2023 Report
Vermont Agricultural Water Quality Partnership

Vermont farms must meet high standards for environmental stewardship while balancing shifting markets, tough environmental conditions, and long days of hard work. The Vermont Agricultural Water Quality Partnership (VAWQP) was established in 2012 to support the evolving challenge of achieving Vermont's agricultural water quality goals. In particular, the Partnership focuses improving water quality by reducing nutrient pollution from farms.

To achieve its vision of a Vermont populated by sustainable farms who steward their land to improve water quality for the benefit of all Vermonters, the VAWQP coordinates partner efforts to provide water quality education, technical and financial assistance to the farming community. The partnership also works toward building a strong collaboration among partner organizations by sharing research, trainings and updates across partners and aligning planning efforts to ensure the effectiveness of targeted watershed strategies.

Vermont Agricultural Water Quality Partnership

Mission

Improve agricultural water quality in Vermont by coordinating partner efforts to provide education, technical and financial assistance to the farming community.

Overarching Goals

1. To improve water quality and wildlife habitat on all farms;
2. Deliver technical and financial assistance in the most efficient and effective manner; and
3. Provide the best service experience possible for the farmer.

The Partners

- Patrick Leahy Lake Champlain Basin Program
- United States Fish & Wildlife Service
- University of Vermont Extension
- USDA Natural Resources Conservation Service
- USDA Farm Service Agency
- Vermont Association of Conservation Districts & Natural Resources Conservation Districts
- Vermont Agency of Agriculture, Food & Markets
- Vermont Agency of Natural Resources, Department of Environmental Conservation
- Vermont Housing & Conservation Board

BONEYARD FARM

VAWQP Programs Support Resilient Landscapes Through Collaboration

Hannah and John Doyle steward Boneyard Farm while raising their young family. The 180-acre property in Fletcher, Vermont was once a conventional dairy farm, but since being conserved through the Vermont Land Trust (VLT), it is now a diversified, grass-based operation producing non-GMO pastured pork, beef, lamb, eggs and certified organic vegetables. The streams on the farm feed the Lamoille River, which ultimately flows into Lake Champlain.

Land stewardship has been a foundational principle of Boneyard Farm from the beginning. According to farm co-owner Hannah, “Conservation on the farm was not just our idea, it was a contingency of the real estate transfer and coordinated through the Land Trust as part of that process.” Thankfully, Hannah and John’s personal beliefs paired well with these goals. “Conservation and environmental ethics have always been important to my husband and me. We want to do right by the land and be good stewards of it.”

Since buying the property three years ago, the Doyles have been hard at work building the farm into a viable business, while also installing projects that benefit water and soil health, wildlife habitat, biodiversity, climate and flood resiliency.

In the spring of 2023, the Doyle Family and the Franklin County Natural Resources Conservation District (NRCD) spearheaded planting of thousands of trees and shrubs along 1,830 feet of stream in two of their hay pastures – an area covering 4.2 acres.

In addition to the tree and shrub plantings, the Vermont Land Trust collaborated with Boneyard Farm and the Vermont DEC's Rivers Program to install woody structures in the stream. According to VLT's Ecology and Restoration Program Director Allaire Diamond, "Before this land was cleared and converted to agriculture, there would have been lots of wood in the stream, slowing waters." Replicating the natural flow pattern of streams reduces erosion provides flood resiliency and improves stream habitat, Diamond shared. Boneyard Farm also installed exclusion fencing along stream and wetland areas. This project will keep their animals from going into the stream and waterways, further minimizing erosion and nutrient loss.

The collaborative nature of the conservation on the farm was highlighted at a water quality event that Boneyard Farm hosted with NOFA in late spring 2024. According to staff who worked on the project, this farm's story highlights the importance of collaboration across organizations to achieve conservation goals. "Coordinating with so many partners had its moments of challenges, but clear communication and ongoing engagement ultimately results in a successful project," said Franklin County NRCD District Manager Lauren Weston. Almost every member of the Vermont Agricultural Water Quality Partnership, alongside some other partners outside the formal VAWQP partnership, played a role in supporting the farm in 2023.

Farmer Hannah agreed that the farm "wouldn't have been able to do this without these partnerships with service providers and programs. It has been challenging navigating all of these things, but … [we are] grateful for the technical and financial assistance and for the ideas people bring to us… and most proud of the conservation the farm has started." Looking forward, the Doyles hope to keep tackling conservation projects big and small. This will be most possible with the continued support of their local and statewide communities and partners.

"We care about the land more than we care about making money," Hannah shared. "The future of our farm depends on being a viable business – but it also depends on how we take care of the land and the community."

What does it mean to your organization to collaborate with partners?

Vermont Agricultural Water Quality Partnership

**The above word cloud was created from the results of the 2022 NEK Partner Survey. Thank YOU!*

This effort was supported by funding from the Vermont Department of Environmental Conservation (DEC) and the Natural Resources Conservation Council's Trees for Streams Program, and made possible by volunteers from the Vermont Land Trust, United States Department of Agriculture Natural Resources Conservation Service (USDA NRCS), U.S. Fish and Wildlife Service, University of Vermont Extension, and the local community.

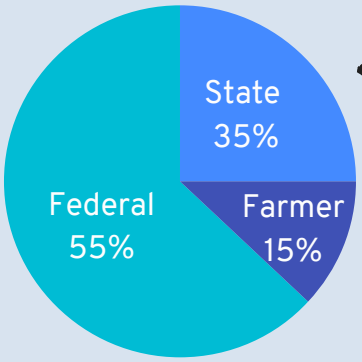
**The figures on the last page are based on the total federal program investments and corresponding results during the Federal Fiscal Year 2023 (October 1, 2022 to September 30, 2023) and the total state program investments and results from the State Fiscal Year (July 1, 2022 to June 30, 2023). All other results included in this report are based on the State Fiscal Year 2023.*

Investments and Impacts

State and Federal Commitment to Water Quality

AGRICULTURAL PROJECT INVESTMENTS AND PHOSPHORUS REDUCTION PROGRESS

$42,722,084 Invested



$36.2 million dollars invested for implementation of agricultural water quality and conservation projects on Vermont Farms. **$6.5** million estimated farmer investment in water quality and environmental stewardship. **918** farmer grants and contracts.

15 30,974 P Phosphorus

35.55 metric tons estimated phosphorus load reduction from agricultural sector. Equivalent to **2.5** dump truck loads.

20% of Lake Champlain Basin and **14%** of Lake Memphremagog Basin Total Maximum Daily Load required phosphorus reductions met through clean water programs.

"CONSERVATION ON FARMS CAN BE A BIT LIKE COMPLETING A PUZZLE, TAKING ONE PIECE AT A TIME AND FINDING THE BEST FIT." SARAH DAMSELL, OCNRCD

Clean water restoration plans, known as Total Maximum Daily Loads (TMDLs), identify pollutant reductions required for an impaired waterbody to meet the State of Vermont's water quality standards. Tactical Basin Plans identify and prioritize clean water projects across land use sectors (stormwater, agriculture, rivers, roads, and wastewater treatment) based on scientific monitoring data and assessment results.

On-Farm Implementation

95,000 ACRES OF ANNUAL CROPLAND

Soil health practices such as cover crop and conservation tillage reduce erosion and build soil resulting in a positive impact for water quality. In 2023 farmers planted **35,000** acres of cover crops such as rye, or other winter crop species and **4,500** acres of cropland was managed with conservation tillage to reduce erosion.

50 Farm barnyards and **13** manure storage systems constructed to properly store agricultural waste and prevent runoff of nutrients

16 farms were conserved including **6.43** miles of streams with 50-ft riparian buffers

Farm conservation easements ensure our cherished farmland will remain that way forever.

115 acres of riparian forest buffers installed

Vegetated areas adjacent to waters that filter runoff and nutrients; stabilize eroding banks, prevent flood damage; support ecosystems, and provide habitat.

47 acres of wetlands conserved

Wetlands are crucial habitat for wildlife and aquatic species, they control erosion and reduce flooding, and improve water quality.