Notes from the Field

THE WATERSHED FORESTRY PARTNERSHIP NEWSLETTER

FALL 2022

INSIDE THIS ISSUE

Transitions at the Watershed Forestry Partnership.....1

Celebrating the CWA with VNRC.....1

Farewell to USFWS's Lachlin Robertson.....2

$60M in new agroforestry funding....3

Cover story *Re-seeding conservation in the Northeast Kingdom*.....4

Stream Wise celebrates pilot year success.....7

Process-based restoration on the Barton River.....9

Converting lawns to forest.....10

FNLC hosts "Shoreline Socials".....11

Adding large wood to rivers for forest health.....13

RE-SEEDING CONSERVATION IN THE NORTHEAST KINGDOM

Jess Colby, Riparian Lands & Forestry Projects Outreach Coordinator, NorthWoods Stewardship Center

It's early June. A deep morning fog blankets the Connecticut River and rain pelts the ground as the Riparian Lands crew and I arrive at one of our field sites in Maidstone, Vermont on the hunt for silver maple seeds. Normally when we are out collecting seed, the team is loaded down with numerous 5-gallon buckets, ladders, loppers, pruning tools, and a pole saw. Today, however, requires something extra: three Vermont Fish and Wildlife employees and their Jon-boat. My crew and I have scouted out this location over the past few days, testing different methods for how to collect the silver maple's samaras most efficiently.

Read more about this project on pages 4-6!

A NOTE FROM THE COORDINATOR ON CHANGES AT THE WATERSHED FORESTRY PARTNERSHIP

Alison Adams, Watershed Forestry Coord., Lake Champlain Sea Grant & UVM Extension

At the end of this month, I will be resigning from my position as the Watershed Forestry Partnership's first Coordinator to move on to a new professional adventure. I started as the Coordinator of the WFP in late March 2020, right as the pandemic shut everything down. I was tasked with building a brand new program at a moment when we were all learning how to transition all of our work online., and distracted by the global crisis besides. It was daunting, but I was welcomed to the already-vibrant community of riparian restoration practitioners with open arms. Thank you for sharing your knowledge and expertise with me, telling me about the challenges you face in your work and brainstorming solutions I could facilitate, and participating enthusiastically in trainings, webinars, working groups, and our annual meeting. This community wouldn't—and couldn't—be what it is without you.

My position will be posted on the UVM jobs page in the next few weeks. If you or someone you know might be interested in applying, please keep an eye out for it, and feel free to reach out to me with any questions or thoughts. The WFP has had a great first couple of years, and I can't wait to see where it goes next. Thank you for everything, and keep up your incredible work! ◆

CELEBRATING THE CLEAN WATER ACT WITH VNRC

October 18th marked the 50th Anniversary of the Clean Water Act. The Act was implemented in 1972, and transformed how water pollution is addressed across the country. This landmark legislation has formed the bedrock of our nation's water protection policy for the past 50 years, and will continue to guide our clean water policies going forward.

VNRC is celebrating the 50th anniversary with a series of events linked to our Clean Water campaign, including participating on a panel for the screening of the local film "No Other Lake" at the Essex theater, a presentation at the Association of Vermont Conservation Commissions this weekend titles "Intact Freshwater Systems Build Climate Resilience", and finally a Clean Water Policy webinar that will review how the CWA has worked to clean up waters in Vermont, highlight key actions taken over the last 50 years under the Clean Water Act to protect water quality, discuss where the implementation of the Clean Water Act has fallen short and what we need to do fulfill the stated goal of the Clean Water Act to restore, maintain and enhance the quality of all of our waters. VNRC invites you to join us for any and all of these events. Learn more at VNRC.org. ◆

A FAREWELL AND THANK-YOU TO USFWS EMPLOYEE LACHLIN ROBERTSON

Katie Kain, Fish & Wildlife Biologist, US Fish & Wildlife Service

Lachlin Robertson, US Fish & Wildlife Service

In April of 2022 the U.S. Fish & Wildlife Service welcomed Lachlin Robertson to the Partners for Fish and Wildlife team. Lachlin joined our Essex Junction office after spending a year as a wildlife technician at Kofa National Wildlife Refuge in Arizona. Lachlin was an indispensable member of our habitat team and helped to support crucial stewardship and maintenance of many riparian restoration projects over the last 6 months. You may have seen him hard at work in restoration areas, often wielding a string trimmer or a backpack sprayer to keep reed canary grass and bindweed away from our planted trees. Lachlin was able to visit 20 sites to support 40 acres of plantings in the summer of 2022, and also had the opportunity to meet many of our conservation partners along the way. Some of Lachlin's favorite memories from a season of Vermont field work include:

Lachlin and Miriam the wood turtle at a riparian restoration site

"One of my favorite days of the field season was when Katie and I accompanied Kiley Briggs from the Orianne Society on a wood turtle survey. Kiley found a wood turtle within the first 10 minutes, which I named Miriam. Holding Miriam was a moment I'll never forget as she was the most stunning turtle I've ever seen. Her deep orange color and intricately patterned shell captivated me. Katie later found a very old, three-legged wood turtle. Holding an animal who was thought to be three times my age was surreal.

Surveying for blue-winged and golden-winged warblers with Mark LaBarr from the Audubon Center was another peak memory for the season. I never had many work or study related bird experiences previously, so being with someone so passionate about the birds we were surveying gave me a whole other level of appreciation for them. Seeing the golden-winged warblers perched on branches singing their songs and swooping through the air was truly a treat.

Another memory that stands out was doing stem injection treatment on knotweed at a dam removal site. Seeing all the piles of knotweed that Katie and I treated made me really appreciate the work we do in restoring riparian areas. I'm grateful for the time I spent in the Partners for Fish and Wildlife program and for the amazing coworkers that I had the pleasure of working with."

Lachlin is departing in mid-October for New Jersey, where he will be working as a wildlife refuge specialist for Walkill River National Wildlife Refuge. Thank you, Lachlin! ◆

NEW AGROFORESTRY FUNDING SECURED - BASIN FARMS ELIGIBLE FOR NEW COST-SHARE FUNDING FOR TREES

In September 2022, historic investment in regenerative agriculture was announced by the USDA. The Nature Conservancy was awarded $60M to advance the accelerated scaling of agroforestry in the United States. Propagate is one of the partners on the grant, and will be leading in the Northeast region.

"This funding will catalyze significant private investments into the industry and increase farmers' incomes while simultaneously expanding carbon sequestration, soil health, biodiversity, and water quality." said Audrey Epp Schmidt, director of strategic partnerships at Propagate.

Through regionalized technical assistance and farmer outreach efforts, this project will transform 30,000 acres into agroforestry systems over the next five years, thus building a foundation for scaling agroforestry nationally.

Implementation will focus on the following three agroforestry practices: alley cropping, silvopasture, and windbreaks.

"Climate change is the greatest environmental challenge of our time, and farmers are on the frontlines," said Joe Fargione of The Nature Conservancy. "Putting more trees in agricultural landscapes is a win for farmers and a win for nature. It reduces greenhouse gas emissions by storing more carbon in the soil, and it helps farmers' bottom line by creating an expanded revenue stream."

To increase access to capital, this innovative project will provide $40 million in direct incentive payments to producers for tree planting, creating a national network of demonstration farms that will be used for education and outreach.

To give more farmers access to this growing and profitable agroforestry market, the partners will advance this work on multiple fronts, simultaneously giving farmers incentives and access to capital and technical support to plant trees and growing the market for their products to ensure their long-term success," said Epp Schmidt. "By increasing the demand for agroforestry commodities, this effort will cultivate new supply chains and develop markets for domestically produced climate-smart agroforestry commodities."

By combining the necessary incentives, outreach, and education through a distribution network of the leading NGOs, businesses, and researchers in the agroforestry space, project partners will increase capital investments in tree planting, thus increasing the supply of agroforestry commodities.

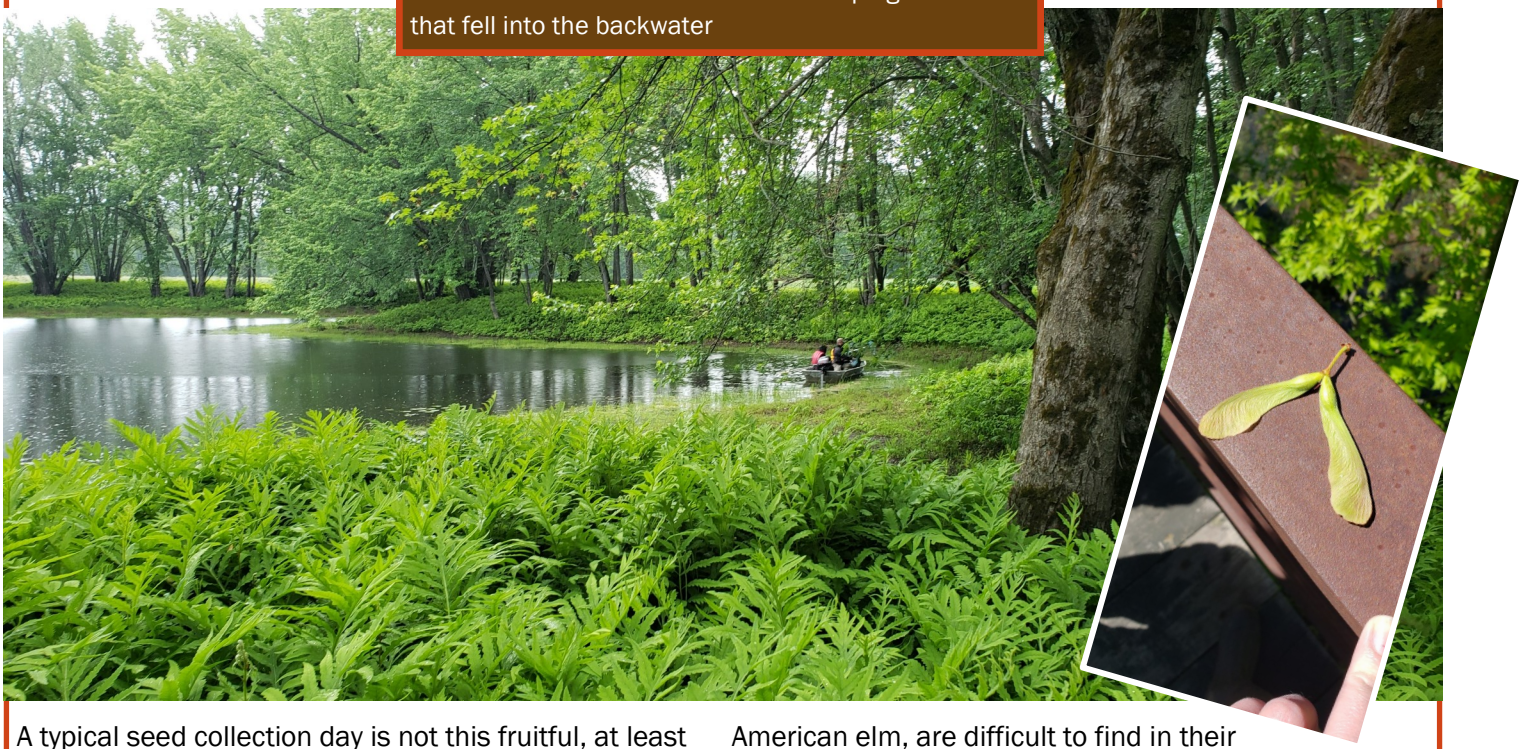
More information will be provided in early 2023 as the program launches. ◆

RE-SEEDING CONSERVATION IN THE NORTHEAST KINGDOM

Jess Colby, Riparian Lands and Forestry Projects Outreach Coordinator, NorthWoods

It's early June. A deep morning fog blankets the Connecticut River and rain pelts the ground as the Riparian Lands crew and I arrive at one of our field sites in Maidstone, Vermont on the hunt for silver maple seeds. Normally when we are out collecting seed, the team is loaded down with numerous 5-gallon buckets, ladders, loppers, pruning tools, and a pole saw. Today, however, requires something extra: three Vermont Fish and Wildlife employees and their Jon-boat. My crew and I have scouted out this location over the past few days, testing different methods for how to collect the silver maple's samaras most efficiently. Today's steady rain and a few days of wind have caused thousands of these samaras to fall into the middle of a backwater pond, making VFWD's boat a vital tool for today's collection efforts.

The crew splits up after hauling the boat out to the backwater. Three hop into the boat – armed with leaf skimming nets – while the other three scout along the edges of the backwater and its various channels for lower branches that might be reachable with the ladder or pole saw. With the recent rain, the seeds are wet and can't be easily shaken off their branches and down onto our awaiting tarps – a method we found useful during dry weather. Within a few short hours, today's crew has easily collected over 40 gallons of silver maple seed.



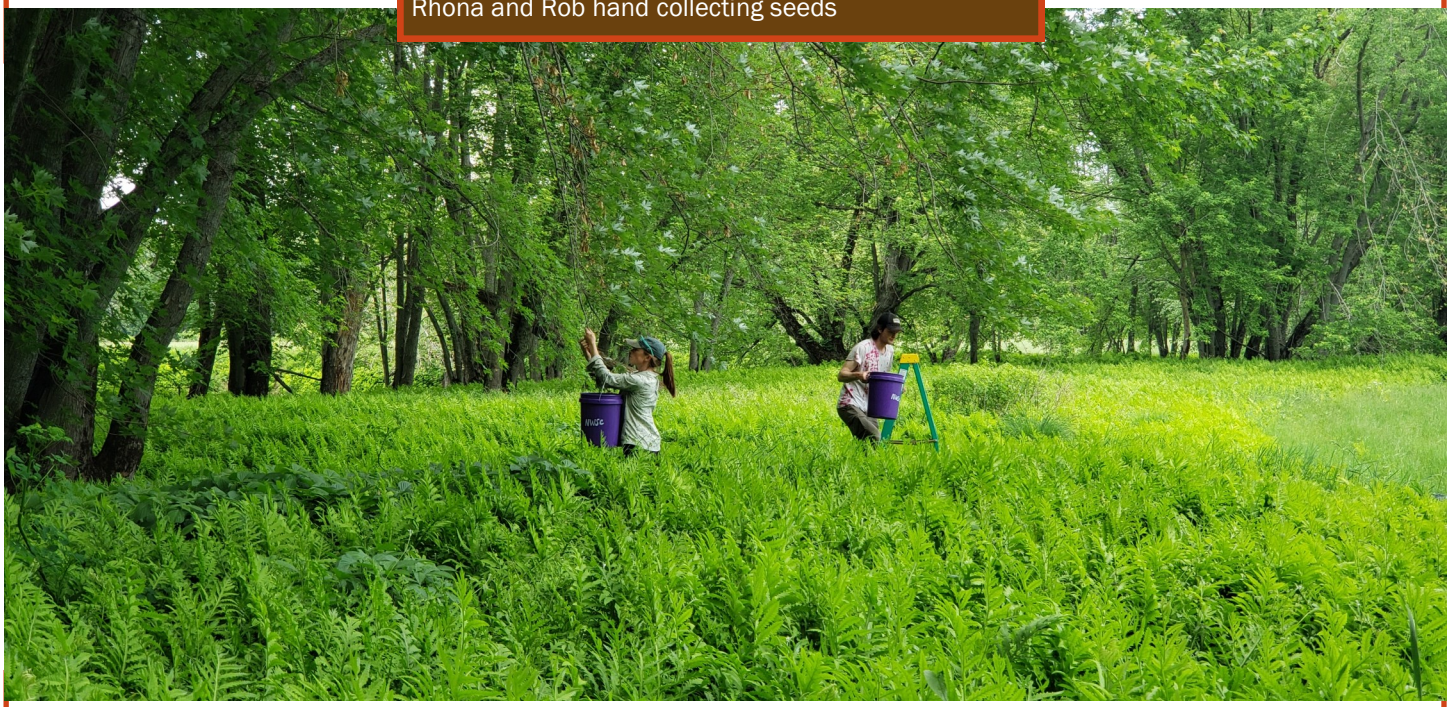
VT Fish & Wildlife in their Jon-boat scooping samaras that fell into the backwater

A typical seed collection day is not this fruitful, at least not yet. Finding good collection areas and figuring out the right time to gather from them have proven to be some of the more difficult parts of our seed collecting efforts. The boom and bust cycle on some mast tree species adds an element of unpredictability to some sites that we have found to be excellent producers in some years. Some species (like quaking aspen or eastern cottonwood) are dioecious, meaning each tree will develop either all male flowers or all female flowers, and only some will produce collectible seed. Some trees, like American elm, are difficult to find in their mature form due to Dutch Elm Disease. Weather may have hindered our spring collections this year. The stretch of 90 degree weather we got in early May seemed to kickstart seed dispersal for our willows and aspens, but many of the seeds were not fully formed as they didn't end up fluffing up when we processed them. We're learning with every setback though and this year is a vast improvement over last year's collection efforts.

As you may have guessed, it has been an *(cont.)*

(cont. from pg. 2)

extremely busy year for the Riparian Lands crew at the NorthWoods Stewardship Center. Our 2022 crew members, Robert Fitch and Rhona Thomson, have been primarily focused on collecting native tree and shrub seeds for riparian restoration projects. From their first collection days with me looking for quaking aspen to their last efforts looking for northern white cedar, these two now know all of Vermont's riparian species extremely well. They have spent many days, like that day in June, as part of an ongoing effort to collect and store seeds in partnership with Vermont Fish and Wildlife Department, The Nature Conservancy, Connecticut River Conservancy, and Intervale Conservation Nursery. Other major projects these two have been a part of include: tree planting, invasive species removal, building stone steps for river access and water quality, and weaving beaver dams for low-tech process-based restoration projects.



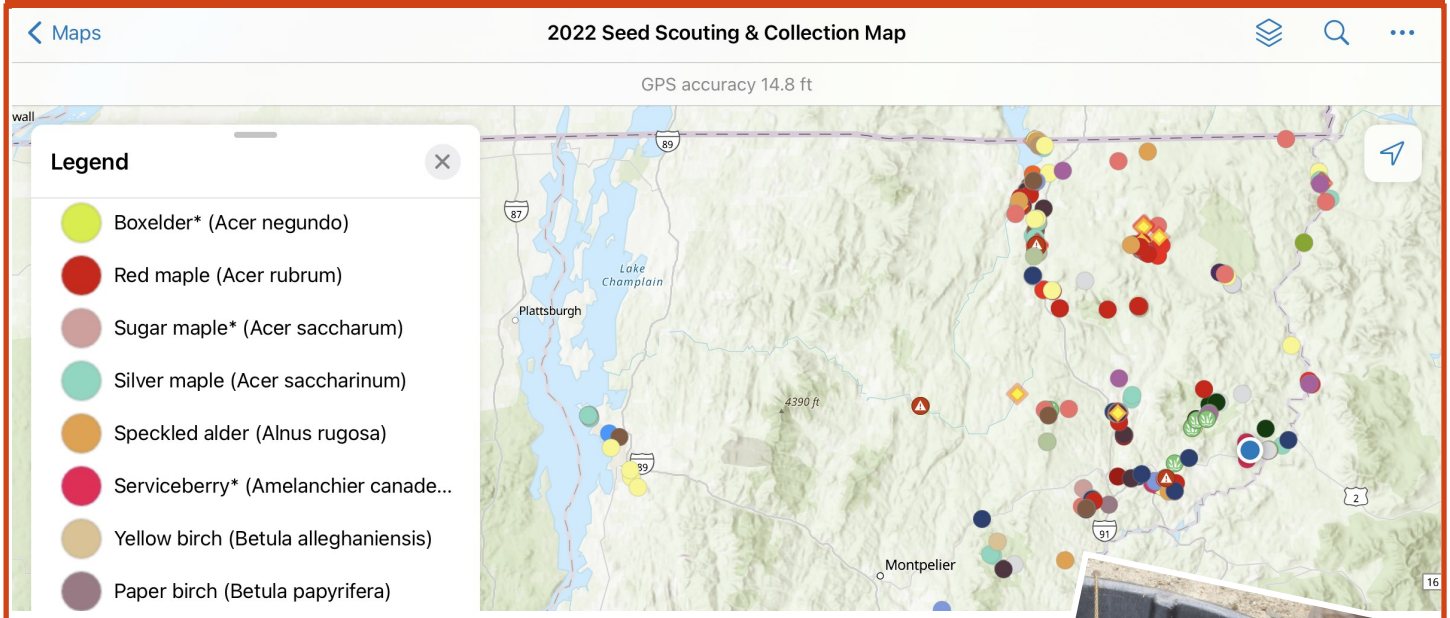
Rhona and Rob hand collecting seeds

This is the second year NorthWoods has hosted a Riparian Lands crew and to date we have collected over 360 gallons of seed from 30 different species. Our capacity was greatly increased this year as we expanded the crew's season from six weeks to nine months, spanning the peak spring and fall seed collecting periods. Their first month with us was spent on some intense training. They had a crash course on Vermont's tree and shrub species, tore through the U.S. Forest Service's Woody Plant Seed Manual for every snippet on our collection targets, they went and got their herbicide applicator licenses, and they took both Game of Logging and Wilderness First Aid. The hope was that this crew could be a semi-autonomous unit, and they far exceeded that expectation.

This year we also purchased our own Dybvig Seed Cleaner, which will hopefully help us improve viability during storage. Rob and Rhona have spent some time getting to know the machine and how to set

(cont.)

42 gallons of silver maple seed stacked up at the "Library" (where the crew stores seeds) to dry for a few days before handcasting onto an experimental hydroseeding site



Above: The crew's seed collection map on Field Maps

Right: Running chokecherry seeds through the Dybvig

(cont. from pg. 3)

it up to clean a variety of our summer and fall berry collection species – namely our dogwoods, cherries, and highbush cranberries. A majority of the seeds we collect will be used in a hydroseeder to revegetate several experimental sites found on State-owned lands. Larger seeds will be cast on the sites by hand. By working with our partners and seeking advice from experts in the field, we have been on the forefront of developing effective methods for collecting, cleaning, and storing seeds here in Vermont.

As we wrap up Rob and Rhona's season here, we plan to compile all we have learned. This entire season the crew and I have been using Field Maps to mark out locations for seed collecting and we have a large portion of the Northeast Kingdom mapped. We have also been taking notes throughout the year about the phenology of each of our target species (i.e. when flowers began forming, when seeds began to mature, when we collected and how much, and the best locations to check first.) All of this information will *hopefully* make next year's collection efforts that much easier and we'll be able to have more days where we gather seeds by the gallon in minutes like that rainy day in June. ◆

STREAM WISE CELEBRATES PILOT YEAR SUCCESS

Lauren Jenness, NEIWPCC Environmental Analyst, Lake Champlain Basin Program

First announced to the Watershed Forestry Partnership during this past annual spring meeting, Stream Wise is wrapping up its inaugural season with an eye toward 2023.

Stream Wise is a newly launched outreach and accreditation initiative designed to inform and incentivize rural and urban riparian private landowners across the Lake Champlain Basin to protect and plant native vegetated buffers on their properties to promote stream health and resiliency. Part awareness campaign and part assistance resource, the initiative's website streamwisechamplain.org provides tools, connections, messaging and resources for watershed organizations, conservation districts, and other water quality groups who partner with the program to work directly with their local stream communities in a new way and with a consistent message and brand.

This summer Friends of the Winooski River (FWR) and the Ausable River Association (AsRA) piloted the program using funding provided by the Lake Champlain Basin Program (LCBP). Support was also provided by the Vermont Fish & Wildlife Department.

Scottie received an award from FWR for her undisturbed, healthy buffer. Even though her property qualified for the award, Scottie appreciated the recommendations made in her Stream Wise report, such as placing stones under a drainpipe and leaving fallen trees in the stream. Photo by FWR.

Will Eldridge (VTFWD) talks with Nasmith Brook neighbors about stream restoration work at an event hosted by Friends of the Winooski River and Vermont Fish & Wildlife Department in September. Photo by LCBP.

In total 15 properties have been assessed using the Stream Wise Riparian Buffer Assessment Protocol, with 10 earning the Stream Wise Award!

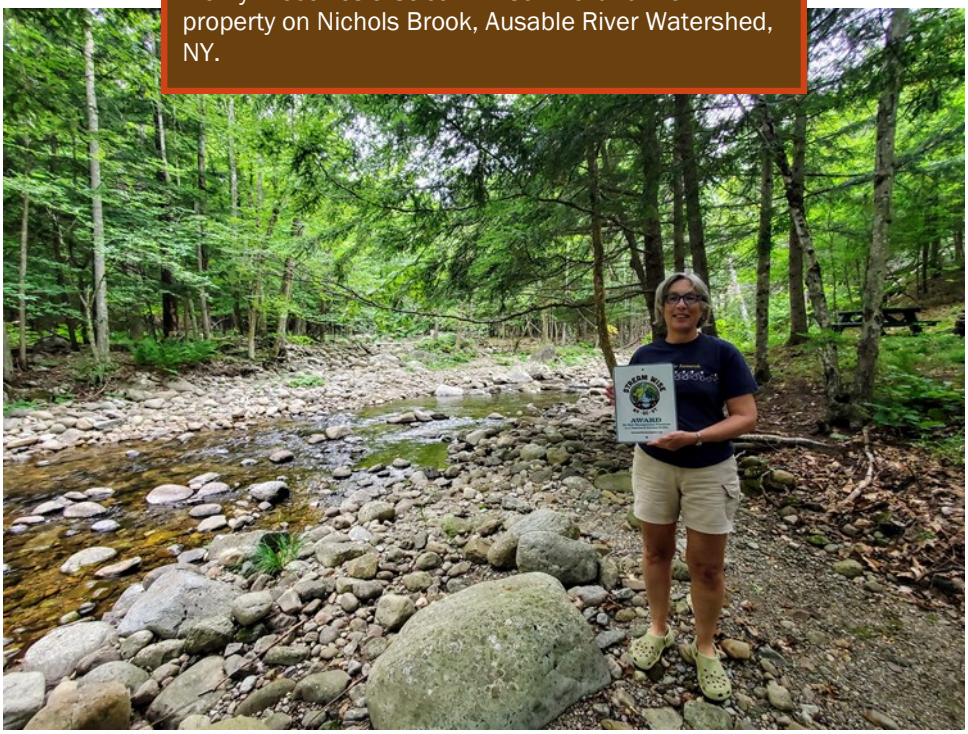
Friends of the Winooski River mentioned the program in one e-newsletter and received more interest in response than we had budget available for assessments. We now have interested landowners on a waiting list for 2023. The landowners we visited were proud of their land management, and hoping to learn both that they were already doing the right thing, and what more they could do. This pushed us to compile or improve resources that we can provide to these folks around native *(cont.)*

(cont. from pg. 6)

plant sourcing, live staking, stormwater management BMPs, and more. Both our staff and our landowners have benefitted from this new program.

Likewise, a lot of community excitement is building in the Ausable River watershed in NY around this project. Ausable River Association had fifteen landowners signed up for 2022 assessments. A community event celebrating Stream Wise awardees and providing additional information about the program was well attended and resulted in a waiting list for 2023 assessments.

Marilyn receives a Stream Wise Award for her property on Nichols Brook, Ausable River Watershed, NY.

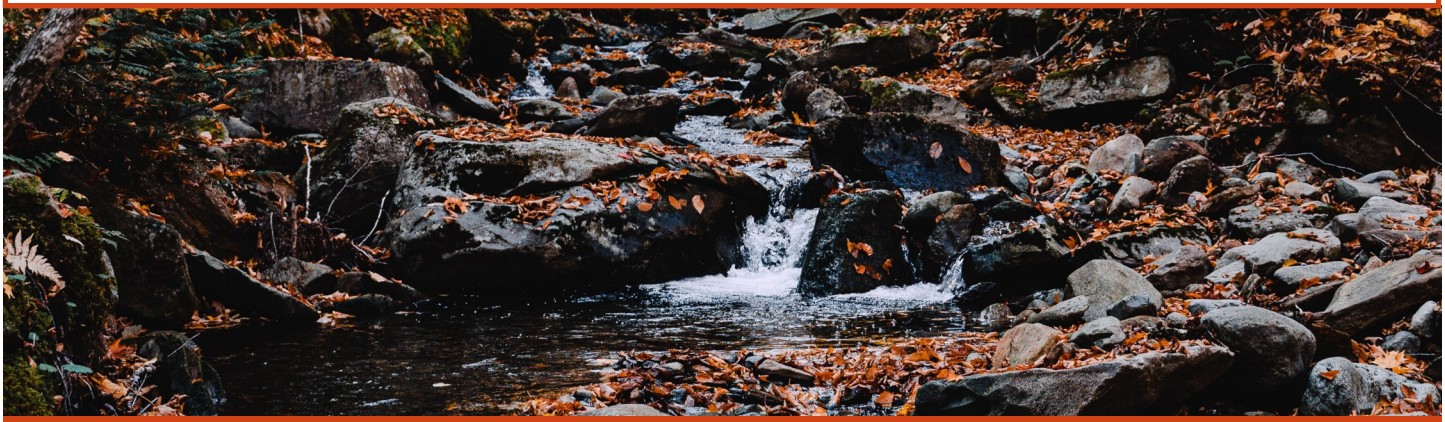


Landowner Scottie Harrison (Great Brook, Plainfield, VT) said that even though her buffer is in good shape, she still learned a lot from the Stream Wise Report on her property. "I've been concerned about the trees that fall into the river, and reading in the report that those trees actually provide good habitat made me think of them in a new way."

Stream Wise was first developed by a team of regional experts, convened by LCBP, who drew upon current research, riparian buffer programs around the country, and existing regulations in Vermont, New York, and Quebec. FluidState Consulting, Greenleaf Design, and The Image Farm were awarded the grant contract by the LCBP to develop Stream Wise in consultation with the project's advisory committee and local community partners via an agreement awarded by the U.S Environmental Protection Agency (EPA) to NEIWPCC in partnership with the LCBP.

Interested in learning more? Contact us through our website! Sign-up to Stay Current via our seasonal emails. And/or Follow us on Instagram and Facebook.

We are also always looking for feedback from the Watershed Forestry Partnership partners about updates to our Stream Wise homeowner resources page! ◆



PROCESS-BASED RESTORATION ON THE BARTON RIVER

Patrick Hurley, Project Manager, Memphremagog Watershed Association

The Memphremagog Watershed Association is working with Vermont Fish & Wildlife Department and NorthWoods Stewardship Center to complete a process-based restoration project on the Barton River floodplain on the Willoughby Falls Wildlife Management Area. The project aims to enhance and restore wetland hydrology, habitat, improve water quality in a floodplain with a history of agricultural ditching.

Sometime in the last century, several extensive drainage ditches were installed throughout the floodplain to improve conditions for agricultural use such as hay. Beginning in the 1950s, the Fish & Wildlife Department began acquiring large portions of the floodplain and surrounding forests to create the Wildlife Management Area that it is today. Soon after, the construction of Interstate 91 further altered the habitat and hydrologic conditions of the floodplain wetlands. The floodplain forest never recovered following clearing and has remained dominated by invasive reed canary grass and other undesirable herbaceous species.

MWA approached the Fish & Wildlife Department in early 2022 with a proposal to develop a pilot project to demonstrate process-based restoration (PBR) techniques in the Northeast Kingdom. Given the remote location of the site and its purpose as a refuge for fish and wildlife, there were limited options for traditional restoration strategies like material-intensive tree plantings or ditch plugs that require significant ground disturbance and earthwork. Thus, PBR was selected as the most viable alternative. In this case, PBR strategies look very much like what you might find in a beaver wetland complex: in-stream woody structures consisting of logs, branches, willows, sedge mats, and other natural materials. These structures – often called beaver dam analogues – work to slow the flow of water, raise the local water table, allow sediment to fall out of suspension, and promote greater floodplain connection during periods of high flows. These structures, combined with strategic breaches through historic spoils berms, should work to restore natural processes that are absent from the floodplain.

MWA, NorthWoods, and FWD worked over four days to collect, haul (up to 2000 feet!), and install over 1500 willows and hundreds of logs to construct 12 large structures to 'plug the ditch'. Materials and installation locations were selected to facilitate the adoption of the structures by nearby beaver populations – with hopes that they will be adopted and maintained by the industrious critters. The project will be monitoring over the next three years to evaluate changes in wetland hydrology, expansion of beaver activity, retention of fine sediment, and recruitment of native riparian plant species. ◆

Left: A beaver dam analogue
Right: The site with additions seed from above

CONVERTING LAWNS TO FOREST TO PROTECT STREAMS

Shawn White, Project Manager, Friends of the Winooski River

Riparian buffers aren't the only way to use woody vegetation to protect streams and rivers and improve habitat. Over the last 2 years, the Friends of the Winooski River's Lawns to Forest program has planted trees and shrubs in upland lawns and mowed areas as a way to reduce stormwater runoff volume, improve water quality, and reduce flooding and erosion.

Stormwater runoff from developed land is one of the main contributors of phosphorus and other pollutants to Vermont's surface waters. When land gets developed for residential housing in Vermont, forested landscapes are often converted to lawns, rooftops, roads, and driveways. This conversion reduces the amount of rainfall and snowmelt an area can intercept and absorb, increasing runoff volume. Stormwater runoff carries pollutants such as phosphorus, sediment, pet waste, herbicides, and pesticides to waterways; causes erosion of private and public property; and makes streams more erosive and "flashy."

Americorps members help plant trees on a suburban hillside in Berlin, VT. Runoff from this steep hillside drains to a stormwater swale that empties into the Winooski River.

Owners of small residential parcels are not required to mitigate runoff, and are most often unaware of the impacts of the runoff generated by their land. The cumulative effect of many small deforested parcels, however, can become quite large. Most of the Winooski watershed is overlain by soils that have slow or very slow infiltration rates, so runoff levels are high and mitigation strategies like raingardens are not very effective.

In 2020 the Friends of the Winooski River received funding from the Lake Champlain Basin Program to run a pilot of the Lawns to Forest program. Lawns to Forest participants were recruited via Front Porch Forum, our Storm Smart residential stormwater assessment program (funded by LCBP and in partnership with Friends of the Mad River and the Winooski Natural Resources District), flyers distributed at Friends of the Winooski River events and at the Marshfield Conservation Commission's annual tree sale, and our e-newsletter.

Good candidate parcels for a Lawns to Forest planting were identified on a subjective evaluation of the benefit a planting would provide in terms of pollution and volume reduction. The primary factors considered included the extent of lawn the owners were willing to eliminate and whether there was a clear hydrologic connection to streams - either directly or via stormwater infrastructure. Planting plans were based on the riparian restoration model, specifying a planting density of 400 stems/acre, species native to Vermont and both shrubs and trees to provide structural diversity. In order to protect the plantings for the long term, landowners were asked to sign a memorandum of agreement stating they will maintain the planted area as a natural area, refrain from mowing or fertilizing (except to control invasives) and agree to let us monitor the planting for two years.

The primary impact of trees and forests on water quality in urban and suburban areas is the prevention of water pollution by runoff reduction. In forested areas with a complete canopy, 30% of annual rainfall never hits the ground but is intercepted by leaves. *(cont.)*

(cont. from pg. 10)

Evapotranspiration from leaves creates a constant pump of water from the soil to the atmosphere while roots and leaf litter slow runoff and create conditions that allow water to soak into the soil. In computer models comparing the reduction of runoff by trees planted over grass to grass alone in Northeastern climates, large and medium trees reduce runoff by up to 83%. When lawn is converted to woody vegetation mowing, fertilizer, and pesticide use is reduced, further preventing pollution. Trees and shrubs also improve air quality, lower urban air temperatures, provide wildlife habitat, store carbon, and improve aesthetics and mental health.

Over the two years we piloted the Lawns to Forest program, we planted a total of 2069 trees and shrubs were planted at 16 sites and a total of 5 acres across the Winooski watershed from Marshfield to South Burlington. Volunteers were recruited to help with the planting and included school groups, groups of employees from local businesses, church groups, a local tree board, AmeriCorps members, and individuals. All volunteers received training on how to plant trees, information on how trees reduce runoff and protect water quality, and encouragement to reduce lawn are on their own properties.

Even when landowners are interested in restoring their yards to a more natural environment, many will not take action on their own. Often they lack the time, finances, or expertise, are physically unable to do the work, are intimidated by the scope of the project, or are simply not interested in yard work. The Lawns to Forest not only allows interested landowners to reduce lawn, create better terrestrial habitat, protect water quality, and reduce flooding, it also helps change the "culture of lawn" in urban, suburban, and rural neighborhoods.

Some example projects include:

A 0.3-acre planting at a manufactured home community in Berlin, VT, situated along a ditch draining to the Dog River, where, at the community's request, we planted edible native species such as walnut, serviceberry, elderberry, and blueberry. Basswood was also included since one community member is a bee keeper.

A 1.1-acre planting across two neighboring parcels along a wetland and a swale/intermittent stream that flows to the Winooski River in Marshfield.

A 0.3 acre planting along a drainage leading from Nashville Road in Bolton to Mill Brook, including a small riparian buffer planting along the brook itself. ◆

FRIENDS OF NORTHERN LAKE CHAMPLAIN HOSTS "SHORELINE SOCIALS'

Alison Spasyk, Project Coordinator, Friends of Northern Lake Champlain

During the summer of 2022, Friends of Northern Lake Champlain (FNLC) received a grant from the Lake Champlain Basin Program to host a series of "Shoreline Socials" in lakeside communities around our region to teach residents about the practices they can implement to reduce erosion and stormwater runoff on their properties. In total, we hosted four events in Georgia, St. Albans, North Hero, and Swanton during June, July, and August.

For the past two decades, FNLC has been committed to sharing knowledge with community members and students on water quality issues in the northern arm of Lake Champlain. Through these programs, we hope to provide community members with the knowledge and tools to implement lake-friendly practices and reduce land-use pollution in their region. Additionally, we have recently conducted comprehensive shoreline and erosion assessments in the towns of Georgia, Swanton, and Highgate. The assessments found many "high risk areas" for decreased water quality due to development occurring very close to the shoreline and the clearing of vegetation up to the shoreline, which often resulted in erosion. These findings inspired us to educate lakeside property owners about the ways they can protect their shoreline against erosive processes and *(cont.)*

(cont. from pg. 11)

manage stormwater to improve water quality in Lake Champlain.

At each Shoreline Social, Kerrie Garvey, from Watershed Consulting Associates, gave a presentation on the shoreline protection methods described in the *VT Bioengineering Manual* and the regulations within 250 feet of the shoreline, as outlined by the 2014 Shoreline Protection Act. All attendees received a copy of the *VT Bioengineering Manual* to take home, as well as other resources on shoreline and stormwater best management practices (BMPs). We also invited other watershed groups and conservation organizations to speak about additional steps that community members can take to improve water quality in Lake Champlain. In particular, staff members from the DEC Lake Wise program spoke about how residents can sign up to get a free, non-regulatory assessment of their property as well as other technical resources.

Above: A Shoreline Social in St. Albans at Cohen Park on July 13th
Below: Another Shoreline Social, this one in North Hero at Camp Ingalls on July 28th

In total, 135 people attended a Shoreline Social, and approximately 10 households have scheduled a Lake Wise assessment of their property after attending one of the events. Overall, this educational initiative was very successful in helping shoreline property owners along northern Lake Champlain understand 1) why shoreline protection practices are important for water quality, erosion prevention, and wildlife habitat, 2) what activities are allowed within the "Protected Shoreland Area" according to the current state laws and regulations, and 3) how to implement the methods described by the *VT Bioengineering Manual* and the practices recommended by the Lake Wise program. ◆

ADDING LARGE WOOD TO RIVERS: A PRACTICE FOR FOREST HEALTH

Ali Kosiba, Assistant Professor of Forestry, UVM Extension

Shayne Jaquith, Watershed Restoration Program Manager, The Nature Conservancy VT

The topic of the Green Mtn. Division of the Society of American Foresters' summer meeting in September was strategic wood addition, the practice of adding large wood to rivers to improve aquatic habitat, slow floodwaters, and trap nutrient laden sediments and reconnect rivers with their adjacent floodplains. The meeting took place at Cobb Brook in Windham, the site of a one-mile large wood addition project by The Nature Conservancy (TNC) two years prior. Approximately 20 private and state foresters gathered to hear TNC, Trout Unlimited, and Redstart Natural Resources discuss the benefits of the strategic wood addition and how projects are designed and implemented.

After some coffee, muffins and a morning workout clearing the half-mile road into the site of blowdown, Shayne Jaquith of TNC began by explaining that large wood is a critical structural element of rivers that helps holds them together, create habitat, slow flood flows, and trap sediments. He went on to describe how human activities since European settlement have largely removed wood structure from rivers of Vermont and the Northeast. Vermont Forest Parks and Recreation (VFPR) Watershed Forester, Dave Wilcox spoke about the permitting considerations and acceptable management practices (AMPs) when conducting forestry activities around rivers. The practice of large wood addition for river restoration is not prohibited by the AMPs, but practitioners may need permits and should consult with the Army Corps of Engineers and the Vermont River Management Program before undertaking a project.

After a short walk along the project reach the group stopped at a logjam that had been constructed by Redstart. Here, Erin Rodgers of Trout Unlimited (TU) talked about the habitat that is created by large wood. Erin – who has led dozens of TU large wood addition projects across New England for partners ranging from the Green Mountain National Forest to private landowners – explained that large wood alters water flow, which results in the sorting of sediments according to their size. These changes create perfect patches of spawning areas for brook trout, scour deep pools and undercut banks where fish can hide from predators, and provide protection from overhead predators such as raptors.

After another short walk, observations of other structures and a break for lunch. Dana Hazen and Bill Musson of Redstart Natural Resources Management described the planning, permitting, design and *(cont).*

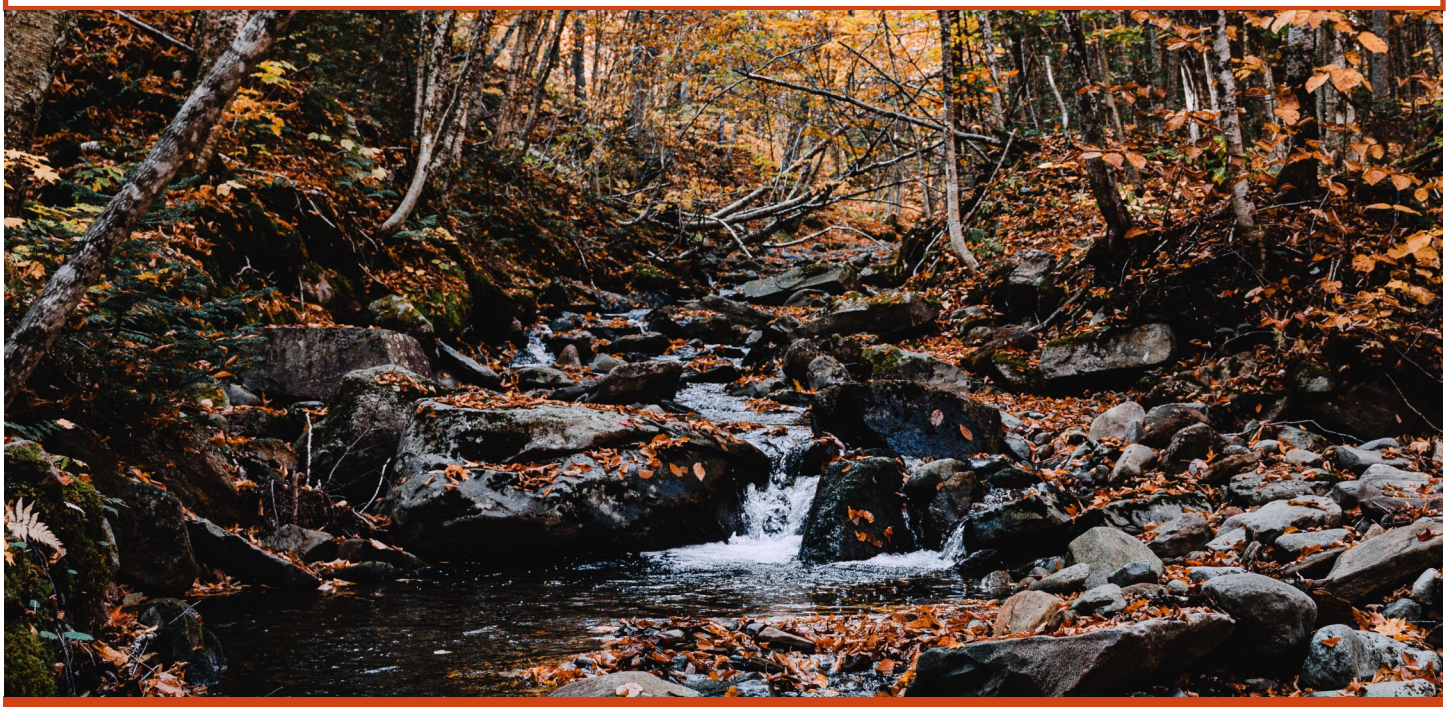
(cont. from pg. 13)

implementation of large wood addition projects. Of interest was how individual logs are strategically felled and moved into place using pulleys to construct a log-jam. A good discussion ensued around the risk of placed wood being floated downstream and clogging culverts. Dana explained that project planning involves the consideration of such risks and projects are typically sited far upstream of any infrastructure, and extremely large immovable structures are built at the downstream end of projects to trap any wood that may be transported.

All of this discussion generated enthusiasm for large wood addition as a forestry practice. Participants recognized the need for qualified professionals to do the work and incentives for private forest owners to fund it. Questions were raised about whether there would need to be trainings for foresters and loggers to become qualified to plan, design, permit and implement projects -- a critical topic if we want to scale-up the practice of large wood addition across the many Vermont rivers that are in need of restoration.

With respect to landowner incentives, the private-sector foresters explained that most private forest owners are as interested in improving the health of their forests and would love to include large wood addition as a component of their forest management plans. Vermont County Forester Nancy Patch explained that under the current use program (Use Value Appraisal (UVA)) rules, sensitive riparian areas such as those providing special protection for maintaining channel stability are not required to be managed for forest products but must be managed for protection/conservation. Nancy was joined by private-sector forester and former Agency of Natural Resources Secretary, Jonathon Wood in stating that large wood addition would qualify as a protection/conservation practice and that this would help to incentivize the practice among landowners who enroll their riparian forestland in the current use program.

Continuing on the topic of landowner incentives for private landowners to implement large wood addition, Shayne Jaquith of TNC mentioned that large wood addition is a fundable practice under the Natural Resource Conservation Service Environmental Quality Improvement Program (EQIP). Erin Rodgers added that Trout Unlimited continually seeks grant funding to implement large wood addition projects on private lands. Efforts to identify additional funding sources and expand the use of strategic wood addition as a forestry practice are ongoing, stay tuned for more information. ◆



If you would like to submit a story for a future issue, or subscribe to or unsubscribe from the Watershed Forestry Partnership mailing list, contact Alison Adams at alison.adams@uvm.edu.

For more information about the Watershed Forestry Partnership, please visit our website!

Thanks to Watershed Forestry Partnership supporters: American Forests, Bruce Lisman, Lake Champlain Sea Grant, PUR Projet, and UVM Extension!