

Northcentral Pennsylvania Conservancy

Stream Habitat Projects Well Underway

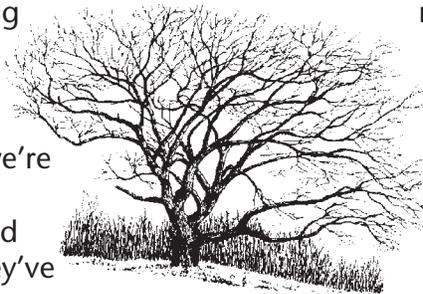
If you've read any of the last few issues of this newsletter, you know that NPC is partnering with Department of Environmental Protection (DEP) and Pennsylvania Fish & Boat Commission (PFBC) on a \$600,000 program to get in-stream restoration and habitat work done. PFBC's Habitat Division is providing the technical expertise to design the projects and oversee construction, while NPC is administering the grants, paying the bills, and working to keep all the frogs in the wheelbarrow (so to speak).

PFBC has been constructing in-stream structures like the ones we're installing for over 60 years. Some construction methods have changed with technology, and over time they've refined the materials they use. But, they still rely on logs, rock, rebar and sweat equity.

PFBC staff utilize a variety of structure designs. The type of structure depends on the stream conditions and site specific considerations. As Karl Lutz explains in the

Pennsylvania Fish and Boat Commission's *Habitat Improvement for Trout Streams*, "There is a science... to this process that should not be ignored...It is...important to understand how flowing water reacts to an improvement structure under normal and, most especially, higher flows..."

A simple structure that is used in many of the projects completed this summer is a multi-log vane deflector. A trench is dug into the stream bank. The two bottom logs are laid in the trench, side by side, and extend into the stream channel. The third log is placed on top the two, to form a pyramid. The logs are sloped downward into stream channel and point upstream. This helps direct stream flow toward the center of the stream. Holes are



Conserving working farms and forests



Back in the Spring, Dave Keller, Tyler Neimond, and Mark Sausser conducted site visits to begin design work on the projects. At this site along Lycoming Creek, representatives from the Lycoming Creek Sportsmen (the landowner) and Carey Entz with the Lycoming County Conservation District joined the PFBC staff for the visit.



Jason Petlock (in sunglasses) from the Bradford County Conservation District and his volunteer, Tyler, work to get pre-construction measurements for physical monitoring at the Wallis Run site.

drilled in the bottom two logs and rebar used to anchor them in place. Likewise, the top log is attached to the bottom logs with more rebar. The trench is filled back in, and the stream bank gently sloped. All disturbed surfaces are seeded and mulched.

Continued on next page

Stream Habitat Projects Well Underway *Continued from front page*

For program projects heavy equipment is used to dig trenches and lay logs. PFBC has gas powered drills to form holes for rebar, but the rebar is put in place with sledgehammers and human power. This is where volunteer labor is so important. Watershed association members, Trout Unlimited chapters, Lycoming College's Cleanwater Institute, the Sunbury Municipal Water Authority, Wal-Mart Distribution Center (Clearfield) and Quehanna Boot Camp, as well as landowners, have all provided volunteer labor to assist with various projects.

Dr. Mel Zimmerman's students spent time on projects on Mill Creek (Lycoming County), Wallis Run (Lycoming County), and Rapid Run (Union County). "As aquatic biologists, it's important for them to understand how stream dynamics impact aquatic habitat. Helping on these projects gave them an opportunity to see first hand how stream dynamics work and change as the material and forces are changed."

Another component to this program is to study how these structures impact the stream channel. Many people familiar with the structures will tell you that they not only improve fish habitat (their original intent), but they often help stabilize stream banks and stream beds. To test this perception, utilizing grant funding, NPC hired the Bradford County Conservation District to conduct pre-construction and post-construction physical



After the trench is created in the bank, and the log placed in the trench, volunteers use sledgehammers to pin the log with rebar. Here Lycoming College Cleanwater Institute interns pound the rebar in.



Construction provides an opportunity for education. At this site on Rapid Run (Union County) neighbors (the women on bank, and the gentleman on right) watch as Tyler Neimond drills holes for the rebar, and Keith Beamer gets ready to start rebar with sledgehammer.

assessments of several sites. During the assessment the teams measured the water depth in cross channel sections, and gathered other information to help them "map" the stream. The same information will be gathered post-construction to allow for a comparison of change.

If you are interested in seeing a project, there are two completed sites in publicly accessible areas. One is along Limestone Run in Lewisburg Area Recreation Park (15th Street and St. Mary's Street). The other is along Wallis Run, just west of the Cotner Farm Parking area on Wallis Run Road.

The Limestone Run project is in the Park's southeast corner, adjacent to the skate park and picnic pavilion. The best way to view it is to stand on the green footbridge. If you look upstream and downstream you'll see a log cross vane (a "V") in each direction. Log deflectors were also used, but may be more difficult to pick out.

Trey Casimir is on both the Lewisburg Borough Council (owner of the Park) and the Lewisburg Area Recreation Authority Board (known as LARA and manager of the Park). He noted that the project was, "a great opportunity for Lewisburg and LARA to continue improving our community's parks by simultaneously providing wildlife habitat, flood mitigation and a nature study area. It was also an impressive display of coordination between several different state agencies and NGOs."

Continued on page 3

Stream Habitat Projects Well Underway *Continued from page 2*



John Thomas (far left) and Mark Sausser (second from left) with the Pennsylvania Fish and Boat Commission worked with these Lycoming College students at Mill Run in Lycoming County.

This project was also a great outreach opportunity for the program. Tyler Neimond, PFBC staff, noted that, "a lot of kids who were at the Park to use the playground were more interested in watching the excavator." PFBC staff, Shanon Burkland Stamm (Union County Conservation District) and LARA staff all spent time talking to people about the project, and explaining what was taking place.

In addition to the log cross vanes and deflectors, the Lewisburg Area Recreation Authority (manager of the park) had funding to install bank full benches (to help slow the velocity of rising water), a muddsill, and plant the riparian buffer with a mix of native trees, grasses and wild flowers. They have also established a "no mow zone" along the stream to help keep vegetation on the bank, and prevent the bank from eroding (the root systems help hold soil in place, and the above ground vegetation helps filter run-off and slows the velocity of the run-off).

The project on Wallis Run is just over 4.8 miles from the intersection of Wallis Run Road and Route 973. This project site is on the Loyalsock State Forest. An old farm road provides a foot trail down to Wallis Run from the road. The project site starts just upstream from the ford across the stream and extends downstream over 400 feet. The rubble under your feet will help you to see how much the

stream channel has moved over time. Using a large muddsill, PFBC worked to stabilize the stream bank and slow water velocity.

This project was constructed the third week in July. In the fourth week of July, the area experienced a very heavy rainfall, and Loyalsock Creek to which Wallis Run is a tributary rose over three feet in just under four hours. While Wallis Run's water level did not rise that much, or that fast, the stream was still very high. The PFBC staff who oversaw the Wallis Run project were in the area for another project and stopped by to see how the muddsill and multi-log vanes were holding up. "We don't usually get to see the structures during high water events," explained Keith Beamer. "Normally we go back during low water, so we can examine structures and check their condition. It was great to see it with the high water and know that it was working just as designed."

As of August 31st 14 of 20 projects were complete. There are 3 scheduled for construction yet in 2009, and the other 3 are being held until 2010. If you want to learn more about these types of projects, plan to attend NPC's Clinton County Dinner. Dave Keller's program will provide more details and photos. If you are interested in volunteering on a project, there's still time! Call the NPC office for more info, 570-323-6222.



This project on Cold Stream (Centre County) is a great example of potential partnerships. PFBC, DEP, NPC, Phillipsburg Borough, local Trout Unlimited Chapter, Centre County Conservation District, and Quehanna Boot Camp all worked together to complete it.

Conservation & Stewardship Plan Complete

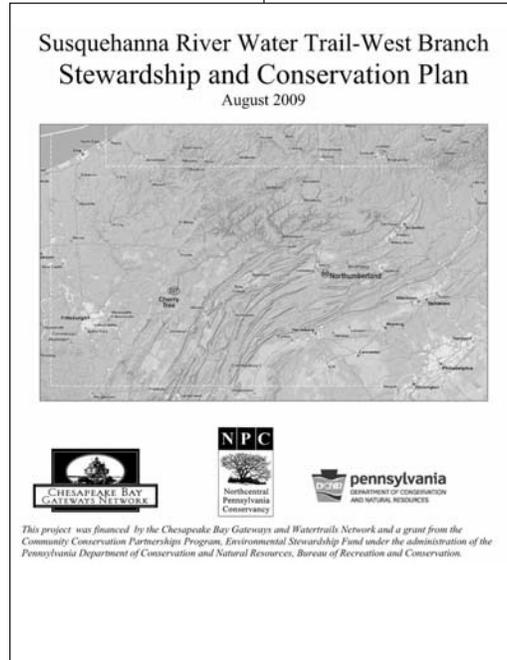
The Conservation and Stewardship Plan for the Susquehanna River Water Trail-West Branch is complete! This project was to further the development and sustainability of the Susquehanna River Water Trail-West Branch by creating a facility maintenance plan, identifying needs at existing access sites, and determining if additional access points are needed. A benchmark of existing conditions was created to serve as guidance for identifying trail and facility needs.

The Northcentral Pennsylvania Conservancy (NPC) gathered information and researched the Water Trail in a variety of ways. Staff visited every access site listed on the Water Trail Maps and Guide to evaluate its condition and document the amenities available. To engage the public and identify interests and concerns, a Steering Committee of individuals from throughout the corridor with knowledge of the river and an active interest in the Water Trail was formed.

Using the information, ideas, and observations gathered during the plan development process, the Plan addresses opportunities to maintain and

improve the water trail, and the water trail users' experience. As an example here are some of the needs that are identified:

- **River Access** – new accesses near population centers to provide shorter trip options as well as in areas where there are long distances between access points
 - **Restrooms** – many existing access points lack restrooms. It was noted that where appropriate (based on use, ability to monitor for vandalism and maintain, and river reach characteristics) and where the landowner was interested, restrooms should be added
 - **Camping** – when considering adding campsites, the increased maintenance needs to be discussed and evaluated. Designated campsites are lacking along the river, and the private campgrounds are few and far between.
 - **Portages** – There are four dam portages along the Water Trail. Improvements are needed to make these more user friendly for paddlers.
- The full plan, maps, as well as a summary will be posted to NPC's website, www.npcweb.org.



Eels, and Mussels, and Pine Creek, Oh My!

NPC will return to the Penn Wells Hotel on October 28, 2009 for this year's Tioga County Dinner. The cost will be \$20 per person with reservations due October 23.

Bill Lellis with the U. S. Geological Survey's Northern Appalachia Research Laboratory will be our featured speaker. Bill has been studying the eastern elliptio (mussel) and its relationship with American eels. Mussel larvae (known as glochidia) use a host fish before developing to their juvenile life stage. Bill's research demonstrates that the eastern elliptio uses the American eel as its host.

Working out of the Northern Appalachia Research Laboratory in Asaph, Bill's field work utilizes many local streams. While mussels are present in regional streams, they are all older, and do not appear to be reproducing. Will repatriation, or re-introduction, of the American eel allow reproduction? This past spring, Bill, in partnership with the local Audubon chapter, held the first eel release into Pine Creek. Come join us as we learn more about eels, mussels and Pine Creek! (for more information on Bill's research, check out the September issue of "Bay Journal" on-line at www.bayjournal.com).

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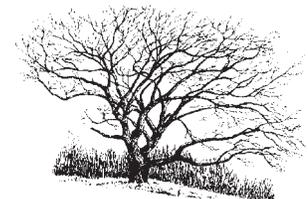
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Kayak With NPC

NPC paddled the West Branch Susquehanna from Montgomery to Watsonstown with Canoe Susquehanna on August 15. The group met in Watsonstown and learned more about the community's involvement in the Susquehanna River Water Trail-West Branch Stewardship and Conservation Plan. Bob Stoudt of Warrior Run Pathways (WRP) explained how WRP and members of Borough Council provided input for a case study to examine if and how a river access could be developed near the bridge. WRP is continuing to work with Council on an implementation strategy. (visit www.wrccweb.com for more information)

It was a great, warm day for paddling and playing in the river. Allan Quant with Canoe Susquehanna showed participants how to safely exit and re-enter their boat on the water and encouraged these "fire drills" to help keep people cool during the trip. During the stretch break one paddler found mussel shells. Dr. Mel Zimmerman was along and identified the mussels and explained their significance to the river eco-system.

With the higher than normal rainfall and river levels it was a quicker than normal paddle. Short or not, everyone had a good day on the river.



Clinton County Dinner Focusing on Restoration Projects



Interested in learning more about the stream restoration and fish habitat projects NPC has been working on with the Pennsylvania Fish and Boat Commission and Department of Environmental Protection? Then mark your calendar and plan to attend NPC's Clinton County Dinner!

Dave Keller, Pennsylvania Fish and Boat Commission Habitat Management Division, will explain the Pennsylvania Fish and Boat Commission's stream habitat program, and how the projects NPC's involved with fit. Dave's worked in this program for several years and takes the projects from design through construction.

We'll be at the Durrwachter Alumni Conference Center on the campus of Lock Haven University on October 13, 2009. Registration will be from 6:00pm until 6:30pm, with dinner beginning at 6:30pm. An NPC update and Dave's program will immediately follow dinner.

The cost is \$20 per person with reservations due by October 6, 2009. Make your reservations by calling the office at 570-323-6222.