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## Local Fifth Graders Become Citizen Scientists

By Bill Chaisson [editor@ithacatimes.com](mailto:editor@ithacatimes.com) | Posted: Friday, December 18, 2015 6:00 am

The students in the fifth-grade classes of four local elementary schools have been in the field doing science, and they are now ready to report their findings regarding invasive species. On Tuesday, Dec. 22 from 10 a.m. to 11 a.m. 175 10 year-olds will hold a symposium at the Space@Greenstar to present their findings.

In a way this began with the trout-raising projects that many fourth graders undertake with the help of the Floating Classroom and Trout Unlimited. According to Bill Foster of the Floating Classroom, the children get attached to the fish and when they release them in the local creeks, many of them wonder what was going to happen to “their” trout.

A group of teachers, led by Brian Goodman from Enfield Elementary School, wrote a successful proposal to get grant money from the Ithaca Public Education Initiative (IPEI).

“They were already familiar with the creeks,” said Beverly J. Martin Elementary School fifth-grade teacher Christine Barley, “because that is where they release the trout, so we decided to use the creeks as a focal point to teach them more about food webs and ecosystems.” This is an objective in the curriculum written by the New York State Department of Education. Called “Next Generation” science standards, they are multi-disciplinary missions that includes not just the sciences, but also English language arts (ELA) and, when possible, social studies. The teachers wanted the students to understand what the creeks were like historically and compare them to their present state.

The various schools went to their local creek. Barley and her class used Cascadilla Creek as it passes under North Cayuga Street and goes past the “bell” park. Caroline Elementary looked at Six Mile Creek. South Hill Elementary went to Buttermilk Creek, and Enfield Elementary visited Enfield Creek in upper Treman State Park.

The classes chose to focus on particular invasive species based on their observations at the creeks.



South Hill Elementary School students netting fish at Buttermilk Creek

“We wanted them to get a broad understanding of natural systems,” said Bill Foster of the Floating Classroom. “We want kids to develop a deeper understanding of how food webs and ecosystems work. They learn how to design scientific experiments. And because this is in their own neighborhood, they get why this is important. So, they learn the ‘why’ of science.”

At Beverly J. Martin the students chose to look into the status of the round goby, a small introduced fish species, and the Norway maple, a ubiquitous tree planted along Ithaca streets for decades and now found into surrounding natural areas.

Barley said that the students had looked for round goby in Cascadilla Creek when they were in fourth grade and they hadn’t found any. This year when they looked for the exotic species in their local creek, they found it. It had arrived in their neighborhood between when they were in fourth grade and when they were in fifth grade.

“We thought it was important for them to engage in hands-on work,” said Barley, “and also to do case studies instead of doing discrete experiments. The case study approach encourages them to ask questions and a lot of different subjects can be integrated into the project.”

Barley took her students out on two field trips. Foster and his colleague Sarah Newman made two site visits per school. Foster said he found a wide range of experience among the students; some of them were accustomed to being outside and paying attention to what was around them, and some students were not.

“We had to say, ‘Remember why you came out here. Don’t act like nuts. You’re still learning,’” he said. “In the end we actually got some pretty impressive observations.”

In addition to the Floating Classroom staff, the elementary school teachers had help from five Ithaca High School students who had been trained to do macroinvertebrate surveys by the U.S. Fish & Wildlife Service and the Department of Environmental Conservation.

The fifth graders received a lot of training in plant and animal identification from Foster, Newman and their teachers in order to carry out their inventories of the study sites.

Enfield students focussed on the hemlock wooly adelgid and earthworms. Caroline students looked at Japanese knotweed, round gobies, rusty crayfish, and house sparrows. South Hill students studied rusty crayfish, round gobies, the wooly adelgids and Japanese privet.

Foster said that finding the invasive species was easy, but assessing their impact proved to be the challenge.

“Whatever we learn from this,” he said, “will inform what we do next year.” IPEI funded this year’s projects as pilot programs.