

Kettle Creek Watershed Association News



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Cross Fork Brook Trout Habitat Project Volunteer Help Needed

After a week delay due to a significant rain event and high stream flows, construction on the Cross Fork Brook Trout Habitat Project started on September 11, 2006. At the first project site located on DCNR Susquehannock State Forest by the Bear Trap Lodge, multi-log vanes were installed to reduce the high velocity of water around a sharp 90-degree bend and decrease the sharp angle of the flows at the bend. A 215-ft mud sill was also constructed, along with the application of a biodegradable geotextile (coconut jute matting) and planting of willows to promote stabilization of the eroded streambank.



David Keller, PFBC, provides oversight to the Quehanna Boot Camp as they work on installing habitat structures.

David Keller of the PA Fish and Boat Commission Habitat Management Section provided the design for the project. Keller and staff also provided the onsite construction oversight and equipment operation, and crews from the Quehanna Boot Camp and KCWA provided volunteer labor. Members of the Bear Trap Lodge generously provided a lunch for work crews from the PA Fish and Boat Commission and KCWA on the first Friday of the project. More information on the funding support for this project is found on page 2.

There is still a lot that must be done for the overall Cross Fork Brook Trout Habitat Project and there is still some work that needs to be completed at the Bear Trap Lodge site, as well. While the PA Fish and Boat Commission can provide the equipment and its operators and construction oversight, all other project activities rely completely upon

volunteer coordination and labor. The assistance of the Quehanna Boot Camp will be sought again for this summer's upcoming work week, but their time at the project site is very limited for each day they can participate, so we really need all the help we can get to complete these projects.

The next work week is scheduled to begin this summer on Thursday, July 5 and will last through the weekend, with the last day scheduled for Wednesday, July 11. Depending upon availability of equipment and equipment operators beyond this timeframe, we will look to schedule at least one or two more work weeks in July, August, and/or September.

Please plan to join us for at least a day on Cross Fork between July 5 and July 11. Lunch will be provided and we'll guarantee you will have a fun day (or two or more!) of installing habitat structures and enjoying the company of like-minded folks who just simply want to give something back to the watershed in return for all the great outdoor recreation opportunities it provides us. We also invite other folks that are interested in learning more about instream habitat structures for fish habitat improvement in other watersheds.

Please check the KCWA website at www.kettlecreek.org for specifics on project locations and work times or contact Amy Wolfe at telephone number (570) 726-3118 or via email at awolfe@tu.org.



Completed mud sill and regraded and stabilized streambank shown here will provide significant habitat cover and reduce erosion.

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Please contact KCWA Board Chair, Mary Hirst, for more information on the KCWA and its projects. Mary can be reached by email at hirsteng@penn.com.

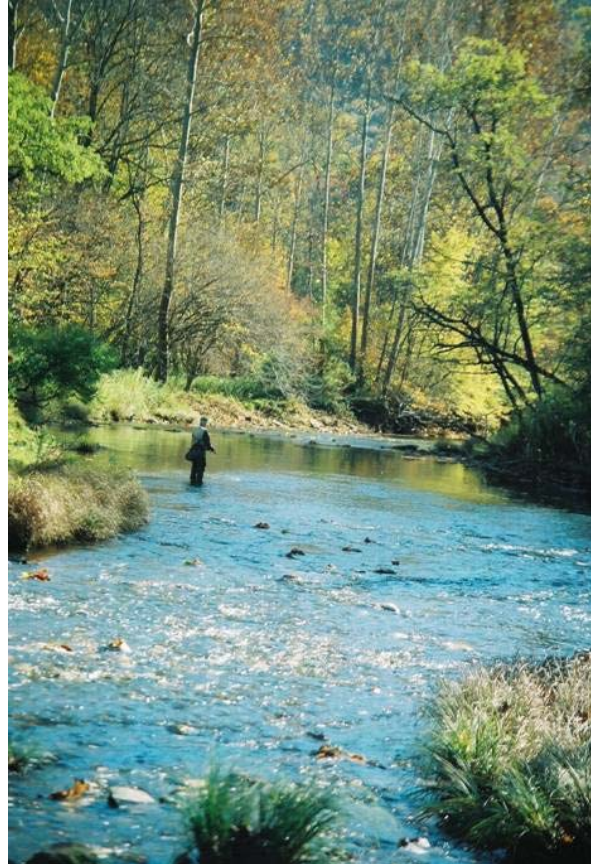
You may also contact Amy Wolfe, Director of Abandoned Mine Programs at Trout Unlimited, for more information specifically on Kettle Creek AMD Projects. Amy can be reached at awolfe@tu.org or (570) 726-3118.

Or write to the KCWA at:

KCWA, P.O. Box 317
Cross Fork, PA 17729

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

Where in Kettle?



Can you guess the location where this picture was taken?

Send guesses by July 4th to Mary Hirst at hirsteng@penn.com, or mail on a post card to Mary Hirst, 413 Ole Bull Road, Cross Fork PA 17729. Be as specific as possible.

The one closest to the location will receive a Kettle Creek related prize package. In case of a tie – winner will be drawn on July 5th at the first work day for the Cross Fork brook trout habitat project. If no one is close – prizes go to next newsletter contest!



Cross Fork Brook Trout Habitat Project Funding

A \$20,000 grant to Trout Unlimited, in partnership with the KCWA, was awarded by the U.S. Fish and Wildlife Service and the Fish America Foundation through the Eastern Brook Trout Joint Venture Initiative. This grant covers costs and delivery for habitat structure materials such as oak boards, rocks, and rebar.

This Cross Fork project is the first project in Pennsylvania to receive funding through the Eastern Brook Trout Joint Venture (EBTJV). The EBTJV is a geographically focused, locally driven, and scientifically based effort by public and private agencies and organizations to protect, re-

store and enhance aquatic habitat to the only trout native to much of the eastern United States. More information on the EBTJV can be found at www.brookie.org.

The project design, construction oversight, and equipment operation is provided as an in-kind service by the PA Fish and Boat Commission. The DCNR Bureau of Forestry Susquehannock District has allowed some trees to be cut on site for habitat devices at a negligible cost.

More information on the history of this Cross Fork project can be found on the KCWA website.

AMD Remediation Master Plans Completed

After three years of hard work gathering and analyzing data, Hedin Environmental completed the “Master Plans” for AMD remediation in lower Kettle Creek. The two plans, titled “Twomile Run Watershed AMD Remediation Master Plan” and “West Side of Lower Kettle Creek AMD Remediation Master Plan” were presented at the February 28 Kettle Creek AMD Committee meeting. The decision to prepare two separate plans is based on the fact that the AMD problems in the Twomile Run watershed are very different than those of the West side of lower Kettle Creek. Copies of the plans will be available on the KCWA website at www.kettlecreek.org or by contacting Amy Wolfe. Funding was provided by a pass-through grant from the DEP Bureau of Abandoned Mine Reclamation, the National Fish & Wildlife Foundation, and the R.K. Mellon Foundation.



Air rotary drill rig operated by Smith Drilling in the Twomile Run watershed.

Twomile Run Watershed

In the Twomile Run watershed, extensive surface mining has left a scarred landscape of barren spoils, dangerous highwalls, and polluted water. This broken land creates innumerable AMD seeps that degrade tributary streams. Careful sampling of Twomile Run and all known inputs of AMD revealed that polluted water was entering the stream as contaminated baseflow upstream of Macintosh Hollow. Geophysical data collected in the Airborne Remote Sensing Survey Project in 2002 with the Department of Energy's National Energy Technology Lab suggested that AMD is flowing from the mines north and

south of the ATV camping area (on the ridge between Middle and Huling Branches) directly to Twomile Run through the groundwater system. Four monitoring wells were installed that confirmed much of the groundwater system is contaminated by these mines.

The amount of contaminated baseflow entering Twomile Run would negate any benefits from actual treatment of the many seeps in the watershed. For the Twomile Run watershed, the best and only sustainable solution is to fix the source of the problem – which means reclaiming the surface mines and removing the isolated deep mines. A drilling program was conducted and the data was combined with historical drilling information to better understand the coal structure and calculate the amount of coal remaining in the watershed. Samples of spoils and overburden were collected to determine the amount of alkalinity required to neutralize the potential acidity in the rocks. All of the information learned about the coal, spoils and overburden was then used to create cost estimates for reclamation and remaining projects to improve water quality.

Topping the list of recommendations in Twomile Run is the construction of a passive treatment system for the Swamp Area discharges, which are the first inputs of AMD to Twomile Run. Completion of the Twomile Run surface reclamation project in 2005 has resulted in a 30-40% reduction in pollution from the Swamp Area, but treatment is still required. The KCWA and Trout Unlimited are seeking a grant from the Growing Greener Grant Program and other grant programs for the project. The estimated cost for the treatment system is \$700,000. *(continued on next page)*



Regrading, addition of organic and alkaline amendments, and establishment of vegetation at the Twomile Run surface reclamation project has resulted in a reduction of 30-40% of the AMD pollution from this area to Twomile Run.

(continued) AMD Remediation Master Plans Completed

Following the treatment of the Swamp Area discharges, it is recommended that the deep mine just north of Robbins Hollow be removed and the adjacent surface mines be reclaimed. Reclamation and remining in this area (referred to as Area 4 in the Master Plan) would serve as a test case before tackling the much larger reclamation and remining projects in other parts of Twomile Run. At the present time, pursuing this project is on hold as the DCNR Bureau of Forestry and DEP attempt to reach an agreement that would allow DEP to coordinate remining and reclamation activities on DCNR property, and to allow the DCNR's coal royalty revenue to be used to help fund the reclamation.

West Side of Lower Kettle Creek

In contrast to the heavily surface mined Twomile Run watershed, the mining performed on the west side of Kettle Creek was primarily underground. Here a large complex of deep mines exists between Duck Hollow and Hicks Hollow covering over 1,000 acres. As a result, many of the discharges on the west side emanate from deep mine entries or drains. Removing a deep mine of this size would be incredibly expensive, and although it

would greatly improve water quality, it is not a practical solution.

The primary recommendation for the west side is to address a deep mine pool that has formed behind a collapsed mine drain. This pool is believed to flood over 50 acres of the mine and contain 38 million gallons of very acidic water. If the dirt that has fallen into the mine drain were to wash out and release all of this water it would wipe out most, if not all, aquatic life in the lower 2.5 miles of Kettle Creek and impact the West Branch Susquehanna River. The proposed project entails providing a secondary outlet in the adjacent Milligan Run watershed by installing collection drains in collapsed mine entries. These collection systems would also serve to protect Kettle Creek from large flows of AMD. Collecting the water on the Milligan Run side allows for future treatment in the large flat area between Milligan Run and Crowley Hollow.

The KCWA and Trout Unlimited are seeking a grant from the Growing Greener Grant Program and other grant programs for the project. The estimated cost for the project is estimated at \$150,000.



Middle Branch Rehabilitation to Start Soon

In September 2006, a collection system was installed to collect and divert the highly variable and polluted R2 discharge. Site investigations had suggested there was a connection between the discharge and a collapsed drift entry upslope of the Middle Branch passive treatment system. Excavation of the collapsed drift revealed this was indeed the case and 6-8 feet of impounded water was found within the deep mine. The water was collected and relocated over the ridge to the Huling Branch watershed for two purposes: 1) To reduce this excessive loading of toxic AMD from the Middle Branch passive treatment system, and 2) To monitor the flow and use it as baseline data for evaluating future remining and reclamation efforts.

There is still a small flow from the R2 discharge that enters the Middle Branch system, but the water collection significantly decreased the flow by 60-80%. By the end of April, rehabilitation work on the system should be well underway to repair broken plumbing, replace limestone and compost to the upper two vertical flow ponds, convert the lower two limestone beds to vertical flow ponds by adding compost.



A glimpse into the past: Excavations in the Middle Branch watershed uncovered this deep mine entry. Black coal is visible on left side of picture and wooden posts show where the haulage way once existed.

This rehabilitation project is funded by grants from the Growing Greener Grant Program and the R.K. Mellon Foundation.

Volunteers Enjoy a Beautiful, Sunny Day Planting in the Watershed (Finally!)

On Sunday, April 22, 2007 a dozen volunteers planted over one-hundred Eastern white pine seedlings, swamp white oak seedlings, and willow stakes. Planting occurred along Cross Fork at the recently completed brook trout habitat project reach by Bear Trap Lodge and along Kettle Creek at the Headgate project.

It seemed that in past years, chilly and rainy days

were imminent when a tree planting was scheduled - so the sunny, warm weather was certainly a pleasant surprise for everyone this time.

Many thanks to each and every person for your hard work and commitment to enhancing this gorgeous part of Pennsylvania and ensuring it stays this way for many generations to come!



Kettle Creek Watershed Association
P.O. Box 317
Cross Fork, PA 17729

Address Correction Requested

KCWA Quarterly Membership Meeting Dates

Saturday, August 4, 2007

Saturday, November 3, 2007

Membership meetings are now held every three months on the first Saturday of the month. Meetings begin at 6:00 PM and are held at the Kettle Creek Hose Co. in Cross Fork. Check the website at www.kettlecreek.org for more information or changes to meeting dates and times.

Mark Your Calendar!

Thursday, July 5 through Wednesday, July 11:

Cross Fork Brook Trout Habitat Project Work Week

We will meet by 8:30 AM every morning in the parking lot by the DCNR Bureau of Forestry maintenance building in Cross Fork (by the Fire Hall).

Don't worry if you can't meet us in the morning;

just contact Amy Wolfe to find out where you can meet up with us on the project.

Lunch will be provided and free camping may be available at the nearby State Parks.

Contact Amy Wolfe for further information.

Amy can be reached at awolfe@tu.org or by calling (570) 726-3118.

