

TESTIMONY TO VT HOUSE AG & FORESTRY

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Cedar Mountain Farm & Cobb Hill Cheese, Hartland

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My wife, Kerry Gawalt, and I began farming in the Upper Valley in 1996. Cedar Mountain Farm is a micro dairy of 20 Jersey cows and a CSA market garden. We are also partners in Cobb Hill Cheese---makers of artisanal raw milk cheeses. Other products include farm-raised beef and finished compost. Our farm is located at Cobb Hill co-housing in Hartland, VT, a 23 household eco-village situated on 275 acres of conserved land and dedicated to sustainable living, forestry and farming.

By practicing no-till organic vegetable production & adaptive rotational grazing with elements of silvopasture, we are attempting to mimic the processes of long term stable carbon sequestration and storage endemic to the ancient old growth forests that once covered our region. We see all these practices as comprising a synergy of effects to restore the totality of landscape functions of the farm ecosystem. Experience has shown us that if we focus first on soil health---crop yields and livestock health will follow. We need to build more resilience into our systems now so that we can be part of the climate solution rather than contributing further to the problem. We want to be ready to help our region transition to a re-localized sovereign food system and ecological economy. Organic regenerative agriculture is not just about farming---it's about regenerating the entire biosphere.

Settler occupation of Vermont and the felling of the ancient forests, along with the subsequent 250 years of extractive "land use" patterns have had a devastating impact on ecosystem health. If we take as our measure the health of agricultural soils nationally, VT looks good. Recent statewide soil surveys conducted through UVM Extension indicate that many of our Ag soils are in the 4-5% SOM range. And with that we can recognize all the work that this committee and others have done, especially over the last 20 years to reduce phosphorous pollution and promote better soil health and sustainable working lands. But soil health nationally is not a good measure---it is in a catastrophic condition. Nationally, soil loss is estimated to continue apace at 5 tons per acre per year (as much as 25-50 tons in IA) that's the equivalent of a pickup truck of soil leaving every acre every year. Nationally, SOM on ag soils is 1% or less---even on the great plains, where Mollisol soils were typically 10%. If the heavily farmed rich alluvial clay and silt loam soils of the Champlain basin are now at 4-5%---what must they have been when they were under the cover of the clay plain ancient old growth forests of white oak and pine?

If we are to effect the truly transformational system changes required to survive and even thrive in this era of irreversible abrupt climate change, we need to understand the short-comings of current land management practices, and realize how degraded our baseline landscape function really is. The work of a conscientious land manager in our time is the work of restoration and repair. We should not use national comparisons as our baseline, but rather look back to what this region was like pre-European settlement. We should take the soil health of the ancient old growth forests as the benchmark for our region. By acknowledging what we have lost we can then awaken to how much immediate opportunity we have to begin to heal and regenerate this land.

Going forward, we need policy makers and land managers to understand that biology is the driver of soil health and carbon sequestration. In natural systems carbon inputs continuously come in through photosynthesis feeding living roots, by way of animal activity, and in the continual deposition of plant residue. In a cropping system the farmer is removing carbon in the form of produce and soil disturbance. By observing how the principles of healthy soil are naturally achieved in a forest system

and mimicking those landscape functions in their land management practices, farmers can begin to restore and augment the carbon bank.

If we are to meet our binding greenhouse gas emission reduction targets as established under the passage of the 2019 VT Global Warming Solutions Act in a truly meaningful way we need to elevate healthy soil as the essential ingredient to solve the climate and ecological crisis. Simply reducing GHG emissions won't ever be enough to halt climate change. Weatherizing our homes and electrifying our transportation fleet are technological fixes that only address the symptoms of the problem and are no substitute for environmental repair. We need to maximize the sequestration capacity of our farms and forests. More importantly, we need to focus on restoration of our habitat.

We can't expect farmers to focus on ecological services while they have to compete to survive in the industrial global food market. We need many more young people to work in regenerative organic land management. We must provide training and a viable career path for this fundamentally vital work of healing land and feeding local communities. The state has a fiduciary responsibility to protect and restore our soil resources by providing a base income to land managers who can regenerate soil while producing food, fuel, fiber, building materials, and medicine. In this era of ecological collapse, healthy soil is the basic infrastructure that must be repaired and regenerative land managers are the frontline essential workers who can get the job done.

The good news is that through practices such as cover cropping & crop rotations, composting & mulching, perennial crops & agroforestry, adaptive multi-species grazing & organic reduced tillage and no-till, farmers can build soil 10X faster the processes of natural forest succession. Our focus should not be on creating additionality on our farms so that we can sell off-sets to polluting industries----but rather *on restoring the carbon cycle*.

Payments for Ecosystem Services programs should take into account that carbon farming is a long term proposition. Land managers using regenerative principles will require a steady guaranteed income. Every farm will experience ebbs and flows in sequestration, but there is not a farm or forest in Vermont that can't build more soil organic matter. It is this cumulative effect that is exponentially important and why payment should be equitable across the board for all land managers participating in soil health management regardless of acreage. Small diversified and intensively managed farms have the flexibility and resilience to best withstand the shocks and disruptions that are coming our way. According to the United Nation's FAO, small farmers (25 acres or less) are still providing 70% of the world's food.

We need to elevate healthy soil as the essential ingredient to solving the climate and ecological crisis. Soil is such a critical resource that we can no longer leave its management unregulated. Ownership or leasehold or any other form of land tenure can no longer mean free license to degenerate or destroy soil. Government must protect this resource and offer transformational incentives for the adoption and maintenance of Soil Health Management Systems.

As a Vermont farmer who is involved in the climate justice movement with a focus on soil health policy, I am often challenged by folks who question whether changing things in VT will make any meaningful difference. The argument goes that we are too small for GHG emissions reductions or a shift to regenerative agriculture to matter in the broad scheme. But ever since our founding as a tiny misfit republic at the outset of the Revolutionary War, our brave little state has always punched above its weight.

We set trends and are a catalyst for broader social change across our nation and the world.

In ordinary times, even if our ultimate aim were to see all the land in Vermont under regenerative management, we could accept incremental gains in regards to establishing a PES program. However, in our current predicament business as usual could quite possibly signal the death of nature. In the latest warning from the IPCC issued last week, climate scientists the world over declare that a just transition

to regenerative land management and habitat restoration must begin now in order to stave off the worst effects of irreversible abrupt climate change. The next 3-4 years are critically important to put the brakes on the 6th mass extinction. Nature based solutions like PES programs are the only current proven and practical means for carbon capture and storage. Soil health protection and restoration is our last best chance to pass on a livable planet to the next generation. But we have to act now. Seize this moment and create programs that will be truly transformational. That's why I am advocating for a whole farm approach to PES that guarantees a base income to participating land managers. There is no part of this planet that is not ecologically significant. What we do here matters. If healthy soil practices are to be adopted widely it will be a grassroots movement of forward-thinking land managers who will be the catalysts. But we can't do it alone. It is time for policy-makers to acknowledge that *we are in a climate and ecological emergency*---and to act accordingly. Vermont can lead the way!

I'd like to finish by giving a quick call out of support to some of the many important bills you're currently working on:

H-148 on Environmental Justice lays the groundwork for bringing equity into the policy-making processes

H-697 amending UVA appraisal to allow landowners to place more acreage in "forever wild" status and encourage old growth

H-606 the outstanding 30x30 and 50x50 conserved

~~Ensure that the clean heat bill does not encourage monocropping~~ for biofuels or forest destruction for biomass

Ensure that on-farm water use regulation is not onerous to small farms

as well Right-to-Farm, on-farm slaughter, and allowing diversified farmers to also grow cannabis--- which all support the viability of small diversified farmers.

Thank you!!!