



Lamoille County Conservation District

Conserving Our Natural Resources since 1945

DISTRICT NEWS

FALL 2022

A Note From the Director About Stream Connectivity

For years now I have been partnering with folks to better understand how rivers and streams work. Much like people, rivers and streams are dynamic entities that require space and stability to thrive; and just like us, they go through changes to achieve a kind of non-static equilibrium. Imagine, if you will, stretching to achieve a sense of well being in the morning. Now, imagine you are a river that needs to have access to its floodplain during large rain events. If the floodplain is blocked by a berm it would be like a muscle cramp or throwing your back out and your day is ruined. Another thing that might ruin your day is seeing your teenagers bedroom in its typical state of disrepair; however, in an upland stream scenario, this disorganization and chaos is a good thing. Boulders, tree and leaf debris, root outcroppings, sediment and stone depositions all in no apparent order (deceptively) are all helping to stabilize the stream velocity, control temperature, filter nutrients, and create aquatic organism habitat.



As one might imagine, our developed world presents challenges to rivers and stream achieving this equilibrium. Undersized culverts choke channels increasing erosive events, sediment loading, and flooding; culverts and dams block the fish and other aquatic organism passage; and armored banks, berms and canals force the energy downstream causing erosion and flooding events as well.

LCCD is partnering with engineers, VT Fish and Wildlife, The US Fish and Wildlife Department, the Vermont River Conservancy, Regional Planning Commissions, and landowners to identify opportunities to replace undersized culverts, remove dams, restore floodplains, and stabilize river banks through tree planting and other means. Moving forward, we should look to development patterns that work in harmony with our precious rivers and the life that exists within them.

New Agricultural Outreach Specialist Emma Sandman

LCCD would like to introduce Emma as a new member of our team! Emma is originally from Kentucky and graduated from Bard College with a degree in Political Science. She previously served with ECO Americorps in Addison County as the Water Quality Planner for the Addison County Regional Planning Commission. She assisted with coordinating and implementing water quality planning functions across watershed planning projects, including municipal stormwater and transportation, for member towns in Addison County. She is excited to get started in her new position as the Agricultural Outreach Specialist.



Lamoille County Conservation District Mission:

To maintain and improve our natural resources.

To aid and educate our fellow citizens to appreciate and adjust to the changes taking place in our natural resource system.

To be a local voice for conservation, preservation and stewardship of all natural resources and work in conjunction with other agencies, private and public.

LAMOILLE COUNTY CONSERVATION DISTRICT

2022 PROJECT UPDATES

Stormwater, Stormwater, Stormwater!

LCCD has been on the leading edge of administering stormwater projects within municipalities in Lamoille County. We have implemented two major underground infiltration chamber projects in Morristown: one in Copley Park and one in the Copley Parking Lot. We have recently completed a project in Hyde Park that is a combination Raingarden or bioretention with subsurface infiltration chambers. Bioretention!? Sub-surface infiltration chambers!? What is this guy talking about!?

So, let take a few steps back. Stormwater is something we are all familiar with and I imagine it's not popular with most folks, especially in large rain events, when your driveway gets wiped out or worse yet, a major flood. As you know, towns have a lot of impervious surfaces for water to run off of, like rooftops, roads and parking lots. Where does this water go? Well, often the runoff flows into ditches and onto someone else's property. After that, the waterflow continues into our streams and rivers and eventually to Lake Champlain. The old school of thought was to redirect stormwater directly to our streams and rivers, which is the path of least resistance.



Bioretention Raingarden in Hyde Park

with

The problem with this approach is the nutrients and sediments carried by the water have no place to go but into our streams and rivers and eventually into Lake Champlain. Large rain events make it difficult for these nutrients and sediments to settle on their journey to Lake Champlain which results in excessive nutrient loading (i.e. Phosphorus). The increased concentration of nutrients fuels outbreaks of cyanobacteria which is an extremely dangerous health hazard that can cause renal failure and death if one is exposed to it. Rising temperatures only aid in the growth of this bacteria as well.

Over the years, LCCD has used the basic principles of Green Stormwater Infrastructure to help capture this nutrient laden stormwater and protect the environment and the public from this health hazard.

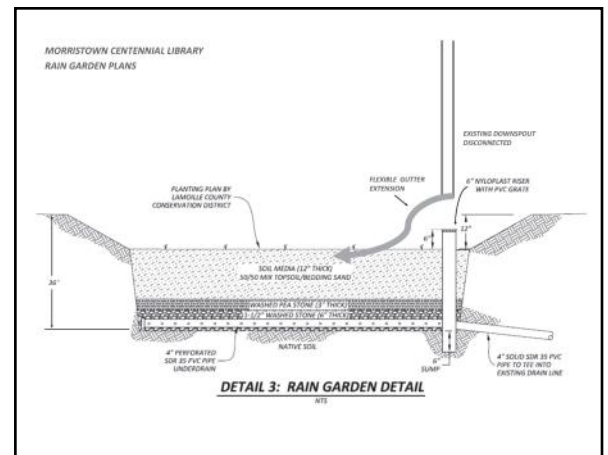


Sub Surface Infiltration Chambers in Morristown

Green Stormwater Infrastructure (GSI) is method of managing stormwater runoff with a focus on improving water quality, reducing nutrient pollution and erosive forces.

The "idea" is to decrease the overall amount of stormwater from directly entering waterways by treating it at its source or preventing runoff from occurring altogether. The three basic principles are 1). Infiltrate—allow stormwater to settle at treatment site. 2). Evotranspiration—the process in which plants absorb water and nutrients to be re-released into the atmosphere and 3). Storage and Use—reuse of water to use for watering a garden or washing car. Typically large municipal projects will hit on the first principle, but when plantings are included then the second principle is recognized as well.




We have numerous stormwater projects lined up for Johnson, Hyde Park, Stowe and Morristown over the next couple of years with GSI in mind so stay tuned!



Simple Raingarden Design in Morristown



MUD CITY FOREST SCHOOL



A once-a-week full-day program entirely outdoors at the beautiful Lamoille County Nature Center, 1600 Cole Hill Rd, Morrisville.

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Contact: Emily Porter-Goff, PhD
emilylccdedu@gmail.com

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Lamoille County Conservation District

lcnrcd.com/school-programs/forest-school/

LAMOILLE COUNTY CONSERVATION DISTRICT

Gratitude and Appreciation to LCCD's Generous Members:

Conservationist: Debbie & David Schoop; Judy Geer and Dick Dreissigacker

Sponsor: Elizabeth & Nicholas Deane; Janet Lanphear in memory of Pete Lanphear; Jeff & Penni Rochette; Katherine Simonds

Supporters: Howard Manosh; Butternut Mountain Farm; Deborah Pomeroy; Susan Ludington in memory of Chris Ludington, Ron & Judy Stancliff

PROGRAM PARTICIPATION	2022
Education Programs	137
Volunteers	62
Trainings/Workshops/Outreach	7
Youth and Adult Education Numbers	1922
Sales Customers	43
Farms	33
Conservation Programs	18
TOTAL PARTICIPANTS	2222

**Thank You to our Current Members! We appreciate your help!!!
If you're not listed on this page and are receiving this newsletter,
please renew your membership.**

Please let us know if your name is missing from the list.

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USDA FSA

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Go to our "Put A Tree On It!" T-shirt sale at
[Sales | Lamoille Conservation District \(lcnrcd.com\)](https://www.lamoilleconservationdistrict.com)

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LAMOILLE COUNTY CONSERVATION DISTRICT

Education Updates

“A Day at the River!” field trips for Lamoille Schools

The LCCD is hosting full-day field trips for school groups throughout the Lamoille River. This program has been generously supported with a grant from the Lake Champlain Basin Program. River-centric curriculum is holistic and interdisciplinary. Students work in small groups to build living models of watersheds, experiment with real-life erosion in river segment models, run water chemistry tests, and sample aquatic macroinvertebrates to evaluate the river’s health. But



But rivers can teach more than science. We will use the river to inspire poetry, storytelling, art, and lead us through a flow of problem solving.

Our first classes provided favorable feedback on the program and appreciated the hands-on, active participation as well as the balance provided between the hard science and art, writing and critical thinking. There is space remaining for spring 2023 sessions. Originally formulated for middle grades, can be adapted for 5th-12th graders. All Lamoille County Schools are eligible for this no-cost field trip. Email Emily at emilylccdedu@gmail.com to schedule your class. Please encourage your children’s teachers to participate.

Junior Naturalist Programs

Our popular Junior Naturalist program continues to thrive throughout the county. We are currently facilitating at 8 locations across Lamoille County Elementary Schools and Public Libraries and visiting 12 different classes. During the 2021-2022 academic years we pre-

sented to a whopping 1903 attendees at 137 programs. We have learned about everything from squirrels to evergreens. Providing school children with hands-on learning experiences in nature is not only important for community building and critical thinking but it has also been shown to reduce stress and anxiety, improve ADHD symptoms, and improve physical well being. Thus far, our program has mostly attracted kindergarten and preschool classes. However, the benefits are valuable to all grades. We aim to expand this program to reach older children in future years. Teachers! Please contact us to bring your classroom into nature!

Now offering Mud City Forest School!

The LCCD has just launched it’s first forest school program. Named after the colloquial name for the area surrounding our nature center, Mud City forest school is a full-day, alternative learning program for 8-12 year old's. This program attracts homeschoolers and school students looking for a more well-rounded educational experience to add to the traditional academic teaching. Many schools are providing attendance exemptions for students attending forest schools. Our program is taught by licensed teacher Willow Longo, MA, and Emily Porter-Goff, PhD. Daily activities support this sessions theme of Cryptozoology and provide hands-on, experiential learning covering: math, science, literacy, history, social studies, art and more. We are currently using these groups extreme interest in tools and fort building to learn engineering, physics, simple machines, critical thinking, problem solving and team work. There is space for 2 more students! Its not to late to join us for the remainder of the session. A spring session is expected, likely beginning in April. Provide a child in your life with the gift of outdoor learning.

Emily Porter-Goff, PhD— Education and Outreach coordinator

Lake Champlain Basin Program

Calling 5-8th grade teachers

No Cost Field trips!

A Day at the River!

Join the Lamoille Conservation District for a free multidisciplinary river field trip. Science, creative writing, art, community studies and more!

Contact emilylccdedu@gmail.com for more info



Lamoille County Conservation District

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