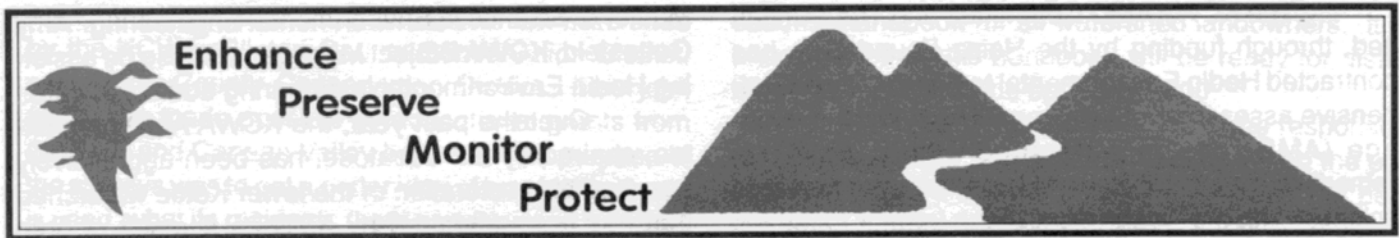


Kettle Creek Watershed Association News



Volume I, Issue 3

December 1999

Stream Improvement Project Completed

The KCWA, along with the donated time and services of the U.S. Fish and Wildlife Service (USFWS) and made possible through funding by the PA Fish and Boat Commission and DEP 104(b)(3) grant, has completed the stream improvement project on Kettle Creek along Route 144, just north of Cross Fork, Potter County. Dave Putnam, Fish and Wildlife Biologist for the USFWS, designed the project using fluvial geomorphological techniques. Fluvial geomorphology is the study of the complex responses of streamflow characteristics in relation to factors such as, but not limited to, the surrounding geology, erosion and deposition of streambed materials, and precipitation events.

This project consists of five rock vanes, four of which were specifically built as J-hooks whose primary purpose is to provide fish habitat and cover. The rock vanes were constructed of large rocks, between three and six feet in length, and were strategically placed on the downstream right side of the stream pointing upstream at an angle of twenty degrees from the bank. The purpose of the rock vanes is to improve this reach of the Kettle both by enhancing fish habitat and pre-

venting further erosion of the bank by redirecting the force of the flow away from the bank. In fact, after the rain that occurred over Thanksgiving that led to some nice "high" water (as compared to how low it has been during the summer and fall), it was very evident that as the water was flowing over the rocks, the faster water was indeed being directed away from the bank to flow in the middle of the channel as intended.



AMD SAP System Construction Begins

The passive acid mine drainage (AMD) treatment project on the Middle Branch in the Twomile Run subwatershed of lower Kettle Creek has finally started. The DEP Bureau of Abandoned Mine Reclamation (BAMR) designed the successive alkalinity producing (SAP) system to treat the AMD impaired waters of the Middle Branch, a main tributary to Twomile Run of Kettle Creek in Clinton County.

As its name implies, the SAP system is designed to produce alkalinity through successive processes by means of combining chemical and biological processes of limestone ponds and wetlands to treat AMD that has high acidity and elevated metal concentrations, particularly aluminum. One component of this SAP system that is unique is that one of the limestone beds will be treated with a microorganism called pyrolusite, an innovative technique developed by Drs. W. J. Vail and R. Riley of Frostburg State University in Mary-

land and Allegheny Mineral Abatement, Inc. The pyrolusite actually etches itself onto the limestone, thereby keeping the limestone active and preventing iron and aluminum precipitates from armoring the limestone. Another benefit of pyrolusite is that since the limestone is kept active, a high pH is maintained which is essential for the precipitation of manganese, typically a very difficult metal to precipitate out in AMD water. The other limestone bed will not be treated with pyrolusite in order to serve as a control to evaluate and compare the effectiveness of pyrolusite.

E.M. Brown, the company contracted by BAMR for the SAP system construction, is only expected to clear and prepare the project site this winter. Major construction could begin in the early spring if the weather cooperates. Project completion is due by fall of 2000.

AMD Consultant to Take Close Look at Kettle's AMD Problems

The KCWA AMD Committee and Trout Unlimited, through funding by the Heinz Foundation, has contracted Hedin Environmental to develop a comprehensive assessment of the impact of acid mine drainage (AMD) on the watershed and to design a remediation plan. Dr. Robert Hedin, a former research scientist with the Department of the Interior for seven years, focused his work largely on mine water characterization and passive treatment processes*. Since forming Hedin Environmental in 1994, Hedin has inspected hundreds of AMD discharges, has improved upon passive treatment techniques, and has prepared watershed-based AMD restoration projects. Hedin Environmental has been involved in the design and implementation of passive treatment systems and restoration plans throughout the state such as in the severely AMD impacted watershed of Slippery Rock Creek in Butler County, Wiconisco Creek of Schuykill and Dauphin Counties, and even all the way down to the Sequatchie Valley Coal Company remediation project in central Tennessee. Hedin's assistant will be Kim Weaver, a graduate of Princeton University with a

Master of Science in Environmental Engineering. Amy Gottesfeld, KCWA Project Manager, will also be assisting Hedin Environmental in gathering additional data.

Over the past year, the KCWA AMD committee, chaired by Bill Sabatose, has been aggressively pursuing the restoration of the lower Kettle watershed that has been impaired by AMD as a result of both unreclaimed surface mines and deep mines in the Twomile Run subwatershed and the west side or Bitumen side of Kettle Creek. Approximately the last six miles of Kettle Creek is affected by AMD and unable to sustain any populations of fish or aquatic insects. The most profound impact comes from Twomile Run that enters the Kettle about two miles before Kettle empties into the West Branch of the Susquehanna River at Westport. The passive treatment system that is being constructed on the Middle Branch, a tributary to Twomile Run, should lead to improved conditions on Twomile Run; however, there are still numerous discharges that will continue to pollute the water and these discharges will be the focus for these further remediation efforts.

*Passive treatment processes, such as the successive alkalinity producing (SAP) system, are those which remove AMD contaminants using exposure to air, limestone, wetlands, etc. Active treatment involves the addition of alkaline chemicals such as lime and ammonia to reduce acidity and remove metals. The major difference between passive and active treatment systems is that once constructed, a passive system requires negligible maintenance, whereas an active treatment system involves a great deal of time and money to continue the addition of chemicals necessary to keep the system functioning.

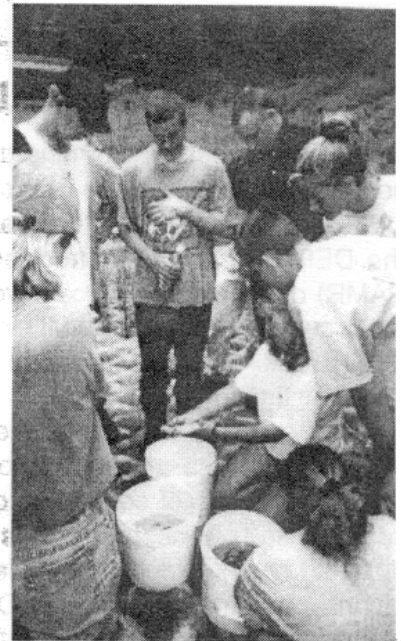
Kettle History Korner

Did you know... that over one hundred years ago the quiet little village of Cross Fork in Potter County was home to "two drug stores, three meat markets, five grocery stores, three millinery shops...five billiard rooms, four barber shops, three blacksmiths, four hotels, eight boarding houses, one opera house...120 dwelling houses...a YMCA...and a population of over 1500 inhabitants" (adapted from Potter County Historical Society Quarterly Bulletin No. 97). This once thriving town owed its existence to the Lackawanna Lumber Company that flourished in Cross Fork from 1884 to 1913. It is rather amazing when you sit back and try to envision all that activity when compared to the peace and tranquility found there these days. The picture below is of Cross Fork at the turn of the century.



Youth Aquatic Program Held At Ole Bull State Park

Amy Gottesfeld, KCWA Project Manager, along with Tim Morey, Environmental Education Specialist at Ole Bull State Park, coordinated an interpretative aquatics program in August for the Coudersport Trailblazers and Galeton Youth Group. The program introduced the youth to the collection and identification of fish and aquatic insects, water chemistry samples, and habitat assessments.



Clinton County Landowner Survey Results

This past August, over 2000 surveys were sent out to property owners in the Kettle Creek watershed by the KCWA, Clinton County Conservation District, and Potter County Conservation District. This joint effort was made possible by educational grants from the DEP and Canaan Valley Institute. The purpose of the surveys was to get a better idea of how Kettle Creek is used, what its residents (both part-time and full-time) thought about water quality in the Kettle, their interest in a volunteer monitoring program, and what type of information they would like to learn as a watershed-user. These results will be used to help establish a

volunteer monitoring program and in creating an educational handbook for all watershed landowners. It is anticipated that this handbook will be ready for distribution sometime in the spring of 2000.

The table below lists the top three responses for each question. Many of the questions had the potential to receive more than one answer so the percentages may be higher than 100%. The table below reflects only survey results from property owners in the Clinton County portion of the watershed. Potter County's results are not available at this time, but will be reported in the next newsletter.

Question	Answer	Percentage %
<i>How do you use Kettle Creek?</i>	Fishing	89
	Swimming	58
	Hunting	56
<i>How would you describe current water quality of the stream? (rate from excellent to poor)</i>	Good	35
	Very Good	29
	Fair	20
<i>Has water quality improved or declined over the past few years?</i>	Declined	38
	Not Sure	26
	Stayed Same	22
<i>Do you think it is necessary to establish a water quality monitoring program?</i>	Yes	74
	No	18
<i>What information should be collected in the monitoring program?</i>	pH	60
	Aquatic Insects	48
	Sedimentation	48
<i>What type of information do you need or want as a watershed user?</i>	Habitat Improvement	51
	Streambank Maintenance	42
	Monitoring Stream Health	42

DEP 104(b)(3) Grant Approval

The KCWA is proud to announce that the proposal for \$28,725 from the DEP 104(b)(3) grant program has been approved for the year 2000. This is a grant program initially funded through the Environmental Protection Agency in which money is allotted to the states to then be awarded on local regional or community levels for small (250,000 acres or less) watershed projects. Emphasis is placed on watershed projects that concern water quality, fish and wildlife habitat enhancement, water supply, wetlands creation and restoration, among others.

Over the past year, DEP 104(b)(3) funds made possible the stream assessment work that was accom-

plished during the summer (i.e. habitat evaluations, water chemistry and quality samples, fish surveys, aquatic insect surveys), the stream improvement project on Kettle Creek just north of Cross Fork, historical data collection, training of participants for the stream studies, and various public outreach programs.

This second year, the DEP 104(b)(3) will be used for the completion of the stream assessment data analysis, the continuation of stream monitoring, the collection of GIS data and assimilation of new and existing data into a workable GIS database, and public educational programs.

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

Address Correction Requested



What is the mission of the Kettle Creek Watershed Association?

The goal of the KCWA, a legal, non-profit organization organized under the laws of the Commonwealth of Pennsylvania, is to protect and enhance the Kettle Creek watershed and trout fishery through public and private partnerships that serve as a catalyst for long-term watershed conservation. Project objectives are to:

- develop a watershed management and conservation plan
- reclaim the lower Kettle Creek through treatment of acid mine drainage
- improve aquatic habitat throughout the watershed
- implement a community-based information and education program that will strengthen the existing watershed and sustain conservation efforts in the future



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KCWA Membership Information

Name _____
 Address _____
 City/State/Zip _____
 Phone _____
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Regular	\$5
Contributor	\$10
Stewardship	\$20
Conservationist	\$100
Other	\$



Please mail to KCWA, P.O. Box 317, Cross Fork, PA 17729. For more information e-mail Karen Labant at klabant@csrlink.net or call John Larson at (570) 923-0598.