Operation Adaptation:

Climate Change and Regenerative Agriculture

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WILD ROOTS FARM VERMONT

How will climate change affect farming?

Climate change is already affecting farmers. As global temperatures rise, farmers are facing unique and unexpected challenges. In some regions, climate change is resulting in longer growing seasons, erratic and extreme weather events, and less (or more) rainfall. This makes an already unpredictable way of life even more uncertain.

https://modernag.org/q/modern-agriculture/how-will-climate-change-affect-farming/

United States accounts for 2.3 billion acres

914 million acres farmland accounting for 2.1 million farms

45.4 % permanent pasture

42.6 % used for commodity crops (corn, wheat, soy, cotton)

8.4 % woodland

5.6 % diversified farms, suburban/urban development

https://www.agcensus.usda.gov/Publications/2012/Online_Resources/Highlights/Farms_and_Farmland/Highlights_Farms_and_Farmland.pdf

Currently levels 408-410ppm global CO2- Safe levels are at 350ppm

https://350.org/about/

17 of the last 18 years are have the highest recorded temperatures in the last 136 years

https://climate.nasa.gov/vital-signs/global-temperature/

As weather patterns become more unpredictable, and seasons extend or decrease, crop failure is more likely with conservation production

What is Regenerative Agriculture?

- Practice of managing land or food systems in a way that will improve biological diversity and increase operational resilience.

- These methods are capable of improving soil quality and pastures, storing water, storing carbon and increasing yield

Why Regenerative Practices?

- Most often times conservation operations are:
  - Input heavy
  - Turn over the soil multiple times in a season
  - Have poor soil quality
  - Dependent on human intervention
  - Have little species diversity
  - Unprotected soil

- Utilizes principles to influence design, decision making and implementation
- Creates diversity within soil structure (symbiotic relationships form to improve overall health of food system)
- Polycultures are intended for diverse yields
- Allows you to view landscape and account for potential of the site

Keyline

Riparian Buffers

*photos from watershedmanagement.vt.gov

Swales & Contour Planting

Windbreaks

-Protects crops

-Creates diversity

-Sequesters carbon

-Creates micro-climates

-Improves soil

*photo from agronomny.com

Silvopasture

- Increase fertility for tree crops
- Elemental protection
- Forage crops can be grown in understory

* Photo from silvopasture.org

Alley Cropping

-Creates diversity

-Soil improvement

-Pest management

-Succession planting

-Annual/perennial partnerships

*photo from extension.umn.edu

Alley Cropping & Silvo-pasture

Rotational Grazing

Forest Farming

Terraces

Terraced Polycultures

What is the greatest potential for a site ?

Viewing the landscape with a whole systems approach

- Observe
  - Patterns, Transitions, Emotional reactions
- Understand
  - Methods of communication, Roles within the living system
- Develop
  - Relationship with the land, wildlife, weather
- Define
  - Mission, Vision, Goals, Project Impact

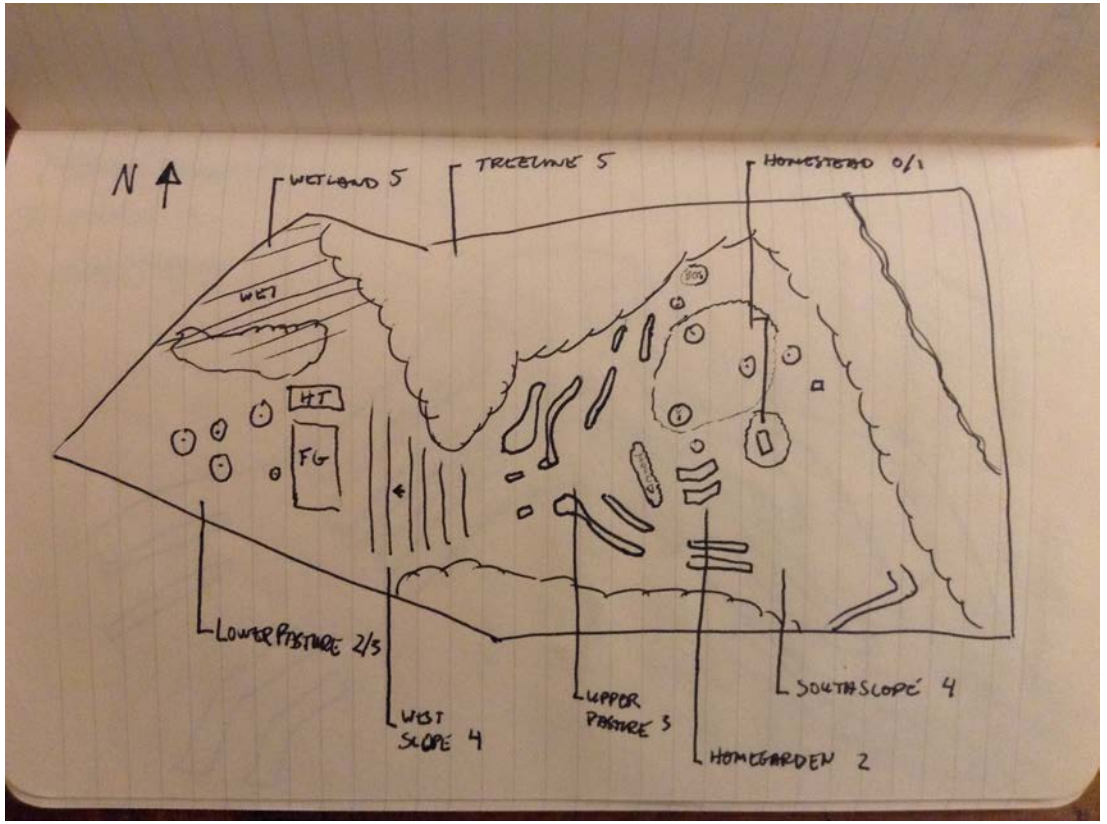
Permaculture Principles

- Observe & Interact
- Catch & Store Energy
- Obtain a Yield
- Self Regulation & Feedback
- Use & Value Resources
- Produce No Waste
- Design Patterns at Various Scales
- Integrate Rather than Segregate

Permaculture Principles

- Small, Slow Solutions
- Use & Value Diversity
- Use & Respond to Change

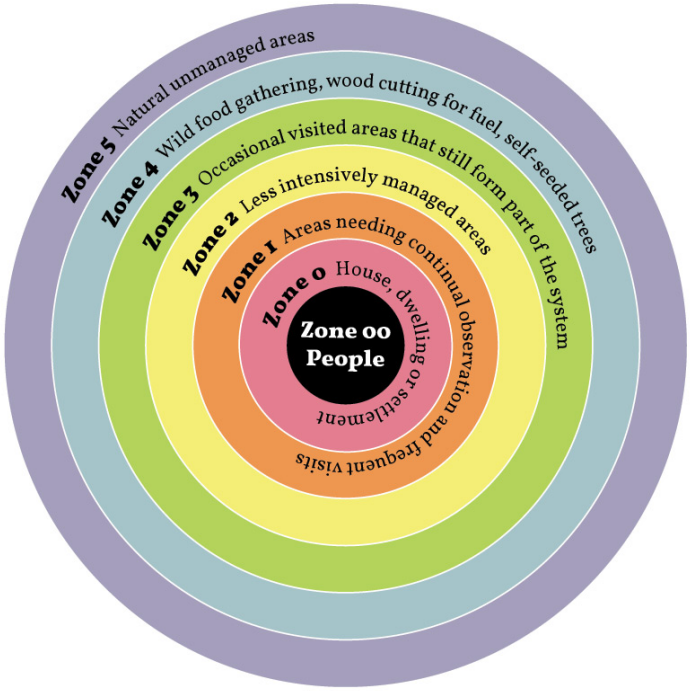
Site Analysis & Assessment

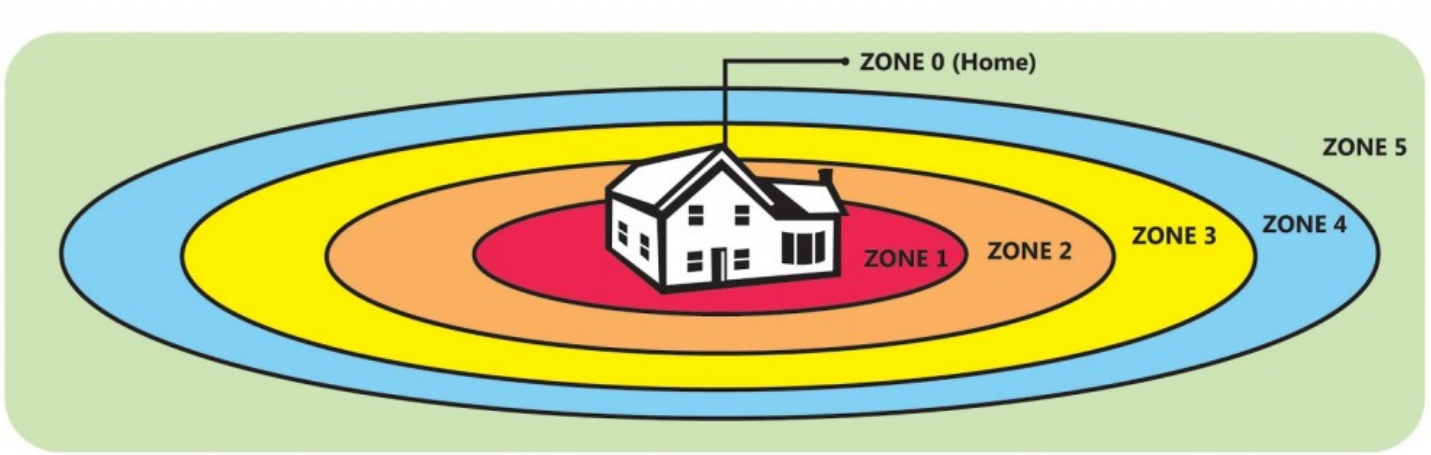


Zones of Use

- Zone 0 Private- Home, Self
- Zone 1 Personal- Kitchen garden, Pathways
- Zone 2 Public- Chickens, Greenhouse
- Zone 3 Farm- Row crops, Bigger livestock
- Zone 4 Forage- Orchard, Pasture, Managed woods
- Zone 5 Wild- Unmanaged woods, Wildcraft, Sacred space

Zones of Use

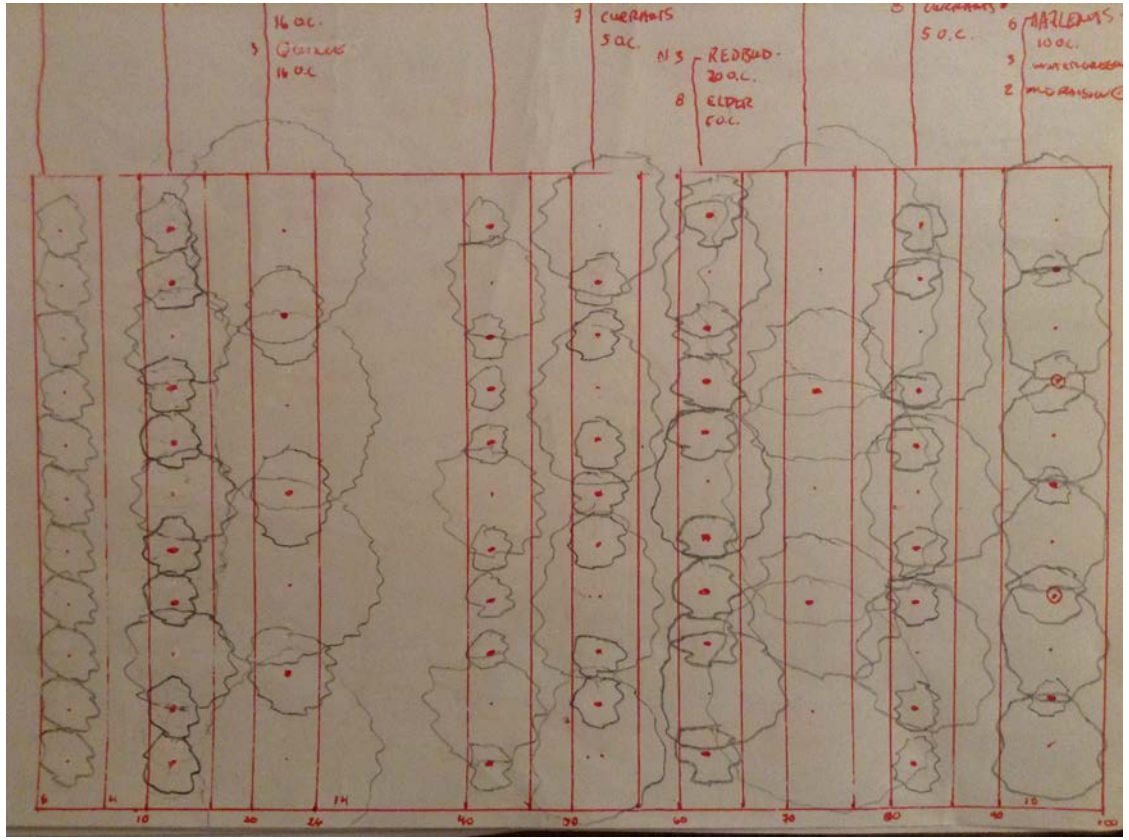

Zone 5 Natural unmanaged areas
Zone 4 Wild food gathering, wood cutting for fuel, self-seeded trees
Zone 3 Occasional visited areas that still form part of the system
Zone 2 Less intensively managed areas
Zone 1 Areas needing continual observation and frequent visits
Zone 0 House, dwelling or settlement
Zone 00 People

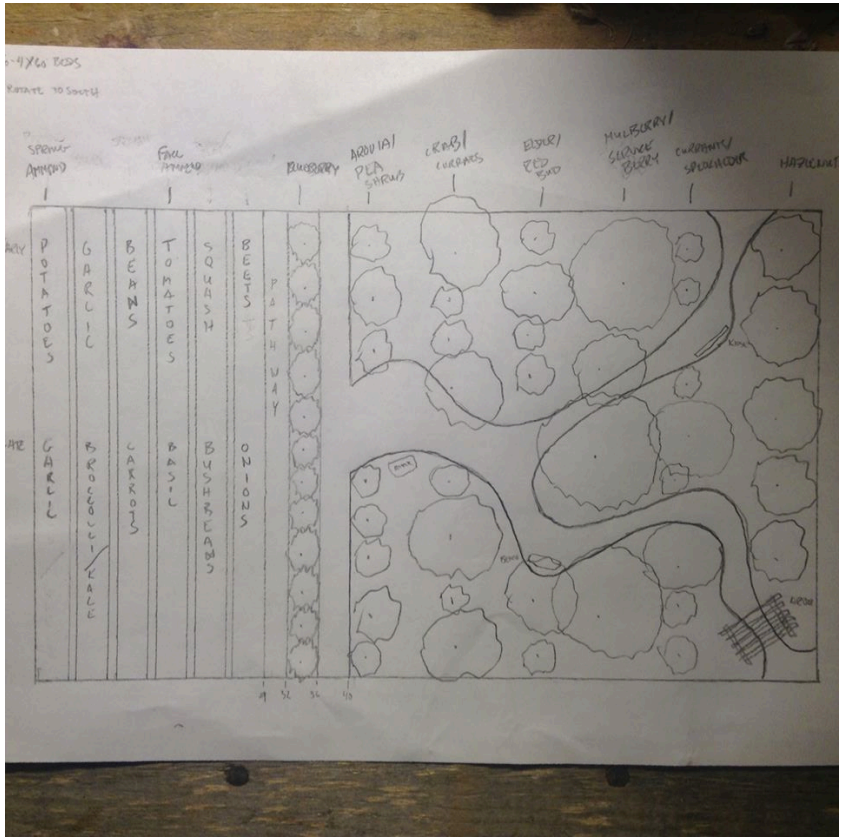

ZONE 0 (Home)
ZONE 1
ZONE 2
ZONE 3
ZONE 4
ZONE 5

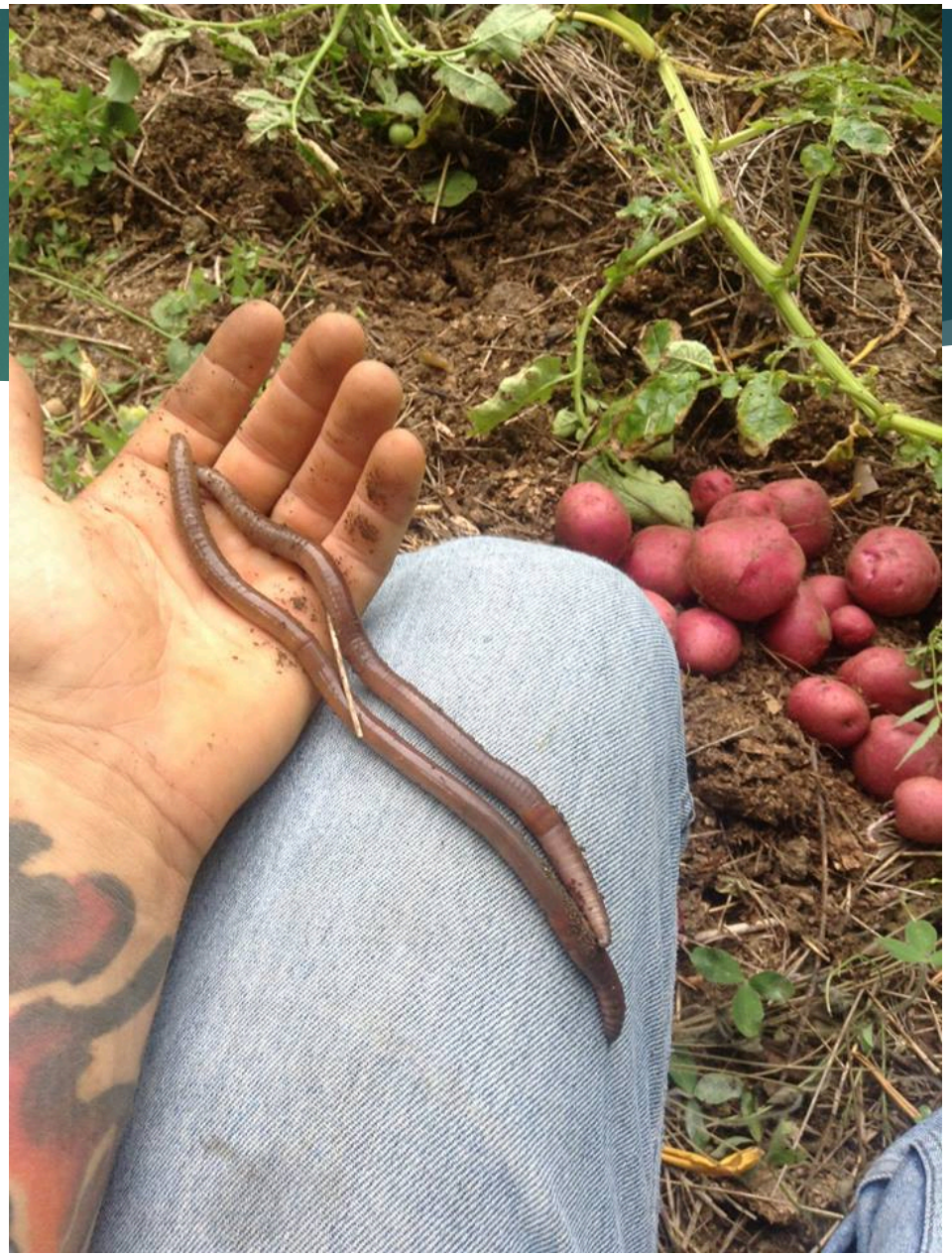
Shifting our perception of space

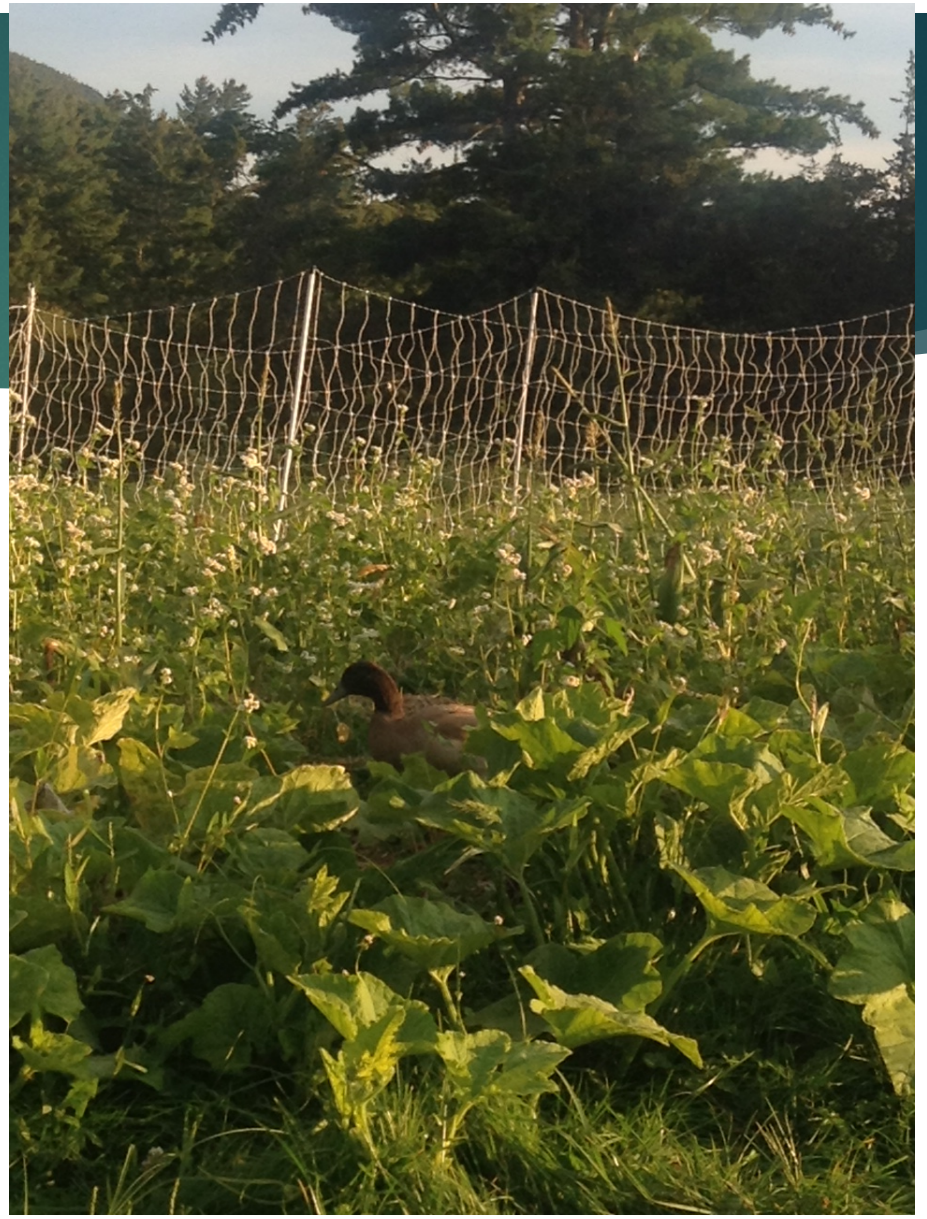
- Observe- People & Place
- Understand- Patterns
- Accept- Perspective
- Determine- Essence
- Harmonize- People & Place
- Co-creation- Evolution

Integrating Diversity









Pasture improved by:

10 birds per 3x8 tractor

Moved 2x daily

Biologically active pasture

Increase water holding capacity

Increase root depth

VETERANS HOMESTEAD SERIES

3/17 Small Scale Sugaring at Greenmont Farms in Underhill
3/25 Farm Business Planning at UVM Extension in S. Burlington
4/22 Carbon Farming at Wild Roots Farm in Bristol
5/27 Designing and Building the Resilient Garden at Sweet Butters Farm in Essex
6/24 Diversified Farm Systems at Headwaters Farm in Hinesburg
7/29 Designing the Mobile Chicken Coop at Papineau Family Farm in Highgate
8/26 Preserving Your Harvest at Tandem in Bristol
9/30 Livestock Integration and Rotational Grazing at Plew Family Farm in Mt. Holly

If you are a veteran or family member and would like to participate, please inquire at 802-377-1214 or wildrootsfarmvt@gmail.com. On-farm workshops are led by veterans.

2018 Regeneration Workshop Series

Wood-fired Discussions

4/30 Soil Health & Climate Adaptation- Josh Faulkner
6/7 Pasture Management & Livestock Integration- Jenn Colby
7/12 Agro-forestry Systems- Meghan Giroux
8/2 Regenerative Agriculture- Jon Turner

On-Farm Workshops

4/13 Grafting & Plant Propagation
6/17 Carbon Conscious Farming
7/15 Wild-crafting & Herbal First Aid
8/11 Perennial Beds & Pollinator Gardens

3rd Annual Hoedown and Harvest Potluck October 6

www.wildrootsfarmvermont.com

Wild Roots Farm VT

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