

Kettle Creek Watershed Association News



Volume VII, Issue I

February 2006

KCWA and Trout Unlimited Celebrate Completion of Twomile Run Surface Reclamation and Robbins Hollow Projects

KCWA and Trout Unlimited hosted a special event on August 11, 2005 to celebrate and recognize the support of many partnering agencies, organizations, and individuals that have contributed to the successful completion of two major abandoned mine drainage abatement projects in the lower Kettle Creek watershed. The total cost of just over one million dollars for the two projects was funded in large part by the Growing Greener Grants Program, Office of Surface Mining Appalachian Clean Streams Initiative, the Richard King Mellon Foundation, and the National Fish and Wildlife Foundation.



Side-by-side vertical flow ponds containing mushroom compost and limestone treat mine drainage discharges in Robbins Hollow.

Trout Unlimited also presented awards to three individuals whose outstanding service and commitment to the cleanup of Kettle Creek abandoned mine drainage has helped to establish a successful Kettle Creek AMD program, one which has been lauded as a model for other similar efforts across the Commonwealth. John Larson, KCWA President, was presented with an award for "Watershed Leadership" and Dean "Jr" Mertz, KCWA Board Member and Chair of the Kettle Creek AMD Committee, was given an award for "Exemplary Volunteer Commitment." Robert

"Butch" Davey, retired District Forester for the DCNR Sprout District of Forestry, who unfortunately was unable to accept the award in person, was acknowledged for "Watershed Stewardship."



(Left) John Larson holds up his award for "Watershed Leadership." (Right) Amy Wolfe presents Dean "Jr" Mertz with an award for "Exemplary Volunteer Commitment."

The Twomile Run surface reclamation project incorporated regrading, addition of soil amendments, and establishment of vegetation on a 57-acre abandoned surface mine site. The main purpose of the project is to reduce the amount of mine drainage produced from this site, which has been a major source of pollution to Twomile Run. A collection system was installed down-grade from the surface reclamation site to collect the remaining discharges. Monitoring data already shows a significant decrease in both the flow and severity

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Joe Fiedor (DCNR Assistant State Forester - Field Operations) speaks on behalf of DCNR Secretary DiBerardinis and award-winner Robert "Butch" Davey, who could not be present to accept his award.

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Watershed Director
Amy Wolfe

Project Coordinator
Amidea Daniel

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Telephone
(570) 726-3118

Or write to the KCWA at:
KCWA, P.O. Box 317
Cross Fork, PA 17729

More information is also available at:
www.kettlecreek.org

Watershed Boundary Signs



Kettle Creek watershed Association board members John Larson, Lou Hoy and LHU Fly Fishing Club members Josh Day, Dillon Vallion, and Jacob Day (left to right) stand by the sign they erected at the top of Tamarack Mountain on Route 144.

To date, two out of five watershed boundary signs have been placed within the Kettle Creek watershed. These signs will assist with the outreach efforts of the KCWA by allowing all who travel through the Kettle Creek watershed to recognize the watershed boundaries, give folks a sense of the size of the watershed when they travel from one end to the other (it is nearly 42 miles in driving distance from Westport to Germania), and to associate local geographical features as being unique to the Kettle Creek watershed. Additionally, the signs will also put into perspective that although you may be at the top of a mountain and miles from Kettle Creek or its tributaries, you are still within the watershed.

The two signs that were placed with the assistance of Lock Haven University's Fly Fishing Club are located at the top of Tamarack Mountain and the other is located in the town of Westport. The remaining three will be placed, depending on the weather, in early spring this year in headwater areas of the watershed in Potter County. A grant from the Canaan Valley Institute provided funds for the signs. The signs were designed and created by Gair the Painter of Beech Creek, PA.

Kettle History Korner

Did you know.....1852: Kettle Creek's beauty and pureness once attracted a renowned violinist from Norway who claimed 11,144 acres, now Ole Bull State Park, as the New Norway. This individual's name was Ole (pronounced OH-lay) Bornemann Bull. He was an acclaimed violinist wherever he played. His nickname was "the prince of violinists." As the New York Herald exulted: "At the close of some of his wonderful cadences, the very musicians in the orchestra flung down their instruments and stamped and applauded like madmen."

Ole had purchased the land within Kettle Creek because of its resemblance to his homeland with huge stands of virgin timber, predominantly hemlock, covering each mountainside and the pure waters running through them. Thus was the beginning of his colony within the "New Norway." (photo credit - Potter County Historical Society)



Kettle Creek Trout In the Classroom Discovery Program



Students, parents, teachers and volunteers gather for a group picture after planting 200 native trees and shrubs in November.



Students figure out the proper number and species of native trees and shrubs before they design their very own riparian buffer planting.

Welcome to the Kettle Creek Trout In the Classroom Discovery Program, an environmental education program for elementary through high school students. The KCWA and Trout Unlimited are excited to offer this watershed based, interdisciplinary program for students within Renovo Elementary this year.

Throughout the year 5th grade students will raise trout from sac fry to fingerlings. The history, habitat, and lifecycle of trout are researched and studied both in and out of the classroom. At the end of the school year, the students will release the fingerlings into an approved coldwater stream.

The Trout In the Classroom program has been successfully implemented in Oregon, Washington, and New York, as well as internationally. This program will help teachers and

students reach Pennsylvania's education standards for math, science, environment/ecology, reading/writing, art, public speaking and research skills. Along with these skills students will become aware of their surrounding community, watersheds, and the important interrelationships between the two, along with career opportunities.

Kettle Creek Trout In the Classroom Discovery Program will help foster a conservation ethic within participating students and encourage them to develop an understanding of their surrounding communities and water resources. Come visit our program online at www.kcsd.k12.pa.us/renovo or kettlecreek.org.



Important Dates to Remember

West Branch Susquehanna Restoration Symposium II - Friday, May 12, 2006 at Penn Stater Conference Center Hotel in State College

4th Kettle Creek Landowner Stewardship Workshop - Saturday, May 20, 2006 at Deb's Place Restaurant in Cross Fork

Volunteer Tree Planting along Kettle - Saturday May 6, 2006

Kettle Creek Discovery Program Open House - Sunday, May 17, 2006 at Renovo Elementary School 7:00 p.m.

Release of Kettle Creek Trout In the Classroom Discovery Program Brook Trout - Monday, May 18, 2006 at Headgate Project on Kettle Creek

Financial support for this project (newsletter) is provided by the Dominion Foundation which is dedicated to the economic, physical and social health of the communities served by Dominion companies. This grant program was administered by the Western Pennsylvania Conservancy in commitment to its core mission of conserving Pennsylvania's diverse ecosystems through science-based strategy, leadership and collaboration. Learn more about the Western PA Conservancy at www.paconserve.org.

Volunteers Learn the “Ins and Outs” of Kettle Creek

On September 17th and 18th volunteers were introduced to habitat and stream functions within Kettle Creek. During the two day habitat training, provided by the United States Geological Survey, PA Fish and Boat Commission, KCWA, and Trout Unlimited volunteers learned how to measure a stream cross section, stream longitudinal profile and conduct a habitat assessment.

The monitoring, when completed, will show how the stream has responded to in-stream habitat structures and will help to answer questions such as these: Has it created a more narrow, deep stream channel? Has it provided good habitat for trout? How is the stream responding and why? Where are the pools and riffles? Are there highly erosive banks present? If so, why?



(Left) Rich Wykoff and Laurie Hendricks use level rods to help measure the stream longitudinal profile. (Right) John Larson uses the laser level to read the level rods for measuring stream longitudinal profiles and cross sections.



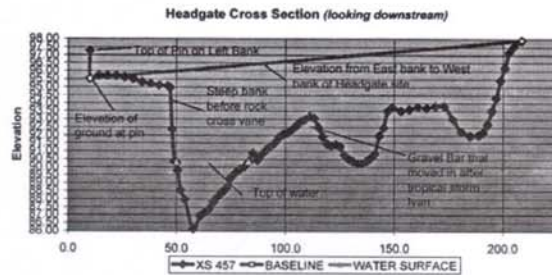
What is a stream cross section and longitudinal profile?

A stream cross section measures the width, depth, area, wetted perimeter and channel passage at one or many locations within a stretch of stream. All data collected through the cross section measurements can then be plotted onto a graph to visually show what the stream bottom looks like at that particular location. If you have permanent markers at each cross section, you will be able to return year after year to collect data and then compare your results to past years. This will demonstrate how the stream is responding to structures, storms and seasons by showing you how the sediment on the bottom has shifted from one side to the other or has been flushed downstream. You will also see whether the stream is either becoming more narrow and deep or wide and shallow.

A stream longitudinal profile demonstrates, over time, the way in which the stream's elevation changes over a given distance. Like the cross section data, the longitudinal profile can also be plotted onto a graph to visually show what the streambed looks like.

Objectives of monitoring:

Natural systems have rhythms that can be



difficult to describe. Some, like the seasonal rise and fall of water in a stream, can be measured simply. Others, like the lateral migration of channels across a floodplain, or changes in regional climate, may take decades or even lifetimes to occur. To accurately record such changes takes an extension of human memory through repeated measurement and scientific records. Placing a permanent, benchmarked reference site is the first step in this long-term effort. Correctly done, it will support further work over time. The other elements are a cross-section, a longitudinal profile, a pebble count, and a stream flow measurement. The object is to find the baseline of existing physical conditions for the stream channel. With this foundation of technically correct and comparable data, we can track changes in the character of the stream.

What is a stream habitat assessment?

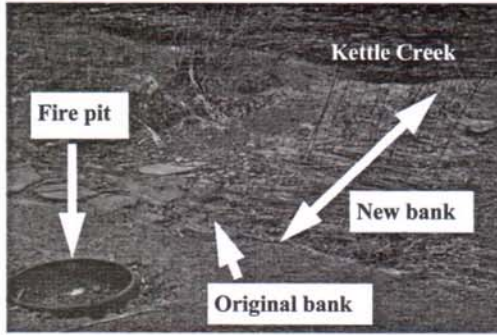
Changes that take place slowly have a way of escaping our attention unless the changes are dramatic in scope. How many of us remember our grandparents or other elders saying, "I remember what this stream looked like when I was a kid"? Even though these accounts are useful and entertaining, proper management of natural resources takes solid data and observations to document what's going on within a natural system. Even with these, it's still difficult to determine cause and effect within a complex natural system.

The stream habitat assessment is an all-encompassing survey of stream characteristics within a measured area (100 ft or so). During a survey, you look at everything from aquatic insects, water quality, in-stream vegetation, and in-stream woody debris to bank erosion.

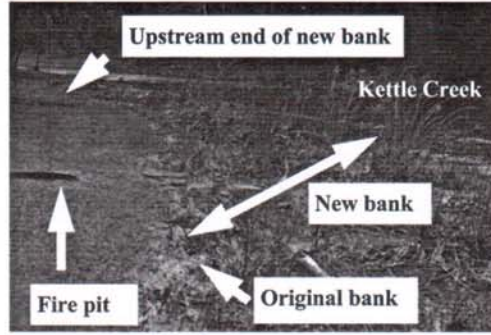
These observations need only be measured and recorded *once a year*, unless there is some significant land use change that may affect stream characteristics in a very short period of time. Examples of this might be a man-made stream channelization or a catastrophic natural event such as a flood. In such cases, a second stream habitat assessment would be valuable to document changes to the habitat from that event.

We are looking for volunteers interested in habitat and water quality monitoring! If you are interested, please contact Amidea Daniel for future monitoring dates.

Local Landowner Reaps the Benefits of Streamside Vegetation



Close-up view of new bank formation along Kettle Creek as a result of planting willows.



In this longitudinal view looking upstream, take notice of how much additional new bank has been created from just simply planting willows.

Two years ago a KCWA board member spoke with a landowner who was planning to cut down and remove willows next to the stream bank. The landowner wanted to see the stream, as we all do; however, the board member informed the landowner that he could trim the willows to his liking and still leave the root system intact for bank protection. Willows are an amazingly versatile shrub.

Taking this advice, the landowner trimmed the willows to the desired height and planted the pieces he trimmed. At that time the stream bank was only 2-3 feet from their fire pit. Two years later, the stream is now nearly 20 feet from the fire pit and the stream bank has

also gained an additional 300 feet in length. The willows help not only to prevent bank erosion, but they also help to create new stream bank by slowing down water flow and accumulating sediment. Ultimately these processes typically result in creating a deeper, narrower stream channel as well.

If you would like to learn more about planting willows and the benefits they provide to streamside property, please join the KCWA for one of our planting days! We always provide refreshments and we may have extra willow stakes available for you to plant at your home or camp.

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of chemistry from the remaining mine drainage. The next step is to continue monitoring these discharges for another year. A passive treatment system will then be designed based on two years of monitoring data and construction could begin as early as summer 2007.

The Robbins Hollow headwaters passive treatment system complex is expected to treat approximately one-third of the pollution that impacts Robbins Hollow, a tributary of Twomile Run. Examples of some of the passive treatment methods utilized include an anoxic limestone drain (ALD), vertical flow ponds, and open limestone beds. Monitoring data thus far reflects that the systems are effective at adding alkalinity, raising the pH, and removing metals such as aluminum and iron. Pending current investigations on the remaining mine drainage discharges further downstream in Robbins Hollow, it is

expected that one more passive treatment system will be needed to complete treatment for Robbins Hollow.



Event participants take a tour of the Robbins Hollow passive treatment system complex and listen as Kim Weaver, P.E., Hedin Environmental, explains how the systems function.








If you would like to learn more about passive treatment technology, check out "The Science of Acid Mine Drainage and Passive Treatment" on the DEP website at www.dep.state.pa.us. Just click on "DEP Keywords", scroll down and click on "Abandoned Mine(s)/Abandoned Mine Reclamation", and then scroll down to find the document under "Publications". Feel free to contact Amy Wolfe if you have specific questions about these projects.

Kettle Creek Watershed Association
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Address Correction Requested

Additional Project Updates

-  The Kettle Creek TU Chapter's "Heivly" stream habitat improvement project, located approximately 1/2 mile upstream of Hammersley Fork on Kettle Creek, was completed in October 2005. Volunteers planted a variety of 600 native trees and shrubs in November of 2006 along the stream bank.
-  Construction of a stream habitat improvement project on Cross Fork may begin as early as August 2006. The PA Fish and Boat Commission's Habitat Management Section will be working on this project.
-  The KCWA and Trout Unlimited are working with the DEP to pursue reining and reclamation in the Huling Branch watershed. Mining the coal that remains in areas that have already been surface mined and deep mined, in combination with reclamation and addition of alkaline materials such as limestone fines, will significantly improve water quality in Huling Branch - the single worst source of abandoned mine drainage in the lower Kettle Creek watershed.
-  Construction of a new and more effective collection system for the remaining abandoned mine drainage discharges in Robbins Hollow was completed last summer. The flow and water quality data collected from these discharges will be used to design the final passive treatment system in Robbins Hollow.
-  A number of field investigations are underway by Hedin Environmental to determine which of the remaining abandoned mine drainage discharges contribute a significant amount of acidity and metals to Twomile Run subwatershed and the west-side of the lower Kettle Creek watershed. Some discharges contribute negligible amounts of acidity and metals to the watershed and are so remote that the cost for treating them would greatly outweigh the benefits that could be gained from treatment. Field investigations will likely be completed this summer or early fall and by January 2007, Hedin Environmental will develop remediation recommendations, and in some instances conceptual or final treatment designs, for significant discharges.
-  The website continues to be updated with upcoming events, new projects and programs. Please visit the KCWA website to see what is new! www.kettlecreek.org
-  Kettle Creek abandoned mine drainage projects were featured on the WPSU-TV Penn State Public Broadcasting documentary, "Water: An Endangered Resource." Interviews with Dean Mertz, KCWA Board Member and AMD Committee Chair, and Amy Wolfe, Kettle Creek Watershed Director, were also included on the program, which aired on February 10. Educational modules from the show will be available free of charge to schools and environmental education programs. For more information on the show, the free educational modules, or purchasing a DVD of the show, visit www.wpsu.org/water.