

# The Batten Kill Watershed Alliance



*Coordinating, educating and promoting stewardship for the benefit of the Batten Kill Watershed in New York and Vermont.*

## Habitat Restoration and Conservation

This past fall, the Alliance completed the first phase of the Twin Rivers Project in Arlington, VT. Working with the Green Mountain National Forest (GMNF) and the Vermont Fish and Wildlife Department (VFWD), we have installed structures for cover and shelter that the scientific studies concluded were missing from the trout habitat along a half-mile reach. The structures consist of treetops, rootwads, and rocks on either side of the river; they will provide habitat for shelter, feeding, and spawning. We will complete the downstream phase in 2007. The Project is financed by the Orvis Company, the National Fish and Wildlife Foundation (NFWF), and GMNF (see page 3 for details).

The Alliance also supported the efforts of Clearwater Trout Unlimited on a similar project in Shushan, NY. And we completed a large bank stabilization project in Jackson, NY just upstream of that area (see page 2 for details).

As we plan for the future we will attempt to build outward from the projects described here. Habitat restoration may be most effective when a long stretch is improved, so we will plan to move upstream and downstream from project areas with additional installation of cover and shelter where possible in both NY and VT. In addition to cover and shelter, we will work to improve natural river dynamics and flood plain access for both the Batten Kill and its tributaries, with a focus on White Creek in both states.

We are awaiting a major geomorphic study (Phase 3) of the Batten Kill watershed in Vermont that may help to guide us in selecting additional areas of problem and opportunity. (Phase 1 and 2 geomorphic studies are available on our website.) We have had a Batten Kill Long Range Planning Meeting for Vermont, and we may be able to have a similar summit meeting for New York.

The main conservation initiative this year was the establishment of a small nursery of native riparian vegetation and continuing our ongoing planting for erosion control and buffer zones. A grant from the Vermont Watershed program financed the purchase of plants and materials for rooting cuttings. Extensive planting was done by the Executive Director, the River Stewards, and local student volunteers. We plan to continue this activity as frequently as possible.

### Final Batten Kill Trout Management Plan Keeps Focus on Restoration

In January, the VFWD approved the final **Batten Kill Trout Management Plan (2007-2012)**, and to our great relief, it does not include the controversial stocking of sterile rainbow trout. The Alliance had opposed this aspect of the plan, since it would have undermined our ongoing efforts to improve the wild trout fishery. Stocking tends to result in further declines in a wild trout population, since stocked fish compete for already scarce habitat. The final plan includes significant habitat restoration initiatives to install the missing cover and shelter, to expand vegetated riparian buffer zones, and to improve natural river dynamics over the next six years. Now, we must all work together to take these investments in better habitat as far as we can, as fast as we can. The Twin Rivers Farm initiative is one such project which aims to restore habitat with the longer term goal of restoring the wild trout fishery (for details about this project, see page 3). One of the goals we share with other organizations such as Trout Unlimited is restoration of the Batten Kill as a wild trout fishery such that it is once again able to support a reasonable harvest. Full restoration of the wild trout fishery would likely be an important component in the recreational activity of the area, for both locals and visitors. To read the final VFWD Batten Kill Trout Management Plan (2007-2012) visit <http://www.vtfishandwildlife.com> or contact Ken Cox at #802.885.8828 or [Ken.Cox@state.vt.us](mailto:Ken.Cox@state.vt.us).

***From the Desk of the Executive Director***

Sitting at my desk, I look out the window and see the Batten Kill running chilly and fast. On frozen mornings like this the river ‘smokes’ or steams because the water is so much warmer than the air. This is due to significant flows of water into the river from the many springs. The springs are a large part of what make the river good for trout. This groundwater functions to make fluctuations in water temperature less extreme; it is cooler than the air in the summer and warmer in the winter. I visit certain springs throughout the year to observe the variations in flow. There is a spring in the bed of the Batten Kill at which you can sometimes actually see the water bubbling up out of the ground. Let us do our best not to take this astonishing natural system for granted. These springs are small everyday miracles: living water flowing out of the ground. Water, the basis of all life, and the lifeblood of the Batten Kill.



I promise you that in the coming year I will continue to do everything that I can to invest in the Batten Kill and its tributaries and the communities through which they flow. - Cynthia Browning, January 2007

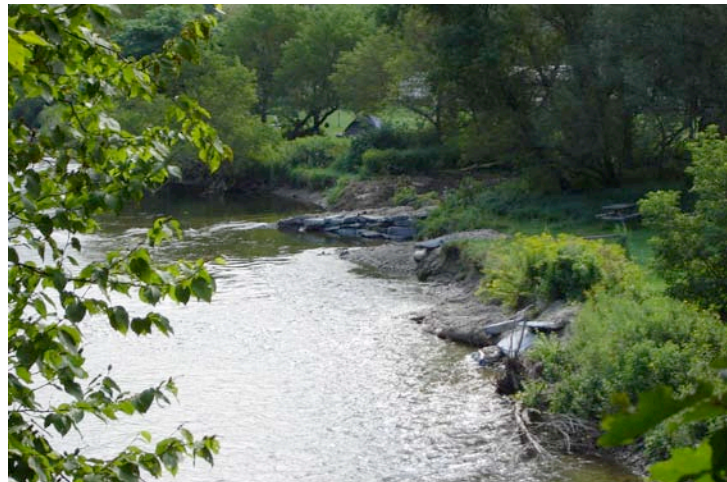
**Piekarz Project, Shushan, NY**

The Batten Kill Watershed Alliance completed a habitat improvement project on the river in New York this past August. The project was designed to protect a severely eroding bank on the property of the Battenkill River Sports and Campground. Landowners all along the river on the New York side are familiar with the habitat structures constructed by New York Department of Environmental Conservation dating from the 1940’s through the 1970’s. NYDEC constructed as many as two hundred structures during this period. Although designed utilizing the best knowledge of the period, most of these structures have failed and are, in some cases, degrading the river’s habitat.

The failed structure near the campground was a double wing dam. As with any dam their useful life is limited. At this location, the river dropped its bed load upstream of the structure, resulting in a river that was twice as wide as and much shallower than a non-impacted stretch of river. As a result, the banks were eroding and causing tons of silt to enter the river.

The Batten Kill Watershed Alliance partnered with the US Fish and Wildlife’s Service for design and implementation, New York State Department of Environmental Conservation for funding, and the Clearwater Chapter of Trout Unlimited for assistance in coordinating equipment and supplies. Habitat improvement projects such as this one are part of the Batten Kill Watershed Alliance and its partner’s larger plan to enhance the wild brown trout population in the watershed. As with the majority of New York’s Batten Kill, public fishing rights access is in place in this location.

Schwartz from the US Fish and Wildlife’s Partners for Wildlife program. Mr. Schwartz utilized natural stream channel design techniques to implement the restoration. Natural stream channel design is a technique that studies the river in its non-impacted condition. Structures utilizing this technique return the river to its ‘natural’ state in terms of depth and width. Natural stream channel structures are designed to work with the river which, when properly implemented, will outlive and outperform the outdated restoration techniques. This project involved building a Rosgen type J-hook vane. The vane was constructed out of rock and logs. Additional log vanes were installed to further protect the bank and add habitat for trout and other species. The structure will narrow and deepen the channel as well as direct current flows to the middle of the river, preventing further erosion. The banks were then planted with native species.



J-hook vanes such as those installed at the Piekarz Project are designed to narrow and deepen the channel, preventing further erosion.

Interested volunteers will note that additional planting will take place this spring at this and other sites along the river. If you know of a stream bank in the watershed that needs protection, please contact us to complete an evaluation. This project is part of a larger effort to improve habitat for the wild trout throughout the watershed. Aside from the major effort of the Twin Rivers project in Vermont, additional habitat improvements are being planned for the adjoining reach of river at Foster Farm.

The project was designed by Carl

- Greg Cuda

# Twin Rivers Farm Update

The first phase of the Twin Rivers Farm Batten Kill Habitat Restoration Project in West Arlington has been completed, and according to Steve Roy, of the USFS, Green Mountain National Forest: "The habitat work at the Twin Rivers site is doing its job of creating excellent cover and refuge for trout. The structures have withstood several high water events including one bankful (channel forming) event. The channel is changing as expected by forming depositional areas near the banks and scour holes around the structures."



**Got Wood?**



**Heavy Metal**



**Sticks and Stones**

Staff from Green Mountain National Forest and the Vermont Fish & Wildlife Department worked with equipment and operators from Dydo and Company of Dorset to create cover and shelter for the trout in the upstream section of the project. The structures can best be viewed from the base of the long hill between Benedict Crossing and the Covered Bridge on River Road in West Arlington. The difference between the amount of cover and shelter now in the project area and the absence of cover outside of it is quite striking. The structures make use of existing features: for instance, at a big overhanging sycamore, three tree rootwads and a log are clustered together and anchored into the bank.

The 20 project structures of the upstream section are concentrated in the pool areas that are most important to the over-yearling trout that are the population segment that has been most compromised. In this reach overall, the percentage of cover and shelter has been increased from 2% to 9%, but the percentage in the pools has been increased from 2% to 20%. The structures will interact with the river's current to create pools and overhangs that are important as cover and shelter for trout. This habitat feature is missing from the Batten Kill. It is important for protection from floods, ice, hot weather, and predators. About 20 more in-stream structures will be installed in the downstream section this fall. The final step will be planting native riparian trees and bushes for an expanded riparian buffer zone along the banks.

In addition to the 'large woody debris' structures along alternating sides of the river, large slate stones were installed on the floor of the pool areas of the riverbed to provide feeding stations for the trout. Trout are territorial, and tend to select and defend a particular feeding station at which they wait for the food that will come to them in the current or emerge from the riverbed. Large rocks provide useful shelter from the current as they wait and hunt.

This project is based on extensive scientific studies of the river by the Vermont Fish and Wildlife Department and the Green Mountain National Forest. These studies indicated that the Batten Kill does not provide adequate cover for wild trout. Young trout in particular need cover as protection from predators, shelter from floods, and shelter from heat and low water. The normal recruitment of debris clusters has been impeded by deforestation of the riparian zone, removal of woody debris from the channel, and straightening of streambeds throughout the watershed.

For complete details on this project, refer to the BKWA website: <http://www.BattenKillAlliance.org>



The new, open bottom culvert over Benedict Brook at River Road is designed to allow fish passage.

### **Benedict Brook Culvert Replacement**

This Town of Arlington project was the replacement of a pipe culvert that was too long and too steep for easy fish passage, and too small for flood waters. High water in Benedict Brook resulted in washouts and near washouts of River Road, creating a chronic repair burden for the Town, and causing excessive sedimentation in the Brook and the nearby Batten Kill. The new culvert is a larger open-bottom arch on concrete footings. The Brook is free to create a natural bed for the first time in 50 years, and there is no barrier to fish passage. This project was financed with Town of Arlington funds combined with funds from the Vermont Bridge & Culvert Program, the Federal Non-point Source Program, the Federal Wildlife Habitat Improvement Program, the Vermont Better Backroads Program, the FishAmerica Foundation, and the Trout & Salmon Foundation. The Alliance supported the project by donating plants for erosion control, and the Executive Director and the River Stewards worked on planting, along with a crew from the Vermont Youth Conservation Corps.

### **Outreach Projects**

The Alliance continued previous outreach programs and initiated new ones this past year. The River Stewards again patrolled the river in both NY and VT, gathering data, assisting river users, and working on planting projects. We will be evaluating the data and planning for the future of this program during the spring. The Alliance worked with students from Burr & Burton Academy and with campers from Camp Adventure to do river plantings and provide information about the river. And we created Batten Kill displays for the Georgi Museum in Shushan.

### **New and Improved**

As you may have noticed, we're working on updating the Batten Kill Watershed Alliance newsletter and website. Feel free to share your thoughts and let us know what you think of the new look. Submit your comments, questions, or suggestions via email or the comments form on the website.



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### **Batten Kill Watershed Alliance**

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