

Current in the Creek

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Above: Gateway Middle School students visited Jennings Environmental Center in November to expand their Creeker knowledge

MERRY CHRISTMAS FROM THE MAPLEWOOD AQUACULTURE CENTER

The idea of having our own “fish farm” was spawned from an interesting discussion in class after visiting Allegheny College’s aquaponics facility during the annual Creek Connection’s Spring Symposium in 2010. Several Maplewood students thought it would be grand to have the sounds of running water, the unique aroma of fish filling the lab rooms, and the joys of farming our own aquatic friends right in our very own classroom! So, we set off on the adventure of developing a system that would work in our allotted space and fit our rather tight budget. It was unanimous that we should begin this journey by educating ourselves through aquaculture first. As time progresses, we will eventually move into the world of aquaponics through which we will grow plants in conjunction with our fish farming system.

We currently have two 150 gallon livestock tanks each having their own aerator systems and biofiltration units. One system has 50 hybrid bluegills while the other is home to 50 large-mouth bass which were purchased from Hilltop Hatcheries in Corry, Pennsylvania as fingerlings. Every day they are fed a fabulous diet of commercial fish pellets and the surface of the water boils with activity until every last fish has filled their bellies! We have a ton of fun watching the fish feed, grow, and flourish in our aquaculture tanks.

After two years of work and development we have created a system that keeps our fish healthy and stable for the most part. Like so many science projects we have created more questions than we have answered. Are we creating an environment for optimal fish growth rates? What feed or supplement will best meet the needs of our fish? How do salinity levels impact freshwater fish? How high do the ammonia, nitrate-nitrogen, and phosphate-phosphorus levels reach in our tanks? How does temperature impact growth rates of the fish in our systems? What plants would work well in conjunction with our current aquaculture environments?

Our goal this year is to find answers to some of the questions we have generated from this project. If you are looking for a fun and fascinating way to learn a variety of scientific principles then you should try your luck with aquaculture or aquaponics. It will challenge your Creeker knowledge in all sorts of ways you never imagined!



Creek Camps

Session I: June 24-29, 2012

Session II: July 8-13, 2012

Creek Camp is gearing up for another amazing summer in the French Creek watershed! Last year summer high school students from Western Pennsylvania, Philadelphia, Ohio, Chicago, New York City, and Costa Rica became Creekers for a week. The short list of their adventures includes analyzing creek water chemistry, kicking for macroinvertebrates, electroshocking fish, snorkeling for freshwater mussels, working together to lift BIG rocks to see hellbender salamanders, and canoeing French Creek. There's so much more!

If you are a 9th or 10th grade student... or know

Camper comments:

"Coming into the Creek Camp experience, I was sure I had already seen most of what would be offered there. Instead, I found that almost every activity was new, and I was amazed at how varied the activities were. Creek Camp showed me areas of ecology and conservation that I had never seen before, and so helped me to better understand the career choices I'll be making in my future. I couldn't have asked for a better experience."



NEW THIS YEAR!! Family Creek Camp arrives this July! Elementary/middle school students and their families (mom, dad, grandma, grandpa, aunt, uncle, etc.) can explore the wonders of nature and environmental science at their own residential camp! Live in Allegheny College's "green" residence hall with Creek Connections staff and counselors with activities and meals included. Activities take place both on campus and in local area creeks, including French

a 9th or 10th grade student... who hasn't attended Creek Camp, what are you waiting for? Don't miss out on an awesome experience! The week is filled with hands-on environmental science experiences led by Allegheny College professors and staff along with local environmental professionals. Each of them is passionate about their profession. Allegheny College students act as camp counselors living in the residence hall with the campers and participating alongside them in every activity.

Check out the campers' blog and camp photos on our website <http://creekconnections.allegheny.edu/creekcamp.html> then use the Application button to apply online NOW!

"I really enjoyed my time that I spent at Allegheny College this summer for Creek Camp. I loved living in the college dorms like you really would if you attended college there. I hope that it will supply me with some of what I need for my future career in the biology field. The camp really meant a lot to me and I am really glad I invested my time in it."

"It was a sweet experience. I really enjoyed it and especially meeting and spending time with friends from other countries. It was an awesome experience that I will remember for the rest of my life!"



Creek! Imagine spending time with other families... including families from Costa Rica... learning and enjoying the natural world with an all-inclusive package. There's so much to discover! And it's especially memorable when you're exploring as a family!

Family Creek Camp

July 15-19, 2012

<http://creekconnections.allegheny.edu/familycreekcamp.html>

Hermitage Green Team Creates Green Spaces on the School Campus

Considering the many environmental issues facing our planet today, we need people to feel connected to the natural world so they will become better stewards of the Earth. With children's access to the outdoors and the natural world becoming increasingly limited or non-existent, schools - where children spend 30-35 hours per week, may be the best opportunity to reconnect children with the natural world and create a future generation that values and preserves nature.

Since the Hermitage Green Team is an environmental service organization, they are working to create new "green spaces" on the school campus and maintain current ones, including the Hickory Hollow Nature Trail and Pine Hollow Run stream. The students work hard wood chipping the trail every fall and spring. They also monitor the stream and conduct clean ups each year. This year the Green Team is involved in three major projects, each at different stages.

A butterfly garden in the courtyard near the new Lonta Elementary addition is now completed. Money was donated for the project by a former teacher in honor of her parents and husband. The students researched appropriate plants to attract butterflies, helped with the design and worked during the summer to plant about \$750.00 worth of perennials. A wildflower seed mix was planted the year before; then the perennial border was added behind the benches this summer. The benches are made out of recycled plastic and were built by local Amish carpenters. The students also keep the area weeded and fill the two birdfeeders located there.

The Hermitage School District received a grant to turn the Artman Elementary courtyard into an outdoor classroom. A former Hermitage student, who owns a local landscaping business, helped with the design and construction of the courtyard. Green Team members worked during the summer and on weekends wheeling loads of topsoil and mulch into the courtyard. They recently planted about 400 bulbs in the courtyard. The area will be used by students in Grades K-3. Thanks to Creekers John and Katie for helping with the bulb planting!

The latest project, turning the high school courtyard into a garden area is in the planning phase. The new food service director is working with us on the "garden to table" concept. The plan is to create raised beds to plant vegetables and herbs that will be used in the school cafeteria. Berry bushes will also be planted. The home economics teacher is going to maintain a compost bin for scraps from the kitchen. An Eagle Scout candidate will be assisting with the project. Sean McKnight, a senior and Green Team member, will be working on the courtyard as part of his community service project for the JAWS (Japanese American Watershed Stewardship) program. He traveled to Japan last summer to participate in a watershed stewardship program with Japanese students. Sean plans to incorporate some ideas from Japanese gardens in the design.

We are excited to create Green Spaces for our students and teachers to enjoy. Hopefully the areas will be used for classes and also for areas to sit and enjoy the beauty of the natural world.

Our Bacterial Tests

By Noah Morus and Dillon Prus, Conneaut Lake Middle School

Have you ever wondered about the microscopic world around you? Have you ever even had the opportunity to look at micro organisms or other microscopic life? We have been blessed to have the opportunity to conduct these bacterial tests for our school. I hope this article will ultimately inform you on what we do, how we do it, and what bacteria is all about.

We chose to do these tests because we are fascinated by the microscopic world around us. We really wanted to see things that cannot be seen with the naked eye. It gives us a small window to a bigger world of mysterious life.

We start by taking 3ml of creek water from a bottle with a water dropper and insert it into the Easy-Gel© container. Then we pour the bottle of EasyGel© into a clear plastic petri dish then cover it immediately. We then repeat the process for a sample 'B'. After we have collected our 'B' sample, we incubate the petri dish in the incubator. After 24 hours, we take out our petri dishes and we can tell what kind of bacteria is present because of the color of the colonies that

appear inside the dish. We can then count the number of colonies for each type of bacteria, and by doing this we can figure out how much bacteria is in each sample.

These tests are more important than most people realize. It shows how clean or dirty a waterway is. Which then tells if a waterway is healthy or if it is safe for use or human consumption. If water contaminated with *E. coli* or other bacteria is consumed the user could become very sick or worse. With these tests we can see if that is possible in certain waterways. This can protect people from the things that they are unable to see.

We understand the importance of the job we have, as well as the golden opportunity we have to do these tests. It is a fairly simple test we do, because of Coliscan© and EasyGel©, but the results are always captivating. I highly recommend that people at least try doing this test, and be able to see these fascinating things.



Above: students from the Hermitage Green Team help transform the Artman Elementary School courtyard into an outdoor classroom. See previous page for article on this project.

Connect with

CREEK CONNECTIONS

Box 10, Allegheny College
520 North Main Street
Meadville, PA 16335

Phone: 814.332.5351

Fax: 814.332.2789

Email: creek@allegheny.edu

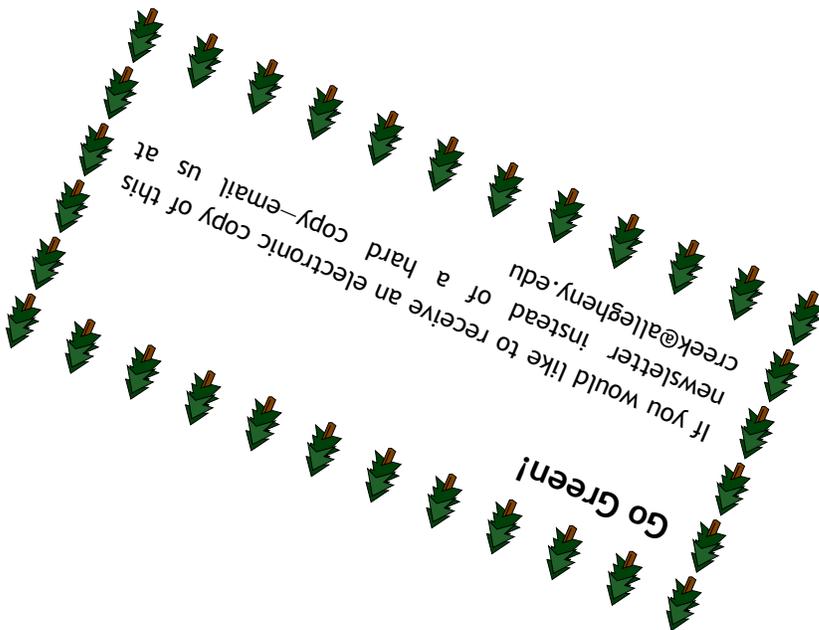
Web: <http://creekconnections.allegheny.edu>



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CREEK CONNECTIONS
Box 10, Allegheny College
520 North Main Street
Meadville, PA 16335

