



Watershed Update

Missisquoi River Basin Association

Fall 2009

2009 Field Work

The volunteer workday season began on Saturday, April 18th at Wynn and Pauline Paradee's farm in the towns of Sheldon and Swanton. This project was MRBA's first tree planting workday in the Hungerford Brook watershed, and was along Route 105 across the road from the farmstead. The Hungerford Brook watershed includes 3 main branches that generally run north from Hard'ack Hill in St. Albans Town, also draining parts of Swanton, Fairfield, Sheldon and Highgate and joining the Missisquoi River just west and downstream of the dam and waterfalls in Highgate Center.

The tree and willow planting project was through the Conservation Reserve Enhancement Program (CREP) of USDA Natural Resources Conservation Service (NRCS), the Vermont Agency of Agriculture, and the Partners in Wildlife Program from the US Fish and Wildlife Service (USFWS). This year at the Paradee's Farm, 3 different parcels totaling 8.3 acres were planted with 2500 total stems and a combination of silver maple, red maple, black willow, box elder and livestakes from willow cuttings.

Approximately 15 volunteers came out and planted 375 trees. The maples were planted with the blue tubes around their stems. These are very noticeable when driving by and farmers at planting sites have gotten many inquiries. The tubes are 3 feet long and buried 3-4" into soil at the base of the tree stem and are intended to prevent voles and other rodents from eating soft tree bark and killing or damaging the young trees. We'll see how they

work – this year was their first year of widespread use in this area but they have been used successfully elsewhere in the Champlain Valley in previous years.

The second workday was Saturday, April 25th at farmland in Highgate owned by Green Mountain Dairy, run by brothers Brian and Bill Rowell. In 2008, the farm was recognized as Vermont Dairy Farm of the Year, so we were pleased to have a high profile farm implement this conservation work. The project included 3.4 acres along a tributary to the Rock River. This site was identified during project development following a Phase II Geomorphic Assessment in 2006 and 2007. It is upstream and adjacent another stream restoration

project being implemented this fall on a neighbor's property.

The project was funded by CREP and Partners in Wildlife and will be implemented over two years. This year 300 livestake willows and 270 northern white cedar were planted by 25 volunteers. While it was a hot day, good progress was made and all the trees and willows were planted by

1pm. Bridget Butler of the ECHO

Center, recorded some images and comments from the day for the "Voices of the Lake" project and can be viewed on-line.

The third workday of the season was Saturday, May 9th at the Leblanc Farm in Troy, along the Missisquoi River near the confluence of the Jay Branch and another small tributary. This CREP and Partners in Wildlife Project involved transplanting more than 200 trees, mostly silver and red maples, from portions of a buffer project that crossed a natural gas line utility right-of way (ROW). The trees would have been destroyed



Over 2,500 stems, protected with tubes, were planted at the Paradee farm.

during maintenance of the ROW and were replanted in new sections of buffer as well as filling in other existing portions of the buffer. The entire project enrolled 19.2 acres into CREP.

A group of around 15 volunteers were able to work through a nice mild morning until a light then steady rain ended the day around 1pm. This day well represented our initially dry spring transforming into the monsoon season that lasted through July! Some 120 additional trees were transplanted on Friday the 8th by Vermont Youth Conservation Corps (VYCC) crewmembers who had completed a Clean and Clear project early in Highgate Springs at Dan and Karen Fortin's farm along Carman Brook.

The fourth project of the year was July 23rd at the Kinney Farm in Berkshire, along a tributary to the Trout River. This site was a small streambank restoration effort that was identified through ongoing project development efforts in the Trout River watershed. This small stream that crosses under Route 118, had been an MRBA planting site in 1998 through a Partners in Wildlife project. The majority of this planting site looked great with 20+ feet tall willow shrubs, ash, oaks, maples and box elders. One bank had eroded over time and extended its outside meander bend as to undermine a pasture fence. This is where bank stabilization with brush rolls and willow cuttings took place.

A volunteer crew of six cut tree and brush branches, dragged them to the eroded bank and bundled them together with baling twine, making the brush rolls. They were then secured in layers, starting at the toe of the streambank, using cable and duck-bill anchors, covering the bare soil like tree revetments. This bioengineering method should protect against future erosion, capture sediments in the stream flow and more closely imitates natural stream bank conditions than would bank stabilization with heavy stone or rip-rap. The brush rolls were then further secured by pounding in live stakes from willows cut on site around and above the brush rolls. Wearing rain gear, heavy use of bug spray and splashing water while securing brush rolls helped keep mosquitoes somewhat at bay.



Volunteers cable brushrolls into place along Kinney Brook

The fifth project of the year was on August 12th at the Choiniere Farm in Highgate on a small tributary to the Rock River. As part of the Stabilized Outlet Demonstration Project funded by the Vermont Agency of Agriculture, a gully was releasing sediment into this tributary near the edge of a crop field. A drainage tile was located in this gully and was prone to future erosion at its outlet. Volunteers working along with a contractor were able to reshape the gully into a more smooth, U-shaped channel, line with geotextile fabric and cover with mid-sized stone, and place a small stone basin or energy dissipater at the outlet of the tile drain. This is the second site at the Choiniere Farm for this

project; they are one of 7 local farms that implemented stabilization projects at the outlets of tile drains and culverts that are at risk of erosion and sediment loss.

On September 1st, Dwight and Louise Callan were the farm owners and site hosts for a volunteer workday

on their Wanzer Brook Floodplain

Restoration Project in Fairfield. A farm road and improved driveway was removed from a floodplain area and relocated to cross a nearby smaller tributary. Eight volunteers seeded and mulched the exposed soil surface and the site has revegetated nicely. This site involved a number of partners including VT River Management Program, the Town of Fairfield, USF&WS, VT Agency of Agriculture and USDA NRCS. This site was identified during a Phase II Assessment of Wanzer Brook in 2005. An additional 3.5 acres of CREP and Partners in Wildlife buffer will be added to the existing stream buffer on this part of the farm with those trees and shrubs to be planted in the spring of 2010.

The next project was September 2nd at the residence of Tim Chapin and Winston Lewis. Another aspect of the Trout River Watershed Project was to identify residential sediment reduction projects. Tim and Winston were willing to host a workday and act as a demonstration site for efforts that landowners can take in watershed protection. Their site was chosen as their land

drains into West Hill Brook, a stream mostly in Montgomery, that has a steep drop from the Cold Hollow Mountains down to the valley floor along the Trout River. At the valley floor the brook reduces in grade and becomes an alluvial fan, depositing the transported sands, gravel and cobblestones upstream, under and downstream of the Route 118 bridge. This bridge has been the site of several ice jams, and flood damage to adjacent homes and was blocked this past February by large blocks of ice released during a thaw. The state has greatly limited the Town of Montgomery's ability to extract gravel from this site due to concerns about additional down cutting and erosion that occur following gravel removal. The work to educate landowners and contractors about sediment reduction practices is a long-term effort to decrease the supply of sediment entering West Hill Brook from upstream sources.

The specific practices implemented by a small group of volunteers included installing waterbars along a tractor road going down a slope. Young trees about 6 inches in width and 18 feet in length were laid across the slope and tractor road at a 60-degree angle. The bars are placed into a shallow trench and extend to either side of the tractor road. The partially buried tree acts as a berm to catch water running downhill or in ruts and diverts into the side and away from the road. The bars are intended to not be too high as to be difficult to drive or walk over. Waterbars are commonly used on logging roads and can be used in Better Backroads Projects. The second practice implemented was culvert outlet stabilization. The outfall of a culvert pipe was temporarily captured in buckets while a shallow basin was grubbed out with shovels and mattocks. A layer of geotextile fabric was placed over the bare soil and covered with rocks from on-site. This shallow pool created an energy dissipater that prevented scouring, erosion and the formation of a gully. Both practices utilized on-site materials and can be done at low cost by landowners or contractors.

The next volunteer workday was October 8th, back at the Choiniere Farm in Highgate. The educational display sign was installed for the Stabilized Outlet Demonstration Project. Volunteers used an auger to dig the deep

postholes, assembled the frame, and set the sign into holes filled by concrete and temporarily braced. Mountain View Auto Body and Sign Design of Enosburg Falls completed the graphics and printing for the sign. The sign on Tarte Road is placed near a stabilized outlet project completed in 2008, identifies the participating farms in Rock River watershed, details about the project and its partners.

A student volunteer workday was held on October 14th near West Hill Brook in Montgomery along Creamery Bridge Road. This was another project identified through the Trout River Watershed Project and it intended to reduce sediment loss from the roadside ditch, an active gully and an eroding slope. The Town of Montgomery was a key partner, hauling stone and operating a payloader and bucket to move materials to the specific locations. An ambitious group of 15 students from Todd Marlow's Richford High School Environmental Science class then did final placement of stones to create a series of check dams and line portions of the ditch and gully.

We were very fortunate to have a 50-degree day given the cold wet weather common this October and about 55 cubic yards of stone were utilized in



Volunteers install the first of 3 waterbars to divert water running down a tractor road in Montoomerv

these stabilization practices. This should reduce the input of sediment to West Hill Brook and protect the infrastructure of the town. The site was adjacent to the newly restored covered Creamery Road Bridge, well worth visiting this fall or when the road is re-opened in spring. A berm was also constructed to prevent roadside drainage from going over the top of an exposed bank, and directed this drainage into the existing stabilized ditch.

Additional guidance was provided by the VT Agency of Transportation in planning this project.

Thanks to the many landowners, agency partners, town officials and of course volunteers for their efforts this season. We look forward to other projects and welcome suggestions and groups interested to participate. There is still plenty to do.....

Brian Jerosse, MRBA Technical Advisor

Bugworks

In Spring 2009, Bugworks was presented to 226 students in 20 sessions. In addition to identifying bugs as a stream indicator, I also included some water chemistry and water testing since many of the water sources flowed through farmland. The good news is that where the students did water testing, there was no indication of excess nitrates or phosphates.



Students collect and study water bugs

We also focused on the importance of trees and their contribution to the detritavours and their role in the forested riparian buffers in our watershed. This was in conjunction and addition to John Little's approach last year relating stream health to fish populations focusing on trout and what trout eat.

Using the concept that without water bugs, trout would not survive and that water bugs indicate stream health was a wonderful introduction to the importance of water health and stream health and that we all are stewards of the land we live in. We don't really own the land, we just borrow it from future generations and it is important that we know how to care for it.

In Swanton, 80 excited students in four classes met in shifts to identify a variety of water bugs. We then learned some water chemistry and tested their water source, the water in the holding tanks and some water from the Lamoille watershed.

At Troy Elementary, one highlight of the collection activity was the capture and transport of a small Giant Water Bug. After warning the students to the painfulness of a bite, they quietly watched and the GWB ambushed another bug in the tank.

At Fairfield Elementary I worked with two classes and the focus was Stewards of the Land which tied

in nicely with the focus of caring for the watershed at all levels.

Enosburg Falls 4th graders celebrated 'Bug Day'. At the end of the day, we had investigated food chains, bug larval development, and characteristics of various water bugs.

Richford Elementary 6th grade students collected bugs, identified them, added them to the holding tanks and also checked dissolved oxygen, phosphate, nitrate, temperature and turbidity.

The Berkshire Elementary experience was focused to be enrichment during the last week of school. Even with the anticipation of summer vacation, the bugs held the students' interest with high levels of excitement.

This was a wonderful opportunity for me and I enjoyed myself as the students' enthusiasm rose.

Ruthanne Rust

Award for 'Bugworks'



On April 20, 2009, MRBA's Chair John Little was presented with the Governor's Award for Environmental Excellence and Pollution Prevention for 'Bugworks', the educational program John developed for grades 5-6 students. Governor Jim Douglas and Jonathan Wood, Secretary of the Agency of Natural Resources, presented John with his award in the House chamber of the Statehouse in Montpelier. Well done, John!!

'Wild and Scenic River' Study

The Wild and Scenic River Study for the Trout and upper Missisquoi Rivers formally commenced in September with the inaugural meeting of the locally-based Study Committee. The formation of

this Committee and the hiring of a local staff person to coordinate the Study are the first critical steps of the Study Process.

The Study Committee. The bulk of the Study Committee will be made up from local residents appointed by their boards of selectmen. As of the Committee's second meeting in October, thirteen local appointments had been confirmed – a great start! More appointments are still expected, including slots which need filling for Troy, North Troy and Jay, but a strong core group has been established. Additional members of the Committee include representatives from: VT Department of Environmental Conservation; VT Agency of Agriculture; Northwest Regional Planning Commission; VT Traditions Coalition; VT Federation of Sportsman's Clubs.

Hiring a Local Coordinator. At the October 29 Committee meeting in Westfield, a draft position description for the Local Study Coordinator was reviewed and discussed. This position, which would be similar to other local watershed coordinator positions throughout the state, would be part-time (16-20hrs/wk), and funded by the National Park Service at a proposed rate of \$20-25/hour. The position would be co-located with the MRBA in E. Berkshire and would be established as a contract employee of the MRBA. The Position Description is available through the MRBA, and interested parties should contact Cynthia Scott at 933-9009 or mrba@pshift.com.

What's Next. The next meeting of the Study Committee is planned for December 10, 7pm in the Richford Town Hall. With any luck, there will be progress and news regarding the local coordinator position. A presentation and discussion of the proposed re-activation of the Troy hydroelectric facility is also planned, with additional agenda items to be developed as the date draws near. Everyone welcome!

Jamie Fosburgh, National Park Service

Trout River Watershed Project

The Trout River Watershed Project is continuing to seek conservation and restoration projects that improve water quality, enhance wildlife habitat and protect the long-term geomorphic stability of the river channel, its tributaries and its adjacent infrastructure. Funding and oversight is provided by the VT Agency of Natural Resources, River Management Program, with Staci Pomeroy as the primary contact.

Most of the effort is in the town of Montgomery, with other portions of the watershed in the towns of Berkshire, Richford, Enosburg and Westford. The

effort attempts to utilize local knowledge of priority conservation and restoration sites and the results of a 2007 Phase II Geomorphic Assessment Report completed by the Johnson Company. Their report described the physical condition of a number of reaches of the Trout River and major tributaries, their risk of future adjustment and erosion, and listed a set of potential project opportunities.

The work in this season can best be divided into 1) planning and development for longer-term and larger-scale projects such as corridor easements, tree buffer plantings and floodplain

restoration, and 2) development and implementation of short-term projects capable of being completed by volunteers.

The effort towards planning and developing easements and buffers has involved gathering additional detail about priority sites, and contacting and visiting landowners to brainstorm conceptual practice and project designs. Three sites are being reviewed by agency partners as to their potential for getting funding and technical assistance through existing state and federal programs. Additional landowner contact and project development will continue through this fall.

The short-term projects have involved the Town of Montgomery, local residents near West Hill Brook

River Clean-up



Our annual Missisquoi River clean-up took place on June 20 between Richford and East Berkshire. Besides the usual haul of old tires and assorted trash, our volunteers netted quite an array of scrap metal. Thanks to the Town of Richford for disposing of our finds!

and the Kinney Farm in Berkshire. Volunteers were able to complete conservation and restoration practices at these locations. More detail can be found in the article on volunteer workdays. These short-term projects help reduce sediment loss on these smaller-scale sites while providing education on watershed protection practices to the volunteers and the public.

For additional information please contact Brian Jerose, the contracted Project Developer at 933-8336 or jerose@together.net.

Brian Jerose

Water Sampling

Our fifth year of water sampling started late this year due to some funding problems at the state level. For awhile we didn't even know if we would be able to send samples to be analyzed at the Larosa lab in Waterbury. Finally, at the beginning of July we got the OK to proceed and our wonderful volunteers jumped in (not literally), and started sampling from mid-July to mid-October. Many thanks to the following volunteers who collected samples and made sure that they were delivered to the MRBA office in East Berkshire before the end of the day.

On the western side of the watershed are: Mary Robinson, Win Harvey, Ray Giroux, Mike Manahan, Bob Johnson, Rebecca Moyer, Jean Hobkirk, Jim MacKenzie and Darlene Alcorn.

Our friends on the eastern side of the watershed are: Anne McKay, Sue Brassett, Alice Morrison, Stan Phaneuf, Rosemary Croizet, Jeff Parsons and Drew Woodmansee.

And our samples would still be here if we didn't have the help of Lilla Lumbra to transport them to the lab.



John Little demonstrates proper water sampling techniques to MRBA volunteers

dinner, to see old friends and learn more about our beautiful Missisquoi River.

Wendy Scott

Thank you also to the Center for Clean and Clear for analyzing the sample data. We look forward to hearing about the results on Sunday Nov.15, 4:00 pm at the Montgomery Emergency Services building on Route 242 in Montgomery Center.

Please come if you can for

Thank you very much to all our volunteers!
Have a great winter! We look forward to seeing you for the 2010 field season.

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