

Chris Mattrick, District Ranger
USDA Forest Service
Green Mountain & Finger Lakes National Forests
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Dear District Ranger Mattrick,

This is a difficult letter for me to write because I know how important your decisions will be for both the near future and the long-term outcomes not only for the trees, the rivers and streams, but also for the safety and security of the residents who live near the forests, and for the future of generations who will need the healthy ecosystems of the Green Mountain National Forest and other healthy forests to weather the impacts of climate change. I know this first-hand from my emergency management background here in Vermont and in Texas. I also know this from my family's first-hand encounter with the flood waters this summer in Montpelier.

On July 11, 2023 I and many others had to leave or be evacuated from our homes in Montpelier as Wrightsville Reservoir's capacity was filled to within an inch from the spillway. If the water had reached the spillway, with the overflow then added to the already flooded downtown businesses and housing area along upper State and Elm Streets, we might have lost lives in addition to precious homes and our senses of security. It was a matter of an inch and it was still raining when I left my house for higher ground. I looked back to see that water had filled my street and had risen above the first step up my front porch. I fully expected to return to a basement full of water and a soaked first floor. My husband and I were much luckier than anyone on our street, all of whom had flooded basements. We had a few things in place that made the difference.

Our 60+ year old Cottonwood tree, the orchard of hazelbert trees, perennial wildflowers and raspberry beds around one side of our yard, the no-till blueberry beds in front of the house and the 14 years of composted soil and leaves at the base of all of these plants around our house. Our indefatigable sump pump, the down spouts that directed water away from the house where it could be absorbed by our healthy and deep soil, and our very good neighbors who put sandbags at the entrance to their driveway to divert water away from our back yard. Still, their basement, their neighbors' basements and everyone up and down our street took on many feet of water.

And we would have too but for two other factors. One, the rain stopped around noon and did not reach the spillway on the Wrightsville Reservoir Dam. Two, the relatively

intact forest of the Worcester Range had the soil capacity to absorb and hold back storm water that could have overflowed the reservoir.

We know the climate has changed. We know the rains are coming more often and in greater duration. In Montpelier we know that our thin top soils saturate rapidly and where they are compacted or paved over, the water runs off, into our storm drains. In this case they over-filled the storm drains into the streets.

We know that the condition of our forests, not only nearby in the Worcester Range, but also in the Green Mountain National Forest will play a major role in mitigating the extreme changes in rain, winds, and seasonal temperatures, both the highs and the lows. And I am very concerned that in my reading of the environmental assessment for the TGIRP plan, I do not get the sense that the assessment or plan connects the impact between permanent or temporary road building and the continued soil compaction that results in flooding. That timber management is not focused on protecting intact forests for climate mitigation and resilience.

I share many of the concerns that others have so articulately expressed in their comments found in the TGIRP Reading Room. I am grateful that Annette Smith expressed her dismay at the time constraints placed on this comment period even as I appreciate the opportunity of the online town meeting offered on March 27. She is right in saying that posting important support material during the comment period does not afford us the time to review the elements of the EA and give them the consideration that you asked of us at the online meeting. I also had asked Mr. Strand if there would be an extension.

I am grateful that Dr. William Moomaw and others have submitted their comments related to carbon, with the interrelationships of older trees to carbon sequestration and storage, to the ecosystem richness found among the well-established and widely integrated root systems only found in undisturbed forests. So that I can call your attention to what I would expect in this time of “ecosystem management” to what would be a primary focus on protecting the base of the forest, its healthy soil.

Healthy soil is defined here by the USDA as they apply it to agriculture but it also applies to forestry:

Soil health is defined as the continued capacity of soil to function as a vital living ecosystem that sustains plants, animals, and humans. Healthy soil gives us clean air and water, bountiful crops and forests, productive

grazing lands, diverse wildlife, and beautiful landscapes. Soil does all this by performing five essential functions:

- **Regulating water**

Soil helps control where rain, snowmelt, and irrigation water goes. Water flows over the land or into and through the soil.

- **Sustaining plant and animal life**

The diversity and productivity of living things depends on soil.

- **Filtering and buffering potential pollutants**

The minerals and microbes in soil are responsible for filtering, buffering, degrading, immobilizing, and detoxifying organic and inorganic materials, including industrial and municipal by-products and atmospheric deposits.

- **Cycling nutrients**

Carbon, nitrogen, phosphorus, and many other nutrients are stored, transformed, and cycled in the soil.

- **Providing physical stability and support**

Soil structure provides a medium for plant roots. Soils also provide support for human structures and protection for archeological treasures.

Because as healthy soil applies to agriculture and is now becoming the foundation for new best practices in farming, it also applies to forestry. I expect that the following soil health principles outlined by USDA for agriculture will become part of the new best practices in forestry.

From the Natural Resources Conservation Service of the U.S. Department of Agriculture. <https://www.nrcs.usda.gov/conservation-basics/natural-resource-concerns/soils/soil-health> accessed 8 April 2024

“Principles to Manage Soil for Health

Soil health research has determined how to manage soil in a way that improves soil function.

- **Maximize Presence of Living Roots**
- **Minimize Disturbance**
- **Maximize Soil Cover**
- **Maximize Biodiversity**

As world population and food production demands rise, keeping our soil healthy and productive is of paramount importance. . . . As a result, farmers are sequestering more carbon, increasing water infiltration, improving wildlife and pollinator habitat—all while harvesting better profits and often better yields. “

What enables and supports the ecosystem services of farms where the healthy soils principles are followed, could, in the well-networked forests of older trees within intact wild forests, increase the resilience of the forests and of our communities. I like the description of healthy soil as described by the USDA:

“Soil is not an inert growing medium – it is a living and life-giving natural resource. It is teeming with billions of bacteria, fungi, and other microbes that are the foundation of an elegant symbiotic ecosystem.”

Last Friday, 5 April 2024, Dr. Courtney Hammond Wagner of the UVM Plant and Soil Science Department, presented an intriguing lecture, “What Do Vermont Farmers and Soil Health Practitioners Think about Soil Health?” It seemed to me with the experiments performed on ranches such as Gabe Brown’s over the past 25+ years as described in his book Dirt to Soil, I thought there surely would be similar research on soil health in forestry. I asked Dr. Wagner – *Not that she knows of but she is working on a proposal for such a study in Vermont.*

Thank you for reading my comments. I could say more about the environmental assessment, but I have run out of time.

Thank you to Jay Strand and your staff for the phenomenal amount of work they have done on this report and for their incredible commitment.

With respect and gratitude,
Lynn Wild