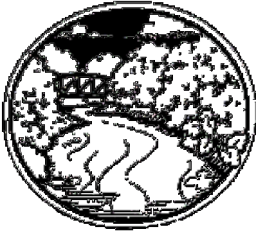


CREEK CONNECTIONS LINK

Volume #9 Issue #1



October 16, 2003

Newsletter for CREEK CONNECTIONS

Based at the
**Center for Economic and
Environmental Development,
Allegheny College,
Meadville, Pennsylvania**

Record Numbers Participate in 9th Year

by Nicole Mason, *Creek Connections*

Calling all Creekers! You are part of something big, very big! You and your classmates have embarked on what promises to be a memorable year of waterway exploration as part of Creek Connections. And you are definitely not alone. In its ninth year, Creek Connections is involving more students, teachers, and schools than ever before. For the 2003-2004 school year,

Creek Connections has added two new schools in northwest Pennsylvania (Wattsburg Area Middle School and Union City High School), and five new schools in the Pittsburgh area (Mt. Lebanon High School, Northside Urban Pathways Charter School, Riverside Middle School, Shady Side Middle School and Sterrett Classical Academy Middle School). New teachers

are also getting involved at schools that have participated in the program in the past. And with the addition of eight new fun-filled watershed activity modules to the program on topics such as wetlands, topographic maps, and riparian buffers, you are in for an extremely exciting and hands-on year indeed. We at Creek Connections wish you all the best this school year!

Lyons and Caddisflies and Mayflies, Oh My!

by Nicole Mason, *Creek Connections*

Lyons aren't a type of organism you'd expect to find in a waterway but on October 2nd, 130 ninth and tenth grade Upper Saint Clair High School Lyons were thigh-deep in McLaughlin Run, where they explored the critters inhabiting the creek down the hill from their school. Just two days after assessing creek health using the Riparian, Channel, and Environmental Inventory (RCE), Mr. Zebo's students returned to the waterway to monitor the water quality using the Pollution Tolerance Index (PTI). Both



Two USC Lyons show off their kicknetting prowess in McLaughlin Run.

the RCE and PTI yielded "fair" assessments of the water quality in McLaughlin Run. USC students attributed the moderate scores to fertilizer and pesticides potentially coming from a nearby golf course and salt, oil and other runoff coming from the parking lot and roads near the banks of the creek. They also suggested that the intact riparian (streamside) buffer along sections of the creek might reduce the negative impacts of these land uses on water quality. Sporting hip waders and equipped with

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Creek Day brings Northwesterners to French Creek

by Nicole Mason, *Creek Connections*



NWHS students wade into the waters of French Creek to collect critters and substrate samples.

For the second year in a row, Mrs. Murray and Mrs. Bucsek have treated their Northwestern High Schoolers to a field day on the banks and in the waters of French Creek. "Creek Day" was held a month earlier this year than last year and the students lucked out with a gorgeous day on October 10th. Nearly 80 students in all participated in the all day creek studies, including several international students. Creek Connections is making a difference not only in Pennsylvania but around the world! The

warm weather made the occasional leaky hip-wader bearable, if not refreshing, and the students relished getting down and dirty in the water after overcoming initial apprehensions.

The high flow rate and depth of French Creek on Creek Day kept the Northwestern-

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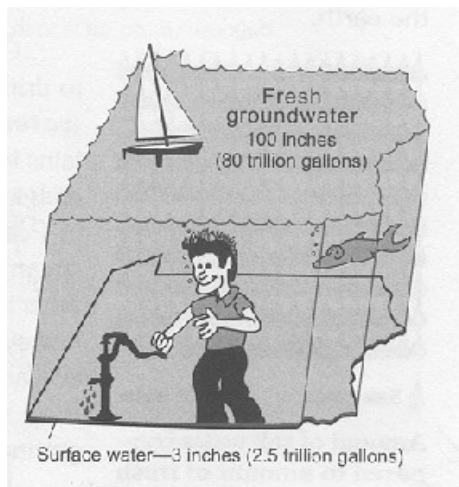
Creeker Creativity

This new section of the Creek Connections *Link* features creative writing by participating students related to their watershed discovery experiences. Let the poetry, prose, songs, limericks, drawings and other forms of creative writing flow from your pens like water running downstream. Become famous and have your creek creativity published in the next issue of the *Link*!

GROUNDWATER

by Justin Stewart, West Mifflin High School

*It goes and no one knows
where when and how it does it.
It goes up and downtown without a sound
and no one sees it.
It goes through dirt pores
and stays its course steady and slow like a turtle.
It goes up and down hills
would get lots of thrills
but you can't ride it.
It's how you get water to put in a plant potter
and where you get water from wells.
It has more water than anywhere else.
It goes down to hard rock and sits as if on a shelf
to fill.
It comes from streams, rivers, rain and snow
and soaks in the ground
but you may not have known until now.*



Source: *The Geology of Pennsylvania's Groundwater*. Commonwealth of Pennsylvania, DCNR. Harrisburg: PA Geological Survey, 1999.

UNTITLED

by Zack King, West Mifflin High School

*The water that falls
Enters the ground
The Earth fills up
It can be found
under the grass
deep in the soil
until it hits the impermeable rock
It gets sucked up
by a well
which is used
by people in need
All the water
cycles back from . . .*

Lyons and Caddisflies and Mayflies, Oh My! - continued from pg. 1

kicknets and D-nets, the USC Lyons trapped numerous net-spinning caddisfly larvae, mayfly nymphs, aquatic worms, damselfly nymphs, snails, crane fly larvae, scuds, and blackfly larvae, particularly in the riffles of the creek. Although very few kicknets came back empty, many yielded only a handful of macroinvertebrates. One student observed, "The water quality is not very good. It would be better if there were more things to catch."

The catch of the day was a large long nose dace that the students named "Jumpy" (pictured at right with Nathan Camus, Mike Dodin, and Ross Dawson). Excited about their prized find, Nathan Camus exclaimed, "That's so cool! Looks like yesterday's dinner!" Several black nose dace also found their way into the USC kick- and D-nets. With water chemistry trips to McLaughlin Run slated for the rest of the school year, Mr. Zebo's students will soon complete the water quality picture of their stream.



Testing Tip:

Clean Glassware

One of the most important steps of any chemical tests should be done before sample water is measured or chemical packets opened. Always rinse glassware with distilled water before beginning a chemical test.

If chemicals or sample water are left in the containers, they may alter your results the next time you use the test kit. Each



by Creek Connections staff

and every time you use a test, it is important that you clean all of the chemicals and sample water from inside the testing containers. For a real tough job, you can even use coarse-bristled brushes to scrape the bottom and sides of the containers. (Ask a Creek Connections intern or coordinator if you would like to obtain one of these.) Always rinse out with distilled water when you are done!

Creek Day brings Northwesterners to French Creek - *continued from pg. 1*



Top - Assessing the riparian area; Middle - Chemical analysis of Cussewago samples; Bottom - The Pebble Count Method explained.

ers close to shore as they collected macroinvertebrates using kicknets and substrate on which to perform the “Pebble Count Method”. Perhaps it was the warm temperatures that triggered the apparent hatch of thousands of water boatmen. The kicknets brought to shore were literally jumping with these critters! An occasional burrowing mayfly, scud, stonefly, and even a catfish were also discovered in the samples collected. The aquatic life station was the hands-down hit of the day, and students could be heard comparing their findings long after they had moved on to another station. One student exclaimed, “It’s cool to discover all the different bugs that live in the creek!” Another added, “I learned that you can tell some things about the health of the water based on the bugs that you find.”

There were three other stations in addition to the Aquatic Life station: stream substrate, water chemistry, and riparian areas. Creek Connections interns Ellen Smith and Jackie Stallard led the stream substrate session. They taught Northwestern students that the substrate, or mineral and organic substances on the bottom of a waterway channel, influences the aquatic life, stream appearance, and water chemistry. Together, the “creekers” discovered that substrate was generally less coarse near the banks than it was further into the channel. Most of the particles in the substrate were classified as “coarse gravel” or “very coarse gravel” with

an average size of 32 mm. Students observed that there was an excessive amount of silt as a result of recent heavy rains and hypothesized that this might have somewhat reduced the levels of biodiversity in the creek by smothering fish eggs and the gills of aquatic macroinvertebrates.

Also impacting the appearance, water quality, substrate, and critters of French Creek is the riparian area, or land right along the stream. By employing the Riparian, Channel, and Environmental Inventory (RCE), students came up with assessments of “good” and “very good”. One Northwestern student commented that the most interesting thing she learned all day was that “What people do next to the creek really impacts the water and the bugs in the creek”. A heated debate ensued during one rotation over the cost effectiveness of using stream bank fencing to keep cows and other livestock from trampling the banks and increasing erosion.

With relatively good RCE scores and levels of biodiversity, it was only fitting that water chemistry results reveal normal levels of pH, alkalinity, turbidity, nitrates, phosphates, total dissolved solids, temperature, and dissolved oxygen. Students tested both French Creek samples and water taken from their normal sampling site on Cussewago Creek. At the end of Creek Day, NWHS students completed worksheets using their new knowledge.

Saegertown Students Explore Community Life Line *by Mary Zoller, Allegheny student*

Bertram Park at French Creek in Saegertown was a busy place right off the bat this school year. On a cool, crisp morning about one month before Northwestern High School traveled to the site for their field day, all 140 seventh graders from Saegertown Middle School took over the park for a day for watershed studies of their own.

French Creek is a priceless resource for the members of the Saegertown community that grew up and continues to thrive along its banks. Located right in their neighborhood, creek day took place just down the road from Saegertown schools. This kick-off to a year long study of their creeks enabled students to get a 360-degree perspective of their nearby waterway. This year’s topics focused on history, geology, topographic maps, water chemistry and biodiversity.

With much enthusiasm these students dove right into their activities. Faculty and students from Creek Connections were on hand to lead activities. At the water chemistry station, Creek Connections staff helped students decipher each water quality test. Students looked forward to the dissolved oxygen test as word got around of its magnificent color change.

Next door at the topographic maps station, students were asked to find specific locations and distances on the maps, and the ever-popular stream ordering was also a hot topic. Meanwhile, down at the creek, biodiversity was discussed through macroinvertebrate sampling. Using D-nets and kick nets, each student had an opportunity to get a little wet, and get a first-hand look at the critters in their creek. While crayfish were among the most popular catch, over ten species of stream critters were sampled.



Top - 7th graders measure the length of a section of French Creek. Bottom - Students bring their teeming kick nets back to shore to ID bugs.

Good Clean Fun at the Clean Water Festival

by Nicole Scatena, Allegheny student



Above - A cub scout looks for signs of life in the trays of critters at the Creek Connections display at the Clean Water Festival.

Below - Macro TV! Father and son both enjoyed using the videoscope to project images of preserved macroinvertebrates onto a TV.



Is it really possible to have fun and learn at the same time? Is it possible to be able to do this with your entire family? It sure is! Many families came out this weekend to the Clean Water Festival, Pymatuning Waterfowl Expo, and had a great time while experiencing activities they might not have been given the chance to otherwise.

September 20, 2003 was the beginning of a full weekend affair at The Clean Water Festival. It was a beautiful day, perfect for the activities that were going to be taking place outside by a nearby pond. Creek Connections was one of many organizations taking part in this all day affair that brought a diverse amount of activities for children and curious adults.

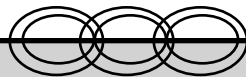
The Creek Connections table was divided up into three sections: project information, biodiversity, and water chemistry. Pictures, handouts, posters, and newsletters were just some of items that were distributed at the festival. This was a chance for people to learn about Creek Connections and it was a great way to show how young people today are getting involved with their environment, and also having a good time doing it. Water chemistry kits were also located on the table for observers to see exactly how water is tested, what materials are used, and why is it necessary to test the water. Although many of the young chil-

dren were not too interested in that area, their parents definitely were.

What really held everyone's attention was the section on biodiversity. Water from the pond was brought up, allowing the children, or anyone that was interested, to view the aquatic life. Microscopes and other tools were used to examine the multiple whirligigs, caddis flies, crawfish, mayflies, stoneflies, etc... The children really enjoyed looking at these insects; some adults even jumped back a bit when they saw some of the bugs.

Besides the extended table inside, "creekers" were located at a nearby pond, allowing for families to join Allegheny students in using d-nets to collect vast amounts of aquatic critters. The families were then given a chance to get a closer look and identify what was found.

Overall, the weekend was a great success. Individuals that were involved and participated in the Clean Water Festival came with little or no knowledge of certain things, and left with information that will stick with them for the rest of their lives. A job well done! Ask your parents to take you to the Clean Water Festival next September for a family outing filled with canoeing, critters, and curiosity!

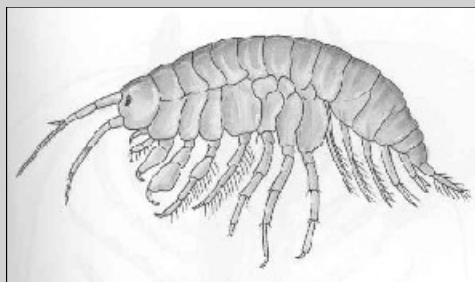


Feature Creature

I am a benthic freshwater crustacean, dwelling most commonly in the decomposing vegetation and debris of cool, shallow, spring-fed streams. I'm approximately 5-20 mm long not counting my two pairs of antennae and tails.

I have seven pairs of legs, the first two being modified for grasping detritus, which is my main source of nourishment. My body color can vary greatly but is most commonly creamy light gray or brown, and is often somewhat transparent.

My most prevalent body characteristic is my strongly flattened body from side to side, which also gives me my nickname. My diet consists primarily of decomposing plant matter but also includes the thin film covering underwater plants made up



of algae, fungi, and bacteria as well as any recently dead organisms I may come upon in my journeys across the bottom. I am most abundant in small habitats without fish and if conditions are right there can be as many as 10,000 of my kind per square meter of bottom. My predators include fish, amphibians, and water birds. North-

by Dave Cass, Allegheny student

western and Upper St. Clair High School students definitely discovered these critters in French Creek and McLaughlin Run. If you're familiar with the Key to Macroinvertebrate Life that many teachers use, I'm located right next to the crayfish. But don't be fooled! This key is not to scale and I am much smaller than a crayfish, although I do look a bit like a mini shrimp.

Your last clue is that my nickname is "sideswimmer".

Do you know what I am? What are my common and scientific names?

Answer can be found on page 6.

From Creek to Creek - Pittsburgh School Updates

by Laura Branby, Creek Connections

Less than two months into the school year, Creek Connections schools have already been extremely busy investigating their waterways. This issue of the *Link* features updates on participating schools in the Pittsburgh area. Stay tuned for Northwest Pennsylvania school updates slated for the December newsletter.

Moon Area High School...Mrs. Schriver took over for a retiring teacher and she has jumped right in to her research class. The class spent an entire day touring the watershed and chemically testing the water. The teacher learned alongside the students and all were more comfortable with the tests by the end of the day, although most were completely soaked. They found that water comes in over the top of the waders when you wade in too deep!

Langley High School...Mrs. Caivano stepped in to replace another teacher at the same school. She and her husband are frequent visitors to Raccoon Creek State Park. Creek Connections allows her to share her love of the park and its beauty with her class. Their first sampling day included completing the chemistry tests and searching for macros in the creek. They even found a small snake nearby.

Sterrett Middle School...A returning teacher, Mrs. Knaebel, switched schools this year allowing a whole new set of students to participate in Creek Connections. Sterrett is right next to the beautiful Frick Park, one of the Pittsburgh City Parks. The students can walk down a picturesque path to their sampling site, which is just upstream from "Hot Dog Pond." The stream has a small dam forming a pool large enough to allow hot dogs to cool off. Some of the students were a little concerned about the dogs, but both students and dogs stayed in their own areas and enjoyed the creek.

Seneca Valley High School...Mrs. Finch and Mrs. Hadley, both new to the program this year, started the school year with Creek Connections. Laura Branby presented the Creek Connections introduction on the 3rd day of school! Students have been working with the modules (two so far) and been to their sampling site twice. What a kick-off! We expect big things at symposium time.

Riverside MS...Students in Mrs. Dwyer's and Mr. Hudspath's classes have long been involved in monitoring the Connoquenessing Creek. It's easy to understand the relevance of water quality issues when the creek flows across the street from your school

(and behind your teacher's house). After assisting at last year's Creek Connections Student Research Symposium at Camp Kon-O-Kwee (on the banks of the Connoquenessing Creek), Mrs. Dwyer and Mr. Hudspath are excited to be a part of the program. Their students travel a few miles upstream to the site of the former Camp Silver Lake to accomplish their testing. As with many other schools in the area, the creek was too high to safely get in for macroinvertebrate sampling at the beginning of the year due to our extremely wet summer. That won't stop them for long!

Shady Side Academy...Mr. Erler and his students are new to Creek Connections this year. Not only have they sampled at their test site on Squaw Run, they've even turned in their research topics for the symposium! We're looking for wonderful things from these students, too!

North Side Urban Pathways Charter School...Mr. Francis, new to Creek Connections this year, took his bailer out to the 9th Street bridge in Pittsburgh to test it...and it reached all the way down to the river! He and his students are excited about getting out to the river for sampling. They'll just have to watch for boaters when they lower the bailer over the side of the bridge.

Seneca Valley Intermediate High School...Ms. Griest has taken students to the creek for sampling (and crayfish catching). Each month they focus on a different aspect of the watershed and impacts on its health. Some of last year's students are planning PJAS projects based on the things they learned in Creek Connections.

Springdale HS...Development in the area means big changes for Springdale. Mrs. Seth involves Creek Connections students in the local happenings by sampling along a creek that runs through the middle of the proposed development area. They'll have a lot of before, during and after data. This year they've also added another site downstream to monitor the water just before it enters the Allegheny River.

North Allegheny HS...In his 6th year of Creek Connections, Mr. Pielin noticed that the creek has been changing. He said, "Some of the boys found some fish, about thirty in a school. A rather large one too. It is hard to believe that this is the same stream we started with six years ago. It is coming back to life."

Upper St. Clair HS...Mr. Callahan and Mr. Zebo continued their tradition with a bug day at McLaughlin Run (below their

school). Nicky Mason got up in the wee hours of the morning to make sure they had the equipment and expertise they needed for a successful day. They have also been making use of the new modules this year.

Emily Brittain ES...Mr. Allen and his students are back at Father Marinaro Park testing the Connoquenessing Creek. Wonder if they'll compare their results to those from Riverside MS further downstream? They're looking forward to borrowing the Creek Connections GPS and doing some mapping projects.

West Mifflin Area HS...Ms. O'Lare took



Teamwork is the key for Emily Brittain students working on water chemistry tests for the first time this school year.

her students underground. OK...not literally, but they have been using the groundwater simulator to understand the movement of water below the surface.

Prospect MS...Mrs. Goyal's students listened to the Creek Connections introduction, hopped in a bus, and headed to Riverfront Park and the Monongahela River for their first sampling experience. Mrs. Goyal noticed that the shoreline looks different than in previous years.

Frick ISA...Mrs. Corr has been borrowing our new modules to explore many facets of the watershed with her students. They will complete an in-depth study of Nine Mile Run within Frick Park. A good stream map would show the connection between the sampling site for Sterrett MS and their site.

Perry HS...Early morning sampling is in the cards for Ms. Wright's Creek Connections classes. They will have to dig out their warm coats, hats and gloves for the trek to the creek. All their sampling will be finished before 9:30 a.m. this year. Brrr!

Greenfield School...The school principal showed up during the Creek Connections introduction to get the students excited

- continued on pg. 6

From Creek to Creek - *continued from pg. 5*

about participating in the program and challenge them to do a good job. Mr. Krynski's students will be sampling in Schenley Park, another of Pittsburgh's City Parks.

Carmalt ES...Mr. Preston's students will be sampling a waterway closer to home this year. They are monitoring the health of Street's Run and post photos on their class website. Check it out at:

<<http://homepage.mac.com/mrpea/PhotoAlbum31.html>>

Brashear HS...Some of Mr. Miller's students were involved in Creek Connections at their middle school. Mr. Miller has them studying Squaw Run, quite a different creek from the one they used to study. Brashear HS and Shady Side Academy share a creek...and hopefully the data they collect.

North Hill HS...Mrs. Milliken has been making use of the new modules to get her students involved in many aspects of the watershed. They also spent a day in the field accomplishing chemical tests and macroinvertebrate sampling. They will be watching closely as decisions are made about dredging North Park Lake since it will affect their sampling site on Pine



FEATURE CREATURE ANSWER

This issue's Feature Creature (pg. 4) is a Scud or Amphipod, *Amphipoda malastaca*.

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