SUSQUEHANNA RIVER BASIN COMMISSION
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SRBC, MD State Agencies, MD Sea Grant, Exelon, Teachers and Students Promote Migratory Fish Restoration

Students Released Shad They Raised Into Deer Creek

JARRETTSVILLE, Md. – Susquehanna River Basin Commission (SRBC) Chairman Kendl Philbrick, Maryland Department of Natural Resources (DNR) Secretary C. Ronald Franks and Maryland Department of Agriculture (MDA) Secretary Lewis R. Riley today were joined by Delegate Barry Glassman, Chairman of the Harford County Delegation, the Maryland State Department of Education (MSDE), Maryland Sea Grant Extension Program and Exelon Corporation to promote the *Shad School: Connecting Students and Shad* program to educate teachers and students about the importance of restoring American shad and other migratory species. After the press conference, students from Perryville Middle School and North Harford High School released the American shad they raised into Deer Creek.

Kendl Philbrick, SRBC Chairman and Secretary, Maryland Department of the Environment said, "American shad once migrated through the Susquehanna River Basin in vast numbers, making them a prized commodity. Today, they still capture our imagination, and re-establishing the American shad in the basin is expected to enhance the basin's economy in the future through enhanced opportunities for fishing."

Until 1830, American shad were a thriving and vital resource to fisherman in the Susquehanna basin but over time their migratory cycle ended. Water pollution and the construction of small dams on tributaries contributed to the end, but it was mainly the construction of four large hydroelectric dams on the lower Susquehanna River that ended their cycle.

DNR Secretary C. Ronald Franks said, "We have seen an incredibly strong return of the American shad in the Susquehanna River. This is largely due to cooperative restoration efforts, improved water quality, and the success of our fish passage program. It's heartening to see these students learn about a fish that is such a part of Maryland's culture. This program is exceptional not only for the thousands of American shad raised by these schools, but also because of the lesson these students have learned about the importance of restoring our natural resources."

MDA Secretary Lewis R. Riley added that, "We all have a role to play in restoring our waterways which serve as habitat for many important species, including shad. Maryland farmers use the best science available to reduce runoff from their farms and it is exciting to see the connection between their efforts and the students' shad rearing and release project."

In 2004, SRBC designed the program to educate teachers and students about the importance of restoring American shad and other migratory species. SRBC partnered with DNR initially to kick-off the program with North Harford High School in Harford County and Perryville Middle School in Cecil County. Students and teachers raised the shad in classroom aquariums from eggs to the fry stage, and today released them into Deer Creek. The shad will imprint to the waters of Deer Creek and when they migrate back to the Susquehanna basin in four to five years, they will instinctively return to Deer Creek.

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"Environmental science provides countless opportunities for students to apply their skills and knowledge by working with professional scientists and other community members to address real world issues," said Dr. Colleen Seremet, Assistant State Superintendent of Instruction, MSDE.

As part of the program, students learned to care for the shad being raised in the aquariums – all the steps spanning the process of feeding them to monitoring the water quality. The data the students and teachers collected were submitted into an online interactive aquaculture database developed by the Maryland Sea Grant Extension Program.

"Preservation and restoration of the Chesapeake Bay and its watershed will require all of us to learn more about the important species that make this ecosystem function. Collaboration in environmental science education is essential and at the cornerstone of our education programs. This new partnership with SRBC, DNR and Maryland schools will increase the opportunities for students and teachers alike. The long-term impact will be to improve their understanding of key species like shad and their essential role in the Bay watershed," said Jonathan G. Kramer, Ph.D., Director, Md. Sea Grant College Program, University System of Maryland.

In addition, students toured Exelon Power's Conowingo Dam to observe the operations of two fish lifts and egg collection from spawning tanks, and received lessons from Normandeau biologists about onsite fish spawning efforts.

"For more than 30 years, the fish lift operations at Conowingo Dam have provided the gateway for the return of the American shad to the Susquehanna River," said Ron Smith, environmental specialist at Exelon Power's Conowingo Hydroelectric Generating Station. "We join in the commitment of all the other agencies and groups involved that are working to bring this important resource back to the region."

For three decades, the partners of the Susquehanna River Shad Restoration project have been working to reopen the Susquehanna River to migratory fish. The partners include government agencies such as SRBC and DNR, electric utilities such as Exelon and environmental and sporting groups. This partnership effort is the largest of its kind in the United States – a multi-million dollar program – and involves a utility-funded fish-passage construction program at the river's four hydroelectric power plants on the lower Susquehanna and the release of hatchery-reared shad in the Susquehanna River and its tributaries, like Deer Creek.

AMERICAN SHAD LIFE CYCLE IN THE SUSQUEHANNA BASIN

The American shad is the largest of the four species of herring that migrate to the Susquehanna basin. The shad range includes the Atlantic Coast from Northern Florida to Southern Canada. Shad commonly reach a size of 18 to 24 inches and weigh 4-6 pounds. Like all migratory fish, American shad spend most of their lives at sea and enter freshwater only to spawn. In mid-Atlantic states, spawning occurs in springtime.

Shad fry feed on plankton and aquatic insects. The young shad live in their river nurseries for about 6 months, and grow to about 4-6 inches. In the fall, cooler water temperatures trigger schools of juveniles to swim downriver to the ocean. In the open ocean, young shad join shad schools from other rivers and begin their seasonal migrations up and down the East Coast, from the mid-Atlantic in winter to Canada's Bay of Fundy in summer.

Shad live in the ocean until they mature in 3 to 5 years, when they return to their rivers of birth to repeat their spawning cycle. Most shad die after spawning, but some may survive to return in future years.

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