



ANNUAL REPORT 2021



THE UNIVERSITY OF VERMONT  
**EXTENSION**

Center for  
Sustainable Agriculture

## LETTER FROM DIRECTOR LINDA BERLIN



At the Center for Sustainable Agriculture, we share a love of the land and farming that includes a commitment to the belief that it is possible to produce food and fiber in ways that are profitable for farmers, good for communities, and in balance with our precious natural resources.

In 2021 the challenges and changes we are collectively facing have shown us just how much this love and commitment can matter.

In the following pages, we are offering a look at our 2021 program year. We were among the many who continued to adjust and pivot to the disruptions of the times we are living through. And still we want to share just a bit about some of the practices we are researching, the knowledge we've gained, and a few of the ways we engage in this work. We hope you'll let us know any time you'd like to know more about the work or ways to get involved.

This is my last Annual Report as the Center's Director as I am preparing to retire from UVM as a full-time faculty member in June 2022. Whether you are reading this as a partner, a donor, a participating farmer or community member, I want to thank you for caring about our work..

Having been part of this robust and brilliant community that makes up Vermont's farm and food sector has been such a joy and an honor. I look forward to staying in touch and helping with projects and research.

In the meantime, on behalf of the Center team, I invite you to stay in touch. Let us know what you need and how we can help. There are new and experienced staff and faculty here, and they're devoted to farming that helps farmers, communities and the natural world of which we're a part, to thrive.

Wishing you the very best,

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## CONSERVATION EFFECTS ASSESSMENT PROJECT

From a small custom-built shed on the Otter Creek, and from conversations with dozens of Addison County farmers, the Center's Farming & Climate Change program is contributing knowledge about what effect conservation practices on farms are having.

The continuing work is part of the 10-year Conservation Effects Assessment Project, or 'CEAP' that includes forty-two watershed studies across the country, all initiated with the goal of 'improving efficacy of conservation practices and programs by quantifying conservation effects and providing the science and education base needed to enrich conservation planning, implementation, management decisions, and policy.'

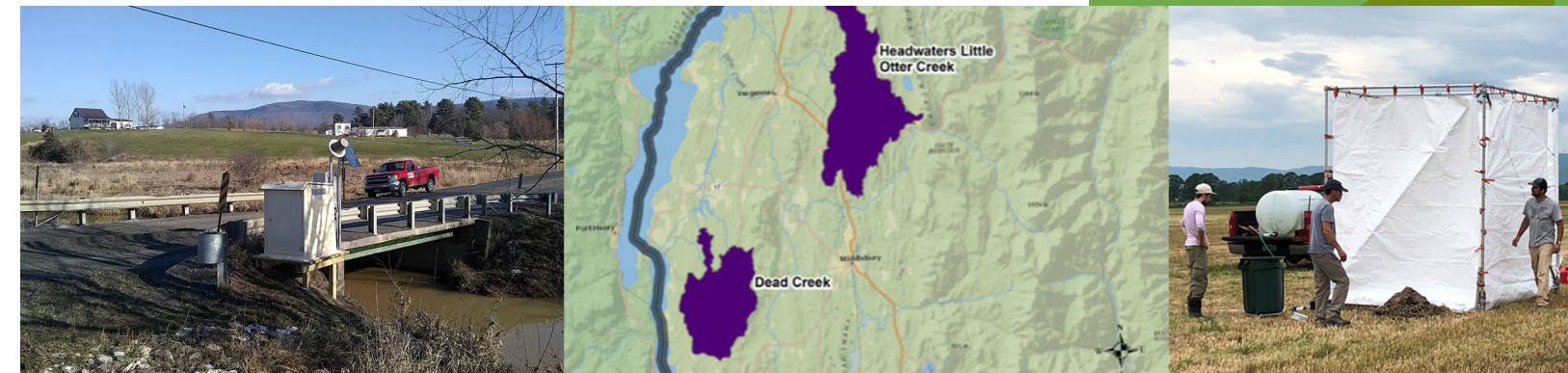
What does this mean here in Vermont? That the team is carefully monitoring two sites in heavily agricultural Addison County, to see what is in the ground and how it shows up in water - and when.

Farming and Climate Change Coordinator Joshua Faulkner says, "We're doing two kinds of sampling: every two weeks we do "baseflow sampling", which lets us know what is flowing by in the river when there aren't storms, just what occurs all year long, and then also have equipment that tells us when the (water) flow goes over a certain level - the true storms. What we think is most meaningful as far as phosphorus getting in the lake is the storms, but we don't know how effective farm conservation practices at a watershed-scale are at reducing losses during those storms."

"Doing a project like this over multiple years is the only way we're going to be able to confidently recommend certain practices. But in a practical sense, we've learned how many challenges there are that go into this type of work: in just the couple of years since we started, we've experienced drought, equipment damage from beaver activity, major flood events like the Halloween storm of 2019 that washed out one site, the freeze-thaw conditions that make sampling liquid water extremely challenging. The real-life conditions of our watersheds show up in this project, as they do on farms."

It's no secret that farmers are pragmatic people. "One reason farmers are doing things is that they're nice people, but also because they want credit for what they're doing."

"We all want to make sure we're investing in what is effective. That's why average citizens should be concerned - how we're doing affects us all."



## IN 2021 WE KEPT LISTENING AND LEARNING

*collected water samples from streams, rivers, ponds and lakes and learned from those results*

*worked in collaboration with Extension colleagues on dozens of projects*

*continued work on the Who Farms? project collaboration with the UVM Humanities Center*

*served as members on Master's and Doctoral dissertation committees*

*walked the fields on hundreds of farms to learn about farmers' work and goals*

*contributed book chapters*

*hosted listservs with vigorous conversation on soil health, grass farming, elderberries and more*

*provided research assistantships for UVM undergraduate and graduate students*

*continued pursuing the Wool Pellets project*

## IN 2021 WE KEPT GROWING

*conducted primary research in resilience and sustainability*

*built partnerships with colleagues across campus for new work*

*prioritized racial, gender and economic equity in our decision-making and resource sharing*

*published peer-reviewed papers highlighting research*

*advised undergraduate and graduate students*

*brought on new staff to work with livestock farmers and coordinate statewide efforts*

*partnered with federal agencies, towns, non-profit agencies and international colleagues*

*offered workshops and pasture walks online and across the state*

## CENTER ENDOWMENT HELPS US HELP FARMERS

The Center team does research into farming that is productive, profitable, and good for communities and the natural world. It takes place across different programs, and different landscapes, but it's all in pursuit of agriculture that supports a healthy world. Much of that is supported by grants and by funding through the Smith-Lever Act that supports Extension efforts across the country. But there's another critical resource that lets us pursue important knowledge: the Mittenbuhler Endowment Fund that was established with a bequest from the Mittenbuhler family in order to support farming innovation.

This gift ([and other generous donations](#)) supports critical inquiries when other funding is not available, and provides flexibility in meeting needs as they emerge. In recent years, the fund has advanced our understanding in water quality, on-farm practices, climate implications, and proposals for future work supporting Vermont beekeepers. In fiscal year 2021, the fund supported:

- A project identifying specific ways in which we can improve the primary tool used on farms for estimating a risk of phosphorus loss to surface water. Recommendations will be considered and incorporated as able when the tool is revised. This could have meaningful implications for reducing P(hosphorus) loss from farmland." (And reducing phosphorus loss from farmland is critical to the state's water quality and the many whose financial and social wellbeing rely on it.)
- Research that shifted our thinking and the recommendations Extension makes to farmers about using a particular management practice (i.e., aeration) to improve water quality. Benefits were not nearly as great as believed, and the practice might actually have a negative effect, overall. This work was also incorporated into the State's efforts to quantify how management practices should be credited toward meeting the water quality goals of the state, set forth by the EPA.
- A project that served as a "wake-up call for farmers and other ag stakeholders about how climate change could potentially impact crop yields on the state's dairy farmers in the future." The research and eventual publication was titled "Agronomic and environmental performance of dairy farms in a warmer, wetter climate."
- A "long overdue" commentary on how models can be used, and misused, to inform policy. It was especially timely given the state's movement toward a Payment for Ecosystem Services program (which would compensate farmers for their success implementing practices that preserve healthy ecosystems).
- The creation of two grant proposals to support honey farmers, one with a certification process to assure consumers that they are receiving actual honey when they buy it, and the other with a market analysis regarding Vermont honey.

## OFFERING GRAZERS PRACTICAL SOLUTIONS

Amber Reed has been with the Center since 2020 and has brought a wealth of farming and professional experience with her. Her primary focus is on the eastern side of the state, where she helps livestock farmers to improve their farming practices.

Amber's position is a partnership with the Vermont Agency of Agriculture, Food and Markets via the Pasture and Surface Water Fencing (PSWF) program, which "provides pasture management technical assistance and financial assistance to Vermont farmers to improve water quality and on-farm livestock exclusion from surface waters statewide."

Here is how Amber described the way she supported farmers in 2021: "With the pandemic and all the disruption, there's been a backlog of farmers needing assistance. But now I can show up, discuss the issues they have concerns about and what they need for infrastructure.

"Water is the most common need for livestock farmers: you can't do rotational grazing if you don't have water at different points in your pasture.

"We try to identify all the possibilities, and win-wins - better animal health because they're grazing better and their animals even live longer and better when they don't have to cull animals when they get tetanus from a rock in their hoof at \$1,500 each. Plus we have cleaner water for everyone, and an easier system for the farmer. Sometimes there's one solution for multiple problems and sometimes we have to find many of them. Dairy is a good example of complex needs: they have to go to a pasture twice a day so that travel piece is really really important."

Amber also knows that matching the right resources with a farmer's needs is a critical part, but that addressing preconceptions can be just as important. "Rotational grazing (moving the animal between different grazing areas) is key. But rotated pasture is messier looking, it has broken plants, there's poop, but then it grows back and it's more productive. I tell them to embrace the mess! We try to identify all the possibilities, and win-wins. Sometimes there's one solution for multiple problems and sometimes we have to find many of them.

"I like to solve problems. So when I show up and they have five problems to solve I'm excited!"

## IN 2021 WE KEPT HELPING

*served on UVM search committees, the University Diversity Council and Extension's Diversity, Equity and Inclusion Committee*

*consulted on grazing projects across North, Central and South America*

*responded to dozens of inquiries about wool pellet research from around the world*

*worked in collaboration with Extension colleagues*

*distributed a monthly calendar of education events to thousands of farmers and community members*

*answered hundreds of phone calls and emails to get farmers and community members the information they need*

*consulted on water systems, water quality and fencing*



## 2019 KEY LEARNINGS:

"I've learned that in my role I have the opportunity to soften the learning curve through access to knowledge and shared experience, and that is essential to farm success and viability."

- Laura Johnson, Agronomy Outreach Professional,

"Deep and personal relationships create the ability and passion to positively affect land and human lives for the betterment of all."

- Jenn Colby, Pasture Program Coordinator,

## WHO FARMS? PROJECT

Though we Extension folks tend to be a pretty practical sort, we know that social and creative connections matter a lot in life.

This knowledge has kept us excited to continue our work on the Who Farms storytelling project. Since the fall of 2017, we have been part of a group exploring the lives and experiences of people with diverse identity and experience who are farming in Vermont. The partners include UVM's Humanities Center, the Vermont Farm to School Network, Vermont Folklife Center, Vermont Historical Society, and The Root Social Justice Center. The project is funded by the National Endowment for the Humanities, and several local generous families and foundations.

"Though the pandemic changed our timeline and some of the specific activities in our project, it did not stop the work," said co-Principal Investigator Linda Berlin. "In some ways it gave us a pause for reflection that we think is going to make it all much richer."

As the project pace slowed down, we had the opportunity to dive into archival research. Vermont Historical Society digging into the archival materials that their team prepared for us. Looking through old receipts, reading old diaries, and working through historical correspondence has deepened our shared understanding of the historical context of Vermont farms.

In April 2021, we hosted conversations with members of the Advisory Council, educators from the Burlington School District, and members of the Center for an Agricultural Community. These conversations helped us think more clearly about how to make this project useful for learners and communities.

All through the July 2020 - June 2021 year, our terrific team of comic artists (Eureka Comics) and video editor (Myles Jewell of Penniman Productions) was busily preparing scripts and drafts. And we even got to have some excellent help from UVM undergraduate students along the way, with research, filming, music and more.

We look forward to sharing the final stories with you.

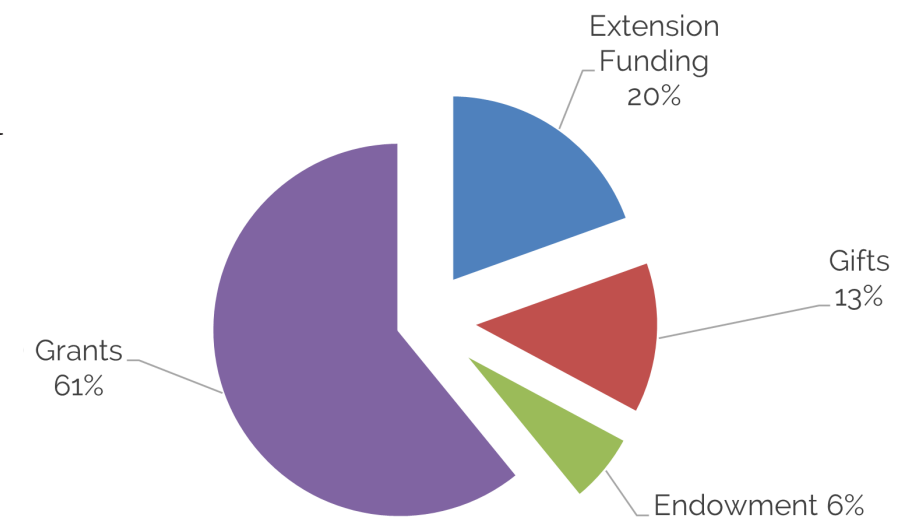
## ABOUT THE CENTER'S FUNDING

**Extension Funding** is a combination of federal and state dollars that UVM receives as a land grant university.

**Grants** are from government sources and private foundations.

**Endowment** income is the interest that is earned from generous donations made to the Center by donors who wanted to ensure that important work can continue in perpetuity.

**Gifts** are donations to the Center's annual fund raising appeals, or those made spontaneously.



FUNDING BY SOURCE  
JULY 1, 2020 - JUNE 30, 2021

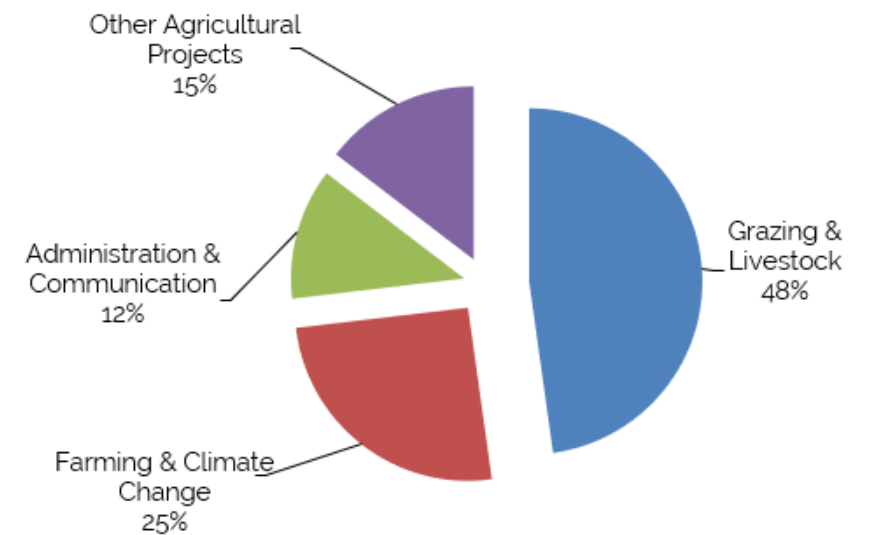
## UNDERSTANDING THE CENTER'S EXPENSES

**Grazing & Livestock** represents salaries and program costs for the Center's largest program, with five staff and faculty members who engage in research, outreach, collaboration and technical assistance with farmers around the state.

**Farming & Climate Change** expenses represent the research, outreach, publications, collaborations, and technical assistance provided through the Farming & Climate Change program.

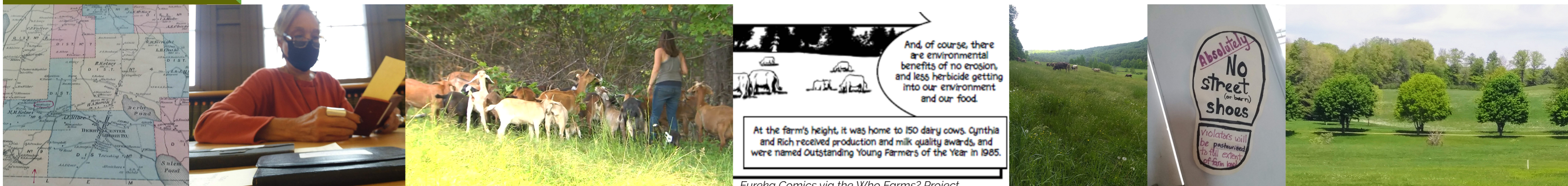
**Administration & Communication** monies support leadership, collaboration, development, grants management, financial oversight, support for program staff, outreach and customer service, and allow us to produce the Center's newsletters, calendars and annual report.

**Other Agricultural Projects** include work on food access, local food, and other projects.



EXPENSES BY PROGRAM AREA  
JULY 1, 2020 - JUNE 30, 2021

About the photos in this report: front cover photo of Amber Reed's farm by Meghan Sheridan of the Vermont Grass Farmers Association; back cover image of Extension colleagues Terry Bradshaw and Laura Johnson collecting samples for analysis for the Wool Pellets Project at Cedar Circle Farm; all other photos except where noted are courtesy the staff and faculty of the Center for Sustainable Agriculture as part of project work, except where noted.



Eureka Comics via the Who Farms? Project



THE UNIVERSITY OF VERMONT  
**EXTENSION**

Center for  
Sustainable Agriculture

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- thanks to a whole community  
of supporters and partners!*

