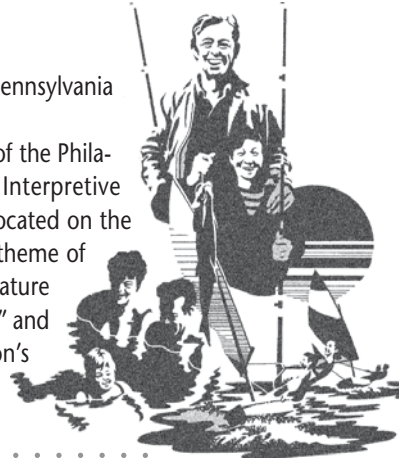


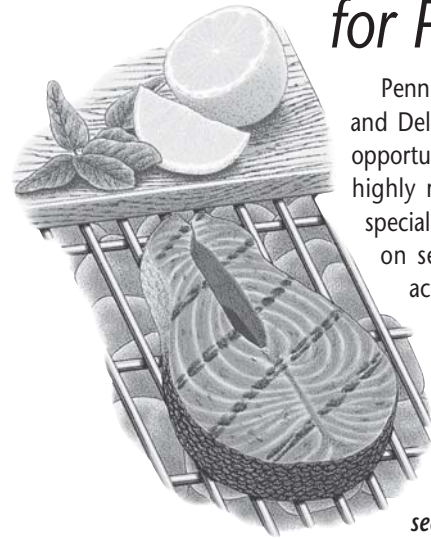
Coast Day Planned

Join us in celebrating the Second Annual Southeast Pennsylvania Coast Day, Saturday, Sept. 20, from 11 a.m. until 5 p.m.

This year's Coast Day will feature the grand opening of the Philadelphia Water Department's Fairmount Water Works Interpretive Center, and will take place at the historic water works, located on the tidal portion of the Schuylkill River in Philadelphia. The theme of the celebration is "Water Works Wonders," and will feature quality educational programming, musical "edutainment," and family-oriented, hands-on activities by some of our region's most influential environmental organizations. Musical acts already confirmed include John Flynn and Billy B.



Seafood Sense: Fisheries Technology for Food Educators



Penn State Cooperative Extension, Pennsylvania Sea Grant and Delaware Sea Grant have developed a unique training opportunity for food educators in the region. Doris Hicks, the highly regarded Delaware Sea Grant seafood technology specialist, has agreed to lead a multi-day training program on seafood preparation and safety. Hands-on cooking activities will provide participants with practical opportunities to learn about buying, handling, and preserving seafood, seafood composition and nutrition, and commercial fishing practices. The program will be held Sept. 9-12 in Lewes, Del. Check out the Web for more detail at:

<http://www.ocean.udel.edu/mas/seafood/seafoodsense.html>



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Erie, PA 16563-0500



A QUARTERLY PUBLICATION OF PENNSYLVANIA SEA GRANT

Pennsylvania Sea Grant, part of the National Sea Grant Program, is a partnership of Penn State, the Commonwealth of Pennsylvania, and the National Oceanic and Atmospheric Administration dedicated to the sustainable development of coastal resources.

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S U M M E R 2 0 0 3

Swab the Deck – And Hull! Simple Precautions Make Pennsylvania Recreational Boaters the First Line of Defense Against Plant and Animal Invaders

With 3,900 lakes, 83,161 miles of streams, and the coastlines of Lake Erie and the Delaware Estuary accessible to them, Pennsylvania recreational boaters have an enormous potential to accidentally transfer aquatic nuisance species (ANS) between coastal and inland waters. In fact, recreational boating may be one of the most significant pathways through which ANS are introduced. Fortunately, it is also one of the most preventable.

Pennsylvania Sea Grant, Pennsylvania Coastal Zone Management, and the Pennsylvania Fish and Boat Commission recently conducted a survey to examine boaters' awareness of ANS and assess the risk of introductions through the recreational boating pathway. The 26-question survey was mailed to 800 registered boaters; 47 percent responded.

We found the overall boater awareness of ANS to be very low. Although 75 percent of boaters were informed about zebra mussels, few had heard of other ANS such as Eurasian watermilfoil, flathead catfish, purple loosestrife, round goby, or rusty crayfish that inhabit some of Pennsylvania's waterways.

Pennsylvania boaters are well traveled, increasing the potential for spreading ANS to new waterways. The average boater took four out-of-state trips in the 2002 season, but a small percentage took as many as 50 trips per season! These "super boaters" present a higher risk of introducing ANS to other water bodies if they don't take routine precautions such as power washing their boat or letting them dry for five days between launchings.

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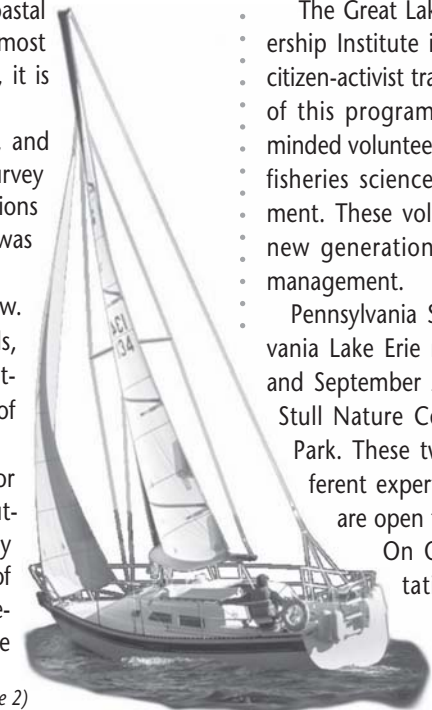
Great Lakes Sea Grant Fisheries Leadership Institute Seeks Citizen-Activists for Erie Training Sessions

The Great Lakes Sea Grant Fisheries Leadership Institute is seeking candidates for its citizen-activist training program. The purpose of this program is to provide ecologically minded volunteers with a solid background in fisheries science and Great Lakes management. These volunteers will then become a new generation of advocates for fisheries management.

Pennsylvania Sea Grant will host Pennsylvania Lake Erie meetings on September 10 and September 24 from 6 to 9 p.m. at the Stull Nature Center on Presque Isle State Park. These two sessions will feature different experts and topics. The meetings are open to the general public.

On October 3 and 4, representatives from Michigan, Ohio, New York, and Pennsylvania will be offered advanced

(continued on page 2)



STOP AQUATIC HITCHHIKERS!

Prevent the transport of nuisance species.
Clean all recreational equipment.

www.ProtectYourWaters.net

When you leave a body of water:

- Remove any visible mud, plants, fish, or animals before transporting equipment.
- Eliminate water from equipment before transporting.
- Clean and dry anything that comes into contact with water (boats, trailers, equipment, clothing, dogs, etc.).
- Never release plants, fish, or animals into a body of water unless they came out of that body of water.

Biennial Report Enclosed



It is hard to believe that Pennsylvania Sea Grant is beginning its sixth year! To update you on our accomplishments over the last two years, we are pleased to enclose a copy of Pennsylvania Sea Grant's 2003 Biennial Report.

— Bob Light, Director

Get W.E.T.!

New Watershed Education Effort Makes A Big Splash

Get W.E.T. (Watershed Education Team) is a unique new watershed education and mentoring program designed to stress watershed stewardship among inner-city youth.

High school students from Strong Vincent and the Northwest Pennsylvania Collegiate Academy joined Mercyhurst College education students for a weeklong watershed camp focused on issues related to the Presque Isle Bay watershed.



Watershed education students Get W.E.T. while studying the biodiversity of Mill Creek.

The students spent the week exploring vital issues such as nonpoint source pollution, waterfront development, and land use. They learned first-hand about the delicate balance between environmental and economic use of our water resources.

The Get W.E.T. attendees will spend the fall working with their mentors to integrate their experiences into educational materials for local elementary school students.

Get W.E.T.'s sponsoring partners are the Bayfront Center for Maritime Studies, Mercyhurst College, the School District of the City of Erie, and Pennsylvania Sea Grant.

Simple Precautions

(continued from page 1)

So what exactly is the level of risk for new introductions associated with recreational boating? Of respondents, 56 percent said they don't take any special steps to prevent the transport of water or ANS between water bodies before launching the boat. This means that of the 350,000 registered boaters in Pennsylvania, 196,000 may not take any precautions to limit the spread of ANS. If each of those boaters travels out-of-state four times and launches their boat back in Pennsylvania waters, then 750,000 potential introductions could occur each season.

Because knowledge of ANS and the perceived importance of preventing their spread are strongly correlated, it's evident we need to provide better education on ANS via media sources boaters reported using most frequently: newspapers, magazines and newsletters, fishing regulation and boating registration pamphlets, and television programs.

For more information on ANS please visit our Web site at <http://www.pserie.psu.edu/seagrant>.

Volunteers Monitoring Exotic Species



Zebra Mussels

Teachers, watershed organizations, members of Lake Erie-Allegheny Earth Force, and ecologically minded individuals have trained to become members of the new Lake Erie Aquatic Exotics Squad Volunteer Monitoring Program.

The program, a collaborative project of Pennsylvania Coastal Zone Management, Pennsylvania Lakes Management Program, the Department of Environmental Protection's Citizen Volunteer Monitoring Program, and Pennsylvania Sea Grant, teaches volunteers how to

identify and monitor aquatic nuisance species (ANS) in lakes and streams. During the one-day May workshop in Erie, Dr. Michael Campbell, professor of biology at Mercyhurst College, and Eric Obert, Pennsylvania Sea Grant extension director, provided information on invasive plants and zebra mussels. Volunteers learned to distinguish native from non-native invasive aquatic plants, and discussed equipment used for monitoring. After being supplied with a training manual, a field guide to ANS in the region, and the proper equipment, each volunteer selected one to two sites in Erie County to monitor throughout the summer.

The data collected by volunteers will create an early detection network, and also help management and education initiatives to minimize the spread of ANS.

Great Lakes Sea Grant Fisheries Leadership Institute... (continued from page 1)

instruction in Great Lakes fisheries management, also at the Stull Center. Each state is limited to seven participants; therefore we are asking that local organizations nominate a delegate to represent them at this meeting. For additional information and an agenda contact Eric Obert, Pennsylvania Sea Grant extension director, at 814-898-6420 or via e-mail at eco1@psu.edu. RSVPs are requested for all sessions.

School Notes

Attention Environmental Rediscoveries educators! If your class has participated in the Environmental Rediscoveries program, have we got a game for you! A new interactive board game is now available to help your students recall their knowledge gained during their field trip in an exciting way.

Fun learning opportunities for students: Encourage your students to attend the Coastal Connections watershed festival on Saturday, September 13 from 10 a.m. until 3 p.m. at Frontier Park. Several organizations will offer educational and fun activities. Look for advertisements for more information as we get closer to the event.

For more information regarding information in the School Notes section please contact Anne Danielski at 898-6421 or at ad118@psu.edu.

Round Goby Research

Aggressive Behavior and Unlimited Eggs Give Gobies an Edge in Tributary Streams

A team of researchers from Gannon University, including Dr. Edward Phillips and students Megan Washek, Aaron Hertel, and Brian Niebel, have had their round goby research published in the *Journal of Great Lakes Research*.

The round goby, a fish not native to the Great Lakes, exhibits repeat spawning activity within a season, cavity nesting behavior, and aggressive behavior that have helped it become prolific in the lakes. This invasive species has begun migrating into tributary streams, presumably competing with native fish for food and shelter.

The research, funded by Pennsylvania Sea Grant and Gannon, focused on the colonization of round gobies in four tributaries of Lake Erie (Elk Creek, Walnut Creek, Twenty Mile Creek, and Sixteen Mile Creek). Conneaut Creek and Twelve Mile Creek also were sampled, but no gobies were found.

Gobies were collected using backpack electrofishing equipment to analyze fish abundance, length, weight, age, diet, and fecundity. Fish

Fish Tumor Conference Proceedings Available Online

Last January, Pennsylvania Sea Grant, the Pennsylvania Department of Environmental Protection, and the U.S. Environmental Protection Agency Region III co-sponsored the first conference on fish tumors related to Great Lakes Areas of Concern. The two-day conference at Gannon University was attended by more than 40 researchers, fishery and wildlife biologists, pathologists, and agency representatives.

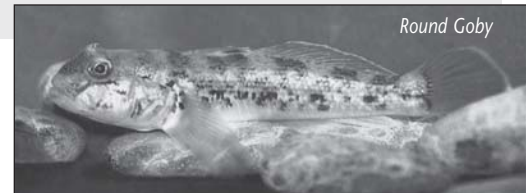
The goal of the conference was to share information concerning fish tumors and deformities from American and Canadian AOC, and to refine and coordinate the standardization of protocols currently being used to evaluate this beneficial-use impairment. The International Joint Commission has identified 14 beneficial-use impairments, including fish tumors and deformities, which are used to characterize critical issues facing 42 AOC in the United States and Canada.

The conference was a first step in establishing a functioning network of scientists to collaborate on research issues concerning fish tumors and deformities, and to develop standardized criteria for analysis. Two working subcommittees, Monitoring and Histopathology, were formed as an outcome of the conference. They are being chaired by

Paul Baumann (Monitoring) and Vicki Blazer (Histopathology), both of the U.S. Geological Survey, and are preparing standardized criteria for this beneficial-use impairment to be used in all AOC possessing this impairment.

The resulting work of the subcommittees was presented at a follow up conference held on August 18 at Penn State Erie. The goal of the conference was to complete recommendations for standardized criteria for fish tumors and deformities and submit a concept paper to the International Joint Commission at its September meeting in Ann Arbor, Michigan.

The proceedings of the Fish Tumors Related to Great Lakes Areas of Concern Conference are available on the Pennsylvania Sea Grant Web site (www.pserie.psu.edu/seagrant). For more information on the conference, fish tumors, or the follow-up conference please contact Eric Obert or Sean Rafferty of Pennsylvania Sea Grant at 814-898-6420. A report on the follow-up conference will appear in the Fall issue of *Keystone Shorelines*.



Round Goby

