

Monitoring Team

A team of BCWA volunteers, under leadership of David Pearson, Thom Fantaskey and Matt McTammany, maintains an active monitoring program, measuring the chemical quality of the water quarterly at 9 sites along the main stream and at three key sites above and below places where remediation is in progress: our headwaters remediation site and an agricultural site where the Union County Conservation District (UCCD) is working with a farmer to mitigate runoff into a tributary near Mifflinburg. The monitoring group will be having a refresher training session in mid-November. It is time for us to look over our equipment and to replenish the chemicals in our water quality kits. New volunteers are needed because our monitoring sites have increased. Volunteers will be trained and will work with an experienced person until they are confident enough to work alone. New volunteers should contact David Pearson at pearson@bucknell.edu for more information.

Buffalo Creek Watershed and River Trail

Planning has begun to improve public access to Buffalo Creek, and to improve the public's knowledge of the creek and its environs. We are investigating the possibility of erecting signs to indicate the boundary of the watershed and provide other information about Buffalo Creek at an appropriate location on the new ten-mile rail trail between Lewisburg and Mifflinburg.

Another initiative will improve canoe and kayak access to the creek at four or five points between Cowan and the mouth of the creek at the Susquehanna River. This longer-term initiative will include signage at the access points, improved access areas, and brochures indicating access points and the history of Buffalo Creek.

Maintaining the Headwaters Remediation Site

The acid remediation treatment ponds near the headwaters, completed in August 2009, are functioning well, bringing the acid levels back to within a normal range. With the support of the Foundation for Pennsylvania Watersheds and the Union County Conservation District, the BCWA is committed to maintaining the site for at least 25 years.

The two ponds, a retaining dam and control, as well as backup systems, are in place and functioning. At the four water sampling sites within the first three miles of stream below the ponds, water samples have been taken quarterly, with a clear difference in pH and alkalinity levels in samples taken prior to and after September 2009, when stream water began flowing through the ponds. When the ponds began filtering much of the headwaters, the pH increased in average from between 4 and 5, to just below 7 (generally, a pH of 5.5 and over will support and sustain life), and the alkalinity, or ability to buffer acid, has gone from an average of 5 to 22.

These measurements indicate that the stream headwaters are now conducive to life. BCWA is awaiting a thorough micro invertebrate study of the first 10 miles of the creek by the biology staff and students of Bucknell in spring of 2012. However, volunteer water testers have already noted large populations of frogs, tadpoles and dragonflies as well as increased populations of other stream insects in those first eight miles.

The Buffalo Creek Watershed covers a land area of 134 square miles in the heart of Union County. The main stem flows 28 miles from its origins in the Bald Eagle State Forest to its mouth at Lewisburg.

The BCWA has as its central purpose to encourage ecologically responsible stewardship of Buffalo Creek, its tributaries, and the environment within its watershed.

Restoring Wetland on Ard's Farm

Union County has had a considerable number of acres of wetlands filled in for agricultural and building purposes over the past century. As a result, the land has lost much of its ability to absorb rainfall, as well as to support a variety of wildlife. BCWA, Bucknell University and the Union County Conservation District have been studying the possibility of creating additional wetlands in the county, and have been fortunate to team up with Ard's Farm and the Conservation District, as well as the US Department of Agriculture and the Foundation for Pennsylvania Watersheds to begin the restoration of a wetland.

The wetland of up to two acres will be part of Ard's farm in the 98-acre watershed of Limestone Run, 75% of which is agricultural land. The wetland will be surrounded by a berm a yard high and will direct water flow in a serpentine motion to increase absorption and allow for a variety of habitats. An island will be constructed within the wetland for wildlife nesting. Surveying is now taking place, and full construction is planned for the spring.

The site of Ard's Farm is significant in that Allan Ard and his family have created an enterprise on Route 45 that includes a restaurant, store, children's playground, a corn maize in the fall, and they hold a number of community events there. Allan's expectation is that the wetland will be open to the public as a demonstration of what a wetland is and why it is important.

The Foundation for Pennsylvania Watersheds has contributed \$10,000; Ard's is applying for \$5,000 in USDA funding; and Bucknell University is providing technical expertise and student assistance in designing the wetland on the farm.

Stream Bank Fencing on Mennonite Farms

Over the past several months, BCWA has been meeting with members of the Groffdale Mennonite Conference to encourage the construction of stream-bank fences on their farms. Fencing the stream keeps animals out of the water and allows the growth of vegetation to form a buffer along the stream, thereby reducing the pollution by nitrogen and phosphorus from animal manure as well as the amount of sediment stirred up by animals in the stream.

The project, including personal meetings and mailings as well as an offer of private financing to cover construction costs, has so far met with little success. However, a number of farms have erected stream bank fencing on their own. One example can be seen when travelling Route 45, just east of Mifflinburg at the elk farm. This initiative and others on Beaver Run have taken place through the cooperation between the Union County Conservation District and several farmers in that area.

Impermeable Surfaces in Union County

Over time our area has seen an increase in the size and number of impermeable surfaces: hard surfaces that do not absorb rainfall, such as parking lots and streets and large roofs. These surfaces contribute to floods by sending the water more quickly to the main stream. BCWA and students from Bucknell University are studying impermeable surfaces in Union County with the help of the Union County GIS staff.

The Buffalo Creek Watershed covers portions of 7 townships and two boroughs in Union County. It is home to 15,000 people

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