. There is no cost to attend the workshop, which includes an overnight stay in Lewes, Delaware and all meals. Participating teachers will be eligible for Pennsylvania Act 48 credit, New Jersey Professional Development credit, or Delaware In-service credit. For more information, please call Lisa Wool at 1-800-445-4935 x 19 or e-mail [lwool@delawareestuary.org](mailto:lwool@delawareestuary.org).

# ESTUARY EVENTS

## Annual Wildflower, Native Plant and Seed Sale

May 8–9, 2004v

Brandywine Conservancy  
Chadds Ford, Pennsylvania



Hundreds of varieties of native plants: herbaceous perennials, vines, shrubs, trees and seeds are offered for sale in the Brandywine Museum Courtyard to benefit the Conservancy's gardens.

For more information, please call (610) 388-8327.

## Oyster Sail & Oyster Raw Bar

Saturday, May 15, 2004, 1 p.m. – 4 p.m.

On the Schooner A.J. Meerwald

Bivalve, New Jersey

Learn about the history and present condition of the once prosperous oyster industry and view remnants of the oyster industry along the Maurice River and Delaware Bay from Meerwald's deck. Feast on fresh Delaware Bay oysters from the bountiful oyster raw bar. There is a fee of \$15 per child and \$30 per adult. For reservations or more information, please call (800) 485-3072 x 100.

## Spring Festival: A Celebration of International Migratory Bird Day

Saturday, May 15, 2004, 9 a.m. – 3 p.m.

Prime Hook National Wildlife Refuge  
Milton, Delaware

This annual event features canoe trips, refuge tours, presentations, exhibits, bird walks, touch tanks, children's games and fun for everyone. For more information, please call (302) 684-8419.

## Stormwater Program Management & BMPs: Pollutants, Selection and Maintenance

Wednesday, May 19, 2004

Myrtle Beach Marriott Resort at Grande Dunes

Myrtle Beach, South Carolina

StormCon®, the North American Surface Water Quality Conference & Exposition, and Forester Communications will be hosting a full-day workshop program and exposition designed exclusively for stormwater- and surface-water-quality professionals to provide hands-on, cutting-edge information presented by leading professionals in the field. For more information, please call (805) 682-1300 x 129.

## Using Science to Protect Wetlands:

Making Science Available to All

Wednesday, May 19, 2004

Rider University

Lawrenceville, New Jersey

This program, sponsored by the Friends of the Hamilton-Trenton-Bordentown Marsh, will include discussions about wetland research, science education, North Jersey swamps, and tidal freshwater marshes. The keynote speaker is Dennis Whigham of the Smithsonian Environmental Research Center. For more information, please visit [www.marsh-friends.org](http://www.marsh-friends.org).

## Migratory Bird Festival

Saturday, May 22, 2004, 8 a.m. – 5 p.m.

Bombay Hook National Wildlife Refuge  
Smyrna, Delaware

The festival is a family event that provides tours of the refuge's habitats including the salt marsh, freshwater and forest areas. For more information, please call (302) 653-6872.

## First Annual Horseshoe Crab Festival

Saturday, May 29, 2004, 10 a.m. – 5 p.m.

Milton, Delaware

A day of unique fun to raise awareness for horseshoe crab conservation, that includes crab craft and food vendors and educational horseshoe crab exhibits. For more information, please call (302) 684-1896.

## Migrating Shorebirds

Saturday, May 29, 2004, 10 a.m.

Nature Center of Cape May

Cape May, New Jersey

Join them for a trip to the Delaware Bay beaches to identify the migrating shorebirds that feed on horseshoe crab eggs. Meet at the Center and carpool to the beach. There is a fee for this event. For more information, please call (609) 898-8848.

## 14th Annual Native Plants in the Landscape Conference June 3-5, 2004

Millersville University,

Millersville, Pennsylvania

This exciting conference includes expert speakers, field trips, workshops, chat rooms and educational exhibits. Native plants and related books and merchandise are offered for sale. Plenty of time is available for interaction and networking. For more information, please call (717) 872-3030.

## WHERE IN THE ESTUARY ARE YOU?

*Answer from page 2*

*Downtown Bordentown, New Jersey. Referred to as a "little city with a lot of charm", the revitalized business district features interesting shops, galleries, restaurants and historically significant architecture. Learn more at the Greater Bordentown Area Chamber of Commerce site at [www.gbacc.org](http://www.gbacc.org) or by calling (609) 298-7774.*



*Photo by Joe Matassino.*

*(Please see map on next page for location.)*

**Delaware Bay Days Lighted Boat Parade Cruise**  
**June 5, 2004, 7:30 p.m. – 10:30 p.m.**  
**On the Schooner A.J. Meerwald**  
**Bivalve, New Jersey**

Experience the excitement of being on the deck of the brilliantly lighted Meerwald as she parades on the Maurice River. Spectacular fireworks over the river follow the parade. There is a fee of \$25 for all passengers. For reservations or more information, please call (800) 485-3072 x 100. (Note: Bay Days will take place on June 5<sup>th</sup> and 6<sup>th</sup> this year.)

**Youth Fishing Tournament**  
**Saturday, June 12, 2004, 10 a.m. – 1 p.m.**  
**Delaware Division of Fish and Wildlife**

Take a kid fishing! There is no entry fee for this tournament, which will take place at Ingrams Pond in Millsboro; at Wyoming Pond in Town Park, Wyoming; and at Lums Pond State Park in the dog training area. Contestants must bring their own equipment. Catch and release will be taught and encouraged. For more information, please call (302) 739-3440.



**Mid-Atlantic Field Music School**  
**June 14–15, 2004**

**Fort Delaware State Park**  
**Delaware City, Delaware**

Civil War music will fill the air at Fort Delaware. More than 100 musicians come to Pea Patch Island to recreate a special music school. For more information, please call (302) 834-7941.

**Restoring Greenspace: Using Ecological Enhancements at Region II and III Contaminated Sites**  
**June 23–25, 2004**

**Hilton Philadelphia**  
**Philadelphia, Pennsylvania**

The Wildlife Habitat Council has organized and hosted a series of national and regional meetings to promote the inclusion of ecological enhancements as part of site restoration programs in Superfund, RCRA Corrective Action and Brownfields. This year, they will focus on the implementation of ecological enhancements in EPA Regions II and III. For more information, please call (301) 588-8994.

**ESTUARY NEWS IS AVAILABLE ONLINE**

**AT [WWW.DELEP.ORG](http://WWW.DELEP.ORG).**

**IF YOU ARE A CURRENT SUBSCRIBER AND WOULD PREFER TO VIEW ESTUARY NEWS ONLINE, PLEASE LET US KNOW BY SENDING AN EMAIL TO THE PARTNERSHIP FOR THE DELAWARE ESTUARY AT [lwool@delawareestuary.org](mailto:lwool@delawareestuary.org)**

## MAP KEY

1. Bordentown
2. Blue Bell
3. Delaware Bay
4. Hamburg
5. Norristown
6. Schuylkill River
7. Taylor Wildlife Preserve
8. White Clay Creek

*Please use this map to locate the places, towns, or waterways mentioned in the articles in this edition of **Estuary News**. We hope this feature will help to enhance your knowledge of the Estuary region and to encourage you to explore its fascinating resources.*





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## DELAWARE ESTUARY PROGRAM

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### WHAT IS THE DELAWARE ESTUARY PROGRAM?

The Delaware Estuary Program (DELEP) is a partnership of governmental agencies, nonprofits, the private sector, and citizens working together to restore and protect the Delaware Estuary. It was established in 1988 and is one of 28 national estuary programs around the nation. To learn more about DELEP activities, visit [www.delep.org](http://www.delep.org).

### WHO IS THE PARTNERSHIP?

The Partnership for the Delaware Estuary, Inc. is a private, nonprofit organization established in 1996. The Partnership promotes the estuary as a regional resource through public outreach and education. It also serves as the education, outreach, and fundraising arm for the Delaware Estuary Program. To find out how you can become one of our partners, call the Partnership at 1-800-445-4935 or visit our website at [www.DelawareEstuary.org](http://www.DelawareEstuary.org).

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