



estuary news

Newsletter of the Delaware Estuary Program

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Winter 2000

Clean Water Begins and Ends With You!

By Kathy Klein, Executive Director, Partnership for the Delaware Estuary

In order to make significant improvements to water quality in the Delaware Estuary, each one of us has to take some responsibility. While this task may seem Herculean, there are ways we can all help prevent stormwater runoff pollution and other sources of non-point source (NPS) pollution.

The Partnership for the Delaware Estuary has made a major commitment to developing and implementing educational and hands-on initiatives designed to address non-point source pollution. Many of these programs will be getting off the ground during the next several months and we need your help in more ways than one.

With urban and suburban stormwater runoff pollution the greatest source of NPS pollution in the estuary, we decided to focus this year's efforts in the region's largest city — Philadelphia. Stormwater runoff pollution occurs when rainwater washes over the land on its way to streams and rivers. The rainwater washes pollutants, including motor oil, fertilizers, pesticides, and litter, off of the land and carries them to either storm drains or directly to Philadelphia's streams and rivers.

The Partnership, working in cooperation with the Philadelphia Water Department and the U.S. Fish and Wildlife Service, is sponsoring an exhibit at the Philadelphia Flower Show, which is being held at the Pennsylvania Convention Center from March 5th — March 12th. The theme of our display is "Habitat Can Be Anywhere." The example that will be portrayed is a habitat restoration project at the Philadelphia Water Department's Southwest Sewage Treatment Plant. This site is participating in the Delaware Estuary Program's Corporate Environmental Stewardship Program (CESP) that the Partnership is coordinating with partners from across the region.

By conserving, enhancing, and by even creating habitats, we can also help to improve water quality in our local waterways. As land use patterns in our region have changed over time, wildlife habitats have been fragmented and lost. This has also resulted in increased soil erosion and runoff into local streams and rivers during storms. By better planning and managing the landscapes that remain, whether its your backyard at home or

your backyard at work, we can all make positive contributions to the habitats around us, which will in turn, help to improve water quality in the Delaware Estuary.

The display at the Flower Show will focus on the importance of selecting native plants — those plants that would have been present prior to European settlement. Native plants require less water, fertilizers and pesticides to grow, helping to reduce the risk of pollutants entering local waterways. If you go to the Flower Show, we encourage you to stop by our display and to pick up our "Habitat Can Be Anywhere..." educational materials. You can also receive copies of these publications by calling our office at 1-800-445-4935.



Students from Frankford High School in Philadelphia helped mark storm drains last spring.

To help celebrate the 30th Anniversary of Earth Day, which will take place on April 22, 2000, the Partnership has been planning a major stormwater education program for the City of Philadelphia. Thanks to funding that we have received from the Philadelphia Water Department and the Pennsylvania Coastal Zone Management Program, during the months of January through April, every Philadelphian will be touched in some way with the message that *Clean Water Begins and Ends With You*.

All the schools in Philadelphia, grades K-8 and the youth serving organizations in the City, have been invited to participate in a drawing

contest. The winning drawings will be used to produce calendars that will be distributed to all the contest participants. The winning artwork will also be used in an advertising campaign on SEPTA (the Philadelphia region's public transportation authority) buses and subway cars during the month of April. The winning artists will be invited to attend an awards ceremony in early April where they will be recognized for both their creativity and environmental awareness.

To reach even more Philadelphians, we are coordinating a major storm drain stenciling program from April 15-29, 2000. **We are currently looking to identify teams of people who would like to help us reach our goal of stenciling more than 5,000 storm drains across the City with the "YO! NO DUMPING! Drains to River" message.** We will be providing all of the stenciling supplies, which include educational tip cards

that the volunteers will distribute to the houses and businesses in the neighborhoods where they are stenciling. If you would like to organize a team of volunteers or to be a member of a stenciling team, please call Lisa Wool, the Partnership's program specialist, at 1-800-445-4935.

During the coming years the Partnership will be taking both the drawing contest and stenciling program to other cities in the estuary. We are very excited about these programs and encourage you to give us a call if you want to get involved. We also encourage you to help make a difference by doing something special for Earth Day. To find out what opportunities exist, check out the Delaware Valley Earth Day 2000 Calendar of Events at www.greenspacefun.org. If you have an event that

you would like included in the region's Earth Day Calendar, please fill out and return the form that is provided on page 7 of this newsletter

For more information about the 2000 Philadelphia Flower Show, call the Pennsylvania Horticultural Society at (215) 988-8800.



Species Specific

Colonial Wading Birds

The Delaware Estuary and other similar estuarine ecosystems supply the primary and sometimes only feeding habitat for wading birds. Pea Patch Island is the most northern nesting site within the Delaware Estuary for most colonial wading birds, however, the great blue heron can be found throughout the Delaware River's lower drainage area.

While probably the most visible and grand of the heron species, the great blue heron is not the only wading bird found in the

Delaware Estuary. There are ten species of colonial wading birds in the estuary including, the little blue heron, tri-colored heron, black-crowned night heron, yellow-crowned night heron, snowy egret, great egret, glossy ibis, cattle egret, and the green-backed heron.

Wading birds require specific but different habitats for feeding, nesting, and roosting. Suitable nesting and roosting habitats must be located close enough to a good feeding habitat to ensure the distance to be flown is energy efficient for the bird. The primary shallow water feeding habitat includes tidal and non-tidal rivers and creeks, saltmarsh panes, ponds, impoundments, and brackish and freshwater marshes. All but the great blue heron appear to prefer brackish habitat.

Most wading birds within the Delaware Estuary are migratory. They are present in the spring, summer, and early fall and migrate south in the winter, except for the great blue heron and black-crowned night heron, which have a much broader range.

The presence of wading birds is an important indicator of environmental quality. Toxic water contaminants, such as PCB's disrupt normal patterns of growth, reproduction, and behavior. Predation and loss of wetlands are other problems facing these birds. Heron species on Pea Patch Island have suffered egg loss during the egg-laying and incubation period do to local predators, such as the crow, owl, raccoon, and fox. Human disturbance through ecotourism, development, and the loss of wetlands have contributed to a decline in acceptable feeding and nesting habitat for the wading birds. Disturbance-free zones become an important habitat consideration as shoreline development and commercial and recreational boating activities become more popular.

This article was adapted from a chapter by Dave Jenkins and Lisa Gelvin-Innvaer in the book "Living Resources of the Delaware Estuary" which is available from the Partnership for the Delaware Estuary, Inc. by calling 1-800-445-4935.



Artist: Leslee Ganss. Published by Down the Shore Publishing.

TIDINGS: News from around the region

10-Year Report on the New Jersey Coastal Heritage Trail Route Available

The NJ Coastal Heritage Trail is a partnership between the National Park Service and the State of New Jersey. It was established in 1988 to foster public understanding and appreciation of the natural and cultural resources associated with the State's coast. The Trail, designed for vehicular touring, stretches nearly 300 miles along the coast from Perth Amboy to Cape May and northwest to the Delaware Memorial Bridge. The report highlights the achievements of the Trail, the partnerships that have made it happen, and the challenges for the future. To request a copy of the report, contact the NJ Coastal Heritage Trail, P.O. Box 568, Newport, New Jersey 08345 or call (856) 447-0103.

Stormwater Runoff Control in Delaware

As a requirement of the Clean Water Action Plan, all states are expected to establish long-term and short-term plans to address pollution caused by stormwater runoff. The U.S. Environmental Protection Agency has approved Delaware's plan which outlines how the State will prevent stormwater runoff from its farms, roads, construction sites and other nonpoint sources from flowing into the waterways. Approval of the plan now means that Delaware is eligible for an additional \$708,900 this fiscal year from the federal government.

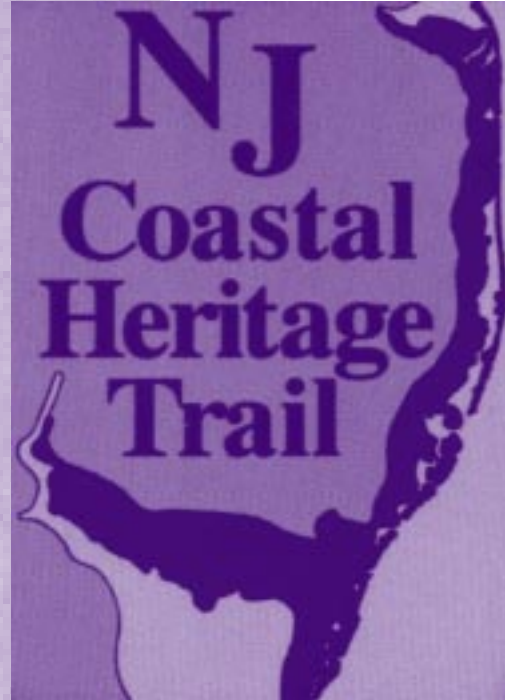
President Clinton has appointed a new EPA Region III Administrator

Bradley Campbell has succeeded W. Michael McCabe as the regional administrator for U.S. EPA Region III. He will be responsible for environmental protection in Delaware, the District of Columbia, Maryland, Pennsylvania, Virginia, and West Virginia. Campbell was previously with the White House Council on Environmental Quality where he was the associate director for toxics and environmental protection. In that capacity, he helped to coordinate administration policy and legislation on Superfund, hazardous waste, safe drinking water, pesticide and food safety, brownfields, wetlands, and community right to know.

New Jersey Governor Announces Awards of Nearly \$1.4 million for South Jersey Watersheds

On January 5, 2000, Governor Whitman presented a check for \$700,000 to the Burlington County Soil Conservation District for two sites in the Rancocas Watershed, \$450,000 of which will go to the Smithville Restoration Project for erosion control on the Smithville Farm. Best management practices will be designed and implemented to reduce runoff and demonstrate farm conservation measures as a model for farmers in the region. The remaining \$250,000 will be used for the second phase of a planting restoration project at Mill Dam/ Iron Works Park in Mount Holly. The Delaware Estuary Program, along with the Natural Resources Conservation Service, Rutgers Cooperative Extension, the New Jersey Environmental Federation and others, have partnered on this project.

Funding was also dispersed to the Salem County Department of Planning, the Gloucester County Parks and Recreation Department, the Federation of Gloucester County Watershed Associations and the Ocean County Soil Conservation District.



Water Snapshot 2000

The Water Snapshot 2000 is an annual educational, basin-wide, water-quality sampling event organized by the Delaware River Basin Commission (DRBC). The event encourages everyone involved in water quality monitoring, as well as new participants, anywhere in the Basin to collect and analyze water for one or more of the following: water temperature, pH, dissolved oxygen, nitrates, phosphates, and turbidity among other parameters. If you do not have a test kit, DRBC is also interested in a sampling of visual observations including water appearance, litter, weather conditions, etc. The samples can be taken anywhere in the Delaware Basin—from the headwaters of the Delaware River in New York State, to lakes and streams in New Jersey, Pennsylvania, and Delaware which drain into the Delaware River, to the Delaware Bay. The Water Snapshot will begin on April 14 and end on April 30, 2000. For more information about Water Snapshot 2000, call DRBC at (609) 883-9500.

Wissahickon Reforestation Funded

The Wissahickon Restoration Volunteers (WRV) received a \$5,900 grant from the National Tree Trust for a spring reforestation project. This grant will enable the WRV to purchase more than 250 trees to be planted in Wissahickon Park. A Canopy Gap Survey was completed in 1997, which identifies openings in tree coverage throughout the park. It is a goal of WRV to fill in these gaps with native tree species. For more information about their efforts or to volunteer, call (215) 848-4426.

Battleship New Jersey Finds Home in Camden

The United States Navy recently announced their decision to select the Camden Waterfront as the permanent home for the Battleship New Jersey, only a short way upriver from the Philadelphia shipyard where she was built in 1942. Supporters of the decision say the endless support from our elected officials and local citizens helped to make this outcome possible.

Estuary events

IMPORTANT UPCOMING DELAWARE ESTUARY EVENTS

CONFERENCES

Third Annual Schuylkill River Watershed Monitoring Conference

March 4 and 5, 2000

Schuylkill Haven, Pennsylvania

Located in the headwaters of the Schuylkill River, this conference will provide participants with training, networking opportunities, and field experiences. Learn how to design your own monitoring programs, make the most out of the data collected, and get the results of your work and your message out to the media and the public. Registration deadline is Friday, February 25. For more information, contact the Schuylkill Riverkeeper at (610) 469-6005.

5th Annual Marine and Estuarine Shallow Water Conference

March 12-16, 2000

Atlantic City, New Jersey

The purpose of this conference is to increase dialogue and foster relationships between federal, state, and local agencies, non-governmental agencies, and the private sector. The conference will address a variety of topics including the redevelopment of the Port of New York and New Jersey, the benthic environment, water quality, habitat, innovative management strategies, and the impacts of dredging. To register for the conference or to receive more information, call Ralph Spagnolo at (215) 814-2718 or Frank Reilly at (540) 286-0072.

National Watershed Outreach Conference

April 17-19, 2000

San Diego, California

Discover exciting ways to involve your community in watershed protection activities. Topics include developing creative curricula, innovative approaches to reaching nontraditional audiences, creating partnerships to meet outreach goals, and reaching across political boundaries. To register, check out their web-site at www.epa.gov/watershed/outreach/events/aprilconf.html

Conference 2000 DNREC

October 24-26, 2000

Newark, Delaware

The Sediment and Stormwater Management Program of Delaware's Department of Natural Resources and Environmental Control (DNREC), Division of Soil and Water Conservation is sponsoring a conference to focus on topics related to erosion, sediment and stormwater management issues.

If interested, please contact Jeanne Feurer, Conference Coordinator at (302) 739-4411 or jfeurer@dnrec.state.de.us.

EVENTS AND HAPPENINGS

Birding Walks

February 2000

John Heinz Tinicum NWR

Philadelphia, Pennsylvania

Sunday, February 20 at 9 am, Winter Birding

Saturday, February 26 at 9 am, Birds and Trees without Leaves

Sunday, February 27 at 9 am, Birding Basics

All walks begin at the Visitors Center located at 86th Street and Lindbergh Blvd. For more information, call (215) 365-3118.

Third Annual Great Backyard Bird Count

February 18-21, 2000

Anyone with an interest in birds and access to the Internet should count the maximum number of each of the different bird species they see during a three-day period from February 18th through the 21st. Counts should be submitted online through BirdSource at <http://birdsource.cornell.edu/>.

Nature Photo Workshop

Saturday, February 19, 2000, 10 am – 3 pm

John Heinz Tinicum NWR

Philadelphia, Pennsylvania

Do you have questions about nature photography? Come get the answers from instructor, Bill Buchanan, as he provides you with some photographic expertise. For more information, call (215) 365-3118.

Delaware Invasive Species Council Meeting

Friday, March 3, 2000

Modern Maturity Center

Dover, Delaware

The Delaware Invasive Species Council is comprised of 30 representatives from federal, state, and local agencies, as well as private organizations. The Council's mission is to protect Delaware's ecosystems by preventing the introduction and reducing the impact of non-native invasive species. Call Heather Apostolos at (302) 739-4811 for more information.

Volunteer Meeting

Saturday, March 4, 2000

Bombay Hook National Wildlife Refuge

Smyrna, Delaware

This meeting will provide an update on Spring events and will be followed by an orientation for new volunteers. The meeting will take place in the visitors' center. For time and directions, call (302) 653-6872.

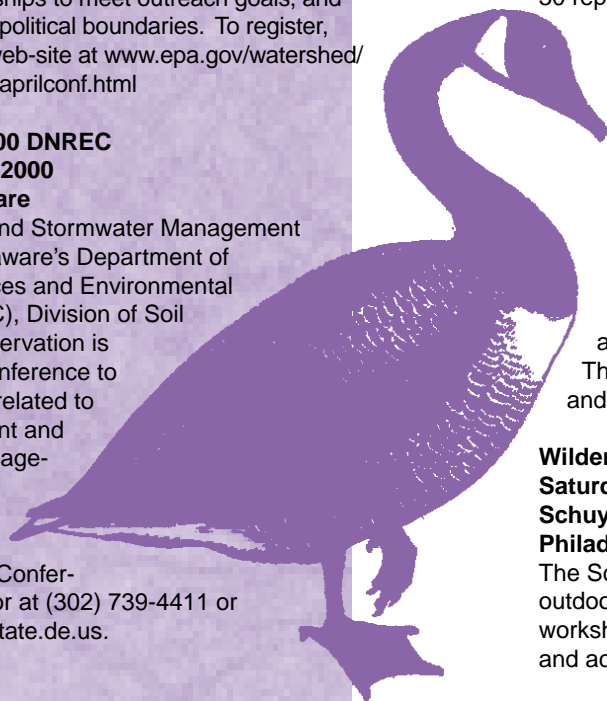
Wilderness Sports Expo

Saturday, March 11, 2000

Schuylkill Center for Environmental Education

Philadelphia, Pennsylvania

The Schuylkill Center has collaborated with retailers and outdoor organizations to provide mini how-to clinics and workshops to showcase state-of-the-art sporting equipment and accessories. Call (215) 482-7300 for more information.



Landscaping for Wildlife Lecture
Friday, March 17, 2000, 7:30 pm

This lecture sponsored by Wyncote Audubon will be held at the Schuylkill Center for Environmental Education in Philadelphia, Pennsylvania. Call (215) 482-7300 for more information.

Tour of the Beneficial Insects Laboratory of the U.S. Department of Agriculture
Saturday, March 18, 2000, 9:00 am
University of Delaware
Newark, Delaware

Learn about some of the notable successes and dismal failures that the laboratory has experienced in controlling exotic pests, such as the Japanese Beetle, purple loosestrife, and water hyacinth, in a tour lead by Dr. Robert Fuester. To receive more information or to reserve a space, please call Carol Largey by March 16th at (302) 369-4145.



Green 'n' New Jersey
Saturday, April 8, 2000, 9am – 1pm

If every person living in New Jersey planted one tree, there would be 8 million new trees for New Jersey's forest resource. The New Jersey Forest Service is looking for volunteers to plant trees as part of their reforestation effort called, *Green 'n' New Jersey*. To volunteer, call the NJ Forest Service at the

Lebanon State Forest in New Lisbon at (609) 726-1621 or at the Bass River State Forest in Mays Landing at (609) 625-1124.

Environmental Education Workshop
Saturday, April 8 and Saturday, April 29, 2000
Bombay Hook National Wildlife Refuge
Smyrna, Delaware

Open to teachers, scout leaders, and volunteers. Participate in wetlands and forest activities, birding, and a wildlife management tour. Call (302) 653-6872 for more information.

Conservation Volunteer Day
Saturday, April 15, 2000, 9 am – 11pm
Forest Resource Education Center
Jackson, New Jersey

Join the New Jersey Forest Service and other volunteers at the Forest Resource Education Center to help reforest New Jersey. Spend some time lifting, counting, and sorting seedlings, earning about conservation projects, taking a hayride, helping to maintain trails, and participating in other fun activities. To receive more information, call (732) 928-0029.

Tour Mansions on the Delaware River
Saturday, April 15, 2000

The Main Line School Night is sponsoring a tour of country estates located along the Delaware River. From the time of William Penn through 1900, many of Philadelphia's first families built homes on the river. The tour will include a visit to Andalusia and Pennsbury Manor, lunch at King George II Inn, and a stop at the village of Fallsington. The cost of the one-day bus tour is \$74. The registration deadline is March 24, 2000. To register using Visa or Mastercard, call 610-687-8201. To get more information about the tour, call (610) 687-0460.

9th Annual Christiana River Cleanup
Saturday, April 15, 2000, 9 am — 1 pm
Fox Point State Park
Wilmington, Delaware

Volunteers are needed to help clean the single most important natural resource in our region — the waterways. Bring some

friends and join other volunteers who want to help restore the health of the Delaware River. For more information, please call Delaware Greenways at (302) 655-7275.

4th Annual Bike Ride of Trees in Philadelphia
April 30th, 2000, 12 Noon
Philadelphia, Pennsylvania

Join Philadelphia Green's Tree Tenders, the Bike Club of Philadelphia, and Barlett Tree Experts for an easy 8-10 mile ride of the historic and notable trees of West Philadelphia. Call the Pennsylvania Horticultural Society at (215) 988-8800 for more information.

Tree Tenders' Workshop
June 2000
Pennsylvania Horticultural Society
Philadelphia Green
Philadelphia, Pennsylvania

The Pennsylvania Horticultural Society's urban greening program, works with community groups and residents in neighborhoods throughout the City of Philadelphia to plan and implement greening projects. The Tree Tenders project was created to train city residents to plant and care for trees. There are currently more than 1,000 Tree Tenders from 85 Philadelphia communities. The next Tree Tenders' training will be on Wednesday June 7, 14, and 21 from 6-9 p.m. and on Saturday, June 17 from 10-1 pm. If you are a resident of Philadelphia and would like more information about the Tree Tenders program, contact PHS at (215) 988-8800.

Spring Workshops for Residents of New Jersey
Sponsored by NJDEP

The New Jersey Department of Environmental Protection plans to offer two, one-day workshops this spring for residents of Lower Delaware region of N.J. The River Assessment Team workshop will train participants to conduct watershed walks, to take an inventory of the physical characteristics of a watershed, and to use Global Positioning System (GPS) units to record field results. The Biological Assessment Team workshop will teach participants to conduct biological monitoring of a body of water. Participants will learn how to identify aquatic macroinvertebrates and how this relates to water quality. Please contact Karen Dorris at NJDEP Division of Watershed Management at (609) 984-6577 to obtain date and location information.

SAVE THE DATE

Schuylkill River Sojourn, June 2-9, 2000. Contact the Schuylkill River Greenway Association at (610) 372-3916 or go to srga@ptd.net.

National River Cleanup Week, June 3-10, 2000. Contact America Outdoors at (423) 558-3595 or amoutdoors@aol.com.

Delaware River Sojourn, June 17-26, 2000. Contact the Pocono Environmental Education Center at (570) 828-2319 or see the website at www.nps.gov/upde/sojourn.



Updates from DELEP's Implementation Teams

Staffing News at the Partnership for the Delaware Estuary

The Partnership for the Delaware Estuary is pleased to announce the hiring of Joseph Matassino as Director of Development and Communications. He was hired to develop and implement a public relations strategy, create and develop outreach materials, assist in establishing relations with funding agencies, nonprofits, and corporations across the estuary, and assist in planning and coordinating outreach events. Joe was previously with the Manayunk Development Corporation in Philadelphia, Pennsylvania, where he was responsible for capital project fundraising and implementation of recreational and educational activities for the historic Manayunk Canal and Schuylkill River. Prior to that, he worked in Wilmington, Delaware managing long and short-term community revitalization projects that focused on downtown development and the arts. Joe has a JD from Widener University School of Law and a BA in Politics from Ursinus College.



Photo courtesy of the Roxborough Review

Habitat and Living Resources Implementation Team (HLRIT)

The Delaware Estuary Program through the HLRIT is looking to appoint an environmental scientist to work with the HLRIT Chair and Team for a period of one year to enhance the Delaware Estuary Program's wetlands' program and to achieve wetlands' restoration and preservation in three ways. This individual would:

1. Assist in the development of a process by which wetlands/habitat areas, and their corresponding actions in the Delaware Estuary Program's CCMP, can be evaluated and prioritized, including the establishment of a rating process.
2. Design and develop a database of projects, costs and funding sources to facilitate implementation of wetlands and habitat action items of the Delaware Estuary Program to assist local governments, nonprofits, businesses, and other groups in identifying further funding sources to implement habitat restoration protection projects.

3. Identify new methods to monitor losses and gains to critical habitat components including, wetlands, forests, upland grasses and riparian habitat. Determine the implementation costs and recommend a course of action to implement the selected methods.

For more information about this position, please call Ed Christoffers at (302) 653-9152 x19 or Forsyth Kineon at (609) 883-9500 x217.

Toxics Advisory Committee

The Toxics Advisory Committee (TAC) spent the last few months reviewing technical aspects of the Delaware River Basin Commission's proposed determination on the assimilative capacity of the Delaware Estuary for several toxic pollutants. In addition, the committee heard presentations from the U.S. Army Corps of Engineers regarding the impacts of dredging on the estuary particularly for toxic pollutants. The TAC will be meeting to discuss improvements to the functioning of the committee in February of this year.

To get information about the other Delaware Estuary Implementation Team's activities, please call the following people:

Public Participation Implementation Team

Kathy Klein, Partnership for the Delaware Estuary, Inc.
1-800-445-4935, partners@udel.edu

Habitat and Living Resources Implementation Team

Edward Christoffers
(610) 653-9152 x19
ed_christoffers@mail.fws.gov

Monitoring Implementation Team

Jonathan Sharp, University of Delaware
(302) 645-4259, jsharp@udel.edu
or Edward Santoro, Monitoring Coordinator
(609) 883-9500 x 268,
esantoro@drbc.state.nj.us

Regional Information Management Service (RIMS)

Implementation Team
Bruce Hargreaves, Lehigh University
(610) 758-3683, brh@lehigh.edu
or Karl Heinicke, RIMS Coordinator
(609) 883-9500 x 241,
heinicke@drbc.state.nj.us

The Delaware River Basin Commission also has two Committees that serve in the same capacity as the implementation teams:

Water Quality Advisory Committee

John Davis, Widener University
(610) 499-4063,
John.F.Davis@widener.edu

Toxics Advisory Committee

Tom Fikslin, DRBC
(609) 883-9500 x 253,
tfikslin@drbc.state.nj.us

Making Waves

Delaware Valley Earth Day 2000 Network*

The Partnership for the Delaware Estuary, in cooperation with the other members of the Delaware Valley Earth Day 2000 Network*, are compiling a master calendar of environmental events to support broad public involvement for Earth Day 2000.

The Network is looking for events that provide the public with the opportunity to celebrate, appreciate, learn or take action on behalf of our environment. Activities can include everything from traditionally scheduled nature appreciation activities and presentations, to neighborhood clean-ups, tree plantings, or nature restoration projects.

Please use the form below to list such activities, then detach and send the completed form to the GreenSpace Alliance. The GreenSpace Alliance has agreed to post these events onto their website at www.greenspacefun.org, providing a single location for information on all Earth Day 2000 events in the eleven-county Delaware Valley Region.

* *The Delaware Valley Earth Day Network is an informal association of environmental and civic organizations, representatives from federal, state, and local government agencies, and private businesses who have come together to mobilize their resources to promote Earth Day 2000 and the commitment to the environment in the new millennia.*

DELAWARE VALLEY EARTH DAY 2000

Environmental Event Registration Form

(For events scheduled between March - September 2000; for Earth Day events, submit by March 15)

Please complete one form for each project; projects repeated on multiple days only require one form.

Event Name: _____
Sponsoring Organization: _____
Event Date (day of week/date): _____
Event Time (start-end): _____
(Multiple days/times? Attach and check here:)
Rain Date and Time (write "N/A" if none): _____
Event Address (street, city, state, zip): _____

County: (check one) New Castle Delaware Chester
 Philadelphia Montgomery Bucks Mercer
 Burlington Camden Gloucester Salem

Event goal & description (100 words or less):

Fee/ticket price(s) and registration requirement: _____
Age(s)/Audience designed for: _____
people expected: _____
Special Considerations (dress, equipment, physical demands):

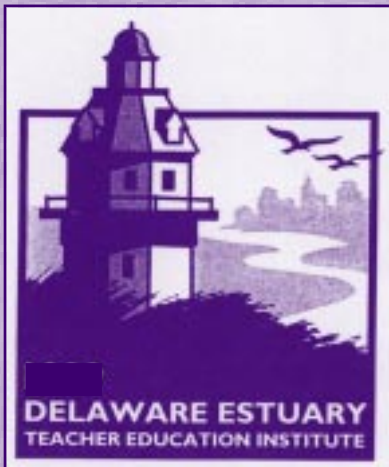
Travel Directions (please include public transportation options):

Contact Person: _____
Title: _____
Contact Phone #: _____
E-mail: _____
Organizations web site: www._____

Type of Event (check one):
 Festival
 Tour
 Education program
 Work project (e.g., clean up, plantings)
 Community service project
 Presentation/lecture
 Recreational outing (e.g., nature walk, hike, bike ride)
 Film
 Other: _____

Fax completed forms to (215) 568-0528 or e-mail Mark McGuigan at mmcguigan@pecphila.org, or mail to GreenSpace Alliance, 117 South 17th Street, Suite 2300, Philadelphia, PA 19103

Teachers Page



2000 Delaware Estuary Teacher Education Institute

The registration deadline for the 2000 Delaware Estuary Teacher Education Institute is April 14th. The week-long residential summer program is open to all K-12 public and private school classroom teachers in the estuary region.

Come explore and experience the geographic, scientific, economic, cultural, and historic resources of the Delaware Estuary. Meet people who are protecting the natural resources of the estuary every day of their lives. Sail from Cape May, New Jersey to Lewes, Delaware aboard the *A.J. Meerwald*, a restored oyster schooner. Most importantly, become part of a network of teachers from across the estuary region who have experienced the Institute and who are now provided with resources and learning opportunities throughout the year. To register, call the Partnership for the Delaware Estuary at 1-800-445-4935.

"I was accepted into the Institute and found it was not what I had bargained for, it was much more! The week was so organized, the trips so well scheduled, and the speakers and destination so well selected that I can honestly say it was the best week I have ever spent in training as a teacher." Robert Cunningham, Edison/Fareira High School, Philadelphia, Pennsylvania.

Recommended Web-sites

South Jersey Watershed Management

http://www.state.nj.us/dep/watershedmg/lowe_delaware.htm

This website provides updated information on upcoming watershed events, hearings, and meetings, the latest version of rules and reports and funding opportunities. Learn more about the status of your watershed in South Jersey and the appropriate people to contact for more information.

Student Water-Quality Testing in Delaware

<http://www.ncsu.edu/sciencejunction/depot/experiments/water/>

This site provides teachers with the information necessary to begin a water-quality, testing program with

their class. It provides an excellent description of and lesson plans for the following water quality parameters: pH, temperature, dissolved oxygen, nitrates/phosphates, and macroinvertebrates. You can also obtain information about existing data in Delaware, grant availability, and national and state science standards.

Water Science for Schools

<http://www.ga.water.usgs.gov/edu/helptopics.html>

What makes water water? What is fish farming? How much water does it take to grow a hamburger? Find out the answers to these questions and many others, participate in interactive opinion surveys, questionnaires, and challenge questions, in the U.S Geological Survey's Water Science for Schools website.

Earth Day Network

<http://www.earthday.net>

The Earth Day Network is the non-profit coordinating body of worldwide Earth Day activities. Check out this site to find an Earth Day event, list your event, or receive electronic alerts about news events in your area and around the world.

Nationwide Rivers Inventory

<http://www.ncrc.nps.gov/rtca/nri>

This site provides a listing of more than 3000 free-flowing river segments in the United States

Recommended Resources

New Jersey Waters

The New Jersey Audubon Society has recently published *New Jersey Waters*. This 218-page educational tool for middle and high school educators is aligned to the New Jersey Core Curriculum Content Standards, relates to New Jersey specific watersheds, provides opportunities for team teaching, and is adaptable for special needs students. The total cost of the book, including tax and shipping and handling, is \$35.30. To order a copy of *New Jersey Waters*, mail a check or money order along with your name, address, and phone number, to NJAS Department of Education, P.O. Box 693, Bernardsville, NJ 07924. Make your check or money order payable to the New Jersey Audubon Society. Call (908) 766-5787 for more information.

Project Learning Tree

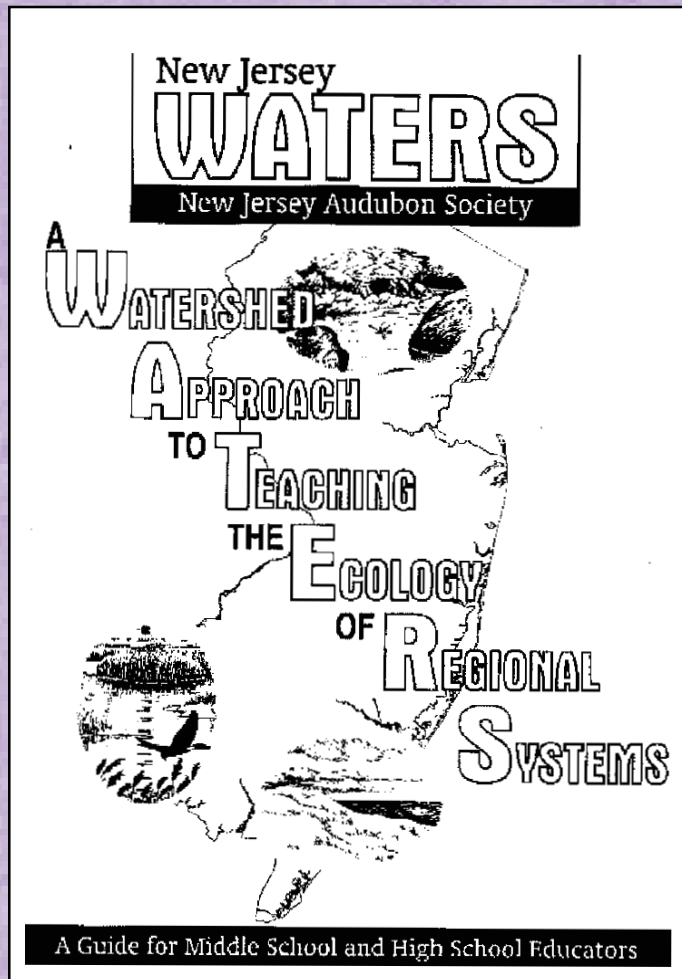
Project Learning Tree (PLT) is a nationally recognized environmental education supplement, administered by the Forest Resource Education Center and the NJDEP, that provides educators with tools for increasing student environmental awareness. PLT will enable teachers/educators to engage their students in interdisciplinary,

hands-on experiences that develop skills in problem solving, critical thinking, evaluation, and research. For more information, call (732) 833-9816. In order to receive the supplement, interested participants must attend one of following workshops, scheduled at various locations throughout New Jersey.

**Visit the State Forest Tree Nursery:
PLT for K-12 educators
Thursday, March 2, 2000, 9 am - 3 pm
Forest Resource Education Center
Jackson, New Jersey
Call: (732) 833-9816**

**Recycling PLT for K-12 educators
Friday, March 10, 2000, 9 am - 3 pm
Cape May County Courthouse, New Jersey
Call: (732) 833-9816**

**PLT for K-12 educators
Thursday, March 23, 2000, 9 am - 3 pm
Somerset County 4-H Center
Bridgewater, Somerset County
Call: (732) 526-6644, Cost \$10.00**



**Check out these websites
to learn more about
the Delaware estuary:**

**www.del.ep.org
www.udel.edu/pde**



**PLT Second Annual Pine Barrens Weekend Workshop
March 24-26, 2000
Belleplain State Forest, Woodbine, Cape May County
Call: (732) 833-9816**

**PLT and Girl Scouting in New Jersey:
The Perfect Match
Saturday, March 25, 9 am - 3 pm
Pine Grove Day Camp, Brick, Monmouth County
Call: (732) 833-9816**

**Student Leadership Summit for the
Delaware River Watershed
May 7 - 9, 2000**

Tuscarora Inn, Mt. Bethel, Pennsylvania

This conference for middle and high school students will feature a "Bike and Boat" experience on the Lehigh River, keynote speakers, student presentations, watershed discussions, and creative activities. Special seminars will be held for teachers and students. Participating schools are encouraged to send a team of six students and deliver a 20-minute formal presentation on their watershed activities and projects. For more information, contact Estelle Ruppert of DRBC at (610) 796-3688 or check out their website at www.state.nj.us/drbc.

The Children's Groundwater Festival

The Children's Groundwater Festival is an annual one-day event serving 4th and 5th grade students. At the festival, lively entertainment and interactive displays are led by groundwater and natural resource professionals representing government agencies, environmental organizations, higher education, and private business. The activities are designed to be fun while teaching children about groundwater. The Festival has become a model and is being replicated around the world. If you would like to learn more about organizing your own festival, the Groundwater Foundation has developed two books entitled *Making Waves: How to Put on a Water Festival*, and *Making More Waves: Ideas from Across the U.S. and Canada for organizing a Festival*. To order either of these books, or to receive more information about the Festival, contact the Groundwater Foundation at info@groundwater.org or call 1-800-858-4844.

Students Page

Hey Philadelphia! Lets Learn About Water!

The Partnership for the Delaware Estuary, with funding from the Philadelphia Water Department, has created an activity booklet entitled "Let's Learn About Water." The booklet explains the history of water use in the City of Philadelphia, identifies the watersheds located within the City and their connection to the Delaware Estuary, explains the natural and urban water cycles, and provides fun games and educational activities. To receive a free copy of the activity booklet, call the Partnership at 1-800-445-4935.

Earth Hawks Youth Corps

Sundays, March 5, April 2, May 7, and June 4, 2000

1 pm - 4 pm

Brandywine Creek State Park
Greenville, Delaware

The Earth Hawks is a youth corps for all kids ages 9-14. The team meets once a month to learn aspects of the environment and to assist with service projects which benefit the park and animal habitats. To register, please call the park's office at (302) 577-3534.

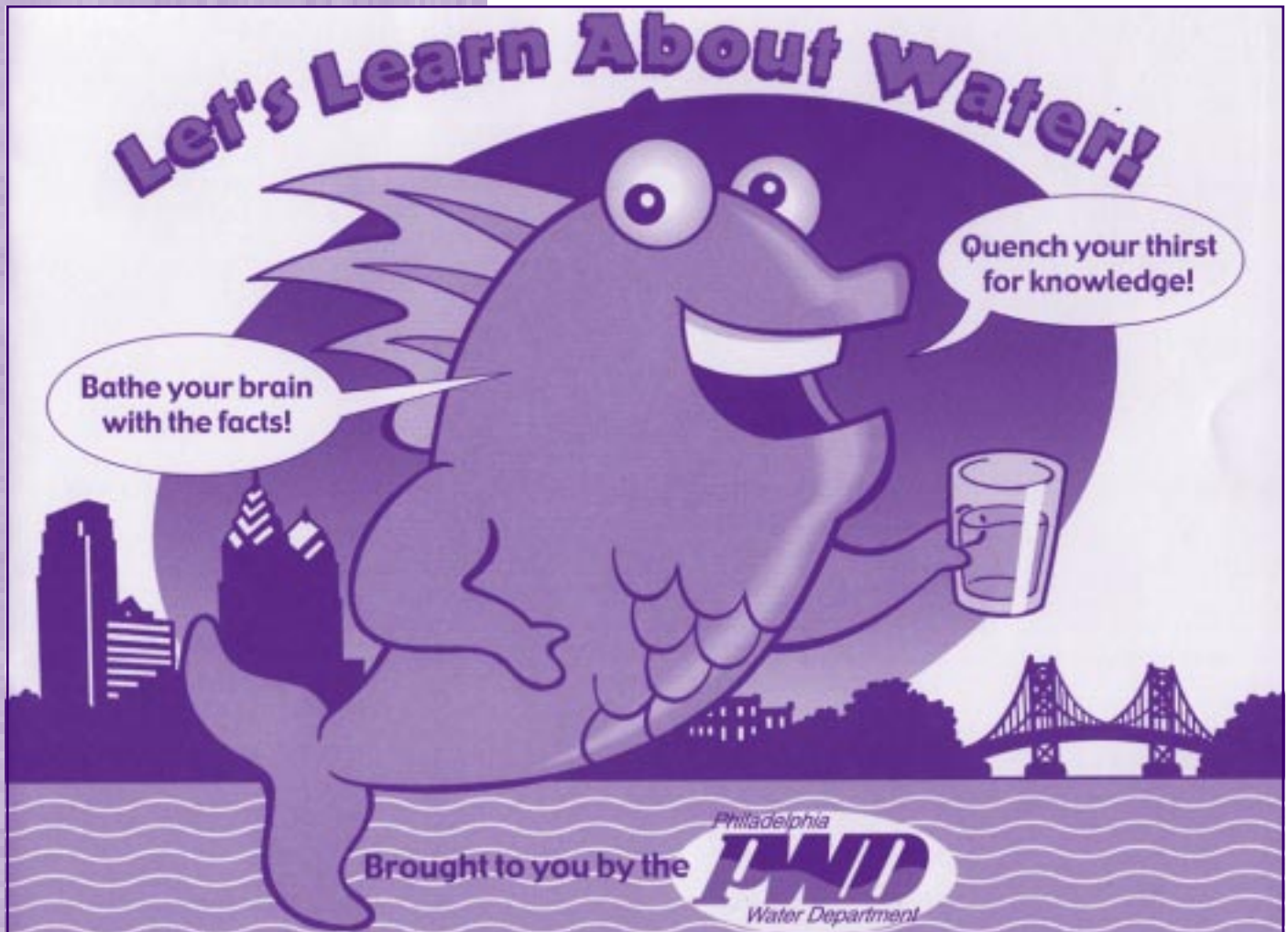
Fly Fishing

Ashland Nature Center
Hockessin, Delaware

This program combines the excitement of fly-fishing with the understanding of aquatic ecology and conservation. The six-session program will meet monthly beginning in February 2000. The program will cover care and selection of equipment, identification of fish and their aquatic insect prey, safety, fishing ethics and fly tying techniques as well as two freshwater fly casting excursions and a trip to a fish hatchery to study breeding techniques. Delaware Nature Society members only. To register or receive more information, call the Ashland Nature Center at (302) 239-2334 x10.

Join the Awesome Aquifer Club

The Awesome Aquifer Club (AAC) is a program that encourages students in 4th and 5th grades to learn about groundwater in the classroom throughout the school year. AAC provides students with the opportunity to become involved in groundwater protection activities within their hometown as well as share lessons learned with other students at the annual Children's Groundwater Festival. For more information about the AAC and the Children's Groundwater Festival, check out www.groundwater.org/KidsCorner/festival.htm.



Estuary Excursions

Manayunk - Philadelphia's 19th Century Mill Town

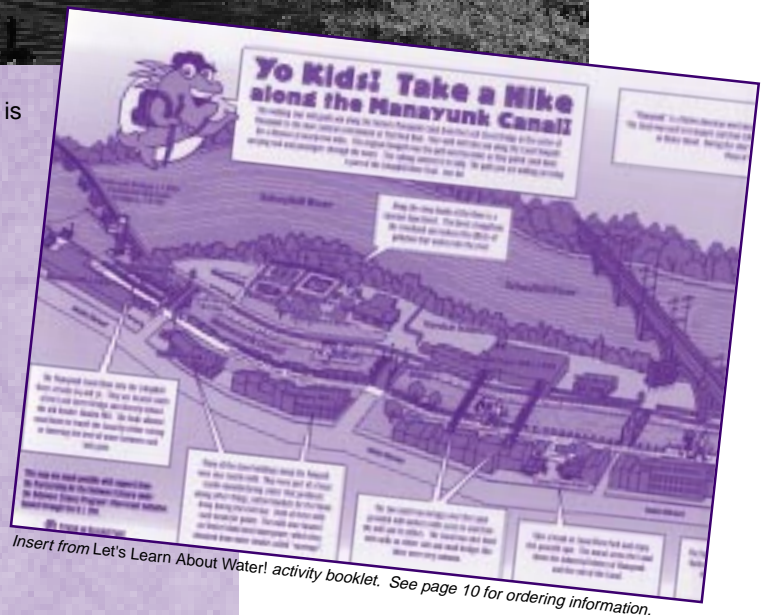


The neighborhood of Manayunk, in Northwest Philadelphia, is known throughout the region as a premier shopping and dining destination. But whether it be to shop, stroll through the Manayunk Arts Festival, or cheer on a cyclist during the First Union US PRO Championship, most of the neighborhood's one million plus annual visitors are not aware of Manayunk's rich riparian history.

Manayunk, a Lenni-Lenape word meaning, "where we go to drink," is located along the steep banks of the Schuylkill River. The canal in Manayunk was built, as part of the Schuylkill Navigation System, to facilitate the transportation of coal from Schuylkill County to the Port of Philadelphia. It was the creation of the Manayunk Canal, and through it, the ability to harness waterpower, that spurred the development of Manayunk as an industrial center for textiles.

The Manayunk Development Corporation, with assistance from the City of Philadelphia, State of Pennsylvania, and numerous other funding sources, is spearheading the restoration of the Manayunk Canal and towpath. The capital project has been divided into phases, which include stabilization of the canal banks and restoration of the existing stone walls, restoration of the canal locks and sluice house, and improvements to the hydrology of the canal.

The Development Corporation has involved the local community in planning for the types of active and passive waterfront recreational opportunities that will be available upon completion of the canal's restoration. It has also developed educational programming for local schools about the role of the Canal and the historic impact of canal-related industry on water quality in the Schuylkill River.



Insert from Let's Learn About Water! activity booklet. See page 10 for ordering information.

Although surrounded by an intense urban environment, both the aquatic and terrestrial habitat in and surrounding the waters of the canal have stabilized and diversified over the years. Often a pleasant surprise for visitors to the canal is the siting of a great blue heron, snowy egret, and even on rare occasions, a green heron. While most colonial wading birds are more abundant in the mid and lower estuary, the great blue heron can be found further inland throughout the lower Delaware drainage area, including Manayunk.

For more information about Manayunk, contact the Manayunk Development Corporation at (215) 482-9565 or visit their website at www.manayunk.com.



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Partnership for the Delaware Estuary, Inc.
1009 Philadelphia Pike
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Delaware Estuary Program

Partnership for the Delaware Estuary, Inc.
Kathy Klein, Executive Director
1009 Philadelphia Pike, Wilmington, DE 19809
Tel: (302) 793-1701 / (800) 445-4935
Fax: (302) 793-1666
E-mail: partners@udel.edu

DELEP Program Coordinator
Forsyth Kineon
Tel: (609) 883-9500 ext.217 / Fax: (609) 883-9522
E-mail: fkineon@drbc.state.nj.us

Environmental Protection Agency
Irene Purdy, EPA Region II
Tel: (212) 637-3845 / Fax: (212) 637-3889
E-mail: purdy.irene@epa.gov

Catherine Libertz, EPA Region III
Tel: (215) 814-2737 / Fax: (215) 814-2782
E-mail: libertz.catherine@epamail.epa.gov

Pennsylvania
Nancy Crickman
Department of Environmental Protection
Tel: (610) 832-6100 / Fax: (610) 832-6133
E-mail: crickman.nancy@dep.state.pa.us

Delaware
John Kennel
Department of Natural Resources
and Environmental Control
Tel: (302) 739-5726 / Fax: (302) 739-3491
E-mail: jkennel@state.de.us

New Jersey
Jay Springer
Department of Environmental Protection
Tel: (609) 341-3122 / Fax: (609) 633-1458
E-mail: jspringer@dep.state.nj.us

Delaware River Basin Commission
David P. Pollison
Tel: (609) 883-9500 x225 / Fax: (609) 883-9522
E-mail: pollison@drbc.state.nj.us

Editors
Kathy Klein, Partnership for the Delaware Estuary
Joe Matassino, Partnership for the Delaware Estuary

Layout & Design
Nancy A. Dubin



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WHO IS THE PARTNERSHIP?

The Partnership for the Delaware Estuary, Inc., is a private, non-profit organization established in 1996. The Partnership promotes the estuary as a regional resource through public outreach and education.

To find out how you can become a member, call the Partnership at 1-800-445-4935, or visit our new website at www.udel.edu/PDE/. Also be sure to visit DELEP's website at www.delep.org.

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