



estuary news

Newsletter of the Delaware Estuary Program

Volume 8 / Issue 4
Spring 1998

Message from the Director

Over the past several months, the Partnership's Board of Directors and staff have been discussing how we might most effectively weave our inherited and new activities into an overall coordinated program that would allow us to be the most authoritative "voice" for the estuary possible. At the February Partnership Board meeting, there was conceptual approval of an open-ended group of coordinated projects called the "Voice of the Estuary Initiative." Two of the most important of the fourteen presently planned elements are the minigrant program, highlighted in the last issue of *Estuary News*, and the Delaware Estuary Teacher Education Institute.

Last year, the Partnership worked with the Pennsylvania Department of Environmental Protection, the Pennsylvania Department of Conservation and Natural Resources, and a number of environmental education centers and organizations from around the estuary region to establish the Estuary Education Institute. The 1997 Institute was a one-week summer estuary-wide program for thirty teachers that was held at a number of locations around the estuary in mid-July.

All parties involved with the effort were enthusiastic - particularly the teachers who participated. As a result, at the end of the summer, the DELEP Steering Committee allocated funds from the 1998 National Estuary Program grant to the Partnership for the continuation and expansion of the Institute. The Partnership, in turn, joined forces with the New Jersey Geographic Alliance, housed at the Educational Information and Resource Center (EIRC), a New Jersey state agency that provides educational resources to schools statewide. For the past six years, the Alliance has held a two-week summer geography program for New Jersey teachers. This year, their twenty-five teachers will spend the first week of their Institute exploring the estuary along with twenty teachers from Delaware and Pennsylvania.

The joint effort by the Partnership and EIRC is resulting in more teachers from the three states — a total of forty-five — being exposed to estuary issues that can be incorporated into local school curricula across the estuary for less than it would cost to do the two programs separately.

This summer's Institute will be held from July 12-17, and will be based at Rowan University in Glassboro, New Jersey for the first half of the week and at the Biden Environmental Center in Cape Henlopen State Park in Lewes, Delaware for the second half. The week's schedule will include a mixture of classroom and field experience. These experiences will provide the participants with a greater understanding of the wide variety of resource use issues within the estuary and the interconnections between human actions and estuary ecosystems. During the week, teachers will gain information, references, methods, and activities directly applicable for classroom use.

As with last year's program, the 1998 Institute will visit a number of locations. The logistics for the Institute are still being worked out, but among the places already on the schedule to be visited are the Fairmount Waterworks and a sewage treatment plant in Pennsylvania, a farm and wetlands restoration site in New Jersey, and the Graduate College of Marine Studies in Delaware. A sure highlight of the trip will be a sail from Cape May, New Jersey to Lewes, Delaware onboard the *A. J. Meerwald*, a restored oyster schooner, owned and operated by the Delaware Bay Schooner Project.

Editor's Note

With the official start of Spring, I sense the estuary's reawakening in more ways than one. Every day our phones are ringing off the hook with calls announcing a new program or special event. What this means for all of us, is now more than ever, there are opportunities for us to take care of and experience the region's water resources. I encourage all of our readers to take advantage of at least one of the many estuary events listed on page 2 of this issue of *Estuary News*. And if you know of an event not listed, give us a call at 1-800-445-4935 or e-mail us at partners@udel.edu, so that we can help spread the word.

Kathy Klein, Editor
Estuary News

During the coming months, in addition to making the final arrangements for the 1998 Institute, the Partnership will be working to establish the Delaware Estuary Teacher's Network — a multifaceted initiative that will work to link teachers across the estuary and provide resources and programs.

To request an application for the 1998 Estuary Education Teacher Institute, call 1-800-445-4935.

*Bud Watson, Executive Director
Partnership for the Delaware Estuary*

ESTUARY Events

Whitesbog Village Full Moon Hike **Saturday, April 11, 1998, 7 pm** **Browns Mill, New Jersey**

Take a 4-6 mile hike on sand roads. Preregistration is required. For more information about this and other events, call (609) 893-4646.

Water Snapshot '98 **April 17 - April 26, 1998**

Join the Delaware River Basin Commission in collecting and analyzing water samples that can be taken from anywhere in the Delaware Basin. The report produced, and the event itself, will bring attention to the Basin and the public's interest in and commitment to protecting water resources. To find out how you can get involved, call DRBC at (609) 883-9500 (Bob Kausch, ext. 252), or contact them on the Web at: <http://www.state.nj.us/drbc/drbc.htm>.

Cape May Spring Festival **April 17 - April 26, 1998** **Cape May, New Jersey**

This week-long festival will include a tulip and crafts show, a concert, tours of Victorian Cape May, and much more. For more information, call 1-800-275-4278.

Cape May Jazz Festival **April 17 - 19, 1998** **Cape May, New Jersey**

Enjoy some of the greatest names in Jazz by attending workshops, intimate jam sessions, and exciting concerts. To request a brochure, call (609) 884-7277.

Earth Day '98 **Stroud Water Research Center** **Saturday, April 18, 1998** **Avondale, Pennsylvania**

Join the Center in celebrating the many ways that people in our community are contributing to environmental change and stewardship of the earth. There will be tree plantings, workshops, music, and family activities. For more information, call Claire Birney at (610) 268-2153 (ext. 230).

River Festival **Saturday, April 25, 1998, 10 am** **Burlington City, New Jersey**

Participate in this day-long celebration at Historic High Street and the riverfront. For more information, call (609) 633-3812.

1998 Christina River Cleanup **Saturday, April 25, 1998, 8 am - Noon** **New Castle County, Delaware**

Volunteers are needed to participate in the Seventh Annual Christina River Cleanup. This event will take place at designated sites along the entire 31-mile stretch of the Christina River and select tributaries. To get cleanup site information and to register, call (302) 832-3441.

Farm Day **Sunday, April 26, 1998, 1 pm - 5pm** **Greenwich, New Jersey**

Learn through living history about farm chores and industries of the 18th and 19th centuries. For more information, call (609) 455-4055.

Delaware Bay Lighthouse Adventures **May through September 1998 (selected dates), 1 pm - 5pm** **Cape May, New Jersey**

Board the *Cape May Whale Watcher* for a four-hour cruise to view six Delaware Bay lighthouses. The cruise is \$40/person. For more information, call (609) 884-5404.

Philadelphia Water Department Tour Days **Saturday, May 2, 1998 and Saturday, May 9, 1998** **Philadelphia, Pennsylvania**

Tours of Philadelphia's eight watersheds are being offered to educate people about the urban water cycle and how daily actions impact both the local watersheds and the estuary. To get tour information and to register, call (215) 685-6300.

Ridley Creek Week **May 1, 1998 - May 10, 1998**

To focus on the benefits of Ridley Creek in Southeastern Pennsylvania, a week-long series of events and activities have been planned which include stream cleanups, riparian buffer and stream bank stabilization plantings, bicycle treks, walking tours, and much more. For more information, call Dan Trotzer at 1-800-322-9214.

Kid's Fishing Derby Mary Elmer Lake **Saturday, May 3, 1998, 8 am - 1 pm** **Bridgeton, New Jersey**

Participate in a free fishing contest for 5-12 year olds. For more information and to sign-up, call (609) 455-0328

2nd Annual Chester-Ridley Crum Watershed Association Cleanup

Saturday, May 9, 1998, 9 am - Noon

Now that the Ridley Creek Conservation Plan is complete and a Chester Creek Plan is in the works, there is an even greater incentive than ever before to tidy up these waterways. To get more information about this event and to suggest sites that need cleaning, call Andy Saul at (610) 566-2569.

28th Annual Green Valleys Association Cleanup **Saturday, May 9, 1998**

In conjunction with the 7th annual National River Cleanup Week, Green Valleys Association will be cleaning 15-miles of the French Creek and 12-miles of the Pickering Creek. To get more information, call (610) 469-4900.

Cape May Bird Observatory Spring Weekend **Friday, May 15 - Sunday, May 17, 1998** **Cape May Point, New Jersey**

Explore nature with expert leaders for three days of birding, butterfly watching, and boat trips. For more information, call (609) 884-2736.

Philadelphia Cares About Fairmount Park Day **Saturday, May 16, 1998, 9 am - 1 pm** **Philadelphia, Pennsylvania**

Join hundreds of volunteers from the Philadelphia area to help beautify Philadelphia's parks. For more information, call Kate Lapszynski at (215) 685-0045.

Maritime Festival "National Safe Boating Week" **Saturday, May 16, 1998, 10 am - 3 pm** **(Rain date Sunday, May 17, 1998)**

Coast Guard Station, Roosevelt Inlet, Lewes, Delaware

The Delaware Division of Fish and Wildlife is sponsoring the Maritime Festival to celebrate National Safe Boating Week. The Festival will feature information booths, rescue demonstrations, vendors, food, and much more. For more information, call (302) 739-3486.

9th Annual Cape May Music Festival **May 23 - June 21, 1998** **Cape May, New Jersey**

Enjoy a dazzling array of symphonies, songs, and straight-ahead jazz. For concert times, costs, and locations, call 1-800-275-4278.

(ESTUARY EVENTS continued on page 8)

UPDATES FROM THE DELEP IMPLEMENTATION TEAMS

Regional Information Management Service (RIMS) Implementation Team

Coming soon: <http://www.delep.org/> The RIMS Implementation Team is developing a new Delaware Estuary Program web site to complement the information already provided on the RIMS web site. The basic framework for this site will be running this spring.

The goal of this new site is to provide up-to-date information on the following topics: Mission Statement; State of the Estuary; Implementation Tracking and Milestones; News and Public Events; Work Groups and Meetings; the Partnership for the Delaware Estuary; and of course a link to RIMS. The history and accomplishments of the Delaware Estuary Program will be described in an archives section.

A dynamic calendar is a high priority feature for the new site, allowing implementation team leaders to post meetings and other important events, such as conferences, in a convenient and logical place.

The RIMS web site (<http://www.state.nj.us/drbc/rims.htm>) will continue to facilitate locating environmental data for the region, including the estuary and the entire Delaware River Basin. Searchable data indices will eventually include data sources, organizations, publications and maps, watersheds, and funding sources. A new data depot will provide electronic delivery of special data sets and information summaries that are not readily available by other means.

The RIMS Team welcomes your comments and suggestions, as well as any additions or information you would like to contribute. Call or e-mail Karl S. Heinicke at (609) 883-9500 ext. 241 or E-mail: heinicke@drbc.state.nj.us.

Habitat and Living Resources Implementation Team (HLRT)

The Habitat and Living Resources Implementation Team (HLRIT) is working with local governments, watershed associations, and land conservancy organizations to assist them in matching their natural habitat projects with government grants and environmental mitigation money. Several organizations have applied for various grants and are now waiting to find out if they will be selected.

For example, the HLRIT has joined with the Partnership for the Delaware Estuary and the Wildlife Habitat Council in applying for an EPA grant for a corporate outreach, participation, and demonstration program for wetland and wildlife habitat protection.

Currently, HLRIT committees are actively working on their projects, but could use some volunteer assistance. The **Natural Habitat Projects Committee** is sending out a request to local organizations to submit their natural habitat (upland, wetland, and aquatic) projects and programs that are supportive of the goals and objectives of the Estuary's Management Plan. These projects will be listed in a compendium that will be available to local planners as a guide to natural habitat projects in their area for funding or partnering purposes. Those interested in

volunteering to assist the committee should contact Peggy Emslie, (302) 739-4691, E-mail: pemlie@dnrec.state.de.us.

The Natural Habitat Focus Area Committee has completed a digitized wetland inventory map based on the National Wetland Inventory data for the entire estuary program area. This map will serve as the base for overlaying other critical and priority data to assist the Team in identifying natural habitat focus areas within the estuary that have the greatest needs and benefits for natural habitat restoration. Once these focus areas are identified, the information will be available to local planners.

The Funding Source Committee is developing a directory of funding sources, which will include the funding source's name, address, contact person, funding cycles, application dates, and the type of projects typically supported. Anyone who has information on funding sources or is willing to assist the committee, please contact Dorina Frizzera, (609)777-3251, E-mail: Dfrizzera@dep.state.nj.us.

Public Participation Implementation Team (PPIT)

The Public Participation Implementation Team and the Partnership for the Delaware Estuary have executed contracts with the majority of the eleven minigrant awardees. The minigrant initiatives will serve as pilot projects for similar efforts across the estuary.

In addition, throughout the spring and summer, the PPIT and the Partnership will be taking the updated Estuary Program display to events across the estuary region.

For more information about other PPIT activities, call Kathy Klein at 1-800-445-4935.

Monitoring Implementation Team Update (MIT)

DELEP's Cooperative Monitoring Plan is being implemented by the Office of Monitoring and Mapping at the Delaware River Basin Commission (DRBC), along with technical advice from the Monitoring Implementation Team (MIT). The MIT has established three subcommittees to bring specific expertise to targeted monitoring scopes including Mapping, Living Resources, and Volunteer Monitoring.

The first annual monitoring report, to be released in March 1998, addresses two priority areas for 1998: (1) Developing a sortable and flexible list of monitoring activities called the "Monitoring Matrix", and (2) Evaluating and reporting the monitoring results.

In the meantime, representatives from the three states and DRBC are discussing measurements related to algal production in the estuary, how to improve full estuary coverage for aerial surveys in the year 2000 for land use evaluation, how to improve full estuary estimates of fish populations, how to better estimate horseshoe crab populations, and how to better link and use volunteer monitoring data.

(DELEP UPDATES continued on page 4)

(DELEP UPDATES continued from page 3)

For more information about the MIT's activities, please call one of the contacts listed below.

MIT Chair

Jonathan Sharp, University of DE, (302) 645-4259 or at jsharp@udel.edu

Monitoring Coordinator

Ed Santoro, DRBC, (609) 883-9500, ext. 268 or at esantoro@drbc.state.nj.us

Mapping Subcommittee

Barry Seymour, DVRPC, (215) 592-1800 or at bseymour@juno.com

Living Resources Subcommittee

Steve Grabowski, USFWS, (717) 894-1275 or at Steve_Grabowski@fws.gov

Volunteer Monitoring Subcommittee

Fred Stine, Delaware Riverkeeper Network, (215) 369-1188 or at drkn@libertynet.org

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

Water Conservation Implementation Team

Jeff Featherstone (609) 883-9500

Water Quality Advisory Committee

Paul Webber (609) 883-9500

Toxics Advisory Committee (TAC)

Tom Fikslin (609) 883-9500 ext. 253

Local Government Resource Teams (LGRT)

In PA call Lou Guerra at (610) 832-6100, in DE call William Brierly, Jr. at (302) 739-5726, in NJ call Anne Witt at (609) 633-1166.

MAKING WAVES

New Jersey Embarks on a New Era of Environmental Protection

By Michael McAllister, New Jersey Department of Environmental Protection

While watershed management is not a new idea, most of New Jersey's existing water resource programs are implemented on a site-specific basis. However, under the holistic guidance of a "watershed management plan," resources would be managed as an entire ecosystem. As a watershed stakeholder, the New Jersey Department of Environmental Protection (NJDEP), has made a commitment to work together with other stakeholders to secure the protection and wise use of resources for the development of a sustainable future.

The department has already begun to set this process in motion by initiating the development of a watershed management plan for Watershed Management area 19 (WMA #19), which encompasses the Rancocas, Cooper, Pennsauken, Pompeston, Mill, and Baldwin watersheds.

In January, more than 130 watershed stakeholders from WMA #19 met to express their support for watershed protection. In addition to this exceptional level of attendance, more than eighty people volunteered to participate in designing the plan for WMA #19.

For more information on this initiative, please call the NJDEP Office of Environmental Planning at (609) 633-3812.

Historic Bartram's Garden: A Gem on the Schuylkill River

By Michele DiGirolamo, Director of Communications, Historic Bartram's Garden

Tucked away in a hidden corner of urban Philadelphia, at the junction of the Coastal Plain and Piedmont Upland, is an enchanting green oasis rich in botanical history. Quaker John Bartram (1699-1777), America's first native-born botanist, naturalist, and plant explorer, purchased a 102-acre farm on the Schuylkill River in 1728. There he tilled the land to feed his large family of nine children, but used every harvest lull to feed his passion - traveling the wilds of the American colonies in search of curious seeds and plants to bring back to his farm.



Visitors from around the world flocked to see Bartram's unique collection of American plants and were often surprised to find his gardens somewhat wild and unkempt. For Bartram, environmental concerns - where a plant grew best in a spot that most mimicked its natural habitat - always took precedence over prettiness.

The Bartram family operated its botanical garden and nursery until 1850 - a remarkable 123 years of continuous cultivation by one family - when it was sold to railroad industrialist Andrew M. Eastwick, who wanted to save it from the industrial sprawl creeping down the river from Philadelphia. In 1891, the city bought the land for use as a public site, and two years later Bartram descendants formed the John Bartram Association (JBA) to assist in the gardens preservation. Today, the JBA, a non-profit organization, operates the garden in cooperation with the Philadelphia Fairmount Park Commission.

The 44-acre site, now known as Historic Bartram's Garden, includes a 1.5 acre fresh water tidal wetland restoration project. This area was included in a \$1.3 million Consent Agreement between the Environmental Protection Agency and the Philadelphia-based Sun Company for the company's violation of the Clean Water Act at its Schuylkill River refinery.

As part of the design and permitting process for this \$360,000 project, the JBA was required to conduct soils and archeological surveys of the work site. An undisturbed area of Native American occupation was discovered so the wetland had to be slightly

redesigned to avoid this spot. Final design of the wetland was completed in the Spring of 1997 and groundbreaking took place in July 1997.

Restoration of the wetland required that a man-made dike along the Schuylkill be breached for approximately 45 feet, that tons of fill deposited on the site over the last 200 years be excavated to lower the elevation to 1.5 feet above sea level to allow the river to flow in and out during its daily tidal cycles, and that the wetland be sculpted to provide for three wetland zones—low, mid, and high marshes. More than 10,000 plants were installed last summer and the banks of the wetland were seeded with a custom moist meadow mix. Plantings for the wetland have been confined to American native plants, primarily herbaceous, which were indigenous to the Schuylkill's banks during the Bartram period of significance.

In addition to increasing the number of plant species, the wetland has had a similar effect on animal life. Within a week of the breaching of the river wall, the number of shore birds doubled. The JBA expects that the wetland will also provide for the reestablishment of a wide range of estuarine reptile and amphibian species.

The restoration has also enabled the rehabilitation of a community baseball field. Soil excavated to reopen the wetland was used to elevate the baseball field, and SEP funds were used for a new backstop and benches. This resulted in the formation of the first new Little League Team in more than twenty years. The wetland will be maintained by JBA's summer high school interns as a community service project and job training activity.

Finally, the wetland has also been incorporated into the JBA's educational programs through six-week long wetland internships to 21 students from the John Bartram High School, and a new program, called Schuylkill Study that was designed for students from local middle and high schools.

Presently the JBA is busy planning the 1999 tercentennial celebration of John Bartram's birth. This event, scheduled for May 1999, is expected to spark new interest in the Bartram legacy and will help to insure that the garden will continue to serve an important role for its community as a cultural center and advocate for environmental improvement.

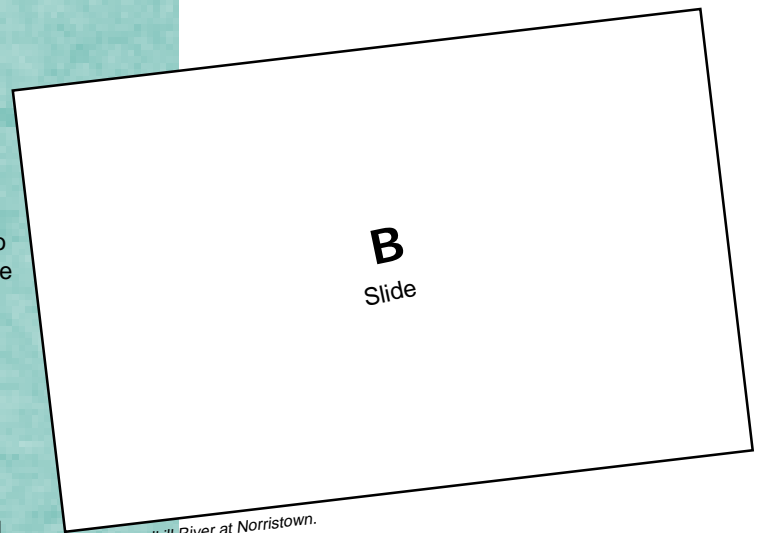
For more information about Historic Bartram's Garden, call (215) 729-5281.

The Schuylkill River Watershed Initiative

**By Nick Dilks, Project Manager
Schuylkill River Watershed Initiative
The Conservation Fund**

Draining over 1,900 square miles of Southeastern Pennsylvania and the largest tributary of the Delaware River, the Schuylkill River Watershed has run the gauntlet of environmental degradation and abuse that many of America's rivers have endured over the past 300 years. Acid mine drainage, extensive damming, toxic dumping, agricultural nutrient overload, and modern development related runoff have all contributed to the heavy human disturbance of this vital economic, aesthetic and ecological resource.

Since July of 1996, over 18 organizations and agencies have come together in partnership to address these pressing problems through the Schuylkill River Watershed Initiative; an innovative



The Schuylkill River at Norristown.

program supported by over \$4.7 million in grants from the William Penn Foundation along with the Wyomissing Foundation and the Commonwealth of Pennsylvania. This initiative is focused on:

- Improving the water quality of the Schuylkill River and its tributaries through natural lands preservation and restoration;
- Increasing public access to the river corridor through trails, parks, and boating activities; and
- Promoting stewardship of the watershed's natural resources through environmental education, citizen monitoring and volunteer training.

In an attempt to further assist local organizations in defining an implementable and results-oriented conservation agenda for the Schuylkill River Watershed, a partnership of the Natural Lands Trust, Academy of Natural Sciences' Patrick Center for Environmental Research, and The Conservation Fund will be developing a GIS-based Watershed Conservation Plan that will help prioritize the watershed's environmental needs based on the following three goals:

- Reducing non-point source pollution as the primary threat to Schuylkill River water quality;
- Creating an infrastructure of greenways and an integrated fabric of conservation and recreation lands; and
- Addressing the landscape-level sustainability of the watershed in terms of habitat, biodiversity and ecosystem stability.

A major component of the Plan will be an intensive input and outreach process that will solicit guidance, suggestions and support from local non-profits, public agencies, businesses and communities. To accomplish this, a series of regional town meetings, workshops and interviews will be held to stimulate as much public interest and buy-in as possible; critical components as it will be local communities that ultimately use the Plan to develop and implement their conservation agendas.

Please look for notices announcing the dates of workshops being held in your region sometime in late spring.

For more information about the many ongoing programs of the Schuylkill River Watershed Initiative, contact Nick Dilks at (215) 563-7860 E-mail: Dilks@msn.com, or visit the initiative's web site at www.srwi.org.

TIDINGS: News from around the region

1998 Delaware Boating Safety Classes

To operate a boat in the State of Delaware, successful completion of a boating safety course is mandatory, as of January 1994, for persons born on or after January 1, 1978. To get information on boating safety classes in Delaware, call the Delaware Division of Fish and Wildlife at (302) 739-3486.

Friends Helping To Care For Tinicum

A new non-profit organization, called the Friends of the Heinz Wildlife Refuge at Tinicum, is working with the United States Fish and Wildlife Service to sponsor activities, produce educational materials that will encourage public participation, and to raise money to support activities at the Refuge. For more information, call the Friends at (215) 365-3118.

Publications Available From Delaware Sea Grant

The University of Delaware Sea Grant College Program has a brochure that lists more than 70 publications that are available. To receive a copy of this brochure, call (302) 831-8083.

Delaware Public Fishing Guide Available

The Delaware Division of Fish and Wildlife is pleased to announce the availability of the 1998 Delaware Fishing Guide. To request a copy of this publication, call (302) 739-3441.

Only Six Bucks!

Outdoor Delaware magazine is a must read for anyone who loves Delaware's outdoors. At just \$6 for four issues packed with great color photography and important information on enjoying and preserving the state's natural resources, this magazine is a bargain. The Winter '98 issue features an article on the Delaware Estuary. To order a copy of this particular issue for \$2.50 or to subscribe for one year, call the Delaware Department of Natural Resources and Environmental Control at (302) 739-4506.

Delaware River Watershed Demonstration Grants Available

The Heritage Conservancy, a non-profit organization serving the region in land conservation and historic preservation, announces the first round of grants for its Delaware River Watershed Initiative. Awards will go to non-profit community organizations, municipalities, quasi-public agencies, and businesses operating within the Lower Delaware segment of the Delaware River Watershed. Applications are due on April 22, 1998. To request an application, call (215) 345-7020 (ext. 107).

Delaware River Nominated to be an American Heritage River

An application has been submitted to the Executive Office of the President, nominating the Delaware River as one of the first ten rivers for President Clinton's American Heritage Rivers Initiative. For more information, call (215) 345-7020 (ext. 107).

Governor Whitman Takes Action to Protect New Jersey's Watersheds

The Watershed Protection and Management Act of 1997 was signed by New Jersey Governor Christie Whitman on October 10, 1997. The bill establishes a watershed-based approach to water quality management and pollution control, provides for the first annual appropriation of \$4.9 million to implement the watershed management program, and creates a watershed management fund as a nonlapsing revolving fund in the Department of Environmental Protection. Up to \$5 million of the fund will come from New Jersey's corporate business tax, which was made possible by a November 1996 constitutional amendment that dedicated a

portion of the tax for environmental preservation and protection.

Wetland Restoration Funds are Going Begging

The Wetland Reserve Program (WRP), operated by the USDA Natural Resources Conservation Service (NRCS), is readily available to help restore wetland functions and values on non-federal lands. Private landowners and state, county, and local governments can get the cost share funds to pay 75% of the restoration costs by agreeing to maintain the restoration for at least 10 years. Information about the WRP can be found on-line at <<http://www.fb-net.org/wrp.htm>>.

A Greener Thumb

A 29-minute video is now available from Rutgers Cooperative Extension that provides how-to tips for growing an environmentally friendly lawn. A package with the video, the "Greener Thumb Guide," a \$2 off coupon for Cooperative Extension plant diagnosis, and a pocket size directory of extension agents and services is available for \$19.95 plus \$3 shipping and handling. For more information, call (732) 932-0640.

Schooner Summer Ecology Camp

The Delaware Bay Schooner Project is offering an exciting overnight camping experience on a restored oyster schooner for students going into grades six through nine. The camp will be held from June 20-24, 1998. For more information, call Suzan Bellincampi at (609) 785-2060.

The Nature Conservancy Treks Through Delaware Bayshores to Compete in World Series

For the second year, on May 9th, The Nature Conservancy's Bayshore office will participate in the World Series of Birding, hosted by the Cape May Bird Observatory. Teams from all over the U.S., Canada, and Britain will be working to identify as many birds as possible during a 24-hour period by sight and sound. This annual adventure is an opportunity to raise public awareness about the Delaware Bayshores' bird life and helps raise money through pledges that are collected for each bird identified. For more information, call (609) 785-1735.

National River Cleanup Week (May 9-16, 1998)

National River Cleanup Week was founded by America Outdoors, the largest national association of outfitters and guides, in response to a need to develop a program to assist local groups in keeping America's waterways clean. To receive free trash bags and tips on organizing a cleanup, call at (423) 558-3595.

Tax Break For Voluntary Land Conservation

On August 5, 1997, President Clinton signed into law a modified version of the American Farm and Ranch Protection Act, which provides an exclusion from the federal estate tax for land subject to a permanent conservation easement. Section 508 of the Taxpayer Relief Act offers tax incentives to people who retire some land into conservation easements rather than trying to develop it. The provision allows a 40% estate tax exemption for land committed to conservation and applies only to land within 25 miles of a federally designated metropolitan statistical area, national park or wilderness area, or within 10 miles of an urban forest. The act is the federal government's first tax incentive for voluntary land conservation in 20 years. For more information, contact NACD, 509 Capitol Court, NE, Washington, DC, 20002-4946, or call (202) 547-6223, or E-Mail programs@nacdn.net.

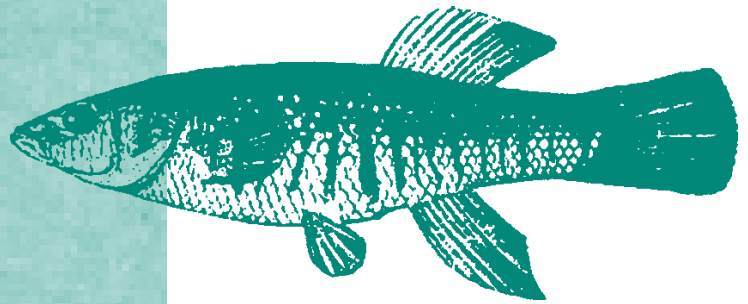
SPECIES SPECIFIC

Freshwater Marsh Killifish - An Important Ally

Freshwater killifish perform the vital function of consuming mosquito larvae in the wetlands and stream margins of the Delaware Estuary. In the Delaware, this group includes the mummichog (*Fundulus heteroclitus*), banded killifish (*F. diaphanus*), and the eastern mosquitofish (*Gambusia holbrooki*). Their distribution is controlled primarily by salinity preferences. Mummichogs are found from freshwater to pure sea water, 35 parts per thousand (ppt), while banded killifish and mosquitofish prefer salinities of less than 5 ppt.

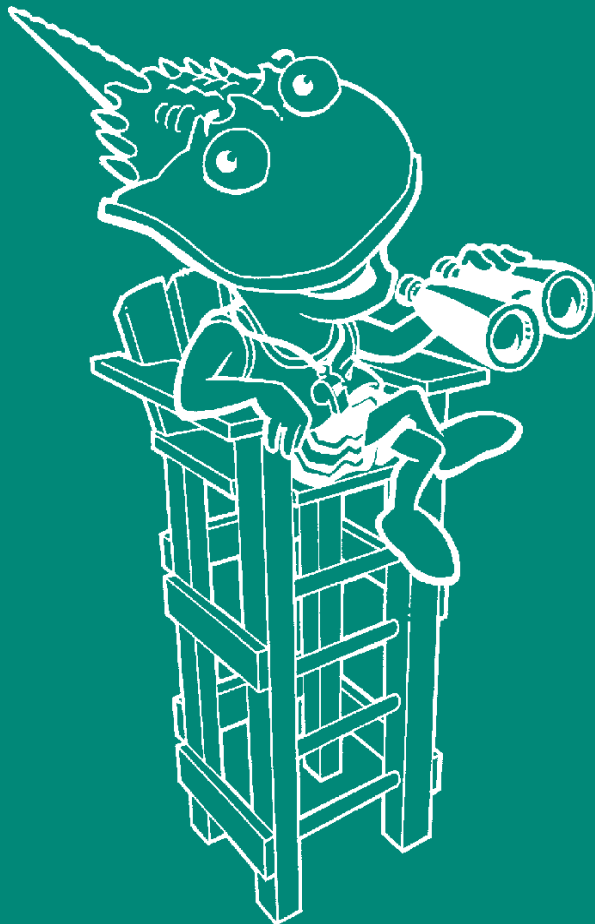
Killifish are an important link in the estuarine food web, becoming prey for crabs, wading birds, and larger fish. They feed on the marsh surface when possible and generally their diet consists of whatever species of insect larvae or other small vertebrates are abundant. Wetlands are highly productive habitats and export 45% of all the energy they produce. A significant amount of this exported energy takes the form of forage fish such as killifish.

Freshwater killifish are among the fish species most tolerant of low oxygen and high turbidity, but if conditions become too severe, they can be harmful to killifish and their food supply. Historically, some marshes were impounded to create open water habitat for waterfowl. Impounding marshes, however, alters the marsh fish assemblages, and often attracts species less efficient



for mosquito control. Such marshes are cut off from the estuary, and can no longer serve as energy conduits, or as spawning and nursery areas for estuarine fish. Open marsh water management techniques maintain fish populations similar to unaltered marshes, and are effective in giving fish access to mosquito breeding areas. For this reason, as well as the fact that these killifish are prey for many of the estuaries game and commercial fish, it is important to maintain healthy abundant wetlands to support these fish.

This article was adapted from a chapter by Allen Whitehead 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.



Name That Crab!

The Partnership for the Delaware Estuary and the Public Participation Implementation Team, is pleased to present the official mascot for the Delaware Estuary Program. Now, we need your help to name our horseshoe crab, a creature that represents all of our efforts to sustain, preserve, and enhance the Delaware Estuary.

The person who comes up with the best name for the mascot will win a Partnership promotional package, complete with a T-Shirt, baseball cap, coffee mug, and other goodies. Please use the form below to give us your ideas by no later than Wednesday, April 22, 1998 (EARTH DAY).

Name _____

Address _____

City _____ State _____ Zip _____

Phone (W) _____ (H) _____

I think the Delaware Estuary Program mascot should be named:

Send your entry to:

NAME THAT CRAB! P.O. Box 9569, Wilmington, DE 19809



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Estuary News

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PARTNERSHIP PARTNERS

Thanks and Welcome to the Partnership's Newest Members

The Partnership for the Delaware Estuary sends a sincere thank you and welcome to its newest Founding Partners, listed below. To find out how you can become a member, call Kathy Klein at 1-800-445-4935.

- Kate Fitzpatrick - Delanco, NJ
- Judi Jeffers - Wilmington, DE
- Ralph & Betty Rickenbach - W. Collingswood Heights, NJ

Partnership Promotional Products Now Available

The Partnership now has in stock a variety of promotional products with our logo that are for sale. These products include adult and children's T-Shirts, baseball hats, and coffee mugs. For price and ordering information, call the Partnership at 1-800-445-4935.



(ESTUARY EVENTS continued from page 2)

Delaware Bay Schooner Project's 6th Annual Delaware Bay Day Saturday, June 6, 1998, 10 am - 11 pm Bivalve, New Jersey

This family fun day dedicated to the rich maritime history, vibrant culture, and phenomenal natural resources of the Delaware Bay will be held on several sites along the Maurice River. The celebration will include children's games and activities, a street parade, crab races, fresh seafood, music, artisans and craftsman, wetland walks, schooner tours, and much more. For more information, call Vicki or Jeanne at (609) 785-2060.