

## Hellos, Goodbyes (from page 3)

student workers; supporting communication activities such as the Web site, fact sheets, and progress reports; providing active extension leadership on behalf of Pennsylvania Sea Grant in key areas such as marinas, charter boats, boater safety, and waste reduction; and providing GIS support for nonpoint-source educational programs.

Sean's position is supported by DEP's Growing Greener Grant Program.

### Kirstin Wakefield, NOAA Coastal Management Fellow

Kirstin has completed her two-year assignment as a NOAA Coastal Management Fellow in conjunction with Pennsylvania Sea Grant and the DEP.

For two years Kirstin was Pennsylvania's soft-spoken foe of invasive species. Kirstin helped create an interagency invasive species workgroup and wrote the first CZM Ocean Resources policy to include aquatic invasive species, initiated the state's participation in NOAA's Coastal States Marine Managed Area Inventory, developed an ANS volunteer monitoring program and served as co-chair of the Aquatic Invaders of the Delaware Estuary outreach symposium, was a member of the Chesapeake Bay regional panels that advanced management plans for purple loosestrife and zebra mussels, and worked on development of a Mid-Atlantic Invasive Species Panel. She also was Pennsylvania Sea Grant's liaison to the Great Lakes ANS Panel, Chesapeake Bay Program Invasive Species Workgroup, Council of Great Lakes Governors Ballast Water Initiative, and Flathead Catfish Consortium.

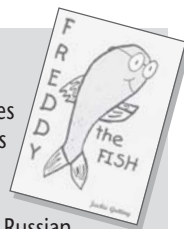
To fund all her accomplishments, Kirstin helped write an endless stream of grant proposals. We wish her continued luck and success at the University of Delaware, where she will pursue her doctoral degree in Marine Science.

### *Freddy the Fish Learns Arabic*

Arabic is the latest language spoken by Freddy the Fish, a brochure series originally developed in English to convey information about the health risks associated with eating Lake Erie and Presque Isle Bay fish.

Because immigrant populations frequently catch and consume fish as a regular part of their diet, Freddy the Fish brochures also are available in Bosnian, Russian, Spanish, and Vietnamese.

For more information about Freddy the Fish, fish consumption advisories or related health issues, or to obtain copies of the brochures, contact the Pennsylvania Sea Grant office or e-mail Sean Rafferty at [sdr138@psu.edu](mailto:sdr138@psu.edu).



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## Chesapeake Watershed Education for Pennsylvania Teachers

*Program Stresses Importance of Pennsylvania Input to Bay*



West Chester University aquatic biologist **Dr. Win Fairchild** (back row center) helped teachers investigate the anatomy of an algal bloom in **Herb Cole's pond**, a tributary to **Shaver's Creek** — and the **Chesapeake Bay**.

With assistance from Maryland Sea Grant, funding from the NOAA B-WET program, and instruction from a host of university faculty and watershed specialists, Pennsylvania Sea Grant launched a new teacher-training program last summer.

The Chesapeake Bay Watershed Faculty Development Scholarship Program was a five-day high school teacher training workshop concerning the ecology of aquatic systems within the Chesapeake Bay watershed. Field and laboratory activities were headquartered at Penn State's University Park campus. Lessons included practical ways in which teachers could incorporate watershed investigations into their science curricula.

Saving the biological integrity of the Chesapeake Bay has become a national priority. Many of the Chesapeake's problems are rooted in the way that land is used surrounding the bay's tributary streams, rivers, wetlands, and ponds. Because both the watershed and its ratio of land to water are so large – 15 parts land to 1 part water, compared to just a 2-to-1 land-to-water ratio in the Great Lakes – the Chesapeake must process much more atmospheric and land-based pollution than other bodies of water.

And because more of the Chesapeake Bay's stream miles originate in Pennsylvania than in any other state, there is a critical need for training that specifically addresses how Pennsylvania land use influences water quality downstream in the bay.

The workshop also helped teachers meet the Pennsylvania Department of Education's academic standards for grades 6-12 Environment and Ecology by offering information and instruction ideas for teaching mandated topics like Watersheds and Wetlands; Threatened, Endangered and Extinct Species; Humans and the Environment; and Environmental Laws and Regulations.

## Think You Caught an Invasive Species? Card 'Em!

*Exotic Identification Cards, Fact Sheets, Newspaper Supplement Available at No Cost*

Great Lakes Sea Grant Network Watch ID cards are now available free of charge at bait shops, marinas, and conservation agencies within the Lake Erie watershed.

The cards identify invasive species that have invaded or are potential invaders of Pennsylvania's waters. Cards are available for known invaders, including round goby, spiny and fishhook waterflea, purple loosestrife, rusty crayfish, and Eurasian watermilfoil; and for potential invaders such as Eurasian ruffe, bighead carp, and silver carp.

The cards show anglers and boaters what each species looks like and informs them of the measures they can take to prevent the spread of invasives to other water bodies.

If you'd like more detail on invasives, Sean Rafferty (Sea Grant coastal outreach specialist) and John Cingolani (student assistant) have developed a series of six fact sheets on zebra mussels, quagga mussels, round goby, Eurasian ruffe, rusty crayfish, spiny waterflea, and fishhook waterflea.

The fact sheets include background information on each species, their negative impact on the ecosystem they inhabit, and preventative measures that can be taken to stop their spread. Find these and additional fact sheets on the Web at [www.pserie.psu.edu/seagrant/seagindex.htm](http://www.pserie.psu.edu/seagrant/seagindex.htm).

Another effort to spread the word on aquatic invasive species was a 16-page Newspaper in Education supplement produced by Pennsylvania Sea Grant, Minnesota Sea Grant, and the *Erie Times-News*. Anne Danielski, Pennsylvania Sea Grant's education and maritime specialist, provided most of the background research for the supplement, which offered young and old timely, easy-to-understand information on the perils of introducing unfamiliar species to new environments. Copies of the supplement and fact sheets are available at no cost by contacting Sean Rafferty of Pennsylvania Sea Grant at 814-898-6420 or [sdr138@psu.edu](mailto:sdr138@psu.edu).



## Aquatic Supertramp Roulette Debuts at Coast Day

Even before the Schuylkill River had fully receded from the flood of Hurricane Isabel, eager contestants of all ages stepped into the Gazebo by the Fairmount Waterworks to try their luck at Aquatic Supertramp Roulette. This interactive exhibit was designed by Pennsylvania Sea Grant as part of the second annual Southeastern Pennsylvania



Coast Day held in September. This high-stakes game tested contestants' awareness of the "Top Ten Least Wanted" aquatic invasive species in the region, but fortunately great expertise was not required to win a prize at the Sea Grant gaming table. For anyone unfamiliar with the growing threat that invasive plant and animal species pose to coastal communities, the answers were easy to find by perusing the surrounding *Aquatic Supertramps of the Delaware Valley* exhibit — cheating was encouraged!

The "Top Ten Least Wanted" species, as decided by Delaware Valley government, academic, and nonprofit professionals polled by Sea Grant staff, are the plants *Phragmites*, Purple loosestrife, *Hydrilla*, Eurasian watermilfoil, and Japanese knotweed; and animal invaders zebra mussel, resident Canada geese, nutria, Asian carp, and flathead catfish.

## Growing Greener Program Finds NEMO Worth Funding

In September, the Pennsylvania Department of Environmental Protection awarded an Environmental Stewardship and Watershed Protection Growing Greener Grant to Pennsylvania

Sea Grant to establish a Nonpoint Education for Municipal Officials (NEMO) program in Pennsylvania's Lake Erie drainage basin. Growing Greener is a five-year-old grant program

that promotes watershed restoration and protection.

NEMO has achieved national recognition for its work in nonpoint-source pollution education. The program's purpose is to provide educational assistance to decision makers about the relationship between land use and natural resource protection. NEMO was originally developed by Connecticut Sea Grant and Connecticut Cooperative Extension, and uses satellite data and Geographic Information Systems (GIS) technology to show municipal officials how their current and future land-use decisions will affect water quality.

The grant totals \$246,000 and will be used over a three-year period by Sea Grant staff to assist municipal officials and developers who make land-use decisions nearly every day. Initial activities will focus on three watersheds located in primary growth corridors, Walnut Creek, Mill Creek, and Fourmile Creek.

## Proceedings of Second Fish Tumor Conference Available Online

As a follow-up to the 2003 January workshop, a second Fish Tumors Related to Great Lakes Areas of Concern Conference was held at Penn State Behrend in August. Participants helped refine the development of standardized criteria for the fish tumors and other deformities initiated at the first workshop. These recommendations were presented by Dr. Paul Baumann of the U.S. Geological Survey to the International Joint Commission at its September meeting in Ann Arbor, Michigan.

A concept paper outlining, in detail, the recommendations for standardized criteria for evaluating this beneficial-use impairment will be submitted to the International Joint Commission for approval. It is our hope that these criteria will be adopted by all Areas of Concern attempting to restore this use impairment. For more information or a copy of the proceedings please visit our Web site.



## School Notes

Teachers – book your class now for the adventure of a lifetime! Enroll in the *Environmental Rediscoveries* program – a hands-on environmental science experience on Presque Isle Bay. Sailing dates for spring 2004 are filling fast. Please view the *Environmental Rediscoveries* pages on the Sea Grant Web site for more information.

For more information regarding items in the School Notes section please contact Anne Danielski at 898-6421 or at add118@psu.edu.

## Hellos, Goodbyes

*Pennsylvania Sea Grant wishes a hearty hello to two new employees, and a fond farewell to a very capable coastal fellow.*

### Dave Skellie, Coastal Land Use and Economic Specialist

Dave, who joined Pennsylvania Sea Grant in September, was previously employed by the County of Erie as director of the Department of Planning, overseeing an office of 13 employees and a budget of over \$5 million. Through his 28 years of work, the county became a leader on issues pertaining to sustainable development activities, including comprehensive planning and land-use regulation, transportation planning, farmland preservation, revitalization/rehabilitation of infrastructure and housing in low-to-moderate income areas, GIS mapping, solid waste planning, and the promotion of recycling activities.

For Sea Grant, Dave plays the leadership role for watershed land-use programming and outreach activities, including habitat restoration, wetlands protection and management, liaison with watershed organizations, Seaway Trail implementation, sustainable coastal development, nonpoint-source pollution education, and land preservation. He also serves as liaison

*Couldn't Make it to the Symposium? Proceedings Posted on Web Site*

## Aquatic Invaders of the Delaware Estuary Symposium

Aquatic Invaders of the Delaware Estuary, a May symposium at Penn State's Great Valley Campus, was the first comprehensive review and identification of gaps in aquatic invasive species management in the Delaware Estuary watershed.

Sponsored jointly by Pennsylvania Sea Grant, DEP's Coastal Zone Management Program, the Partnership for the Delaware Estuary, NOAA, and EPA's Delaware Estuary Program, the symposium addressed both economic and ecological impacts, identified key pathways for introduction, and highlighted regional and local management successes.

The symposium facilitated dialogue between state and federal policymakers, natural resource managers, non-governmental organizations, environmental professionals, and scientists; over 75 participants from the tri-state area attended. With some of the "worst" invasive species in the United States (like zebra mussels) not yet present in the Dela-

ware Estuary, participants clearly saw the need for an active management approach for this emerging problem. When asked to rank the value of federal, state, estuary-wide, or local coordination to address invasive species issues in the Delaware Estuary, participants ranked regional, estuary-wide coordination the most important. Active prevention and early detection, enhanced public awareness, and regional coordination will be key to minimizing the innumerable ecological and economic impacts of aquatic invasive species.

Building on this dialogue and the framework provided by the Delaware Invasive Species Council (Pennsylvania's interagency invasive species workgroup) and the anticipated Mid-Atlantic Regional ANS Panel, we hope this symposium will foster collaboration to prevent the introduction and control the spread of aquatic invasive species in the Delaware Estuary watershed.

to the Pennsylvania Coastal Zone Management Program, procures and manages related grants, and provides outreach regarding Sea Grant to local, state, and federal legislators.

Dave serves on a number of boards and committees: Presque Isle Bay Public Advisory Committee, Lake Erie Region Conservancy, Route 5 Scenic Byway Corridor Management Plan Committee, Pennsylvania Lake Erie Watershed Association, and Millcreek Township Planning Commission. Dave received his Bachelor of Science degree in Regional Planning from Indiana University of Pennsylvania in 1974. He is married to Frances Gocal Skellie and has two children, Michael and Loren.

Dave's position is supported by the Pennsylvania Department of Environmental Protection (DEP) and its affiliated Coastal Zone Management Program.

### Sean Rafferty, Lake Erie Coastal Outreach Specialist

Sean received his B.S. in Biology from Penn State Behrend in December 2002. Sean spent a year as student assistant at Pennsylvania Sea Grant, during which time he developed our *Identification Guide to the Invertebrates of Presque Isle Bay*, assisted with various environmental education programs, and gained experience in the various techniques of environmental monitoring. Following graduation, Sean stayed on as a part-time employee, assisting in the Presque Isle Bay fish tumor monitoring program and in the compilation of the *Fish Tumors Related to Great Lakes Areas of Concern Conference proceedings*.

Sean's full-time position as of July is Lake Erie Coastal Outreach Specialist. His primary duty will be the implementation of a Nonpoint Education for Municipal Officials (NEMO) program. Other duties include: conducting and facilitating ecological studies related to the coastal areas and tributaries of Lake Erie, including the use of specialized equipment and oversight of technicians and

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## Pennsylvania Sea Grant Hosts Great Lakes Fishery Institute

The Great Lakes Fisheries Leadership Institute is a new program supported by the Great Lakes Sea Grant Network. It is designed to provide emerging fishery leaders with the knowledge and skills to effectively interact with Great Lakes fishery management organizations.

The goal of the conference hosted by Pennsylvania Sea Grant in October was to educate representatives from the various organizations on fisheries management principles and issues that affect the Great Lakes ecosystem. Over 50 enthusiastic members of angling and conservation groups, along with regional media, attended from Michigan, Ohio, Pennsylvania, and New York. Attendees heard from Great Lakes fisheries agencies about how the federal governments, states, and provinces cooperate to manage the fishery populations in the Great Lakes. Representatives are expected to share their knowledge with their organizations so that they may be able to interact more effectively with the governing fishery agencies.

For more information please visit the Great Lakes Sea Grant Web site at [www.greatlakesseagrant.org](http://www.greatlakesseagrant.org)