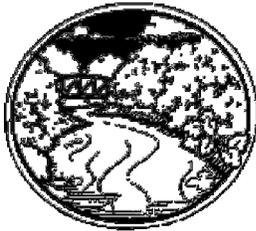


CREEK CONNECTIONS LINK

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Newsletter for CREEK CONNECTIONS

*Based at
Allegheny College
in Meadville, Pennsylvania*

Symposia Cap Off Quality Creek Year

by Chris Resek, Creek Connections

Each year, part of the Creek Connections experience is for schools to showcase their creek research and data to other participating schools, environmental groups, and the public. They also celebrate their hard work involved with learning about waterways. This is what the annual Student Research Symposia are all about. Creek schools create displays and oral presenta-

tions to summarize data, research topics, and waterway issues. Students proudly share this information with others.

Using the words of Maplewood student Tim Dobos, “the sharing of knowledge from a variety of view points” was an important aspect of the Symposia as schools joined together to learn from one another. Bethesda student Lindarise McCoy agreed,

claiming the best part of the Symposium was that “[she] got to see what other kids were doing and their points of view on their projects.”

In the process of attending, the students discover that there are many fun ways to learn about waterways and there are always new topics and issues to explore, new creek creatures to catch, and new data to display.

Creekers Connect at Northwest Pennsylvania Symposium

by Chris Resek, Creek Connections

From streamside restorations to all-day creek adventures, Northwest PA and New York schools participating in Creek Connections this year have had a big impact on local waterways, and on the communities who value the natural treasures of our creeks and streams.

On Friday morning, April 4, Creek Connections schools also made a noticeable impact at Allegheny College’s Henderson Campus Center, when about 470 school



Research project displays at the Symposia become interactive ways to learn.

students showcased their watery projects to each other, environmental professionals, and the public at the 8th annual Student Research Symposium. The day was filled with research displays, oral presentations, hands-on activities, educational games, posters, live creatures, and fun.

This event was a big day to display a year’s worth of effort and research. It was a chance for Youngsville High School to showcase the streamside park they created

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New Location and Creek Knowledge at Pittsburgh Symposium

by Laura Branby, Creek Connections



The epitome of Symposia: interactions among teachers, students, and environmental groups.

If you attended the first Pittsburgh Area Student Research Symposium, you were in for a surprise at the second! A brand new location! Not only did we switch locations, we were in a brand new building for most of the day! This year’s Pittsburgh Area Creek Connections Student Research Symposium was held at YMCA Camp Kon-O-Kwee near Zelienople, PA. Over 300 people participated in the event, held on the banks of Connoquenessing Creek.

The symposium kicked off with a wel-

come to the Connoquenessing Creek watershed by representatives of the Connoquenessing Watershed Alliance. The Creek Freaks (Seneca Valley IHS students), Bill Nye (or someone just like him), some newscasters and puppets informed the creek-knowledgeable audience about the problems

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Creekers Connect at NW Pennsylvania Symposium

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in the fall, for Maplewood High School to let everyone know why they are in the business of restoring riparian (streamside) forest zones to local waterways, and for Conneaut Lake Jr. High School to demonstrate how you can learn about creeks by playing colorful and creative educational games. Seneca High School showed that Pennsylvania's six major watersheds could be edible; they put a watershed map on a cake. The main course of the event was some crayfish recipes from Conneaut Lake Jr. High School 7th graders. Cambridge Springs High School showed off the plethora of research they did reaching from the stars over French Creek to the bacteria breeding in the depths of our water.

"I really enjoyed walking around and looking at the different projects and learning about different things," claimed student Jennifer Oakes of Cochranton Jr./Sr. High School. Sean Unice of Meadville Middle School thought the best part of the symposium was "the diverse amount of projects and schools involved."

General McLane High School made sure they taught everyone about amphibian life cycles during their oral presentation, one of 8 presentations completed in Shafer Auditorium in the morning. "Being on stage for my presentation" was the highlight of the day for Caitlyn Heffren of Cussewago Elementary School. All the students also had the opportunity to hear from a guest speaker, Terrell Dixon, President of the Association for the Study of Literature & the Environment. Mr. Dixon enthusiastically complimented the students in attendance for their environmental education endeavors and was impressed with the research projects he saw.

In the afternoon, students took over some of the campus buildings and partici-



At the Allegheny Symposium, there were 470 students and some elementary students that composed the enthusiastic crowd.



pated in water-related activities led by Allegheny students, faculty, and environmental organization representatives. Activities ranged from salamander searches to geological explorations to acid rain experiments to algae viewing. These activities were considered to be "awesome" and "lots of fun" by the students and a nice way to end the day.

When the activities were completed, the students navigated their way back to the Campus Center for an awards ceremony and closing remarks. The ceremony celebrated the student's hard work and each school was presented with a plaque to signify Creek Connection's appreciation for the students making it a great year and great symposium.

For more photos of the Student Research Symposia - check the Creek Connections website: <http://creekconnections.allegheny.edu>



Enjoying the educational displays and meeting new people were all part of the day at the Allegheny Symposium. The display tables were busy with visitors learning from other schools or environmental groups and agencies.

Afternoon Activities:

"I learned a lot about different kinds of rocks in different types of streams." - Holly Kays, Youngsville High School



"We learned about acid rain. We did a lab. It was a good experience and a lot of fun." - Vanessa Haings, Cochranton High School.



"We learned about salamanders, found where they live, when they are active, and how to identify them by their characteristics." - Derek Hornaman, Cambridge Springs High School

"We learned how hard it was for fish to survive by playing a game." - Heather Kephart - Conneaut Lake Jr. High School



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facing the Connoquenessing Creek and its watershed and the positive steps that have been taken to alleviate them. Teachers and students were then recognized for their participation and hard work in the Creek Connections program this school year.

Oral presentations throughout the morning featured an original symphony created by a Seneca Valley IHS student that represented a creek as it made its way from the headwaters to the rivers' mouth. Other students presented conclusions on the water quality of their local waterway. Kathryn Stevens of Upper St. Clair HS said "...it was interesting learning about the creek that I grew up near."

"I did enjoy [the Symposium] because you learn new things and meet new people," said Blaze LaBoon of Prospect Middle School. Students had the opportunity to meet and mingle with the other students, teachers and environmental groups throughout the morning.



Ranging from music to computer presentations, stream models to data analysis, the Pittsburgh Symposium displays allowed the students to take pride in their research and share their results with others.



Students from the Ellis School brought games, activities and websites they had created on their laptops (technology



meets the creek!). Callie Wentling, a student at The Ellis School said, "I liked presenting my own project, and learning about the other projects." There was a lot to learn from the other schools. West Mifflin Area High School students created a myriad of displays ranging from board games to models. Letsche, Brashear, and Upper St. Clair High Schools, and Frick Middle School also completed interesting and creative projects and displays. Seneca Valley Intermediate HS even fed crayfish chili to brave attendees!

Interspersed among the school projects were displays from environmental groups in and around the Pittsburgh area. The Carnegie Science Center had students testing well water to determine the source of a contaminant. The Carnegie Museum of Natural History brought enough specimens to fill an entire table! Live birds from the Aviary captivated people and drew them in to learn more. The creativity of the student projects combined with the enthusiasm of the environmentalists and the beauty of the location made for an exciting day!

After lunch, students filled the camp as they explored various creek-related topics with experts in the field. From salamander searches to sewage treatment, GPS to freshwater mussels, acid mine drainage to vernal ponds, creek quilts to creek stomping the students jumped in (some literally!) and learned from people who work in the field.

So, what should be done to improve the Symposium and the afternoon activities next year? "I don't think I would change anything, everything was put together well, I had a great time" claimed Leanne Schmidt of West Mifflin Area High School

Thanks, Leanne! Creek Connections had a great time, too!

Afternoon Activities:

"Very fun. I identified some aquatic animals I've never seen before."
- Richard Dickerson, Letsche High School



"Buggy bioindicators was great. The coordinator was really into it and we learned about how insects that can't tolerate pollution are good to appear in the water." - Ben Stoviak, Bethel Park High School

"I learned about the different kinds of salamanders and where they live. It was a lot of fun." - Felicia Ragsdale, Frick Middle School



"I learned that a satellite can track where you are on earth if you have a GPS device. We put in coordinates and the device told us where to go." - Haylee Piccolino, Prospect Middle



Maplewood High School Spring Projects:

by Nicole Mason, Creek Connections

Saving Lives and Tax Dollars with Trees Along I-79

What do whiteouts, white pines and waterways have in common? All were part of the efforts of Maplewood High School students from Mr. Drake's biology classes on April 29! If you've ever been traveling on I-79 on a windy, snowy day, you've probably been stuck in the otherworldly conditions of a whiteout. When caught in a whiteout, all you can do is slow down and put on your hazard lights. But, as Maplewood students discovered, there is something else that you can do to prevent these dangerous circumstances. You can plant a living snow fence using white pines and other conifers and hardwoods!

On April 29, more than 100 Maplewood High School students put on work gloves and fluorescent orange safety vests, grabbed shovels, and worked with numerous members of the Pennsylvania Department of Transportation's Green TEEM (Transportation Employees for Environmental Management). In only five hours,

they managed to plant close to 2,800 seedlings at five sites on the western side of I-79 southbound between the Edinboro and Saegertown exits. The main goals of the project were clear, and were highlighted on a message board that motorists passed as they approached the work area: "Saving Lives. Saving Your Tax Dollars. Maplewood School. Living Snow Fence." By reducing the amount of accident-causing snow drifting across travel ways, living snow fences save lives and also decrease the amount of costly road salt used to keep those roads passable. Another benefit of living snow fences is that less road salt applied to the roads means less total dissolved solids (TDS) level-spiking road salt washing into waterways in runoff and affecting aquatic life osmosis. In addition, living snow fences are much more aesthetically pleasing than the conventional snow fences that Green TEEM member Rick Weaver described as "unsightly".

The project began when Maplewood biology teacher Jason Drake suggested the idea of a living snow fence to Stacy Armstrong, one of his students who is also an intern at PennDOT. Stacy said, "Mr. Drake has wanted to do this for a while and I put it into action. PennDOT supplied the funding for it. Mark Lewis [a forester from the Department of Conservation of Natural Resources (DCNR)] ordered the trees through DCNR." Many Green TEEM members including spokesperson Jim Slozak were instrumental in the success of the project. The Crawford County Conservation District and the French Creek Project were involved as well.

Planting nearly 3,000 trees in five hours is no small feat and Maplewood students undoubtedly left I-79 feeling good, albeit tired, about the contributions they had made to road safety and the environment. And, as Mr. Drake said, "If nothing else, they'll sleep well tonight!"



Maplewood teacher Mr. Drake and DCNR forester Mark Lewis give instructions and pump up the students before the planting effort.



One major goal of the project was to save lives by reducing the amount of dangerous drifting and blowing snow on open sections of I-79.



Two Maplewood students plant one of the nearly 2,800 trees they and their classmates planted along I-79 to form a snow fence.

Best Management Practices Installed to Protect Cochranon Dairy Farm Stream

No rest for the weary and super motivated! Over 100 Maplewood students, many of whom participated in the snow fence project, were at it again on Thursday, May 8, 2003. This time, however, improving water quality wasn't a secondary objective but a main objective.

The May 8th project was led by Maplewood senior Maria Anderson, who also organized a smaller restoration project back in November. Maria worked with Mr. Drake and other teachers at Maplewood along with technical and financial support from the DCNR, Natural Re-

sources Conservation Service (NRCS), Crawford County Conservation District, Creek Connections, the French Creek Project, Ducks Unlimited, and Ernst Conservation Seeds. The stats for this project were even more impressive than the snow fence effort: 3,000 trees, 300 live stakes, and one mile of streambank fencing on the Glen Kenny dairy farm! Wow!

So, why all the trees and fencing? The trees will act as a windbreak, similar to the natural snow fence, and also form a riparian buffer "pollution break". This buffer will protect the stream that runs



Driving in a live stake in the wetland area.

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Youngsville High School Holds Symposium Of Its Own

by Nicole Mason, Creek Connections

On March 12, 2003, hundreds of students of all ages and community members gathered to share watershed research they had done throughout the course of the school year. There were displays with information about ducks, beavers, salamanders and newts, dissolved oxygen and total dissolved solids, and water pollution. Tamarack Wildlife Rehabilitation Center representatives taught students with live critters. The Fish and Boat Commission shared information about local fish populations with participants. And students examined preserved aquatic insects under brock microscopes and the videoscope at the Creek Connections display. Are you having déjà vu? Does all of this sound strikingly familiar? Well, this wasn't another Creek Connections Student Research Symposium but it was the Youngsville Student Research Symposium.

Organized by former Creek Connections intern and Allegheny College gradu-



Two outstanding displays at the Youngsville Symposium: Ducks (above) and Freshwater Mussels (below). Preschool students learn about mussels from a Youngsville student (below).



ate Laura Tingley and her teacher mentor Mrs. Dorunda, the symposium concluded an extremely impressive year of environmental accomplishments in Youngsville. Laura said that "It's been wonderful working with the Youngsville students and giving back to my alma mater and my community." All students that presented displays at the Youngsville Symposium are to be congratulated. The "Hellbenders and Mudpuppies," "Furbearers in Allegheny," "Salamander vs. Newt," "Beaver Habitat," "Painted Turtle," "River Otter," "Freshwater Mussels," "Ducks," "Forest Management," "Welcome To Our Trail," and "Wildlife"-themed displays were selected as the outstanding projects of the Symposium and their authors were rewarded with the honor of representing Youngsville at the Creek Connections Symposium. Great work this year, Youngsville! We look forward to seeing all the excellent work you'll do next year!

Maplewood Spring Projects: *Best Management Practices Installed* -continued from pg. 4

through the farm by absorbing runoff and nutrients, filtering sediment, and providing shade and food for aquatic life.

According to Jen Nahay, the fencing job is the most important "because it keeps the cows out and helps protect this environment." Nathan Helgert added, "The cows introduce excess nutrients into the water that lead to eutrophication...it lowers DO [dissolved oxygen] and it looks ugly." Last year, Ducks Unlimited installed some streambank fencing. Farm owner Glen Kenny noted that "streamside fencing has definitely improved water quality." Mr. Kenny added that "We [farmers] don't want to see the environment get messed up. We work with it, we depend on it." He also said that he's working hard to develop a strong sense of collaboration between dairy farmers and environmental groups.

Although they were working extremely hard, the students seemed to really enjoy themselves and take pride in knowing that they were helping to protect their local waterways. It was a "perfect day for it - overcast, a breeze, and very pleasant digging conditions," commented Stella Vealey.

Mr. Drake was a proud teacher indeed at the end of the day. He congratulated his students enthusiastically, exclaim-

ing, "It was unbelievable! Incredible! You didn't plant trees today, you planted a forest!"

So, what's next for Maria, Mr. Drake, and the Maplewood tradition of restoration projects? "As long as I am in Erie in college, I plan to come down and help Mr. Drake out," said Maria. And other students agreed that underclassmen will rise to the occasion to ensure that the tradition continues.



Two Maplewood students plant one of the hundreds of white pines that made up the 3,000 trees planted on the Kenny Farm.



Students installed one mile of streambank fencing (top) to protect the small stream (bottom) running through the farm.

Conneaut Lake-Allegheny College Creative Creek Collaboration

by Kaitlin McCormick and Sarah Falkowski, Allegheny students



On April 23rd, 25th, and 28th, three students from Professor Kerry Bakken's Writing About the Environment class at Allegheny College went to Conneaut Lake Middle School to teach environmental writing to seventh graders. Art Craig, Kate Sceiford, and Kaitlin McCormick led seventh graders in a variety of writing activities to challenge their descriptive powers and give them the opportunity to write about their surroundings creatively.

The first day was only 37 degrees out, very cold to be outside! The students braved the weather and worked in groups to create vivid paragraph descriptions of a natural object nearby. The next class was much warmer: 62 degrees and sunny. Everyone was glad to be outside! The students turned a highly technical paragraph about an ant into a fun and easy to read paragraph using their own encounters with ants. On both Friday and Monday, students worked on essays of their own choice about something found at their outside location before sharing one of their pieces with the group.

About 100 seventh graders participated in the environmental writing classes. Some of the essays will be published in the French Creek Journal, which is being started by another group of students in Professor Bakken's class.

Conneaut Lake Junior High School seventh graders got to spend yet another day outside learning about French Creek on

Wednesday, April 30th. Over 100 students visited the French Creek Outdoor Learning Center and participated in five different activities. Each group of students rotated to various stations throughout the day. Students learned about aquatic macroinvertebrates, riparian zones, topographic maps, the web of life, and even a little bit of history about George Washington's journey through the area. The weather turned sunny in the afternoon making the day even more enjoyable.



Above: Allegheny student Art Craig assists Conneaut Lake 7th graders with their environmental writing pieces.



At left: During their day at the French Creek Outdoor Learning Center, Conneaut Lake students work with topographic maps (top) and macroinvertebrates (middle), and play the "Web of Life" game (bottom)



Feature Creature

I am the aquatic macroinvertebrate version of turtles. I am usually between 2-60 mm long and I like to construct my home, or "case", out of leaves, rocks, sticks, or a combination of materials. I construct my case by spinning my own silk that I use to hold the materials together. We build our cases streamline to avoid being swept away by the current, and some of us use a trailing stick in our cases as a rudder! Only my head and thorax stick out and my case covers my fleshy abdomen. I use my case for a variety of reasons. My predators, including fish and aquatic macroinvertebrates, have a hard time seeing my case. I can also hide from predators in my case. My



case even helps me breathe underwater. I pull dissolved oxygen through my skin and since my fleshy abdomen is protected by my case I can move my abdomen around in my case to increase the flow of water through it. This increased ventilation allows some of us to live in areas with poor dissolved oxygen, like wetlands and lakes. Most of us that you will find in your streams around here like cool permanent running streams. Depending on which species I am I can be an omnivore,

by Mark Galatowitsch, Allegheny student

vegetarian, or detritivore. When I'm ready to pupate I make a sealed cocoon inside my case and when I'm a fully developed adult I swim to the water's surface so I can fly around and mate. One last hint: I'm the critter featured on this year's Creek Connections t-shirt that was showcased at the Symposia!



Do you know what I am? Do you know what **Order** and some of the common **Families** I belong to?

North Hills High School Get Wild at Wildwood Site All Day

by Chris Resek, Creek Connections

On May 15, North Hills High School in Pittsburgh will hopefully not get too wild when they explore their "Wildwood Site" and other sites in North Park for a day-long Creek Connections adventure. They might see some wild things in Pine Creek though, everything from fishfly larva to water snakes.

Each year, Mrs. Milliken has her students take the day to do water chemistry studies and aquatic life studies on their sites, inviting the Allegheny College students and staff to assist with the adventures. This year two of her environmental science classes will be involved.

One of the interesting things about the Wildwood site is the efforts that have been made to restore fish habitat in that part of Pine Creek. Discarded fishing line and tackle are often seen along the creek, and maybe if the North Hills students are lucky, they will net a few fish during their study. They will also be investigating the water chemistry parameters, perhaps reviewing the results to see if they are at sufficient levels to support a fish population. Dissolved oxygen, temperature, pH, and metals concentrations are especially of interest when dealing with fish impact.

The North Hills High School Wildwood Site in Pittsburgh



The creek adventure will be a nice way to end a school year for the North Hills samplers and a good opportunity to get outside and learn on a nice spring day.

New York Schools' Field Day at Nature Conservancy Preserve

by Chris Resek, Creek Connections

Each May, Creek Connections' two New York schools - Clymer Central School and Sherman Central School - participate in a field day at the French Creek Preserve, land owned by The Nature Conservancy. The students engage in hands-on activity sessions about aquatic insects, freshwater mussels, forestry practices, and agricultural practices. The students look for mussels, flip over rocks for bugs, identify trees and wildflowers, and even study the soil, all while hiking through the beautiful woods along the upper stretches of French Creek.

The schools also have the opportunity to learn more about The Nature Conservancy, an environmental organization that helps preserve valuable land resources and implement best management practices to protect threatened ecosystems. In Chautauqua County, The Nature Conservancy has become a strong community partner with local landowners, farmers, and the

schools. In fact, The Nature Conservancy supports Creek Connections' New York schools with funding to participate in their ongoing water quality monitoring and creek research.

This year's field day should again prove to be a memorable and valuable opportunity for the Sherman and Clymer students, allowing them to investigate new topics about French Creek and the land surrounding it. The students will also learn that what they do in the headwaters (start) of French Creek could affect all of the downstream sections. All the other participating Creek Connections schools are downstream of Sherman and Clymer.

French Creek is recognized by The Nature Conservancy as "one of the last great places" because of its biodiversity (different types of aquatic life) and because of its historical and community importance. Hopefully the Sherman and Clymer students become future protectors of the creek.



Sherman and Clymer Central School students collect aquatic insects along a shore in The Nature Conservancy's French Creek Preserve.

Seneca High School to Paddle French Creek

by Nicole Mason, Creek Connections

In upcoming Creek Connections news, students in Mr. Stack's Seneca High School classes will be paddling down French Creek on Thursday, May 29th. These students have been chemical sampling all year at their site but this canoe trip will allow them to get a sense of the big picture of their watershed, particularly as it relates to the river continuum concept. They plan to investigate how the waterway changes as they move down the gradient, downstream. Using watershed delineation and stream order skills they

refined throughout the school year, Mr. Stack's classes will be making predictions about the order of the stream they'll be canoeing and then testing those predictions based on the aquatic life they collect at various sites. In addition, they'll be investigating the land uses in the area around the stream, how these uses affect the waterway, and ways to prevent negative land use impacts on the waterway. May 29th promises to be quite an adventurous day for Seneca High School students!



Creekers Share Thoughts on the Year

“Creek research taught me a lot about what is needed to keep organisms in the stream alive.” - Matthew Rousk, Maplewood High School.

“I loved going outside to the creeks!” - Amanda Snyder, Cochranon Jr./Sr. High School.

“There were several things about the waterways that I was unaware of at the beginning of the school year.” - Paige Payer, Cambridge Springs High School.

“I enjoyed learning about the creeks because the more knowledge we have about waterways, the more ways we can make them better.” - Jordan Sylak, Meadville Area Middle School.

“It was enjoyable because I learned about our community.” - Sam Williams, Youngsville High School.

“Waterways are an important part of our everyday life and I enjoyed learning about them.” - Abby Lemersky, Ellis School.

“I like to know what I’m drinking and what is in the water I fish in.” - Corey Kelly, Moon Area High School.

“I didn’t know anything about the waterways around me, but now I do.” - Kayla Coles, West Mifflin Area High School.

“I learned things about our watershed that I never knew before. I am more motivated to go explore the creek now and see what I can find.” - Zach Lukes, Seneca Valley HS.

“I thought the Creek Connections program was wonderful. It gave me more insight into our environment and provided a hands-on way of learning.” - Lisa Stidle, Brashear High School.

Thanks for a great year Creeker schools and students !

FEATURE CREATURE ANSWER

This issue’s Feature Creature (pg. 6) is a Case Building Caddisfly Larva (Order Trichoptera, Family Limnephilidae or Phryganeidae)

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