



Monitoring the White River:

A School-Based Watershed Education Program

Summer 2020 Newsletter

“What a Difference a Day Makes” as the old song goes, or even more so a year...who could have imagined the changes 2020 would bring? As parents and community members, we are deeply appreciative of the efforts educators make on a daily basis...and acutely aware of the shifting landscape we are all navigating.

The WRP continues to provide free content specialist support and other resources for participating teachers, featuring opportunities for hands-on, place-based ecology education. Some of our offerings appear at right, but we stress that they can be tailored to help achieve standards and proficiency goals – and keep students engaged and having fun! In Vermont we are blessed with streams within walking distance of nearly any location. We are evolving with the realities of remote, distance and hybrid learning options, but still base our work in the pleasures and grounding of natural, sensory experience.

Monitoring the White River (MWR) programs extend our work to “bring together people and local communities to improve the long-term health of the White River and its watershed”, and we believe strongly in the “Partnership” portion of our name. Our new Monitoring the White River Project on iNaturalist allows student work to contribute to, and connect with, the work of a growing network of citizen and professional scientists documenting the wonders of one of the last free-flowing rivers in Vermont.

The MWR network represents a forward-thinking, committed core of outdoor-oriented educators with a wealth of knowledge and experience - invaluable in turning our current challenges to opportunities. In spite of having to postpone our 2020 tree plantings (which frequently engage more than 600 students and 20 teachers) and other spring activities, WRP worked with 32 teachers over the past year to provide 1000+ learning experiences to more than 600 students.

Strengthening our skills, communications, and relationships is key to the resilience and creativity needed to leverage this unique time for a fuller embrace of the benefits of outdoor education. If you are among our veterans we’d love to hear how we can best meet your needs. If you’re new to Monitoring the White River, have any questions, are interested in learning more about MWR program opportunities, or would like to know more about our Lending Library, please contact Dan ‘rudi’ Ruddell at rudi@whiteriverpartnership.org or (802) 763-7733.

Monitoring the White River units can be tailored to address individual school goals.

- *Crayfish* – key members of river and riparian food webs and invasive species
- *Waterbugs* (benthic macroinvertebrates) – indicators of river health and water quality
- *Winter Track & Sign* – evidence of wildlife activities along river corridors
- *Trout in the Classroom* – what’s needed for survival of this keystone, in conjunction with Trout Unlimited
- *Snorkeling* – in-depth exploration of the inhabitants of the pools and riffles of a restored stream, in conjunction with US Forest Service
- *Watershed Restoration* – on-the-ground projects that improve water quality and habitat:
 - Culvert replacements and retrofits
 - Trees for Streams riparian buffers and planting plans
 - Alternative stream bank restoration projects
 - *and more!*

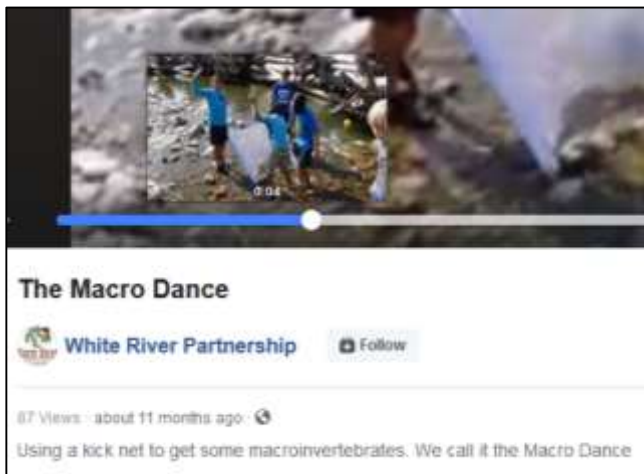
We're thankful to the Wellborn Ecology Fund, Lamson-Howell Foundation, Hope Foundation, Couch Family Foundation, Greater Upper Valley Trout Unlimited, and the US Forest Service for their support of MWR programs, as well as all the committed teachers and educators we are honored to work with.

Some updates to offer a glimpse of what our programs are about:



SNORKELING with the USDA Forest Service takes place on a restored section of the West Branch of the White on the Green Mountain National Forest, where participants can see fish benefitting from large wood used to rebuild meanders and stabilize pools as well as investigate nearby 'waterbugs' on which the fish feed. Typically held in early-

mid September and primarily working with grades 4-6, the snorkeling program has unfortunately been cancelled for 2020 due to the current status of COVID-19 impacts.



Our WATERBUGS unit is available however, with curriculum materials found alongside other well-developed TEACHING UNITS available in the TEACHER RESOURCES section of our website: <https://whiteriverpartnership.org/teacher-resources/>. We're happy to support your work in-person if your school or group can have outside visitors working with you outdoors, or via remote sessions for introductory or support sessions. Contact us to explore options, or to inquire about our Lending Library for fieldwork. Various waterbugs can be found in any stream, and can be caught with simple nets and viewed with hand lenses.

MWR programs started in part as a response to a Rusty Crayfish survey of the White River, conducted in 2005 with our friends at VINS and aquatic biologists from Vermont DEC. At that time, we found 85% of the crayfish surveyed along the mainstem of the White were Rusty or rusty-native hybrids. We teamed up again in 2020 (and caught 100% Rusties!) to make a short YouTube video at Clifford Park, and VINS has helped launch a statewide Vermont Crayfish Index on iNaturalist. In combination with our Monitoring the White River Project on iNaturalist, these efforts provide real-world impacts and accessibility for the efforts of students and citizen scientists. Student crayfish work utilizing WRP's teaching Unit contributed to a USDA Forest Service 2015 Ecological Risk Screening Summary for Big Water Crayfish, which has only been recently identified in the watershed.



Our Trout in the Classroom collaboration with Greater Upper Valley and Vermont Trout Unlimited was placed squarely in the spotlight when schools were abruptly closed due to COVID-19 risks in March 2020. Several teachers managed to successfully transport their trout to their new home-based teaching headquarters (hat's off to you!); Stockbridge students had trout raising videos and blog posts included in their science lessons through the remainder of the year, while South Royalton 4th-5th grade students benefitted from a great release day video. Even teachers who released their fish early noted benefits from the experience, and the challenges surmounted by all of these teachers amply demonstrated their commitment to providing the benefits of this program to their students. We couldn't be prouder than to support their herculean efforts.



South Royalton third graders led the way during Winter Riparian Track & Sign outings, and pointed out sit-stumps and outdoor spaces that have been created in their riparian corridor along the White mainstem. We have been actively working with teachers, administrators and ESPECIALLY community members, who can play a vital role in supporting them, to more fully embrace the possibilities for outdoor education in response to COVID-19 impacts and preparations for school openings. As challenging as this moment in time is, we feel strongly that it could offer unique opportunities and encourage interested educators and parents to find inspiration in a



Two-page **Position Statement from the Inside Outside Advisory Board:**

<https://static1.squarespace.com/static/5cef097070108400013b627d/t/5f08e2f33aeb01466c065267/1594417908037/Outdoor+Learning+School+Reopening+071020.pdf>

Please feel free to reach out to us and stay in touch, as we are acutely aware that we can often do together what we cannot do in isolation.

All of our MWR offerings are tied to our overarching commitment to the health of the White River basin and its communities, and we always have an eye to watershed protection and restoration. In most years, students are a huge part of the 600-700 volunteers and partners that help plant



3,000-5,000 trees and shrubs along the White and its tributaries. When COVID-19 impacts prevented spring 2020 planting season, we heeled in our trees in hopes that we might be able to plant with volunteers in the fall. Current trends now appear complicated enough that we will likely plant with limited in-house crews this fall, but **we encourage and are happy to support outings and explorations based on our *Watershed Restoration: Trees for Streams* unit**, which explores everything from the numerous important roles that good buffers play to how to map and plan a planting. We'll hope to be planting with schools

again during spring 2021!

In the meantime, almost everyone lives within walking distance of a culvert (though you may not be aware it's there!) The MWR ***Watershed Restoration: Culverts*** unit explores our growing list of culvert replacements



and retrofits, a key link to better fish passage, healthier stream systems and greater flood resilience for communities.



We are also expanding our use of Greg Russ' hands-on Lane's Balance to explain some of the principles of stream equilibrium and geomorphology. Find out why rivers need functioning floodplains, and how water

quality and animal habitat depend on our relationship with the streams and rivers in our backyards.



Let's stay in touch!



Snapshot of MWR's Watershed Education Network (participants since 2012)

<u>MWR Schools</u>	<u>Supporting Organizations & Agencies</u>
<p>Barnard Academy Bethel Elementary School Braintree Elementary School Brookfield Village School Chelsea Public School Dothan Brook School (Hartford) East Valley Academy Hartford Memorial Middle School Killington Elementary School Mid-Vermont Christian School (Quechee) Newton School (Strafford) Ottauquechee School (Hartford) Randolph Elementary School Randolph Union Middle/High School Randolph Technical Career Center Rochester School Sharon Elementary School South Royalton Elementary School Stockbridge Central School The Sharon Academy Tunbridge Central School Vermont Technical College White River Valley High School (South Royalton) White River Valley Middle School (Bethel) Williamstown Middle/High School Woodstock Elementary School Woodstock Union High School</p>	<p>Canaday Family Charitable Trust Clear Water Carbon Fund Couch Family Foundation Ecotone Education (Verdana Ventures LLC) Four Winds Nature Institute Friends of the Winooski Greater Upper Valley Trout Unlimited Green Mountain National Forest Hope Foundation (Hypertherm) Jack & Dorothy Byrne Foundation Lamson-Howell Foundation Lake Sunapee Bank (Bar Harbor Bank & Trust) Mascoma Savings Bank Foundation Ottauquechee Natural Resources Conservation District Upper Valley Linkages for Environmental Literacy U.S. Fish and Wildlife Service Vermont Department of Fish and Wildlife Vermont Department of Forests, Parks & Recreation Vermont Water Quality Division Wellborn Ecology Fund</p>
<p align="center">Questions about MWR? Dan 'rudi' Ruddell, WRP Monitoring and Education Coordinator <u>rudi@whiteriverpartnership.org</u> (802) 763-7733</p>	<p align="center">Visit the White River Partnership's website for White River watershed information and maps, links to Water Quality Reports and other resources, and more: <u>www.whiteriverpartnership.org</u>.</p>