



estuary news

Newsletter of the Delaware Estuary Program

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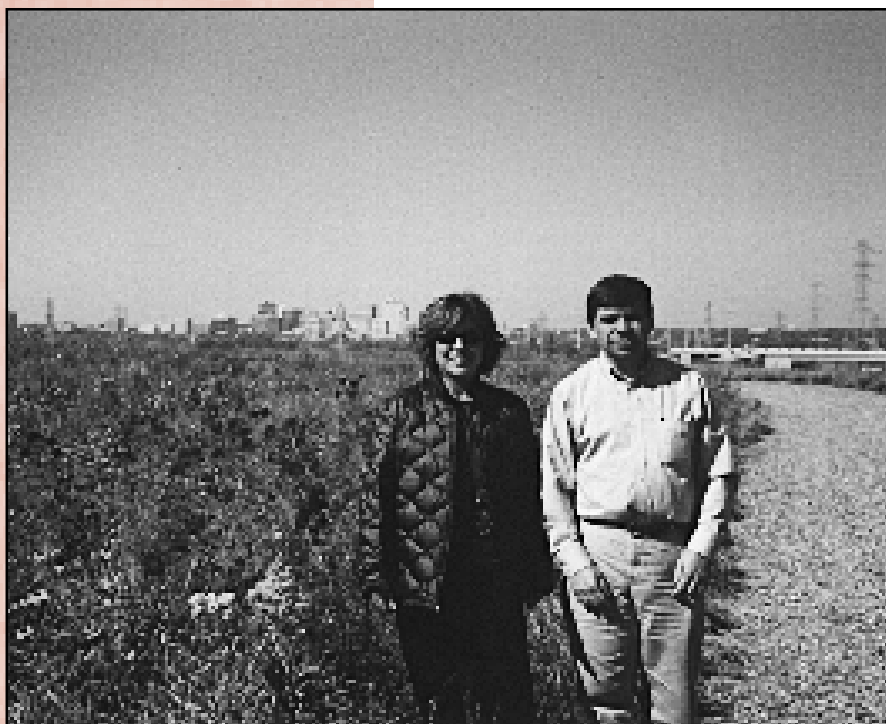
Taking a Team Approach to Corporate Environmental Stewardship

The Delaware Estuary Corporate Environmental Stewardship Program (CESP), established in 1998 through a \$152,000 grant from EPA Region III, is designed to provide corporations across the region with the technical expertise, and in certain situations demonstration dollars, to help these landowners better manage their properties. This program is assisting corporations with the restoration of wetlands, protection and enhancement of fish and wildlife habitat, and the preservation of open space. In addition to improving the environmental health of the Delaware Estuary, it also helps to increase employee moral and reduce property maintenance costs.

An excellent example of the CESP's ability to make exciting things happen is on a 100-acre site that is owned by the DuPont Edge Moor Plant in Wilmington, Delaware. DuPont's Edge Moor Plant, just north of the site, produces titanium dioxide (the pigment that makes paper white) and ferric chloride (an additive for water purification). A co-product of this plant is "iron rich," which can be used as a soil amendment. The CESP site is a capped landfill bordered by the Shellpot Creek, a tributary to the Delaware River to the north; the Delaware River to the east, and the City of Wilmington's Waste Water Pollution Control Facility to the south.

For more than a year, staff from DuPont have been working with a CESP support team comprised of the New Castle Conservation District, the U.S. Fish and Wildlife Service's Delaware Bay Estuary Project Office, the Delaware Department of Natural Resource and Environmental Control, and the Partnership for the Delaware Estuary.

Phase one of the enhancement project took place last fall with an application of herbicide to reduce the amount of phragmites on the site. In early spring of 2000, the 50-acre capped portion of the site was treated to eradicate non-native grasses and woody plants. In June 2000, this area was seeded with native warm season grasses (little blue stem, big blue stem, and Indian grass) along with a wildflower mix.



Kathy Klein, Executive Director of the Partnership and Leonard Fasullo, Environmental Manager at DuPont's Edge Moor Plant overlook a meadow planted at DuPont's CESP restoration site.

Funding and in-kind support for the first phase of this project has come from all of the partners involved with an estimated value of more than \$30,000. With the first phase of the project nearly completed, the CESP team has set its sights on the remaining 50-acres of the property, currently being used to store iron rich. A conceptual plan, completed by URS Corporation, depicts the creation of an environment that includes wetland, meadow, and upland habitats, and an interpretive walking trail. Discussions are underway to eventually utilize this CESP site to teach community members and schools groups about the different kinds of habitats found in the Delaware Estuary and their interconnections to water quality.

To learn more about the Corporate Environmental Stewardship Program and how you can take a team approach to enhancing your corporate property, please call the Partnership for the Delaware Estuary at 1-800-445-4935.

updates from del ep

Toxics Advisory Committee (TAC)

An expert panel has been formed as a first step toward formulation and development of a PCB model for the Delaware Estuary. The definition of a model is as follows: A simplified representation of reality used to simulate a process, understand a situation, predict an outcome, or analyze a problem. A model can be viewed as a selective approximation, which by elimination of incidental detail allows some fundamental aspects of the real world to appear or be tested.

The six individuals on the panel are national/international experts on various aspects of PCB modeling, such as sediment and atmospheric deposition. The first meeting of this panel was held on October 6, 2000. The PCB model will be used to establish the maximum acceptable loading of PCBs to the various segments of the Estuary and allocate this loading to point and nonpoint sources. It will also be used to assess a range of PCB control alternatives in order to evaluate their effectiveness in achieving water quality standards that protect human health and aquatic life, and eliminate Fish Consumption Advisories.

In addition, the Coalition of Industrial and Municipal Dischargers hosted a meeting on August 28, 2000, to present their thoughts regarding the plans to move forward to address the issue of PCBs in the Delaware Estuary. Discussions are continuing on this issue.

Monitoring Advisory Committee (MAC)

The first meeting of the recently appointed MAC was held at the Delaware River Basin Commission's offices, on September 6, 2000. The MAC has taken the place of the DELEP Monitoring Implementation Team, and has a basin-wide scope. The MAC will advise DELEP's Steering Committee, and the DRBC Commissioners, who have the authority in their states to implement changes. The Chairperson of the MAC will report directly to the DRBC Commissioners at Commission Meetings. It is expected that this committee will address management issues and make recommendations to the DRBC Commissioners and the DELEP Steering Committee members.

At this meeting, a number of items were discussed including procedural details, monitoring needs, committee goals, and environmental indicators. Forsyth Kineon, the DELEP Program Coordinator, brought up the idea of holding a workshop to help identify additional environmental indicators for the Estuary. The MAC supported the idea, but said they were the data collectors and that the workshop should involve participation by the analytical and public relation's sector. Once the monitoring needs have been identified, the MAC could be consulted to see how current-monitoring efforts could be amended to address the needs identified through the workshop.

Another outcome of the MAC meeting was a decision to expand the committee to include membership of representatives from the U.S Fish and Wildlife Service, and the State Fish and Wildlife agencies in all four of the basin's states.

A brainstorming session was held to determine monitoring needs and actions to be addressed by this committee, and a draft outline of the 2001 Monitoring Report was also handed out for committee review and comment.

The next meeting of the MAC was set for Tuesday, December 12, 2000 at 10:00 A.M. at the DRBC offices in West Trenton, NJ.

Habitat and Living Resources Implementation Team (HLRIT)

JOB ANNOUNCEMENT:

The Delaware Bay Estuary Project is seeking an environmental scientist with a bachelor's degree, or higher, to work with the HLRIT. Wetlands and habitat restoration experience, data base development, and good interpersonal skills are required.

The Wetlands and Habitat Coordinator is a full-time position that will work on the Delaware Estuary Program (DELEP) in filling the need identified in the Comprehensive Conservation and Management Plan (CCMP) for coordination and enhancement of habitat management in the Estuary. The geographic scope of the effort will include the lower Delaware River watershed areas of Delaware, Pennsylvania, and New Jersey. The position will be located with the Delaware Bay Estuary Project in Smyrna, Delaware.

To learn more about this one-year appointment, contact Dr. Edward Christoffers at (302) 653-9152, ext. 19, or fax your letter of interest and resume to (302) 653-9421.

Delaware Estuary Program Announces Minigrant Request for Proposals

The DELEP Minigrant Program provides small grants to organizations throughout the Delaware Estuary. Over the past nine years, approximately 70 minigrants have been awarded, totaling more than \$220,000 and averaging \$3,300 per grant. Past recipients of these minigrants have included Delaware Greenways for the creation of an access trail to the Delaware River, the New Jersey Academy of Aquatic Sciences to develop a one-act play for elementary school students about indigenous estuarine animals, and the Clean Water Fund to promote reduced pesticide use by integrated pest management. The deadline for submitting proposal's for the 2001 Public Education and Participation Estuarine Improvement Minigrants is December 1, 2000.

To receive a copy of the Request for Proposals, please call the Partnership for the Delaware Estuary at 1-800-445-4935, or email us at partners@udel.edu.

Public Participation Implementation Team (PPIT)

The PPIT is pleased to announce the completion of two initiatives. The initial suite of nine Delaware Estuary environmental indicators, developed to assess the health of the Estuary region, is now available for public viewing at www.delep.org. A printed version of the indicators will be available soon. If you would like to receive a copy, please call 1-800-445-4935.

On behalf of the Delaware Estuary Program, the Delaware Valley Regional Planning Commission (DVRPC) has completed an analysis of the household hazardous waste (HHW) programs operating within the Delaware Estuary Region. The study, which was funded by the United States Environmental Protection Agency's Region II, surveyed the 19 existing HHW collection programs in the region. On the following page is a summary of this study.

Household Hazardous Wastes: What are they?

A household hazardous waste (HHW) is any material that poses a risk to human health or to the environment that is thrown away by a household. The hazards posed by these materials include the risk of ignitability, corrosivity, reactivity, or toxicity. For example, drain openers used to unclog your bathroom sink are corrosive. Motor oil in your car or lawnmower is ignitable, and herbicides and insecticides used in your garden are toxic. The care you use in handling these types of products, for whatever purpose, must also be used in their disposal.



The list of HHW is extensive and ranges from the more obvious materials like bleach, oil-based paint, and lighter fluid, to some less obvious ones like hair coloring products, floor wax, and air fresheners.



What could happen if these wastes are not disposed of properly?

Numerous problems could occur. If, for example, you throw away HHW in your weekly garbage collection, those HHW could react with other wastes during the collection, handling and transportation, causing fires in the garbage collection vehicles, or dangerous fumes from chemical reactions at the waste handling facilities. At the landfill, there are further opportunities for co-mingling or reacting with other chemicals or rainwater. These reactions form air emissions, dangerous gases, and leachate that require collection and treatment to prevent it from contaminating ground water.

Many people, with good intentions of proper disposal, let their HHW accumulate in their basements or garages. Just one word of caution, storage of HHW can also cause problems. Leaking containers can create indoor air pollution, aggravate respiratory problems, or exacerbate house fires.



So what do you need to do?

Find out where you can properly dispose of your HHW and when collection events take place. In the State of Delaware, there is one HHW collection program, which is operated by the state's Delaware Solid Waste Authority. In Pennsylvania and New Jersey, the HHW collection programs are more often than not, operated by counties or municipalities.

Each HHW collection program operates very differently. The frequency of collection can vary from daily collection events to only a few days per year. The types of facilities will also vary. Some sites provide a permanent location or a fixed drop-off point, while others are mobile, meaning the drop-off site changes or a vehicle specially designed to collect HHW is used. In addition, not all programs collect the same products. For example, the Cape May County Municipal Utilities Authority and the Chester County Health Department do not collect automotive waste. To complicate matters, the percentage of funds allocated for advertising or public outreach is very small.

So you will have to do your homework to find out where, when, and what you dispose of through your communities collection program. To get you started, below is a listing of the HHW collection programs in the Estuary. Give your program a call to find out the specifics.



Delaware

Delaware Solid Waste Authority (302) 739-5361

New Jersey

Atlantic County Utilities Authority (609) 272-6921
 Burlington County Division of Hazardous Wastes (609) 499-5200
 Camden County Division of Environmental Affairs (609) 566-3131
 Cape May County Municipal Utilities Authority (609) 465-9026
 Cumberland County Improvement Authority (856) 825-3700
 Gloucester County Improvement Authority (856) 478-6045
 Mercer County Improvement Authority (609) 695-1200
 Monmouth County Health Department (732) 922-4815
 Ocean County Dept. of Planning and Solid Waste Mgmt. (732) 506-5047
 Salem County Utilities Authority (856) 935-7900

Pennsylvania

Berks County Solid Waste Authority (610) 373-7575
 Bucks County Planning Commission (215) 345-3400
 Chester County Health Department (610) 344-5940
 Delaware County Solid Waste Authority (610) 892-9716
 Lebanon County (collection sometimes provided by the county's conservation district)
 Lehigh County Office of Solid Waste Management (610) 782-3046
 Montgomery County Planning Commission (610) 278-3733
 Philadelphia Streets Department-Sanitation Division (215) 686-5095
 Schuylkill County Office of Solid Waste and Resource Mgt. (570) 628-1220

To receive a copy of the Household Hazardous Waste Collection in the Delaware Estuary Study, please call the Partnership for the Delaware Estuary at 1-800-445-4935.

updates from del ep continued

Message from the Program Coordinator

By Forsyth Kineon

As the Delaware Estuary Program (DELEP) Program Coordinator, I attended a meeting of the Estuary Program Directors from September 30 through October 4, 2000. These meetings occur twice a year, in the spring in Washington DC, and in the fall at one of the 28 National Estuary Program (NEP) sites.

The spring meetings coincide with EPA Headquarters budget announcement and any new requirements for the estuary programs. The fall meetings provide an opportunity for information sharing among the estuary programs and with EPA. All of the estuary programs are members of the Association of National Estuary Programs (ANEP); and all the Directors or Program Coordinators automatically sit on the ANEP Board. ANEP is a nonprofit organization that raises funding for estuary program operations and activities. ANEP also lobbies Congress, educates the public at the national level, and produces technical documents on estuarine subjects, such as habitat restoration. The Delaware Estuary Program was elected to the Executive Board of ANEP, which means we will play a larger role in the discussions concerning EPA resources, and will provide input into the future direction of ANEP.

A significant benefit of these meetings is the sharing of information with other estuary programs on what is happening in each of our individual estuaries. In the Delaware Estuary, DELEP has done much over the summer.

- We have just completed a set of environmental indicators that show positive improvement in the health of the Estuary, and a monitoring report giving more detailed information on monitoring in the Estuary.

- We participated in Coast Day in Delaware through the Partnership, the Delaware Department of Natural Resources and Environmental Control and the Delaware River Basin Commission (DRBC), and in New Jersey through the New Jersey Department of Environmental Protection.
- We have completed an Interactive Map Server that allows the public to access information about the various watershed groups. It also identifies the location of boat sewage pumpout facilities.
- Under the program, DRBC and the states are developing TMDLs (see summer 2000 issue of *Estuary News*) for PCBs as required by the Clean Water Act.
- The program, through the Partnership is working on the Corporate Environmental Stewardship program (see the cover article for detail on the DuPont Edge Moor Plant restoration project).
- Additionally, the Program has just created a Fish Consumption Advisory Implementation Team, which will meet for the first time in November, to establish Estuary-wide fish consumption advisories. (An article in the August 1, 2000 issue of the Philadelphia Inquirer highlights this initiative).

These were just a few of the many items that I shared with the other estuary programs during the fall meeting. For more information about any of the issues mentioned in this article, please call me at (609) 883-9500 x 217.

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, Partnership for the Delaware Estuary, Inc.
(800) 445-4935, partners@udel.edu

Habitat and Living Resources Implementation Team

Edward Christoffers
(302) 653-9152 x19
ed_christoffers@mail.fws.gov

Information Management Advisory Committee

Warren Huff, (609) 883-9500 x237, whuff@drbc.state.nj.us
or Karl Heinicke, RIMS Coordinator
(609) 883-9500 x 241, heinicke@drbc.state.nj.us

Watershed Implementation Team

Nancy Crickman, PA DEP
(610) 832-6100, crickman.nancy@dep.state.us

The Delaware River Basin Commission also has three 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

Monitoring Advisory Committee

Edward Santoro, Monitoring Coordinator
(609) 883-9500 x 268,
esantoro@drbc.state.nj.us

Species specific

Nutria – *Myocaster Coypus*

Nutria is an invasive, semi-aquatic species that is similar to a muskrat. They range anywhere from 8 to 18 pounds and are two-to-three feet long. Their fur coloring is dark brown to yellowish brown and consists of long glossy guard hairs. Nutria's features are well adapted to water habitation including webbed feet.

In 1937, nutria were brought to Louisiana from Argentina, by E.R. McIlhenny, the inventor of Tabasco Sauce, to be housed in his private zoo. However in 1941, rising waters from a gulf coast hurricane enabled the nutria to swim out of their compound. The species was introduced into Maryland in 1940 in an attempt to promote a fur farm industry. When the farms failed due to a drop in fur prices, the animals were released into the wild. With no natural predators to help to control their numbers, the nutria population in the United States, particularly in Louisiana and Maryland has skyrocketed. For example, at the 10,000 acre Blackwater National Wildlife Refuge on the Maryland's Eastern Shore, their population has grown from 150 in 1968 to 35,000 – 50,000 today.

The negative impacts of Nutria on the marshlands/wetlands have been extensive. Nutria feed almost entirely on vegetation, including saltmarsh hay, smooth cordgrass, and three-square bulrush. With their high reproductive capability, and ability to dig under the marsh surface to feed on emergent vegetation, they have devastated large areas of the vegetative root mat in the marsh – the very structure that holds the marsh together. Once nutria chew through the vegetative mat and expose the mudflat, tidal currents and wave action eventually erode the mudflat. This results in a loss of marshland, thus a loss of critical and eventual conversion to open water. Marsh loss will effect native wildlife species, such as waterfowl, wading birds and muskrat, which are dependent upon the marsh for food and shelter. Healthy marshes also function as sediment/nutrient filters and nursery areas for other types of aquatic species.

The Delaware Estuary's Prime Hook National Wildlife Refuge, in Milton, Delaware, is home to an estimated 500 nutria. They have not yet caused major damage in Delaware, but with the warmer winters that the Delaware Estuary Region has been experiencing, their numbers, and subsequently their impact on the marsh, could increase. In addition, nutria seem to be adapting to a cooler climate by growing more fat onto their bodies and burrowing further down into the marsh during colder weather.

In 1998, in an effort to control the nutria population on the eastern shore, the United States House of Representatives approved of legislation providing \$2.9 million to help fund a three-year pilot program to potentially eradicate the species, restore damaged marshland, provide public education, and guidance for controlling nutria in other regions.

Louisiana has worked to control nutria levels by developing markets for their fur and meat. In 1998, the Louisiana Department of Wildlife and Fisheries and USGS sponsored the first official nutria, cooking contest.



For more information about the efforts to control the nutria population, please call the Blackwater National Wildlife Refuge at (410) 228-2677. To receive more information about programming at the Prime Hook National Wildlife Refuge, please call (302) 684-8419.

Information was obtained from an article written by Carl Weiser in the March 14, 2000 edition of The News Journal; and from three websites <http://www.pwrc.usgs.gov>;; <http://blackwater.fws.gov>, and www.flex.net/~lonestar/wild.htm. The photo can be found on <http://encarta.msn.com/find/concise.asp?ti=0571C000>.

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for the Delaware Estuary at
partners@udel.edu.***

TIDINGS: News from around the region

New Jersey's Strawbridge Lake Gets Some TLC

Strawbridge Lake was in need of a little tender, lovin' care back in the 1990's when the New Jersey Department of Environmental Protection's Nonpoint Source Pollution Grant Program provided \$110,000 in funding to assist in its restoration. The popular lake, located in Strawbridge Lake Park, in Moorestown, New Jersey, has traditionally received heavy recreational use from the residents of both Burlington and Camden Counties.

For many years, the lake had been suffering from an eroding shoreline and the affects of nonpoint source pollution. With assistance from the Township of Moorestown, Eastgate Mitigation Fund, the New Jersey Natural Lands Trust, and a host of volunteers, including the Moorestown Environmental Advisory Committee and the Strawbridge Lake Association, approximately 4,020 feet of shoreline was stabilized using soil bioengineering techniques. The bank stabilization project included a "no-mowing" zone, which established a vegetative buffer ranging from 10 - 20 feet. More than 240 linear feet of shoreline was treated using red gravel bordered by large flat stones to create areas for public access.

In addition, because the lake receives numerous stormwater discharges from the surrounding residential and commercial areas, as well as directly from Highway Route 38, pocket wetlands were constructed to treat the stormwater discharges into the lake.

The Strawbridge Lake project has not only enhanced the natural beauty of the lake and surrounding area, but also significantly improved the lake's water quality. For these reasons, this restoration is considered a model project.

For more information about the Strawbridge Lake restoration project contact Sue Halsey of NJDEP at (609) 633-1441.

Information for this article was obtained from the Summer 2000 edition of "Watershed Focus," a publication of the New Jersey Department of Environmental Protection.

Next Round of Growing Greener is just around the corner

The Pennsylvania Department of Environmental Protection (PA DEP) will be announcing its next round of Growing Greener Grants in late December 2000. These grants, specifically entitled, Environmental Stewardship and Watershed Protection Grants, will be accepted until late February 2001 for use of State Fiscal Year 2001 monies available July 1, 2001. Growing Greener Grant Workshops will be held within each area of PA DEP's six regional

offices throughout early January 2001. To date, more than \$2 million has been granted to organizations in the Pennsylvania portion of the Delaware Estuary.

For more detailed information about the grants, workshops, and application materials, refer to the Growing Greener web page on PA DEP's web site, www.dep.state.pa.us, or call the Growing Greener Grants Center at (717) 705-5400.

The Latest News from New Jersey's Watershed Management Areas 17 and 18

Many exciting things are happening in the Lower Delaware Bureau of the New Jersey Department of Environmental Protection's (NJDEP) Division of Watershed Management (DWM). On September 27, 2000, approximately 100 people gathered at Gloucester County College in Deptford, New Jersey to attend the Kick-off Meeting of Watershed Management Area (WMA) 18. This watershed management planning process will be organized by the Delaware Valley Regional Planning Commission (DVRPC), through a contract with the DWM. WMA 18 covers portions of Burlington, Camden, Gloucester, and Salem Counties, and includes the Pompeston, Pennsauken, Cooper, Newton, Big Timber, Woodbury, Mantua, Raccoon, Repaupo and the Oldmans Creek Watersheds.

October marked the start of activity in WMA 17. On October 4, 2000, NJDEP Commissioner Robert Shinn signed a contract for \$400,000 with Cumberland County to start the watershed management process in WMA 17. This contract signing followed an ecotourism event held on the Cohansey River to highlight the abundant natural beauty of this watershed. (See article in "Making Waves" on page 11) The Cumberland County Department of Planning will take the lead for WMA 17, which consists of portions of Salem, Gloucester and Cumberland Counties, and includes the Maurice River, Cohansey River, Alloway Creek, and the Salem River Watersheds.

Congress Acts to Restore and Preserve National Estuaries

During the week of October 23, 2000, the United States Congress passed the Estuaries and Clean Waters Act of 2000. This act authorizes a total of \$275 million over the next five years for matching funds for restoration projects and designates an additional \$35 million per year for the next four years to support the National Estuary Program (NEP).

With passage of this act, Congress has reaffirmed its support for the NEP and the importance of federal partnership in implementing plans to protect our estuaries. Congress has also given tangible support to the critically important goal of restoring habitats along our coastlines. The bill has now been transmitted to the White House where it is widely expected that the President will sign it into law.

For more information about WMA 18, please contact Karen Dorris, WMA 18 Manager with NJDEP, at (609) 984-6577. For more information about WMA 17, please contact Jay Springer, WMA 17 Manager with NJDEP, at (609) 341-3122.

Cape Henlopen State Park Growing By Leaps and Bounds

As part of its efforts to preserve remaining open space between Lewes and Rehoboth Beach, Delaware, the Delaware Division of Parks and Recreation has purchased 41 acres of woodlands at a cost of \$1,035,000 that will be added to Cape Henlopen State Park. The purchase was funded through the State of Delaware's Open Space Program. This transaction is the second half of a two-part acquisition from the Dodd family heirs. In July 1999, 81 acres of farmland and woods were purchased for \$2,032,075.

Cape Henlopen State Park is now more than 5,000 acres. It includes four miles of ocean beach and two miles of bay beach. It contains the only stand of pitch pine on the Delmarva Peninsula, and the only population of nesting piping plovers in Delaware.

For more information about visiting Cape Henlopen State Park, please call (302) 645-8983. To help promote the protection and wise management of the diverse resources within the park, contact the Friends of Cape Henlopen State Park at CHSPFriends@juno.com.

Information for this article was obtained from a press release submitted by DE DNREC dated August 10, 2000, and from a brochure produced by the Friends of Cape Henlopen State Park.

New Jersey Launches the Watershed Ambassador Program

The New Jersey Department of Environmental Protection (NJDEP) is pleased to announce the start of the "New Jersey Watershed Ambassador Program." This new program will work in conjunction with the NJDEP's Division of Watershed Management to support the watershed management priorities of New Jersey, as indicated by Governor Whitman in her 2000 State of the State Address.

Through the Watershed Ambassadors Program, 20 AmeriCorps members will be placed in the 20-watershed management areas across the State of New Jersey. The purpose of this program is to improve water quality by exploring the relationships between people and the environment, nurturing community-based environmental activities, and empowering residents to make responsible and informed decisions regarding their watershed.

The AmeriCorps members will assist NJDEP in monitoring the rivers of New Jersey through the River Assessment Teams (RATS) and Biological Assessment Teams (BATS) volunteer monitoring programs, and will also train community members as needed. In addition, they will be available to provide information and education to community organizations and schools, in order to better inform New Jersey residents about water and watershed issues.

This year, AmeriCorps, the domestic Peace Corps, will provide more than 800 individuals with the opportunity to spend a year serving New Jersey communities tutoring and mentoring at-risk youth, building homes and safer neighborhoods, and cleaning up our rivers and streams.

Through the Watershed Ambassadors Program, AmeriCorps members will help to address the diverse environmental needs of New Jersey and raise awareness about the state's watersheds. In coordination with the NJDEP Division of Watershed Management, the AmeriCorps members will work with all sectors of society to aid in the protection, restoration and enhancement of New Jersey's waterways.

For more information about the Watershed Ambassadors Program, please call Fran Varacalli of NJDEP at (609) 633-0533. For more information about AmeriCorps, check out their website at www.nationalservice.org.

U.S. Secretary of Commerce Norman Y. Mineta Establishes a Horseshoe Crab Sanctuary

On October 12, 2000, Commerce Secretary Norman Mineta announced a 15-day public comment period, closing on October 31, 2000, on the proposal to create a 1,500 square-mile preserve in federal waters off the Delaware Bay to protect horseshoe crabs. The sanctuary would be located 30 miles into the Atlantic Ocean, extending from Peck's Beach, New Jersey to Ocean City, Maryland. This area was chosen because it has the largest horseshoe crab population on the East Coast.

In addition, Secretary Mineta imposed a statewide moratorium, effective October 23, 2000, prohibiting fishing for horseshoe crabs in Virginia waters after the state failed to heed repeated warnings to set stricter limits on its catch. The moratorium is to remain in effect until Virginia complies with coast-wide regulations to reduce harvests of horseshoe crabs. John Paul Woodley, the Secretary of Natural Resources for the Commonwealth of Virginia, did not rule out the possibility of going to court to challenge the moratorium.

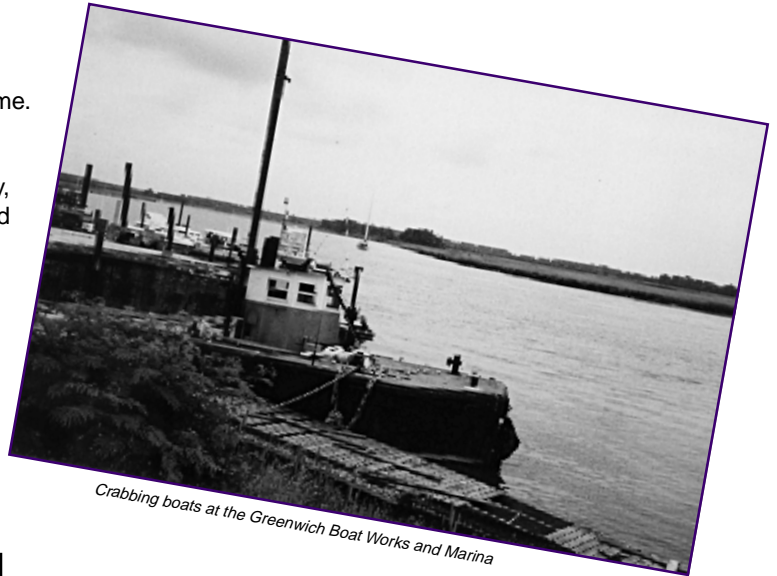
Information for this article was obtained from the web site for the National Oceanic and Atmospheric Administration, <http://www.noaanews.noaa.gov>.

Estuary Excursions

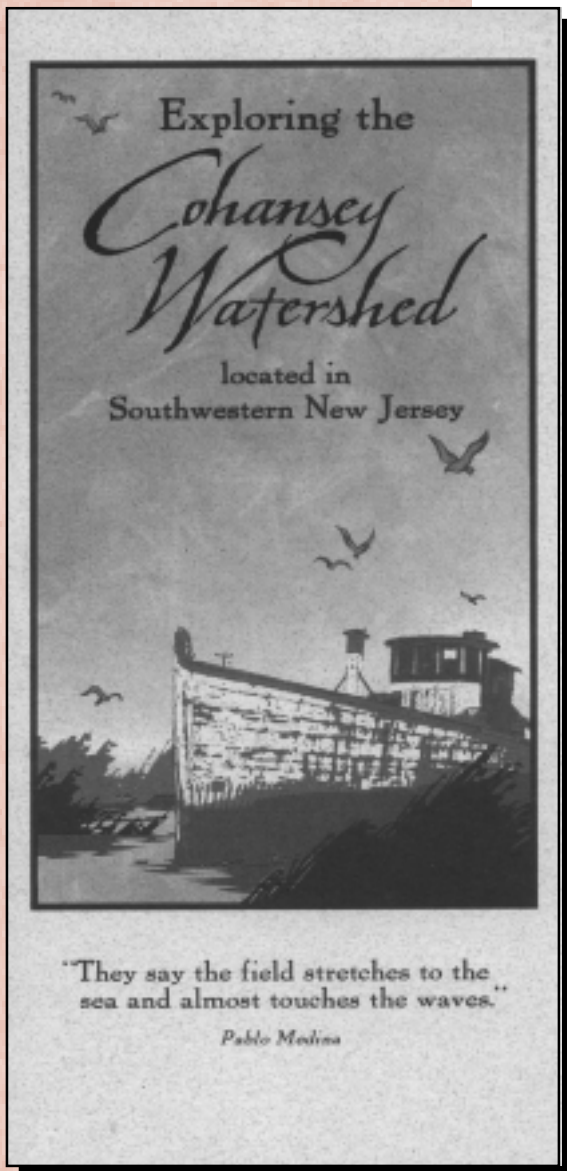
Exploring the Cohansey Watershed

Visiting the Cohansey Watershed is like stepping back in time. The Cohansey Watershed is an area full of history, wildlife, and natural beauty. From its headwaters in Salem County, through the picturesque countryside of Cumberland County, visitors to this secluded region of South Jersey are provided with a wealth of opportunities for outdoor recreation and historical exploration.

This fall, the Partnership for the Delaware Estuary and the New Jersey Department of Environmental Protection's Division of Watershed Management collaborated in the creation of an ecotourism brochure highlighting the resources of the Cohansey Watershed. The brochure introduces visitors to the 300-year old city of Bridgeton,



Crabbing boats at the Greenwich Boat Works and Marina



which is the largest city in the watershed. Bridgeton's diverse population and small town charm translates into a unique experience for sightseeing and for the palate. We also encourage you to take some time to visit the tiny village of Greenwich, which is home to the John DuBois Maritime Museum, to stop and chat with the locals at the Greenwich Country Store.

There are a number of wildlife management areas and wetland restoration sites scattered throughout the watershed, including the Sea Breeze Wildlife Management Area owned and operated by New Jersey's Fish and Wildlife Service, and Public Service Electric and Gas's (PSEG) Bayside Tract Natural Viewing Area. These sites are accessible to the public for hiking, boating, and a variety of other recreational activities. Our favorite is the view from the boat launch at PSEG's Cohansey Watershed Wetland Restoration Site, where spotting a bald eagle is a regular occurrence.

There are a number of events or festivals taking place this holiday season, so pack your family and head down for a weekend or just sneak away on your own and enjoy the solitude of a day on the Cohansey River.

To receive a copy of the Cohansey Watershed brochure, please call the Partnership for the Delaware Estuary at 1-800-445-4935.

What is ecotourism?

Ecotourism is defined as responsible travel to natural areas that conserves the environment and sustains the well being of local people.

Estuary basics

Learning Your P-C-Bs

By Catherine A. Libertz, United States Environmental Protection Agency,
Region III Delaware Estuary Program Coordinator

Polychlorinated biphenyl's (PCBs) have been detected at elevated levels in the sediments and tissues of resident and anadromous fish collected from the Delaware Estuary, which has resulted in the issuance of fish consumption advisories by the three states covering the entire tidal Delaware River and Bay. In order to address the issue of PCBs in the Estuary, the Delaware Estuary Program has drafted a PCB Strategy. The goal of this strategy is to reduce and/or eliminate the PCBs that contaminate the Delaware Estuary and its living resources in order to achieve water quality standards, restore the Estuary's ecological health, and eventually allow consumption of certain important species of fish from those water bodies that currently are not safe to eat due to PCB contamination.

What are PCBs?

PCBs are synthetic chemical compounds consisting of chlorine, carbon and hydrogen. PCBs are relatively fire-resistant, very stable, do not conduct electricity and have low volatility at normal temperatures. These and other properties have made them desirable components in a wide range of industrial and consumer products. Some of these same properties make PCBs environmentally hazardous especially their extreme resistance to chemical and biological breakdown by natural processes in the environment. PCBs are also known by their various brand names, which include Aroclor, Pyranol, Interteen, and Hyvol.

PCBs are either oily liquids or solids that range in color from clear to light yellow, and have no known smell or taste. PCBs are soluble in most organic solvents but are almost insoluble in water, so when added to it they sink to the bottom. Most PCBs are non-volatile at normal temperatures. However, overheating of electrical equipment containing PCBs can produce emissions of irritating vapors. PCBs are completely destroyed only under extreme heat or in the presence of certain combinations of chemical agents and heat.

History

PCBs were first synthesized in 1881. Commercial production began in the United States in 1929 in response to the electrical industry's need for a safer cooling and insulating fluid for industrial transformers and capacitors. PCBs have not been manufactured in North America since 1977. The most common usage was in electrical equipment such as transformers, large capacitors and fluorescent light ballasts. PCBs were also used as hydraulic fluids; as surface coatings for carbonless copy paper; as plasticizers in sealants, caulking, synthetic resins, rubbers, paints, waxes, and asphalts; and as flame-retardants in lubricating oils. Some of these uses have been limited by current regulations, and remaining uses are being discussed for inclusion in new regulations. Another remaining use is for

research and development purposes, which are attempting to find better ways to dispose of the PCBs.

Regulation

It was discovered that PCBs are toxic substances that are a hazard to human health and the environment. PCBs have been demonstrated to cause a variety of adverse health effects. They have been shown to cause cancer in animals as well as to cause a number of serious non-cancer health effects in animals, including effects on the immune system, reproductive system, nervous system, and endocrine system. Studies in humans provide supportive evidence for potential carcinogenic and non-carcinogenic effects of PCBs.

Concerned about industrial chemical toxicity and persistence in the environment, Congress enacted the Toxic Substances Control Act (TSCA) (Public Law 94-469, October 11, 1976), which included prohibitions on the manufacture, processing, and distribution in commerce of PCBs. Under TSCA, Congress mandated the regulation of PCBs from manufacture to disposal, or from "cradle to grave" throughout the U.S.

Although TSCA prohibited further manufacture, processing and distribution of PCBs (with a few exemptions), many products containing PCBs are still in use. Use for some, such as PCB-containing equipment, may continue as long as the equipment is properly monitored and maintained.

As the evidence of their danger to human health and the environment accumulated, PCBs became a broadly regulated chemical substance. In addition to TSCA and accompanying regulations 40 CFR Part 761, PCBs are also regulated by the EPA under the Clean Air Act, Clean Water Act, Resource Conservation and Recovery Act, and the Comprehensive Environmental Response, Compensation and Liability Act.

What are the substitutes for PCBs?

Safer alternatives have been found to take the place of PCBs in all their previous applications. As PCB-filled transformers come to the end of their service life, they are being replaced either with dry-type transformers or with transformers containing an approved dielectric fluid, such as silicone oils or transformer-grade mineral oil.

Sources: EPA Regions VIII and IX webpages and http://www.gascape.org/index%20/FAQs_About_PCBs%20.html, which states "Taken from "The PCB Story," Canadian Council of Resource and Environment Ministers, Toronto, Ontario, 1986."

Please refer to Updates from DELEP on page 2 to learn more about the Monitoring Advisory Committees activities with PCBs.

Making Waves

New Jersey and Delaware Celebrate the Coast

New Jersey

The New Jersey Marine Sciences Consortium (NJMSC) and its New Jersey Sea Grant College Program sponsored Coast Day New Jersey on October 1, 2000 in Cape May. The event, which was held at three locations: the Nature Center of Cape May, The Lobster House Restaurant and Dock, and Utsch's Marina, is dedicated to highlighting New Jersey's coastal environment and its unique marine resources.

Visitors to these locations were able to see and sample salt oysters, tour the R/V *Lionel A. Walford*, the NJMSC's research vessel, and try their hand at seining. The Nature Center of Cape May led groups on "Explore the Shore" nature tours, and at the Center, provided the opportunity for visitors to hold a horseshoe crab.

For more information about Coast Day New Jersey 2001, please call Claire Antonucci at (732) 872-1300 x 22, or reach her by email at claire@njmsc.org.

Delaware

The 24th Annual Coast Day, sponsored by the University of Delaware's Sea Grant College Program and the Graduate College of Marine Studies, was also held on October 1, 2000 in Lewes, Delaware. Coast Day celebrates Delaware's ocean and coastal resources and showcases the University's efforts in marine research and education. This year's celebration also marked the 30th Anniversary of the Graduate College of Marine Studies.



Tom Carper Governor of Delaware signs a paddle held by Megan Wren, Executive Director of the Delaware Bay Schooner Project as part of the Coast Day 2000 festivities. The paddle has been passed state to state and signed by state officials since April 1, 2000. It will eventually be displayed at the Smithsonian Institute. The "Pass-the-Paddle" event was organized by the River Management Society to draw attention to the partnerships, on a community to national level, that are essential to protecting water resources. Photograph taken by Kathleen Jamison.

Aside from the very popular and tasty juried Crab Cake Cook-Off Contest, Delaware's Coast Day offered dozens of activities and learning opportunities to the more than 10,000 people who attended the event. The University hosted a number of research demonstrations including an introduction to the variety of organisms living on the murky bay floor, and an exhibit explaining how University of Delaware scientists use satellites to track nearshore currents, internal waves, and El Nino.

For more information about the University of Delaware's Sea Grant College Program or the Graduate College of Marine Studies, please call (302) 831-8083 or visit their website at www.ocean.udel.edu.

Delmarva Coastal Clean-Up

Residents of the Delmarva Peninsula and New Jersey joined forces this fall for the 7th Annual Delmarva Coastal Clean-Up. The event coordinated volunteers to assist in the removing of debris from the shores of the Chesapeake and Delaware Bays, their tributaries, and the Atlantic beaches. This year, more than 2,300 volunteers collected approximately 42,000 pounds of trash between September 16th and September 23rd.

The types and quantities of trash collected in the various locations are recorded on data cards and forwarded to the Center for Marine Conservation, which compiles the information for all the clean-ups held in the country and around the world. This information helps to identify the sources of the debris and focuses efforts on their elimination or reduction.

Information for this article was obtained from a press release submitted by DE DNREC dated September 27, 2000.

Environmental Excellence Award goes to the Schuylkill Center for Environmental Education

On September 26, 2000 the Schuylkill Center for Environmental Education was presented with a Community Environmental Excellence Award from the Pennsylvania Department of Environmental Protection (PA DEP). This award was for their work in developing environmental curriculum that was used in 25 schools throughout Pennsylvania and an additional 25 schools across the country.

The Schuylkill Center for Environmental Education, founded in 1965, maintains 500-acres of open space as a "living classroom" within the City of Philadelphia. The Schuylkill Center provides innovative environmental education programs, which include outreach, environmental resource and information, teacher enrichment, and curriculum development, as well as community service programs.

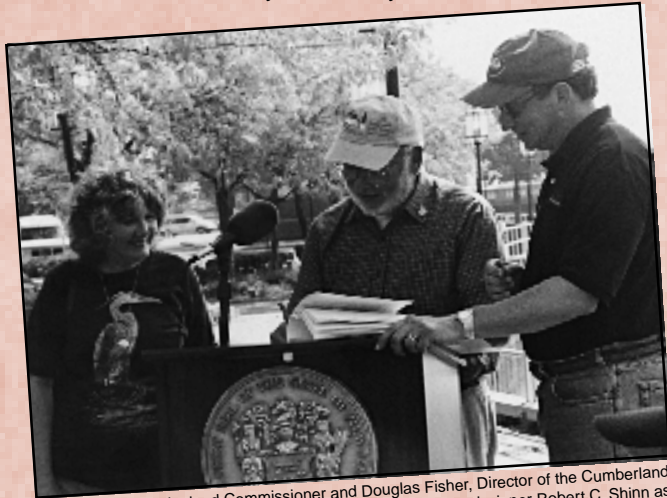
For more information about the Schuylkill Center for Environmental Education, please call (215) 482-7300.

Information for this article was obtained from a press release submitted by PA DEP dated September 26, 2000.

Paddling the Cohansey River

There is no better way to advance the stewardship for our waterways than to experience the water first hand. That is why the Partnership for the Delaware Estuary in cooperation with New Jersey Department of Environmental Protection's Division of Watershed Management coordinated a canoe and kayak trip on the Cohansey River in southwestern, New Jersey. The trip was open to the region's environmental leaders and political decision-makers to help them to better understand the impact of land-use on the region's waterways, in preparation for their participation in land-use planning efforts over the next few years.

The paddling trip, held on October 4, 2000, was led by Project USE (Urban Suburban Environments). Project USE is based in Red Bank, New Jersey and coordinates meaningful learning adventures on New Jersey's waterways.



Leslie Ficcaglia, Pineland Commissioner and Douglas Fisher, Director of the Cumberland County Board of Chosen Freeholders stand by NJDEP Commissioner Robert C. Shinn as he signs the contract to begin the planning process for Watershed Management Area 17.



Cathy Libertz (left) and Alexis Alexander, both of U.S. EPA Region III, begin their journey up the Cohansey River.

Immediately following the paddling trip, a press event was held along the City of Bridgeton's waterfront promenade announcing the award of a grant for \$400,000 to the Cumberland County Board of Chosen Freeholders. The Cumberland County Department of Planning and Development has been selected to be the lead planning entity for New Jersey's Watershed Management Area 17, which includes the Cohansey, Maurice, and Salem River watersheds. This funding will be used to begin the watershed management planning process in this area of New Jersey.

For additional information about Watershed Management Area 17, please call Jay Springer of NJDEP, at (609) 341-3122. For additional information about Project USE, please call (732) 219-7300 or email them at projectuse@yahoo.com.

Experience the Estuary

On the evening of September 28, 2000, along the Delaware River, the Partnership for the Delaware Estuary held their second annual Experience the Estuary Celebration at Fox Point State Park, in Wilmington, Delaware.

The celebration attended by 200 of the region's environmental leaders, included dinner, a silent auction, and the first ever *Excellence in the Estuary Awards*. The awards were established to recognize those organizations, agencies and individuals who are protecting, enhancing, and sustaining the Delaware Estuary.

This years recipients of the First Annual Excellence in the Estuary Awards include the following:

- Photographer, Kevin Fleming, and painter Joyce C. Gagen for their efforts in capturing the beauty of the Delaware Estuary in their respective mediums.

- The Delaware River Basin Commission for "Snapshot 2000," which has united and educated diverse audiences in an effort to build stewardship for the region's waterways.
- The DuPont Edge Moor Plant, the New Castle Conservation District, the U.S. Fish and Wildlife Service – Delaware Bay Estuary Project Office, and Delaware DNREC for their efforts in restoring wetland and upland habitats along the Delaware River.
- The Delaware River & Bay Authority for their efforts in providing public access and expanding public awareness of the Delaware Estuary Region.
- The Maurice River Historical Society for their efforts to preserve the history of the Delaware Estuary through restoration of the East Point Lighthouse.

Making Waves continued

- The Pennsylvania Department of Environmental Protection for providing the means through "Growing Greener" to enable watershed communities in the Delaware Estuary Region of Pennsylvania to protect and improve water quality.
- Public Service Electric and Gas's (PSEG) Estuary Enhancement Program for restoring habitat, providing public access, and educating the public about the Delaware Estuary.
- The Ecological Research & Development Group for their tireless work to protect the Delaware Estuary's horseshoe crab population.
- The Bala Cynwyd Middle School for their efforts to restore the riparian buffer along Mill Creek, a tributary to the Delaware Estuary.
- The Philadelphia Water Department for their proactive efforts in developing and sustaining water-based educational programming.
- Dr. Ruth Patrick for her life-long devotion to preserving the health of our region's waterways.



Guests, socializing and bidding on auction items, during the Experience the Estuary Celebration on September 28, 2000. Photo courtesy of PSEG.



Cheerfully accepting their award for Corporate Environmental Stewardship (from the right) Tom Moran, DE DNREC; Larry Irelan, New Castle Conservation District; Leonard Fasullo, DuPont Edge Moor Plant; Ed Christoffers, U.S. Fish and Wildlife Service - Delaware Bay Estuary Project Office; Jonathan Rinde and Kathy Klein, Partnership for the Delaware Estuary. Photo courtesy of PSEG.

The Partnership for the Delaware Estuary is in need of volunteers. Please check any areas that may be of interest to you, then return the form to us. We will contact you to introduce ourselves and to better acquaint you with the work that we do. 1009 Philadelphia Pike, Wilmington, Delaware 19809.

_____ Administrative (ongoing). Assist the office with periodic mailings.

Name: _____

_____ Newsletter (quarterly). Assist in collecting information for newsletter articles.

Address: _____

_____ Activities (ongoing, but mostly spring and fall weekends). Represent the Partnership at local/regional events.

City: _____

State: _____ Zip: _____

_____ Experience the Estuary Celebration (early fall). Assist in the collection of auction items, invitation mailings, and day-of activities.

Telephone: (_____) _____

Email: _____

Watershed: _____

estuary events

Upcoming Delaware Estuary Events and happenings

Partnership for Delaware Estuary Fourth Annual Meeting
Thursday, November 9, 9:30 a.m. 12:30 p.m.

Philadelphia Navy Yard
Philadelphia, Pennsylvania

You are invited to join the Partnership for the Delaware Estuary Board of Directors at their Fourth Annual Meeting. An update on the Partnership activities will be provided as well as a tour of the Navy Yard. This is an amazing piece of property that has interesting historical value, great access to the Delaware River, and the potential for becoming a showcase for habitat protection and enhancement in the Delaware Estuary. To RSVP, please call (302) 793-1701.

Star Watch

Saturday, November 18, 2000, Sunset

Fort Mott State Park
Pennsville, New Jersey

This event, sponsored by the Willingboro Astronomical Society, will introduce you to the fall constellations overlooking the Delaware River. This event is free. For more information, please call (856) 935-3218.

Birding for Turkeys

Sunday, November 26, 2000, 9 a.m.

John Heinz National Wildlife Refuge at Tinicum
Philadelphia, Pennsylvania

Get into the spirit of Thanksgiving by taking some time for a nature walk at the refuge. For more information, please call (215) 365-3118.

Ye Neighbors and Ye Colony

Sunday, November 26, 2000, 9 a.m.

White Clay Creek Preserve
Landenberg, Pennsylvania

A Thanksgiving celebration hike to the tri-state marker for an informal gathering of friends and family. For more information, please call (610) 274-2471.

Pine Barrens' Van Trip

Sunday, December 3, 2000

Rancocas Nature Center
Mount Holly, New Jersey

Travel back in time along Bloody Ridge to relive Colonial times in the Pine Barrens. Cost is \$25 per person. This trip will be led by Brian Vernachio, a teacher and naturalist with the Rancocas Nature Center. For more information, please call (609) 261-2495.

**Conference on Dredged Material Management:
Options and Environmental Consideration**
December 3 – 6, 2000

Massachusetts Institute of Technology
Cambridge, Massachusetts

Several Sea Grant College Programs and collaborators have convened this conference on the management of contaminated dredged materials. Topics include scientific and technical issues related to nearshore disposal choices, financial and legal issues, and policy implications. For more information or to register, please email sediments@mit.edu.

Explore Beach Plum Island
Saturday, December 9, 2000, 1 p.m.

Cape Henlopen State Park
Lewes, Delaware

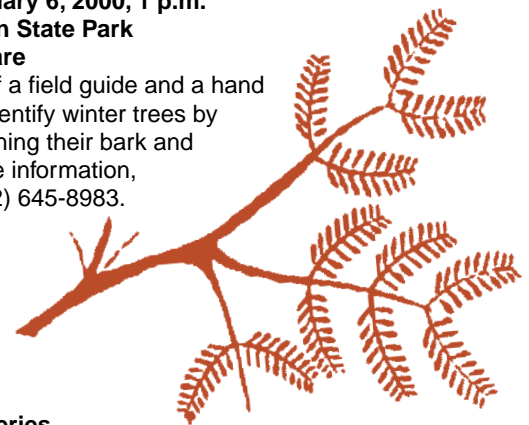
Surrounded by the Delaware Bay and the Broadkill River, take a walk with a naturalist across this former island, which is now part of Cape Henlopen State Park. There is a cost of \$3 per person and pre-registration is required. For more information or to register, please call (302) 645-8983.

Winter Twigging

Saturday, January 6, 2000, 1 p.m.

Cape Henlopen State Park
Lewes, Delaware

With the help of a field guide and a hand lens, learn to identify winter trees by carefully examining their bark and twigs. For more information, please call (302) 645-8983.



Nature Discoveries, Singing, Stories and Art Projects

Bellevue State Park
Wilmington, Delaware

These programs are specially designed for children ages 3-6.

- Thursday, December 7, 2000, 1 p.m. - Seeds and Nuts
- Wednesday, December 20, 2000, 1 p.m. - Gifts of the Season
- Thursday, January 4, 2001, 11 a.m. - Wiggly Worms
- Wednesday, January 17, 11 a.m. - Animals in the Winter
- Thursday, February 1, 1 p.m. - Feeding Birds
- Wednesday, February 21, 1 p.m. - Silly Science

For more information, please call Bellevue State Park at (302) 577-6570.

**Grand Opening of
Cusano Environmental
Education Center**
Saturday, January 20, 2000
**John Heinz National
Wildlife Refuge at Tinicum,
Philadelphia, Pennsylvania**

This new exhibition and classroom space uses environmentally friendly building materials to showcase and advance nature-based learning. For more information, please call (215) 365-3118.



Teachers Page

2000 Delaware Estuary Teacher Education Institute

The 4th Annual Delaware Estuary Teacher Education Institute was held this year from July 17th through July 21st. Twenty of the Delaware Estuary's educators traveled throughout the region to places such as Rowan University, the Philadelphia Water Department's Southwest Water Pollution Control Plant, the Independence Seaport Museum, Manayunk, the Cape May Bird Observatory, and the National Estuarine Research Reserve in Dover, Delaware.

One of the highlights of the 2000 Institute included a "behind-the-scenes" tour of the Fairmount Water Works provided by Ed Grusheski, General Manager of Public Affairs at the Philadelphia Water Department. The participants paddled in canoes on Union Lake in Millville, New Jersey with the guidance of Steve Eisenhauer of the Natural Lands Trust. In addition, graduate students at the University of Delaware's College of Marine Studies, in Lewes, Delaware led the teachers on a seining exercise at Cape Henlopen State Park.

To receive information about the 2001 Delaware Estuary Teacher Institute, please call the Partnership for the Delaware Estuary at 1-800-445-4935.



Participants in the 2000 Delaware Estuary Teacher Education Institute (bottom row, left to right) Laurie Ann Frattini, Margaret Prouse, Francine Patalano, Stacy Olitsky, Ann Muits, Eva Pennock (middle row, left to right) Lisa Wool, Geoffrey Selling, Mary Murphy, Darleen Amobi, Diana Feuer (top row, left to right) Shane Rifenburg, Bob Cunningham, Michael Kelly, Mark Cooper, Ramona DeVan, Dave Jarvie, Jane Monaghan, Kathy Klein.

Awbury Arboretum to Create New Watershed Lesson Plan

The Awbury Arboretum has received a grant from Pennsylvania Department of Environmental Protection's Growing Greener Initiative to implement a new lesson about watershed protection and backyard conservation at their Natural Resource Education Garden. To celebrate the receipt of the grant, an event was held on September 23, 2000 that educated the people in attendance about composting, pest management and other backyard conservation techniques. The goal of this project is to expose more children, their teachers and their families to backyard conservation.

For more information, please call the Awbury Arboretum's education department at (215) 849-5561.

Delaware ENVIROTHON

This past spring, seventy students from across the State of Delaware participated in the 2000 Delaware ENVIROTHON, an annual event held to educate students about the wise protection and use of our natural resources. ENVIROTHON 2000 was held at the Prime Hook National Wildlife Refuge near Milton, Delaware, where five ecosystem stations were created. At each station, the participating teams of students answered questions related to forestry, aquatics, soils, and wildlife. At the fifth station, each team had to give an oral presentation about wetlands - this year's topic. Congratulations to the students at the Charter School of Wilmington who took First Place honors at the event.



Michael Kelly and Ramona DeVan at the Delaware National Estuarine Research Reserve on the St. Jones River in Dover, Delaware

To help raise money to support ENVIROTHON, the Kent Conservation District held their Third Annual Barn Dance on September 9, 2000. The event raised more than \$6,700 in net proceeds to support the educational program.

For more information about Delaware's ENVIROTHON, please call the Kent Conservation District at (302) 697-2600.

Recommended Resources

Atlas of America's Polluted Waters

This atlas includes maps showing waters within each state that do not meet state water quality standards. Receive this publication for free by calling the Center for Environmental Publication, at (513) 489-8190 and requesting EPA report number 840-B-00-002, or check out their website at <http://www.epa.gov/owow/tmdl/atlas/index.html>.

Expand Your Library of Watershed Resources

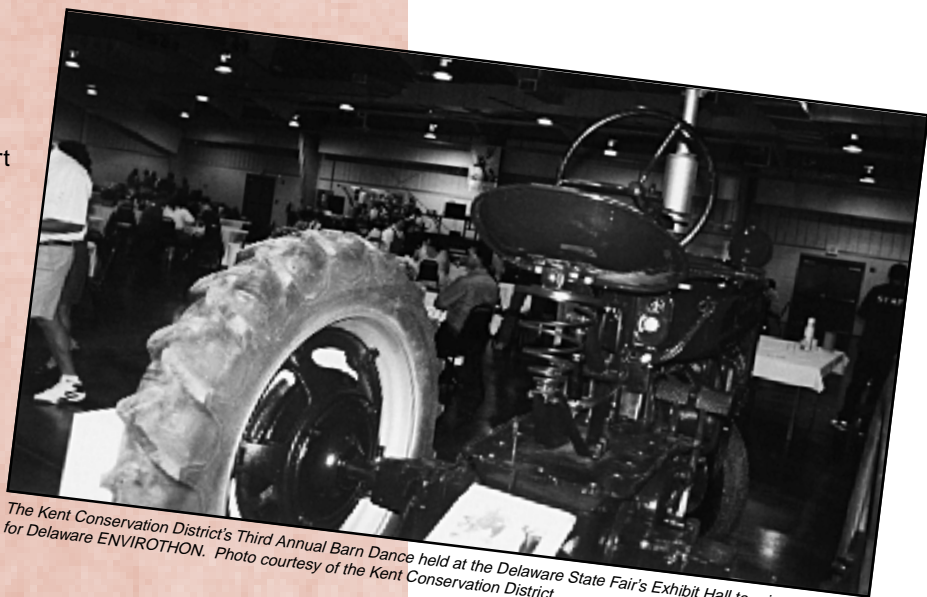
Are you looking for information about watersheds, riparian areas, salmon, or reforestation? The Oregon State University Extension Service has more than 50 watershed related publications and videos, with topics such as wetlands, streams, estuaries, wildlife, dairy production, and rangelands. You can find the entire list of resources at <http://eesc.orst.edu/agcomwebfile/edmat/html/eesc/eesc40.html>.

Take a Class Trip to the Delaware Museum of Natural History, or have the Museum's Educators Come to You

The Delaware Museum of Natural History in Greenville, Delaware, offers interesting interactive programs that interpret the museum's collections and exhibits. The collection includes bird eggs, shells, fossils, and taxidermic mounts of birds and mammals. The museum's staff also offers outreach programs, workshops, and classroom loan kits that address a variety of natural history subjects in ways that make science enjoyable and accessible to children of all ages. The museum offers educational opportunities for teachers as well, helping educators to become more comfortable with science and the natural world. To receive the Delaware Museum of Natural History's Educator's Resource Guide, please call the museum at (302) 658-9111.

Watershed Academy Pilots On-line Certificate

The United States Environmental Protection Agency's Office of Wetlands, Oceans, and Watersheds (OWOW) is now offering



The Kent Conservation District's Third Annual Barn Dance held at the Delaware State Fair's Exhibit Hall to raise money for Delaware ENVIROTHON. Photo courtesy of the Kent Conservation District.

a watershed training certificate for the successful completion of a series of 15 specific on-line watershed training modules (10 required, 5 elective). General areas covered include Introductory Modules, Watershed Ecology, Watershed Change, Analysis and Planning, Management Practices, and Community/Institutional/Social Context. For more information, please log on to www.epa.gov/owow/watershed/wacademy/acad2000.html.

What is Sustainable Living?

Help your students understand this concept by checking out <http://www.communitiesbychoice.com/teachers.cfm>. This site offers a collection of lesson plans and activities to help children in grades K-12 understand and apply the concepts of sustainable living at home and in their communities. As the world's population increases and resources are slowly depleting, the need for our children to understand the concepts of sustainable living is crucial. The lesson plans can be integrated into other classroom subjects or can be used by parents who want to help their children understand these issues.

Coastal Awareness: A Resource Guide for Teachers

This publication, produced by the U.S. Department of Commerce's National Oceanic and Atmospheric Administration (NOAA), is intended for elementary, middle and high school teachers who have a desire to explore the ecological aspects of coastal awareness with their students. The guide addresses currents and tides, sandy beaches and dunes, rocky shores, estuaries and marshes, and provides coastal zone awareness activities for all age levels. For more information or to order a copy, please call (301) 713-1208.



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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. The estuary region extends from Trenton, New Jersey to the mouth of the Delaware Bay. To learn more about DELEP activities, visit 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 a member, call the Partnership at 1-800-445-4935 or visit our website at www.udel.edu/PDE/.

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Affiliation _____

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Telephone: _____ E-mail _____

Send to: Partnership for the Delaware Estuary, 1009 Philadelphia Pike, Wilmington, DE 19809