

The Soil Series: Grassroots for the Climate Emergency  
Part 1: Ground to Body: Soil Health & Human Health  
Speakers: Didi Pershouse, Grace Gershuny, Michael Denmeade  
February 27, 2019

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- Living Notes FROM THE WALL:
- Actions; upcoming events; people, groups, initiatives to connect with
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## Soil Series Hosts

- [Building A Local Economy \(BALE\)](#) - South Royalton, VT. BALE is a community resource center for local economy initiatives in the White River Valley of Vermont, intentionally multi-issue in focused and multi-dimensional in their programmatic work. Check out the [documentary film](#) *Dancing With the Cannibal Giant: Five New Stories for the Great Transition*.
- [Vermont Healthy Soils Coalition](#) - To join the Vermont Healthy Soils Coalition Email Listserv, fill out this [quick survey](#). Then, follow the instructions in the email confirmations that you'll receive to join the listserv. Join the [VHSC Facebook group](#).

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## **Living Notes FROM THE WALL**

*This is not complete list of resources by any means The lists below were compiled from the collective voices throughout the event. All this in just 2 hours!*

**ACTIONS** (*people are already doing these things in our region*)

- Flour/bread dinner party trick
- Take Didi's classes <https://www.landandleadership.org/>

- Land Listener Workshops <https://soilcarboncoalition.org/land-listeners-project/>
- Buy grass fed animal products
- Small equipment tool sharing
- Regenerate soil – farm, backyard
- Composting
- Textiles can be grown to nurture land – know what you buy
- Recover waste
- 350.org (walks, direct action)
- Scale issues/questions – small scale no till
- Grow more food
- Use farmland, keep in use
- For climate – fields vs forests, what to do with a forest
- No till veggies
- Connections to conventional world
- Practice ‘elevator speeches’
- Save seeds
- Cover cropping - experiment with multi species mixes
- Talk about soil!

## UPCOMING EVENTS

**March 9** [Backyard Composting and Soil Health Workshop](#) with Cat Buxton. Hartland, VT.

**March 11** [Soil Health for Vegetable Producers](#) with Jan Hendrik Cropp at Stonewall Farm in Keene NH

[The Soil Series: Grassroots for the Climate Emergency](#)

**March 13** Shielding Soil with Plants and Animals

**March 20** Storytelling Panel

**March 27** Building the Soil From the Ground Up

**April 10** Social Mycelium: the Fiber of Community Resilience

**April 24** A Soil Sponge to Cool the Planet

**March 17** [Soil Theory: Human Interaction, Then and Now](#). Charlotte VT. Travis Berg, Infinity Soils.

**March 24** [Mushroom Medicine](#) Charlotte VT. Vermont Myconode

**March 19** [The Stories Behind Our Food](#). Springfield VT. Equal Exchange and Springfield Food Co-op are collaborating as part of their workshop series Connecting with Food which encourages us to deepen our connection with the food we eat and the people behind it.

**April 5 - 9** 350 VT Climate Walk: A 5 day, 53 mile walk from Middlebury to Montpelier. <https://350vermont.org/nextsteps/>

**March/April** Meetup series for new farmers: Vital Communities is organizing a short meet-up series for new farmers that have been in production for three years or less in the White River

valley. The group will be meeting 3-4 weeknight evenings in Bethel between March and early April. The meet-ups are primarily geared towards building community between new farmers, though each will also feature a brief dinner table presentation from a local agricultural expert. Email [Lauren@vitalcommunities.org](mailto:Lauren@vitalcommunities.org) to get plugged in.

**April 11** [Vermont Organics Recycling Summit](#) (VORS). Vermont Technical College, Randolph VT

**April 14** [VHSC Common Ground for Climate Action](#), Brattleboro

**April 14** [MycoRemediating a Vermont Brook](#) Poultney VT Vermont Myconode

## PEOPLE (*alphabetical*)

- **Anne Biklé** - Microbial Roots of Life and Health, ([1 hr video](#))
- **Cat Buxton** - Grow More, Waste Less. Compost and soil health educator. [Handouts](#), [slides](#), [resources list](#), [classes and presentations](#)
- **Steve Diver** - <http://www.uky.edu/hort/node/1379>
- **Grace Gershuny** - Books: Organic Revolutionary; The Soul of Soil; The Rodale Compost Book)
- **Walter Jehne** Seminar in Fairlee VT, 2016 (*the spark that started VHSC*) Part 1 Restoring Water Cycles to Naturally Cool Climates and Reverse Global Warming ([2 hrs 15 min, P1 video](#)), Part 2 Regenerating the Soil Carbon Sponge ([2 hrs, P2 video](#))
- **Dr. David Johnson and Hui-Chun Su Johnson** - Johnson – SU compost bioreactor. How to build one ([pdf](#)) . How it works ([12 min video](#)).
- **Michael Kravcik and Jan Lambert** [Water for the Recovery of the Climate: A New Water Paradigm](#)
- **Jack and Anna Lazor** - Butterworks Farm, Westfield VT. Organic dairy farmers. Grass and grain growing experts.
- **Dr. Daphne Miller** - Book: Farmacology: Total Health from the Ground Up. [Video](#).
- **David Montgomery** - The Hidden Half of Nature: Microbial Roots of Life & Health. ([video, 1 hour 20 min](#)) Books: Hidden Half of Nature; Dirt.
- **Leah Penniman** - [Soul Fire Farm](#), Petersburg, NY. [Acres USA interview March 2018](#) Book: Farming While Black.
- **Didi Pershouse** - Book: The Ecology of Care. Resources at [Didipershouse.com](#). Online course: Growing the Soil Sponge for Flood, Drought and Wildfire Resilience at [LandandLeadership.org](#). Teaching Manual at <http://soilcarboncoalition.org/learn>
- **Gerald Pollack** - Professor of Bioengineering at the University of Washington. Book: The Fourth Phase of Water. [Video](#).
- **Jess Rubin** - [Mycoevolve](#)
- **Allan Savory** – How to Fight Desertification and Reverse Climate Change. ([20 min TED talk](#)). Hope for Reversing Desertification and Climate Change - What You Can Do ([1 hr 15 min, video](#)) at Stonewall Farm, Keene NH, September 2018.
- **Judith Schwartz** - [Books](#): Cows Save the Planet, Water in Plain Site

## GROUPS/INITIATIVES - Local Resilience Connections

- [Black Krim Tavern](#) in Randolph (local food restaurant. Provided our event food!)
- Hospitals, engaged healthy food systems
  - Mount Ascutney Hospital – 27% local food
  - Fletcher Allen Hospital - Local foods initiative. Rooftop garden
  - Dartmouth Hitchcock Hospital - CSA pickup and Farmers' Market weekly at Cancer Center lot.
- [Center for Sustainable Medicine](#), Didi Pershouse, Thetford VT
- Online Course. Regenerating the Soil Carbon Sponge for Flood, Drought, and Wildfire Resilience: Six-Week Intensive on Whole Systems Landscape Function. More at [Land and Leadership](#).
- [Center for Transformational Practice](#), White River Junction VT
- VT Law School – [Center for Sustainable Agriculture and Food Systems](#), [Institute for Energy and the Environment](#), and [Environmental Law Center](#)
- Mother Up! (a 350VT project)
- [Soil4Climate](#) Facebook Community. The Vermont chapter has a [facebook page](#) too. [www.Soil4climate.org](http://www.Soil4climate.org)
- Regional Conservation districts – have some **equipment sharing** opportunities. White River Conservation District has a grain drill.
- New Community Climate Change Group (Chester, VT) (*anyone have a link or contact?*)
- [350 Vermont](#) - 350 Vermont organizes, educates, and supports people in Vermont to work together for climate justice – resisting fossil fuels, building momentum for alternatives, and transforming our communities toward justice and resilience.
- Bethel – Intentional community/land share (*anyone have a link or contact?*)
- [NOFA-VT](#) – Resources for farmers and gardeners
- Food security and gleaning operations: [Salvation Farms](#) and [Willing Hands](#)
- [Upper Valley Seed Savers](#) and [Solstice Seeds](#)
- [Voices of Water for Climate](#) Educating globally to empower people to act locally, to renew natural small water cycles to aid climate recovery.
- [Valley Green Journal](#) NH. A free monthly newsletter to foster grassroots connections, locally and globally, to help grow caring communities based on sustainable agriculture.
- [Green Energy Times](#) newspaper
- [Vermont Myconode](#) We research, practice inoculation techniques, experiment with, and educate about how to apply fungi in habitat enhancing applications such as food & medicine in clean sites & through remediative infrastructure in polluted sites.
- [Vermont Grass Farmers Association](#)
- [Upper Valley Apple Corps](#) - Community volunteers plant and care for free-for-the-picking fruit and nut trees in public places.
- [Veggie Van Go](#) – in VT – Sharing food around the state, free and available

## GROUPS/INITIATIVES (not so local)

- 4/1000- Initiative: <https://www.4p1000.org/>  
The international initiative "4 per 1000", launched by France on 1 December 2015 at the COP 21, consists of federating all voluntary stakeholders of the public and private sectors under the framework of the Lima-Paris Action Plan (LPAP). The aim of the

initiative is to demonstrate that agriculture, and in particular agricultural soils can play a crucial role where food security and climate change are concerned.

- Maryland study – hospitals and local food
  - The Center’s Food Communities and Public Health program focuses on developing relationships with communities to improve food environments, increase access to healthy food, and inform food and nutrition policy. [More info.](#)
  - Food Insecurity and the Role of Hospitals ([pdf](#))
- [Fibershed](#) develops regional and regenerative fiber systems on behalf of independent working producers, by expanding opportunities to implement carbon farming, forming catalytic foundations to rebuild regional manufacturing, and through connecting end-users to farms and ranches through public education.
- [Yes! Magazine](#): recent issue includes Leah Penniman, Anne Bikle’ and David Montgomery
- <http://soilcarboncoalition.org/learn> - free curriculum online
- [Mothers Out Front](#) Grassroots mothers, grandmothers, and other caregivers coming together to make climate change an issue that leaders can no longer ignore.

## Wedge Issues

*Wedge issues are important issues that tend to divide us and distract us from the whole. These are some of the wedge issue we heard and managed to record.*

- Invasives
- Amendments
- Weeds
- Nutrients
- Algae Blooms
- Runoff
- Erosion
- Organic Standards and Labeling

## Group Discussion

Pose a question that won’t be answered; State a comment or how you’re feeling; Question(s) you’re left with.

*Below are your statements as best as we could capture them*

Questions:

- How to get engaged in building the soil without a farm on a personal level
- How to regenerate the soil everywhere; composting method: Johnson Sue – produces in a year, something that can inoculate the soil
- How to add composting to gardening on a large scale considering communal living/caring issues
- How to incorporate nutrients into the soil without tilling on an organic farm
- How the livestock that is used for wool and yarn graze the soil
- How to include and support fungi in the soil

- How to promote recycling waste recovery at town/local events
- How to flood-proof land in a floodplain; switching from annuals to perennials
- How to start an herb garden in a house
- How to stop tilling without buying all of the expensive equipment. Consider getting a local loaner/share equipment
- How to make decisions on farms, employ resources to build soil health
- How to incorporate soil health on a small scale farm or homestead
- How to address climate change, utilize cover cropping given the short seasons and limited land in Vermont, steps to take to start minimizing tillage
- How to get kids excited about dirt
- What are good and bad invasives
- What are the unique influences our climate may have on our soil
- How can soil become a topic for city people who make up a huge portion of the population
- What is the most effective action
- How to manage the land and soil without animals and reduced energy; perennial and low maintenance ways to use the land
- How to get away from tilling
- How to build forest soil health
- How to address both small scale things (microrhizal fungi in plot) and bigger national agricultural policies
- What eats up the greatest amount of carbon for climate change
- How to build soil and keep it in place
- What's the best thing to do with small scale low-grade junky pine forests; cut wood to regenerate the hardwood forest
- How to build up soils, use rain gardens, permaculture
- How to build a house in Bethel on poor soils and how to fix those
- What are the connections that the presenters today have with conventional/industrial farmers and their awarenesses
- How to improve soil without animals
- How do you do "no bare soil"; it seems like a lot of mulch is required
- How to replenish soil on a previously mono-cropped plot of land that keeps getting washed away by water; flooding in greenhouses. What's the quickest way to revitalize soil that is left?
- How to create a food garden on degraded grassland/hill
- How to keep fossil fuels in the ground
- How to learn more about Didi's Center for Sustainable Medicine

#### Statements:

- Concern for organic standards nationally versus in Vermont
- Vermont Law School – Biodiversity Conservations
- Thinking about international environmental systems – sustainable agriculture in developing countries, economic, business, trade perspectives
- Soil4Climate – join the Facebook community!

- More about the relationship between soil and human health
- Farm animals are part of the problem and therefore part of the solution
- New Climate Change group in Chester - bring information to reduce soil compaction, stockpile soil and put it back doesn't work
- Tools to boil all of this information down to transfer to Planning Commissions, Select board, and in general more functionally use among wider groups
- Previously performed work in the Mojave Desert to rebuild soil
- Recognition of how everything is connected: algae blooms in Lake Champlain, pollinators, health of the forests
- Grateful for the cycles of the Earth
- Learn from Cat, climate activist
- Amazement at how absent soil and other conversations like this are from regular life; we need to learn from each other
- Previous contact with soil all over the world
- There is a lot of farmland in Vermont that is no longer being farmed and it should be!
- Interest in learning about no till with vegetables on an organic dairy farm
- Creating a small, affordable tiny house community, anti-capitalist, farming community in Bethel
- Healthy soil can reverse global warming
- "It's the soil, stupid!"
- No bare ground!
- Field cropping; can put annual red clover between rows.
- Soil is an incredible resource; there are ecosystems under our feet
- Interest in growing corn and connecting with people

## Presentations

Didi Pershouse

Presentation Overview

- Discussed the impacts of Tropical Storm Irene on small towns in Vermont
  - Emphasized the importance of rain and soil
  - The economics of replacing roads and infrastructure as compared to just protecting the soil
- Flour vs. bread dinner party trick:
  - The difference between healthy and unhealthy soil
  - Choose a rain cloud volunteer and a God volunteer to make it rain
  - Flour:
    - Flour represents sand, silt, clay (mineral substrate/desertification/degraded soil); turns to dust when not being held in a living matrix
    - Pouring water onto the flour on a plate generates: runoff; erosion; mudslides; flood; water contains pollutants and sediment; flour is completely dry at the bottom of the flour pile which represents not having enough water for roots or to refill aquifers
  - Bread:
    - Bread represents soil with biologic health (yeast) – Soil Carbon Sponge

- Pouring water onto the bread on a plate generates: absorbs water; filters physically and biologically; not causing runoff; refills water table with clean, clear water
  - What happens when you leave both soil types out in the sun?
    - Flour: evaporates faster, forms a crust to prevent future infiltration
  - Why does the bread work so much better:
    - Various sized pores
    - Acts as a sponge – when it is placed in water, it doesn't fall apart
- Image comparing a variety of soil treatments with a rain/runoff simulator
- Fact: In Iowa, for every 1 bushel of corn harvested, we lose 1 bushel of soil. For every 1 bushel of soybeans harvested, we lose 2 bushels of soil.
- Why does this matter?: We need clean water and oxygen to survive. In order to thrive, we need: nutrient-dense food, safety from extreme weather events, livable climate.
- Healthy soils provide: flood and drought protection, water table refilled (subsidence), transpiring plants which takes heat away from the ground surface
- Walter Jehnes believes: If we increase the coverage of the ground with additional green vegetation by 5% we can solve global warming
- Takeaway: Trust Mother Nature
- Center for Sustainable Medicine
- Didi has spent one week every month for the past 5 years traveling around North America and has found it both promising and depressing. People are buying land to mine soil and then they move on
- Regenerative soil/agriculture is bringing very diverse people together, crosses all kinds of boundaries – General Mills and McDonalds are really interested in this
- In general, it is a very hopeful, big movement and it's happening fast
- Ben and Jerrys is trying to make this transition to regenerative agriculture but running into issues like trying to respect farm culture and passed down knowledge from previous generations
- Rural Vermont organization ends up crossing fences/building bridges
- Champlain Valley Farmer Alliance – no till, cover cropping
- Connecticut Valley Farmer Alliance – no till, cover cropping
- Vermont Agricultural Committee – trying to write legislation that makes sense

### Michael Denmeade

#### Presentation Overview

- Works at Mount Ascutney Hospital
- Believes that social activism, peace, soul health, human health, etc. are inextricably linked
- Has worked with First Nations People to re-teach them how to plant and grow food
- Works with an organization called African Organics to teach permaculture and organic gardening in West Africa
- Hippocrates said:
  - First, do no harm.
  - Your first medicine is your food
- What's missing from the traditional food chain (aquatic and terrestrial)?
  - Soil! But now people are starting to pay attention to this component



- There is an initiative in Maryland to buy local and healthy food for the hospitals - Local Food to Local Hospitals
- Compared food miles for food consumed in hospitals: conventional food requires 1,500 food miles whereas local food only requires an average of 56 food miles
- In 1998 at the University of Nebraska, a study was performed to increase the awareness regarding soil quality and food
- Humans are polluting water with toxins and carcinogens
- Connection between human health and soil health:
  - Skin is the largest organ in our body and soil is the skin of Mother Earth
  - Metaphor involving a burn victim with severe burns over their skin to a proposed paved parking lot at Mount Ascutney
  - If we are using evidence-based medicine for human health, we should use evidence-based science to take care of the Earth
  - There is some connection between developmental issues with young people and the soil as these people are the most susceptible to environmental hazards
- Grandfather Wallace Black Elk – “All my relations” everything is related. Belief in hearing the six bells, which is when we hard going to be facing a very hard time. He believed that we live in an auspicious time and he heard the 5<sup>th</sup> bell before he died.
- It all boils down to relationships
- Start with relationships to the soil and the earth

### Grace Gershuny

#### Presentation Overview

- Thanks to Abenaki People
- Image of: Healthy Soils Healthy Humans – handed out at NOFA by Rural Vermont
- Common Ground for Climate Action
- Seminar in Brattleboro in April; one was already held in St. Johnsbury in November
- What does healthy soil look like?:
  - Steve Diver – former NRCS extension agent - Dreadlock Roots
  - Root system and the rhizosphere
  - Dynamic and inter-related
- How do you know if your soil is healthy?: The Land Listener Workshops – sensory methods (touch, smell, taste, etc.)
- Quote: “Land is the basis of freedom, to free ourselves we must feed ourselves.” - Malcolm X
- Leah Penniman – Keynote speaker at NOFA; author of Farming While Black – focuses on honoring the origins of farming/techniques
- Avoid disturbing the soil, bring in livestock, encourage the water cycle and diverse pasture species – biodiversity and cultural diversity
- David Montgomery and Anne Bilke – The Hidden Half of Nature
  - Soil is the guts of the earth
  - The rhizosphere is the intestines turned inside out
  - “40% of the health promoting compounds in our bodies are of bacterial origin”
  - Inner microbiome and soil microbiome
- Dr. Daphne Miller – Farmacology – health value of contact with the soil
- The Food System is responsible for approximately 1/3 to 1/2 of climate change - agriculture and agricultural production

- Synthetic nitrate fertilizer is one of the worst offenders for poor nutritional quality, poor water quality, climate change – Originally made for dynamite in World War I
- About 5% of food by retail sales is organically produced
- Only 1% of US farmland is organic
- “By reconnecting with soil we heal the planet and ourselves” – Leah Penniman
- Contact information for Grace [organicrevolutionary@gmail.com](mailto:organicrevolutionary@gmail.com)
- The idea that the national organic program has been watering down the standards for Vermont farmers is a very damaging myth; learn more in Grace’s memoir
- Grace ended up helping to write the rule for the national organic certification