

TROUT

by
Linda
Saucerman

in the Classroom

If you've heard the old proverb once, you've heard it a hundred times: "Give a person a fish, and they'll eat for a day. Teach a person to fish, and they'll eat for a lifetime." Now imagine what could happen if you teach a child to hatch fish from eggs, raise them into bug-eyed "fingerlings," and eventually release the fish into a cool, clear river!

That's what schools across the Granite State, in partnership with New Hampshire Fish and Game, Trout Unlimited and various other conservation-minded organizations, are doing – through an exciting program called "Trout in the Classroom."

During the 2010-11 academic year, thirty New Hampshire schools took part in the program, with students and their teachers raising Eastern brook trout, fish that can be found in New Hampshire's rivers and are a "species of conservation concern" recognized in the Wildlife Action Plan. Trout in the Classroom is just one part of N.H. Fish and Game's Watershed Education Program, supported by Sport Fish and Wildlife Restoration Funds and local grants. N.H. Fish and Game hatcheries supply the schools with fish eggs. Trout Unlimited chapters help out with donations of chillers and tank supplies. Many volunteers assist as classroom liaisons, delivering eggs and helping to address tank problems. With dedicated supporters and numerous helping hands, more than a thousand New Hampshire school children each year are learning about aquatic ecosystems in the most effective possible way – by *doing*.

SMALL FRY, BIG IDEAS

"We got our fish on Valentine's Day," said Mackenzie Rittenhouse, a seventh grader at Dover Middle School, as she sprinkled krill into a tank for fish that were now a little over a month old.

"I like your feeding technique, but just remember not to overfeed them," advised Judy Tumosa, an aquatic resources educator for Fish and Game.

Tumosa provides the training and curriculum materials for the program and gets the needed permits, but her involvement doesn't end there. She periodically checks in on each classroom to help ensure that students and teachers have the materials and know-how they need to raise healthy fish. On this particular day, she was visiting all of the participating schools in Dover. At Garrison Elementary School, students were eager to ask Tumosa questions, show her their own version of a "fish face," or describe what they see when peeking inside the tank.

"The fry stage is when they are little. They're small trout and they're squiggly when they swim," explained Sofie Demaray of Sue Schlapak's third grade class at Garrison.

Down the hall in Elaine Marhefka's fourth grade class, the students were studying the warmwater species of fish from the river as a comparison to the life cycle of the coldwater trout species. Brianna Surawski talked about how some fish in their classroom tank survived, while others weren't so lucky. "The



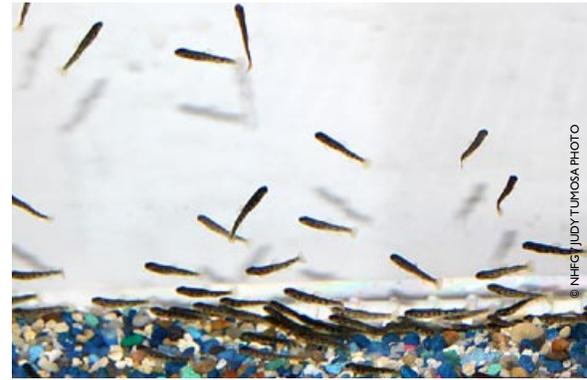
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pickrel tried to eat the bass, but it spit him out,” she said. “The bass then got this white fuzz on its skin and then he died.”

But students in the program are learning about much more than just the strange circle of life that happens between a “mean” pickrel and a “big mouth” bass and how to raise trout eggs; they’re also learning about the importance of good water quality and land conservation.

“The students study water quality by taking pH levels and measuring water temperatures. For instance, brook trout don’t like water above 65 degrees. They need cold water because it holds more oxygen,” explained Tumosa. “And in warmer weather, we take field trips to rivers, and the students will turn over rocks to look for certain insects that cannot tolerate pollution. If you have a river that has those insects, such as the Cochecho River in Dover, then you have a river that’s clean.”



Clockwise from top left: Third graders from Garrison Elementary in Dover show off school projects made in the Trout in the Classroom program. Trout “fingerlings” on view at the Children’s Museum of N.H. in Dover. Regan Hartley, Miss New Hampshire 2011, checks out insects collected from the Cochecho River by aquatic resources educator Judy Tumosa (right) of N.H. Fish and Game. Garrison students Michael Willett (right) and Heather Caruso release “wicked squirmy” fish into the Cochecho River during a field day.



COCHECOSYSTEM

At the Children's Museum of New Hampshire, the effect of pollution on water temperatures, oxygen levels and other aspects of river habitat can literally be found on display throughout their building. Although not a traditional classroom, this Dover-based museum is taking an active role in teaching about the importance of healthy rivers and the surrounding habitat by being a part of the Trout in the Classroom program.

Overlooking the Cochecho River, the museum has a permanent, hands-on "Cochecosystem" exhibit, which encourages visitors to discover all the ways that animals and people use the river, and how important it is to keep the river, its shores, its tributaries – its entire watershed – healthy.

"Visitors can look out the window and see the river, then look at and learn about the fish in our tank," said Jane Bard, associate director of the museum. "What better way to experience the creatures that live in the river than to actually meet them and develop a connection with them?"

Having the museum participate in the trout program helps expand the ideas of environmental conservation beyond the classroom. On the morning that Tumosa stopped by the museum, she met New Hampshire families from Hopkinton and Lisbon, plus people visiting from Maine, Massachusetts and even Indiana.

Like all the exhibits at the museum, the Trout in the Classroom program aims to engage visitors of all ages. Sometimes the youngest are content to stare mesmerized into the tank, teenagers are often asked by museum staff to think about the similarities between their fish tanks at home and the river habitat, while wanna-be and even seasoned anglers have been known to ask museum staff about the best fishing spots on the Cochecho.

COMMUNITY CONNECTIONS

Such family involvement happens at all the participating schools, too. In May, students release the fish they've raised into nearby rivers, making it one of the highlights of spring for many communities. In the last several years, the fish release program has been a part of the Cochecho River Field Day and Clean Up coordinated by Great Bay Trout Unlimited.

"We're not just a fishing group. We're a conservation group that combines our efforts to try to keep the rivers clean," said Mark Seymour of Trout Unlimited.

For the past couple of years, the event has been held at Measured Progress, an educational testing company whose building is adjacent to the Dover Community Trail, a path that follows the northern portion of the river all the way into downtown Dover.

Citizen Scientists

New Hampshire Fish and Game's Watershed Education Program is designed for middle and high school students. The program has a three-phase format – water quality/macrobenthos, GIS (Geographic Information System), and cold and warmwater fisheries studies – that allows students to become citizen scientists, studying and working with local community members to improve and maintain healthy aquatic ecosystems for the fish and wildlife in New Hampshire. For more information, visit wildnh.com and click on "education," or contact Watershed Education Specialist Judy Tumosa at judy.l.tumosa@wildlife.nh.gov.

The purpose of the trail is to provide recreational opportunities and protect river habitat, plus create an alternative route for people to walk or ride bikes to and from town instead of driving.

For Measured Progress, allowing the trail to be in their "backyard" and hosting the fish release event is part of its commitment to being good land stewards and fits well with the company's emphasis on education. "This event is about community, kids, education – a combination of all the things that we try to do," said Stuart Kahl, Measured Progress's founder. "I have Trout Unlimited to thank for showing us the oasis we have here along the Cochecho."

During the May 2011 fish release day in Dover, the event had a festival-like feel, with members of Trout Unlimited cooking burgers on the grill, children petting Dover Police horses, Measured Progress employees and their children drawing pictures of fish, the mayor of Dover giving a speech, and even a young woman wearing a tiara, cuffing her jeans in preparation for a muddy walk to the Cochecho River.

"I can't wait to see some fish, and I like looking at the bugs," said Regan Hartley, a former Garrison Elementary student and now Miss New Hampshire 2011. In January, she will be competing for the Miss America title, but on this day she was looking at caddisflies – a trout's favorite snack – with Jacob Cullen-Squier, a Cub Scout from Dover.

"Jacob is the fisherman in our family and has fished this river," said Jacob's dad, Fergus Cullen. "He even taught me how to fish. And this fish release is just a real treat for both of us."

Judging by the smiles of everyone at the Cochecho fish release that day, it seems like the Trout in the Classroom program has already started to rewrite that old fishing proverb, updating it for the conservationists of today and tomorrow.



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