

# Batten Kill News



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**Inside this issue:**

<i>BK Investigations &amp; Assessment Activities</i>	2
<i>BK Special Regulation Evaluation Final Report</i>	3
<i>Celebrate the New Spring</i>	4
<i>FYI</i>	5
<i>Check Out These Websites</i>	6



*The MISSION of the Vermont Department of Fish and Wildlife is the conservation of fish, wildlife, and plants and their habitats for the people of Vermont. In order to accomplish this mission, the integrity, diversity, and vitality of all natural systems must be protected.*

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## ***Bi-State Watershed Coalition Up and Running***

This is a story about meetings. (Now I've got your attention!) But these meetings weren't the usual sort that people attend grudgingly, knowing they'd leave frustrated. These were more like politely conducted rallies, with lots of energy, ideas, and people from many different backgrounds with many different concerns. The success of the gatherings shouldn't have surprised any of us, since these were meetings of what's before long to become a bi-state Battenkill watershed coalition. The range of interests and the enthusiasm of those attending represent the interests and enthusiasms of the people who live in the watershed or work on behalf of this much-loved river.

The first meeting, held in October, was called to take advantage of excitement generated by a University of Vermont-sponsored workshop on the Kill held in Arlington the month before. Fifteen people from Vermont and New York came to discuss whether a watershed coalition is needed and if it is, what it should look like. It was easy to agree that a coalition was necessary, but as to what it should look like...

That issue was taken up at a November meeting in Shushan, NY, where 28 people — some from as far away as Ray Brook and Cortland, New York and Essex Junction, Vermont, others from as nearby as



*Panel discussion at September forum*

the farm a mile upriver — discussed how other watershed organizations around the Northeast were organized and funded. Afterward, a questionnaire was sent around listing the many ways in which those other organizations approach organizational structure, funding, group mission, and work plans. Questionnaire respondents were asked to rank those elements as they thought they should apply to our own fledgling Battenkill organization.

Almost everyone who responded believed that the new organization should be private non-profit administered by a paid staff and guided by a philosophy of partnership and consensus building. As for issues the organization might address, the highest ranked ranged from "what the public thinks is important" to "natural resources" to "data

*(continued on page 3)*

## Batten Kill Investigations and Assessment Activities

Last winter, when the Batten Kill Study Team was set up and met for the first time, one of its first actions it undertook was a review of a long list of possible factors that might be affecting the river's brown trout resource and causing the decline in its abundance through the 1980s and 90s. Many of these factors were raised by concerned anglers and other citizens during the several public meetings held over the past couple years as well as through letters and phone calls. Of these the study team identified 14 issues or factors which it began addressing last year (*see Batten Kill News, January 2000 issue*).

Even though much information on the Batten Kill's trout populations and sport fishery have been assembled and analyzed over the years, a quantitative assessment of the river in terms of habitat for trout has never been undertaken. To this end, the study team initiated investigations during 2000 and has planned additional work for the 2001 field season.

Much attention is now being directed at assessing current habitat conditions in the Batten Kill which in turn will be evaluated against parameters identified in the professional literature as being optimal for brown trout production and survival. Additionally, the Kill's habitat will be compared with conditions currently existing in other productive wild brown trout populations occurring in similar streams around Vermont.

During the 2000 field season, Vermont Fish & Wildlife and U.S. Forest Service fishery personnel initiated a detailed survey of the Kill's trout habitat (e.g., identifying and measuring pool and riffle habitats, trout cover, substrate composition, water

temperatures), river channel morphology (e.g., channel widths, water depths, bankfull and floodprone widths, stream bank erosion), and current condition and use of adjacent riparian lands. The survey began at the New York state line and proceeded upstream on the river mainstem. With one survey crew working on the river this past summer, 4.6 miles were inventoried. Data from the survey have been entered in a computerized database and processing of the data will begin this winter.

Plans are being made to have two survey crews on the river this coming summer picking up where the crew left off last year. An additional 10-12 miles of habitat is expected to be inventoried. By the end of the 2002 field season, it is hoped that 20+ miles of the mainstem will be completed.

To evaluate the effects of sediment transport and sedimentation on the quality of trout spawning substrates (gravels), sampling cages were set out this past fall for the second consecutive winter season in likely spawning habitats. The cages hold suitably-sized gravel simulating an egg pocket of a spawning redd. These are buried in the streambed and left in place over the winter corresponding to the egg incubation and early fry development period. In the spring at about the time the fry would emerge from the redds, the cages are removed and analyzed for the quantity of fine sediments trapped in them. Excessive sedimentation can reduce egg and fry survival. This technique is one way to assess whether sedimentation is affecting trout year class strength. Samples from last winter have been processed and now being analyzed.

Beginning this spring, water samples will be collected from several sites on the Batten Kill and

a number of reference streams located in other watersheds in the state. Reference streams are being selected on the basis of having biological and gross physical characteristics not unlike the Kill, such as they support wild, productive trout populations including brown trout, are not stocked, and are similar in size to the Kill. Water samples will be collected throughout the year and analyzed for such chemical parameters as total and dissolved phosphorus, nitrates-nitrites, alkalinity, magnesium, calcium, potassium, sodium, chloride, and pH.

In order to continue tracking changes in the trout populations, electrofishing surveys were resumed this past summer at the usual four index stations: two on the lower river in Arlington and one each in Manchester and East Dorset. Results from these sites were mixed. Catchable-size ( $\geq 6$  inches) brown trout abundance at both sampling sites on the lower river declined by about 30% from the 1997-98 means. However, young-of-the-year (YOY) browns were greater than the 1997-98 means at both sites and approximated the higher levels observed during the years 1988-93. At the Manchester and East Dorset index sites catchable-size brown trout numbers were similar to the 1998 estimates but were still down from the years 1984-93. Brown trout YOY abundance estimates were similar to those measured during the late 1990s. It is too early to know what, if any, influence the 2000 year class will have on brown trout population structure in subsequent years, but it and other new year classes will be closely monitored.

(continued from page 5)

**(Watershed Coalition, continued from page 1)**

collection” to “fisheries” to “on-the-ground project implementation” to “habitat” to “town involvement” to “water quality.” “Sprawl”, “farmland protection”, and “economic development” were considerably further down the list of priorities.

Twenty-four people attended the next meeting, in December, again at the Georgi Museum in Shushan. Referring occasionally to the questionnaire responses, the group discussed organizational structure, funding, and finally mission. We heard that “we need effective mechanisms to communicate, coordinate, support one another,” that “communities have to take responsibility for the stewardship of their watershed,” that “the new organization should strengthen, not weaken, existing groups,” that “we need to use our clout to fix riparian problems and other solutions will follow,” and many other suggestions.

So many others, that the larger group asked a smaller steering committee to help manage them. The steering committee was charged with drafting a mission statement, by-laws, and a draft work plan by

mid- to late Winter 2001. The mission statement was drafted just before the holidays (it’s a secret until the larger group acts on it). Goals and objectives are the topic of the next meeting scheduled for late January.

*So who are all these Battenkill advocates? They're people from the Battenkill Conservancy-NY; the Battenkill Watershed Council; the Bennington County Conservation District; the Bennington County Regional Commission; Senator James Jeffords' office; the Town of Manchester; the New York State Department of Environmental Conservation District 5; the Town of Salem, NY; Trout Unlimited (Vermont and New York chapters); the U.S. Fish & Wildlife Service Partners for Wildlife Program in Vermont and New York; the U.S. Forest Service; the Vermont Department of Fish & Wildlife; the Washington County Soil and Water Conservation District; and business owners and landowners from within the watershed on both sides of the state line.*

— Shelly Stiles, Bennington County Conservation District

## **Batten Kill Special Regulation Evaluation Final Report**

The long awaited final report, that evaluates the protected slot limit placed on two miles of the Batten Kill from 1994-1998, has been completed and is available at request from the Vermont Department of Fish & Wildlife, Springfield office.

The special regulation provided for the harvest of not more than three trout per angler per day, all trout 10-14 inches had to be released, and angling was restricted to the use of artificial flies and lures only. The rest of the river and tributaries continued under the state's general fishing regulation. In short, the special regulation did not increase the abundance of quality size (10-14") trout in the population or improve catch rates as it was intended to do. It is postulated that unidentified factors, affecting the brown trout population throughout the river mainstem, had a dominating influence over the population rendering the special regulation ineffective. As a consequence of the unexplained steadily declining brown trout resource, the Fish & Wildlife Department placed 20 miles of the lower river (Dufresne Pond dam to New York state line) under a “no-kill” regulation and investigations into the causes for the decline were begun and are in progress.



## Celebrate the New Spring!

The Bennington County Conservation District and the Southwestern Chapter of Trout Unlimited seek volunteers to plant two stream bank sites on the Batten Kill on **Saturday, April 28**. Both sites were recently restored using natural channel design techniques to forestall further bank erosion and enhance fish habitat.

Some 150 native shrubs will be planted at the Wilburs' Bridge site in Manchester. This 300-foot long project was completed last summer and made use of root wads and tree revetments to protect two sections of badly eroded river bank up- and downstream of the historic bridge.

The other site is in Arlington, nearly opposite "The Scales" pulloff on Route 313. It was restored in the Fall of 1999 using root wads, tree revetments, rock vanes, and stone rip-rap. About 50 seedling trees will be added to the plantings installed last spring.

Both projects were designed by the U.S. Forest Service, the U.S. Fish & Wildlife Service's

*Partners for Wildlife Program*, the Natural Resources Conservation Service, and the Vermont Department of Fish & Wildlife. Funding, cash contributions, and in-kind services, such as labor and excavator time, were provided by those organizations, and Burgess Bros. of Bennington; Central Vermont Public Service Corp.; the Southwest Chapter of Trout

Unlimited; Orvis Company, Inc.; volunteers; and the participating landowners. The projects were coordinated by the Bennington County Conservation District.

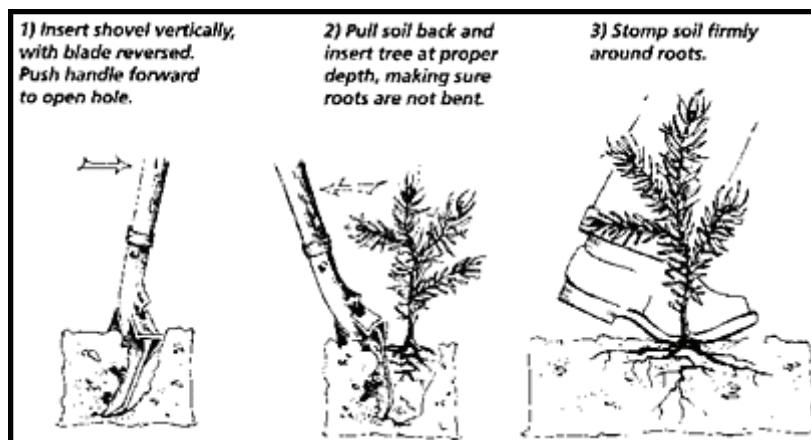
If you are interested in volunteering time and making an important contribution to the river, you should meet on April 28 at 9:00 AM in the parking area by the Route 313 bridge and Arlington Recreation Area. Volunteers will be divided between two teams to travel to either the Manchester site or Arlington site. Please dress accordingly



*Tree revetments at Wilburs' Bridge site*

for Vermont April weather conditions. Volunteers should have heavy work boots and gloves, a hat, rain gear, and of course insect repellent for those pesky blackflies. Each person is encouraged to bring a garden spade and/or shovel and bucket (5 gallon preferably). Only a heavy downpour will cancel this event!

For more information, call Shelly Stiles at the Bennington County Conservation District at 802-442-2275 or e-mail her at [stiles@together.net](mailto:stiles@together.net).



**FYI**

Each of the past issues of *Batten Kill News* featured two of the river's most prominent fish species, the brown trout and the brook trout. Because of the importance of these fishes to anglers, they are very familiar to most people who have spent time on Vermont streams. However, the Kill is ecologically a complex community of organisms that interrelate with one another on various levels and with their environment. These organisms encompass a wide range of species from microscopic bacteria, algae, protozoans, and zooplankton to macroinvertebrates (aquatic insects, crustaceans, molluscs) to higher plants inhabiting the stream and stream banks (riparian vegetation) and large vertebrates, including trout, minnows, suckers, ducks, mink, beaver, and of course humans.

But a community is much more than an assemblage of plants and animals that inhabit a common environment, it has an organizational structure comprised of different layers (trophic levels) which interact and are dependent on one another in terms of food and energy relationships. Alterations, whether natural or man caused, can have consequences for the environment, species, and overall ecological processes. Furthermore, these changes can affect the abundance, survival, and productivity of one or more species at any given time which in turn can cause a rippling effect through large parts of the community.

As for fishes that contribute to the larger Batten Kill community, 20 species have been identified as occurring in the watershed. Each of these has specific habitat requirements and, therefore, has

closer relationships with some species than others. Most fishes found in the watershed are native or endemic to it; others are not but were introduced intentionally or accidentally from other waters. Since most introductions occurred many years ago, their affect on the natural community is difficult to ascertain. The following species are present in the Batten Kill watershed. An asterisk indicates the species is not native to the system.

<i>Brown trout*</i>	<i>Longnose sucker</i>
<i>Brook trout</i>	<i>White sucker</i>
<i>Chain pickerel*</i>	<i>Brown bullhead</i>
<i>Lake chub</i>	<i>Trout-perch</i>
<i>Cutlips minnow</i>	<i>Rock bass*</i>
<i>Common shiner</i>	<i>Pumpkinseed</i>
<i>Pearl dace</i>	<i>Bluegill*</i>
<i>Golden shiner</i>	<i>Largemouth bass*</i>
<i>Blacknose dace</i>	<i>Tessellated darter</i>
<i>Longnose dace</i>	<i>Yellow perch*</i>
<i>Creek chub</i>	<i>Slimy sculpin</i>

The introduction of new species to a watershed, either through stocking streams or private ponds or release of fish from the bait bucket, is an ill advised practice and in most cases is illegal. Introduced species can reduce or even eliminate native fishes and other organisms by competing for habitat and food, causing excessive predation, disruption of natural processes, and/or introduction of pathogens and parasites. Ultimately this affects the ecology and health of our waters, our use and enjoyment of them (e.g., water quality, fisheries, and wildlife, and aesthetics), and is a cost to the public's investment to properly manage and protect these resources.

**(Assessment Activities, continued from page 2)**

As a side note, there appeared to be a greater presence of large browns in the population last summer in contrast with past years. This was observed at several electrofishing sites as well as was reported by several anglers. Less intraspecific competition between brown trout resulting from low population densities over the past years and the elimination of harvest under the new "no-kill" fishing regulation are reasonable explanations for the larger browns.

The team is also considering other study proposals, including pesticide sampling and analyses, evaluating river flows and patterns over the years, and resumption of creel survey. As these activities wrap up and the data are analyzed, results for each activity will be presented in a report or white paper. The first of these will be completed by the end of the year. Lastly, it merits mentioning that all of this work would be nearly impossible without the involvement and cooperation of state and federal natural resource agencies (Vermont Agency of Natural Resources, U.S. Forest Service-Green Mountain Forest), and the support of private conservation groups (such as Trout Unlimited), and concerned and actively involved citizens.



20+” Batten Kill brown,  
Fall 2000

## Check Out These Web Sites



**VT Agency of Natural Resources**  
[www.anr.state.vt.us](http://www.anr.state.vt.us)

**Friends of the Mad River (VT)**  
[www.friendsofthemadriver.com](http://www.friendsofthemadriver.com)

**White River Partnership (VT)**  
[www.epa.gov/owow/showcase/whiteriver](http://www.epa.gov/owow/showcase/whiteriver)

**Poultney-Mettowee Watershed Partnership (VY-NY)**  
[homepages.together.net/~pmnrcd/index.html](http://homepages.together.net/~pmnrcd/index.html)

**River Watch Network**  
[www.riverwatch.org](http://www.riverwatch.org)

**Buffer Strips: Common Sense Conservation**  
[www.nhq.ncrs.usda.gov/CCS/Buffers.html](http://www.nhq.ncrs.usda.gov/CCS/Buffers.html)

**Aldo Leopold**  
[www.aldoleopold.org](http://www.aldoleopold.org)  
[www.naturenet.com/alnc](http://www.naturenet.com/alnc)



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## BATTEN KILL NEWS

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