Finland Food Chain

www.finlandfoodchain.org

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The Finland Food Chain's mission is:

Cultivating a thriving local food economy by facilitating funding and resources to build knowledge, skills, and infrastructure for ourselves and future generations.

The Finland Food Chain's vision is:

The Finland Food Chain envisions an interrelated local food system where the community collaborates to respond to local needs, culture, resources, and climate.

North Shore AgroEcology Center

a project of the

Organic Consumers Association

Finland, MN

www.organicconsumers.org

Stefan Meyer – Farm Manager
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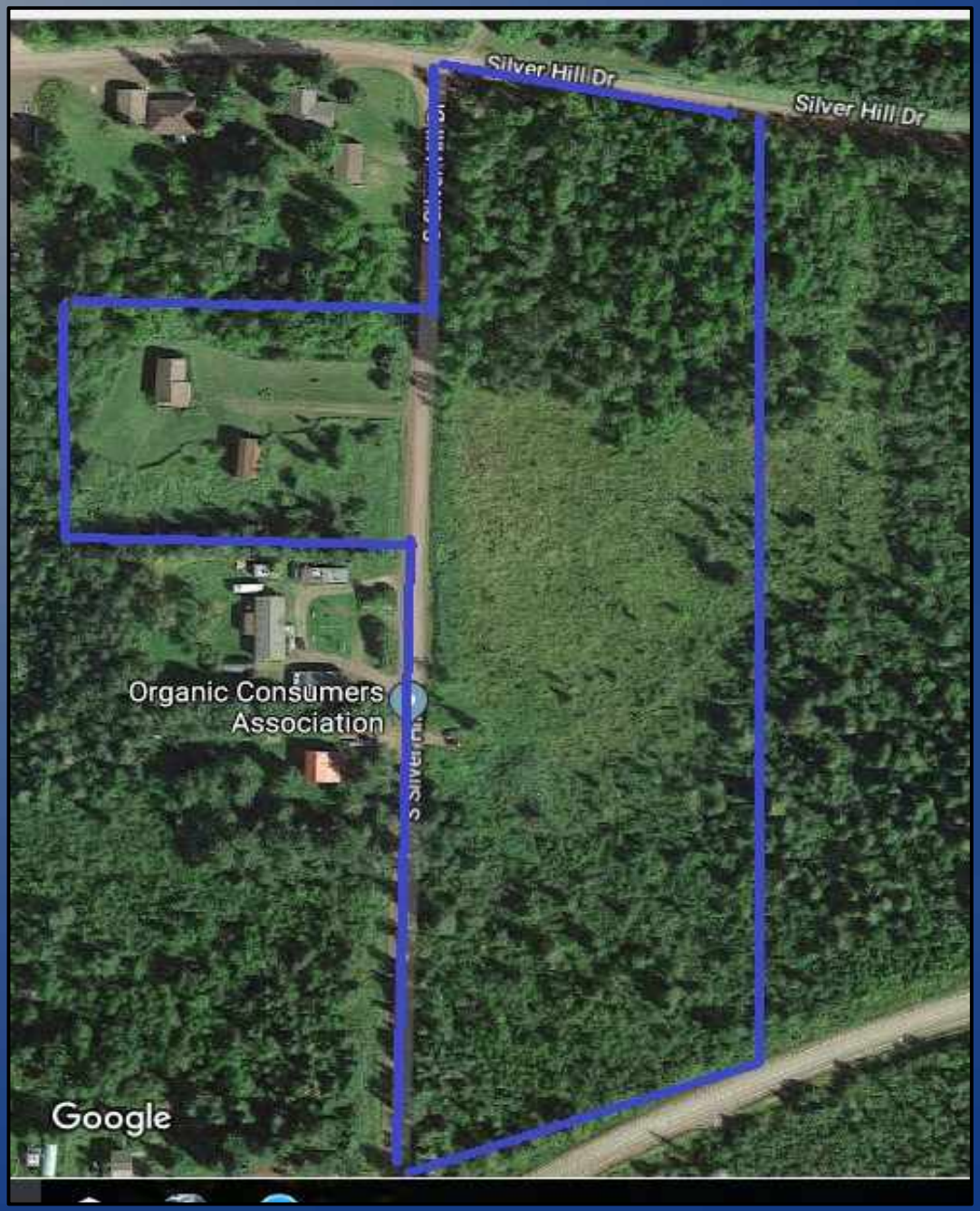
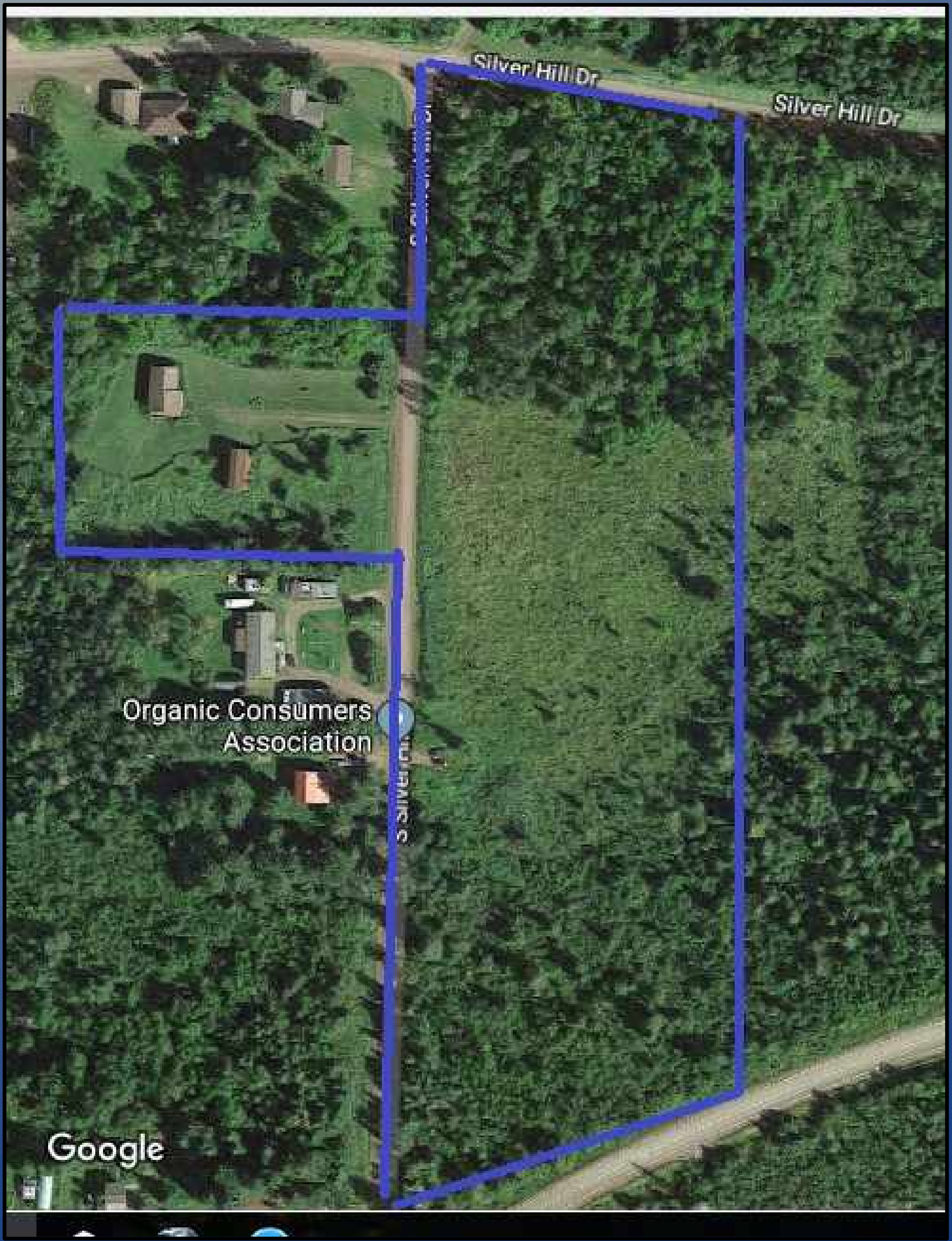
North Shore AgroEcology Center



The Vision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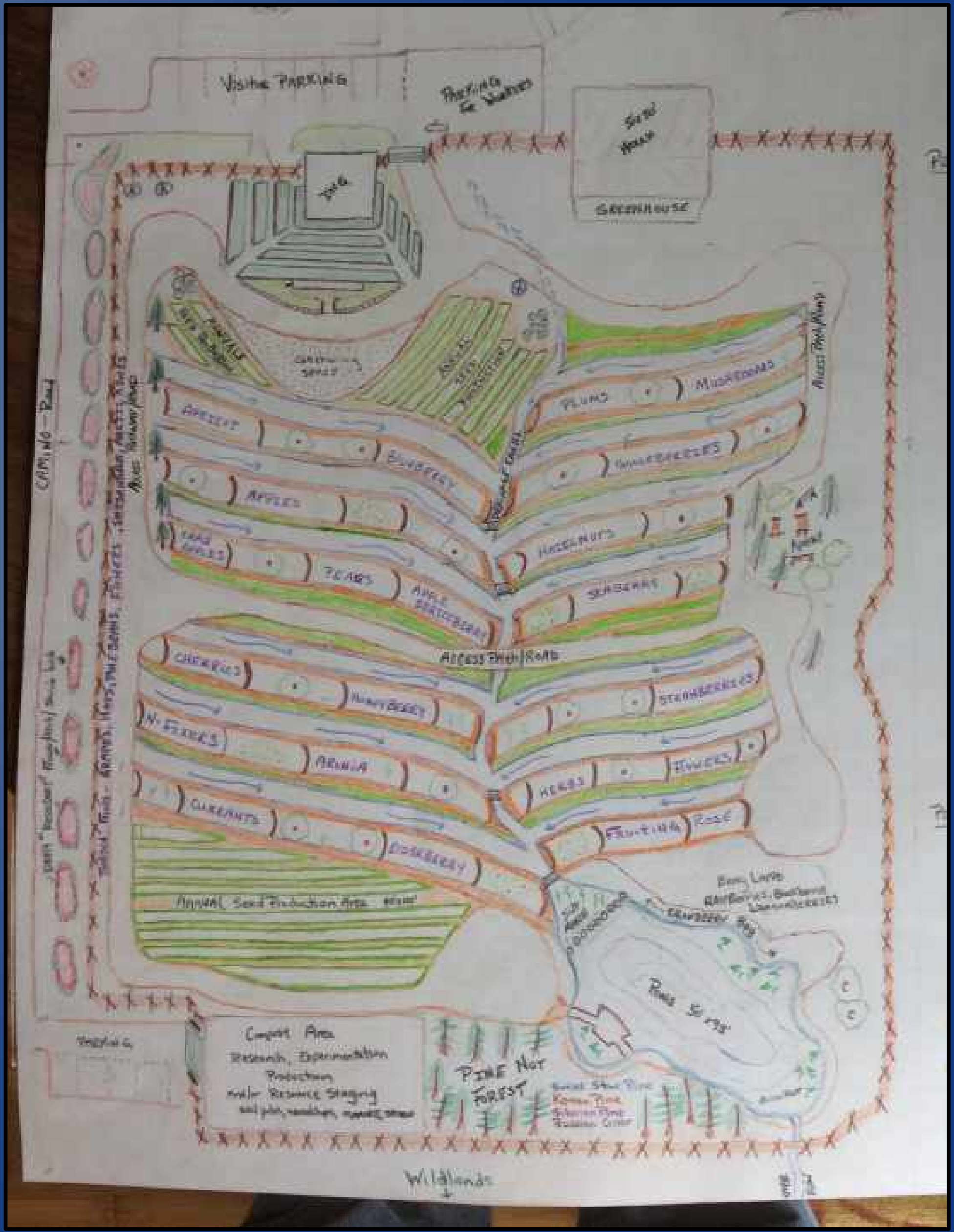

Visitor PARKING
GREENHOUSE
APRICOT
APPLES
PEARS
PLUMS
MUSHROOMS
HAZELNUTS
SEABERRY
Access Path / Road
CHERRIES
STRAWBERRIES
N-FIXERS
ARONIA
HERBS
FLOWERS
CURRANTS
ELDERBERRY
ROSE
Annual Seed Production Area
Compost Area
PARKING
PINE NUT FOREST
Wildlands

Hugelkultur Herb Terraces

After the Deep Winter Greenhouse was completed, it was back-filled with a sandy gravel. Devoid of life .

The vision was to create a terraced herb garden on the gravel slope. But soil and compost are a rare and premium commodity in this area.

So what *is* hugelkultur??

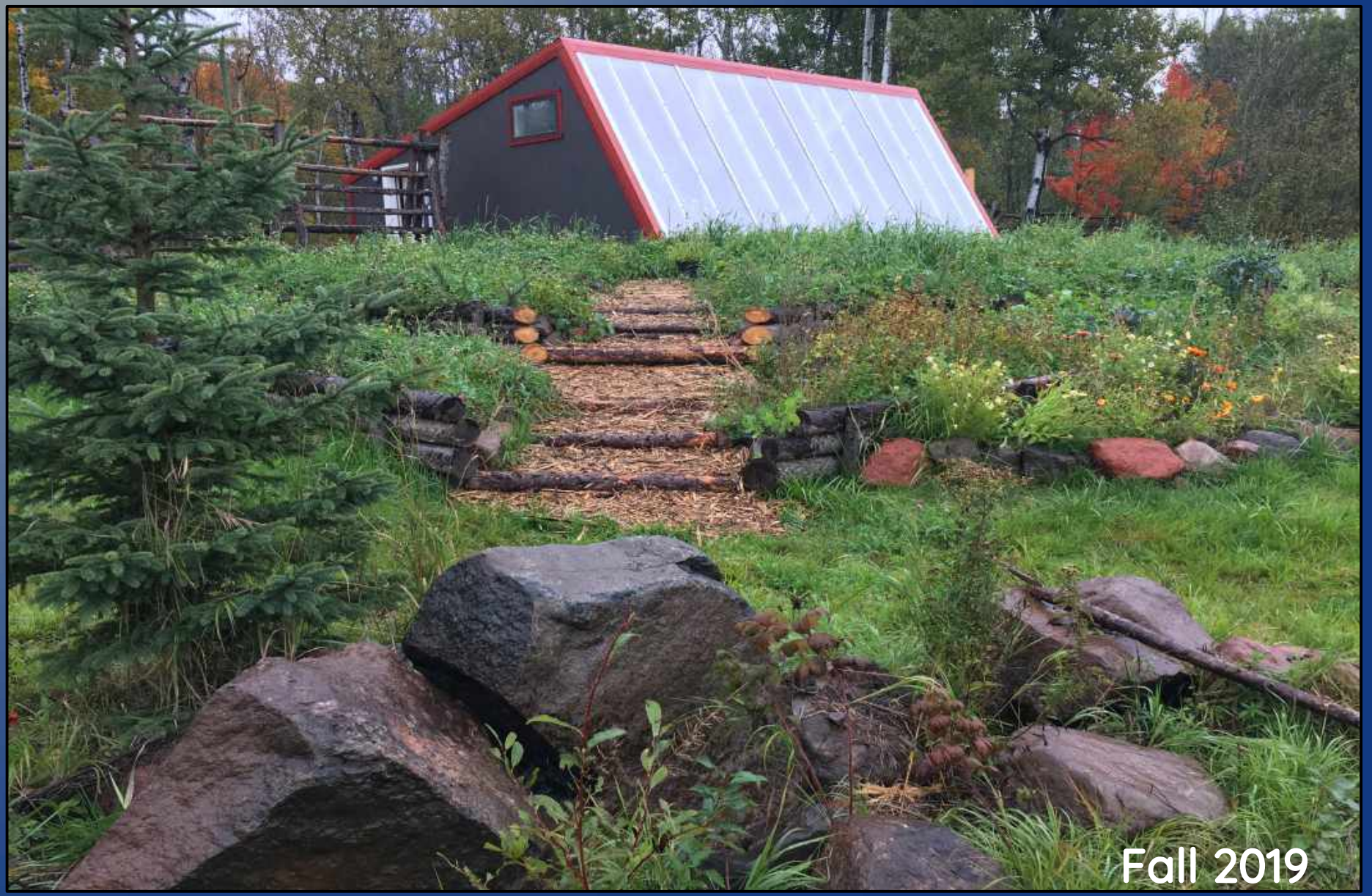
Hugelkultur, hill culture or hill mound. It's literally a raised garden bed that is built from the bottom up with logs, sticks and branches, wood chips, grass clippings, manure, leaves, food scraps, egg shells, coffee grounds... everything you would put into a compost heap.

Hugelkulturing the Terraces

Using the resources on hand: big pile of wood and fresh grass.

Living Roots and Growing Nitrogen

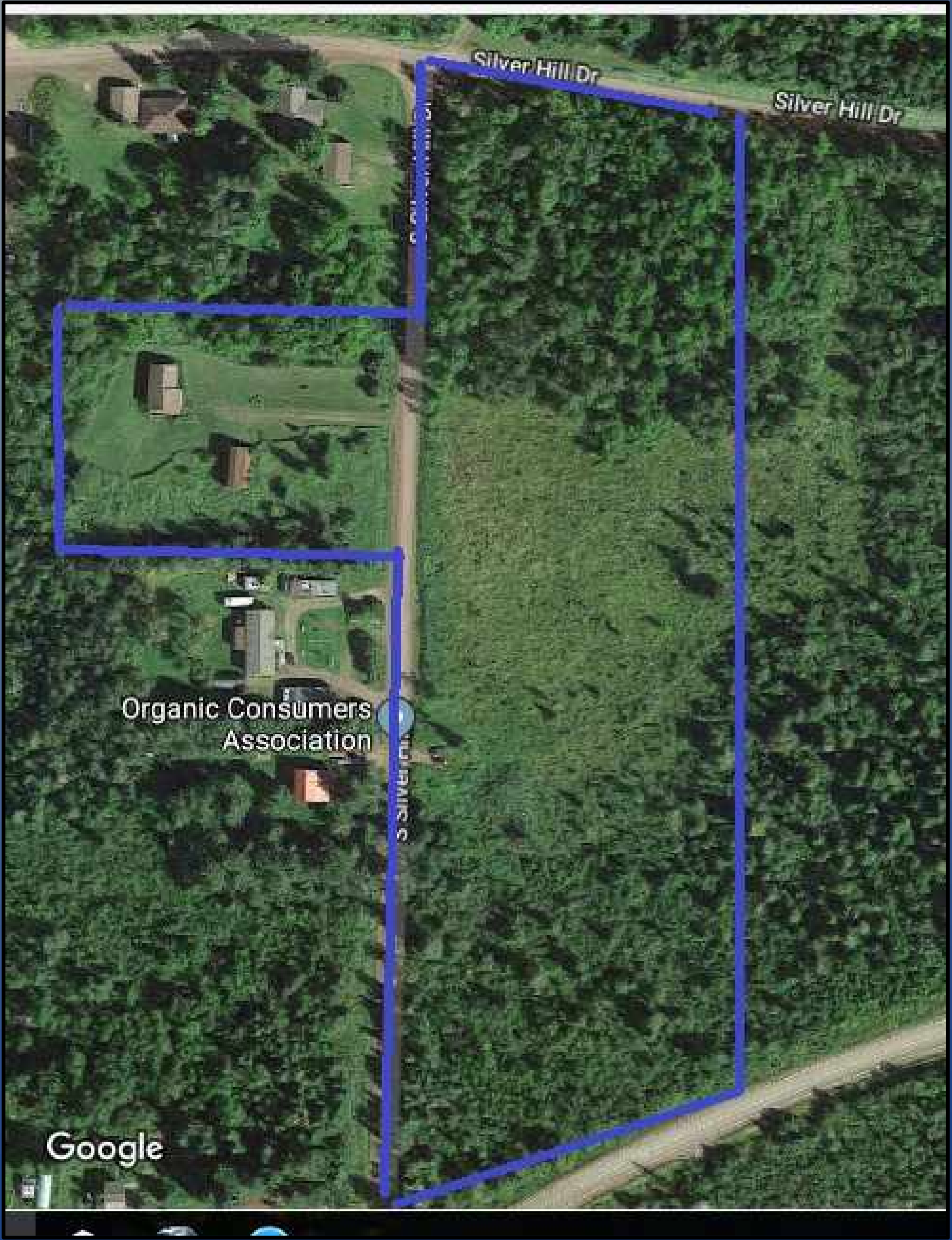
Beauty as a Function



Hugelkultur Herb Terraces 2020

Calendula, Skullcap, Catnip, Wormwood, Elecampane, Poke Root, Anise Hyssop, Swamp Milkweed, Echinacea, Wild Bergamot, Maral Root, Sage, Comfrey, Mountain Mint, White Mugwort, Thyme, Feverfew, Edelweiss, Marshmallow, Yarrow, Celandine, Motherwort, Valerian, Hyssop, Ceanothus, Chives, & Mullein can all be found in terraces.

The Vision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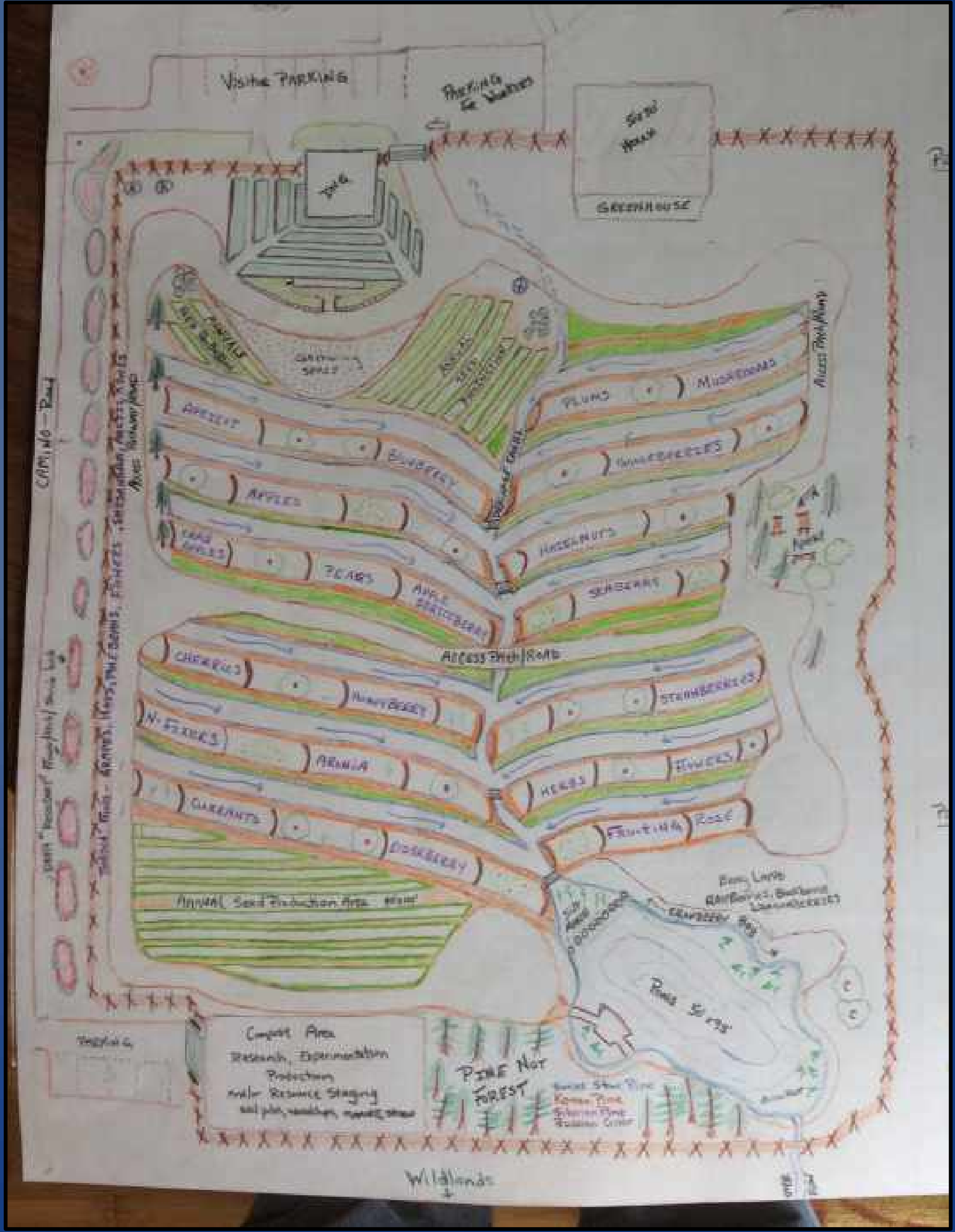
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Grape Mash Windrow Composting

Fall 2018

Grape mash from the North Shore Winery in Lutsen, MN. 10-12,000 lbs of grape mash layered as a grape mash & wood chip lasagna style windrow. Inoculated with Wine Cap mushrooms.

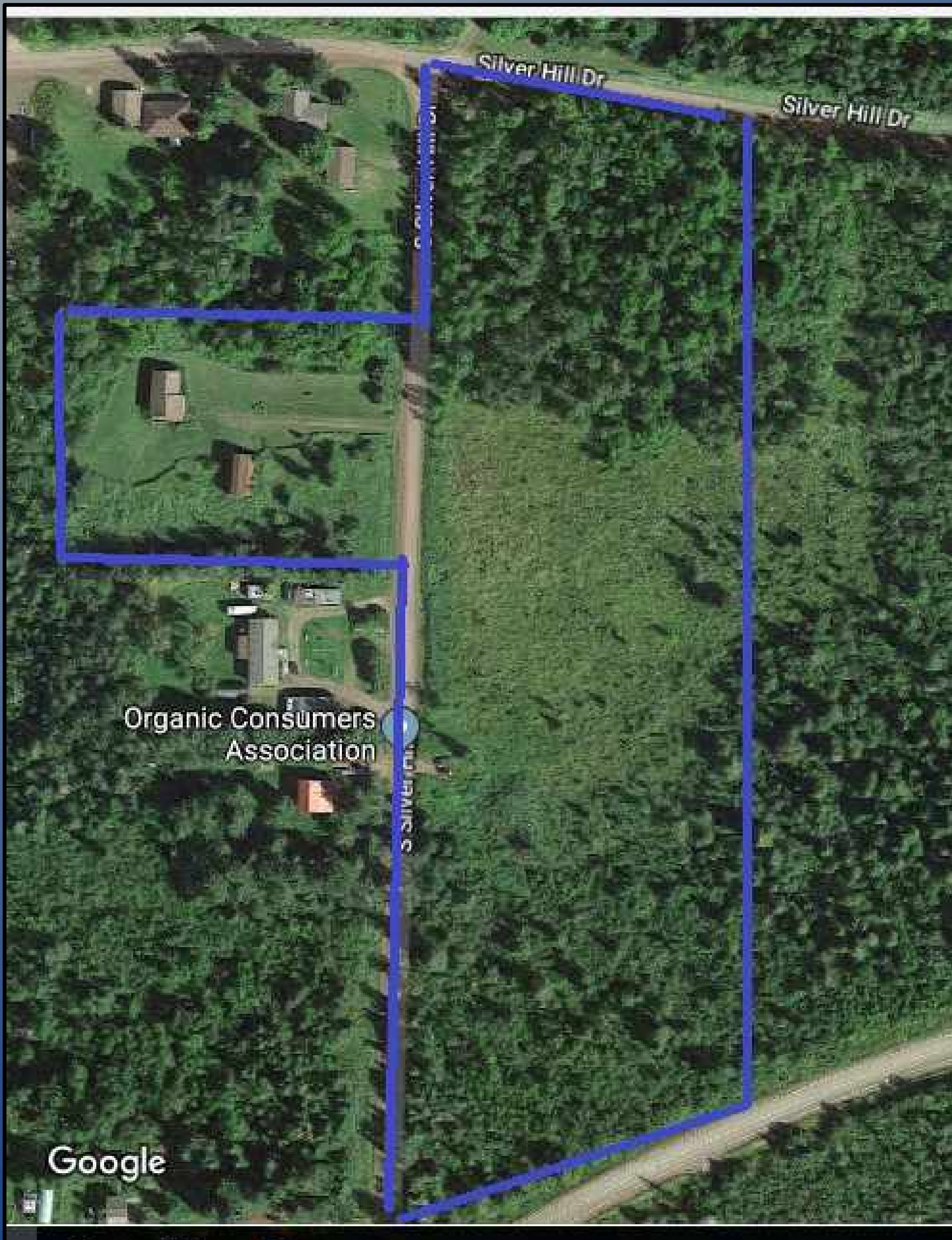
Grape Mash Windrows

In June 2020, to test “readiness” for cropping, a mix of cover crops and butternut squash were planted in the windrow.

August 2020 – During a semi-drought year, the grape mash windrow received no additional water. The plants are lush and green, and the butternut squash is producing fruit like crazy.

As an interesting side note, the grape seeds are germinating… perhaps we'll end up with a northern Cabernet??

The Vision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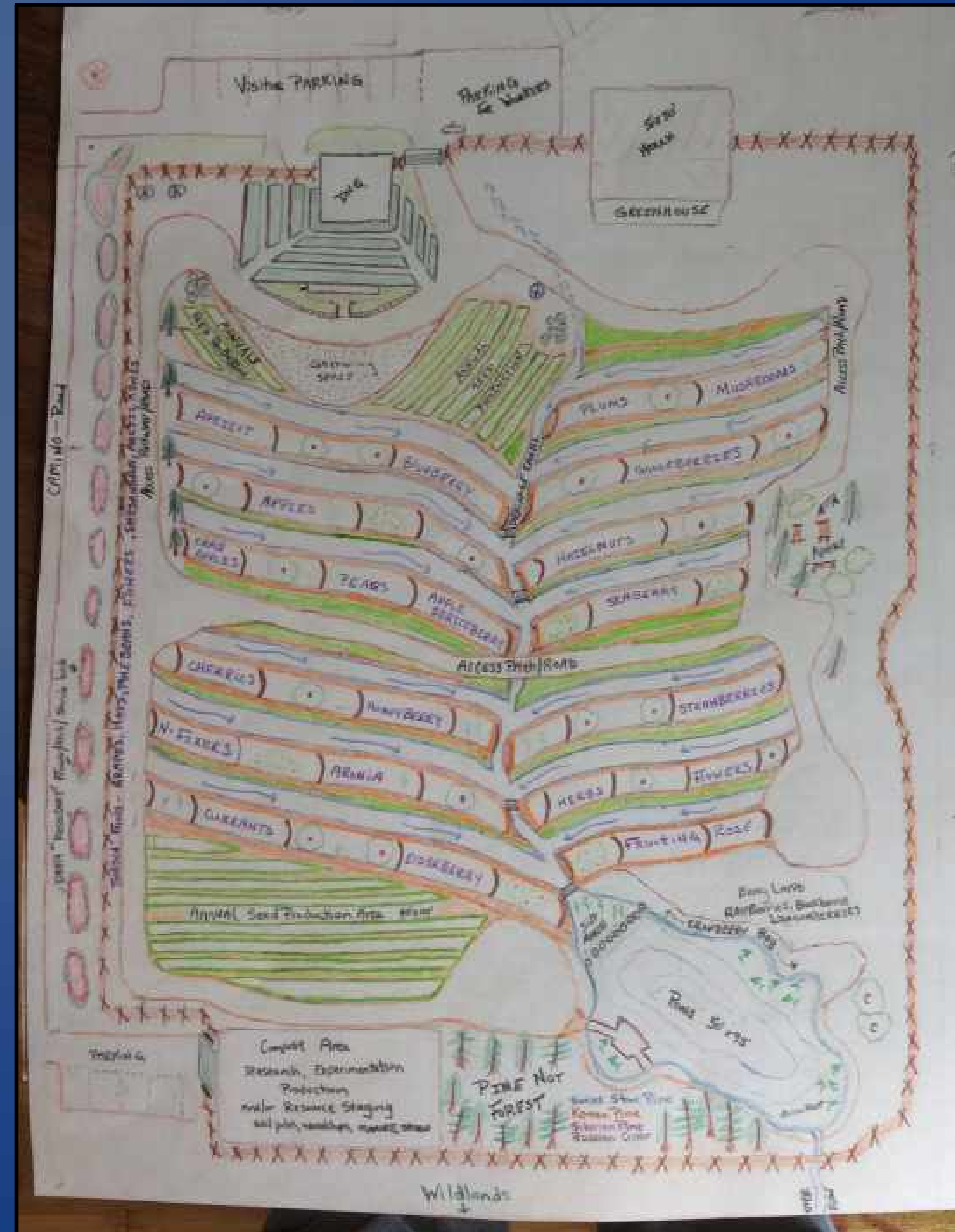
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Earthworks: Modifying the landscape

Spring 2017

Clearing & Excavation

Fall 2017

Summer 2017 – The grass and shrubs were cut down, the drainage contours mapped, and the shrubs and grass were laid down as a hugelkultur core to direct the excavation work.

Berm Leveling & Cover-cropping

Fall 2017 – the berms were leveled by hand, then cover-cropped with a mix of oats, winter rye, tillage radish & hairy vetch to begin first stage of soil regeneration.

Cover-crop, mow… repeat

Summer 2018 – 2019

Goal was to create biomass, both above and below the ground.

After soil tests in the Spring, a soil amendment mix put together and spread between cover crop cycles.

Soil Regeneration Process

Cover-cropping:

- ➔ Multiple functions in regenerating soil health: nitrogen fixing, biomass production, soil building, living mulch, nitrogen scavenging.
- ➔ Living plants pump photosynthates (sugars) into the soil matrix via their roots, feeding the soil life.
- – A diverse mix of cover crop types are ideal. Cover-crops used to regenerate the berms: winter rye, hairy vetch, tillage radish, oats, clovers, buckwheat, turnips, sunflower, sunn hemp, sorghum-sudangrass and phacelia.

Soil Regeneration Process

Soil Amendments

- After soil testing, a variety of soil amendments can be used to balance the mineral matrix of the soil.
- Soil life is vital in breaking down rock minerals and slowly making them bio-available for plants.
- A mix of rock minerals were applied to the berms: lime, rock phosphate, greensand, boron, sulfur, & azomite.
- Biological-based fertility was also spread over the soil: alfalfa meal, kelp meal, & fish bone meal.

Soil Regeneration Process

Liquid Soil Amendments

- Liquid soil amendments can be used to supply nutrients in soluble form, and help condition a soil.
- Bio-ferments: a mix of stinging nettles, comfrey, yarrow, kelp meal and wide array of weeds were stuffed into 55 gallon barrels with water and blackstrap molasses. Allowed to ferment for a month, then filtered and poured onto soil berms.
- Liquid fulvic and humic acids (by-products of decomposing organic matter) were mixed with bio-ferment. These improve stress tolerance and water retention, enhance chelating of plant nutrients and stimulates root mass and plant growth

Filled with life – ready for perennials

Spring 2020 – Clover bursts forth and tells us the soil is ready to begin planting perennials.

The Perennial Framework

- **Berries**:

  Seaberry, Honeyberry, Currants, Gooseberry, Aronia Berry, Grapes

- **Fruits**:

  Apples, Pears, Cherries, Apricots, Plums, Cherry-Plums, Shipova Mountain Ash

- Herbs & Flowers:

  Comfrey, Maximillian Sunflower, Catnip, Asters Marshmallow, Yarrow Elecampane, Echinacea +

- **Commercial Trials:**

  4 varieties Hazelnut

  10 varieties Elderberry

Small-scale Intensive Farms & Homesteads

- Herbal Medicines
- Commercial Elderberry Production

- Commercial Hazelnut production
- Fruits & Berries

- Deep Winter Greenhouse
- High Tunnels

- Vegetables & Seeds
- Varietal Trials
- Developing new varieties

- Bees
- Mushrooms

- Willows for basketry & living structures

Mushroom Cultivation

Oyster, Shitake, Piopinni,
Turkey Tail, Wine Cap,
Agaricus, & Bleu Foot on a mix
of logs, stumps, wood chips
and spent coffee grounds.

Bees for honey, pollination and wax

Experimented with Carniolans, Italians and Saskatraz. The Saskatraz came through the Winter fully alive and ready to tackle 2020. Then came the bear.

Deep Winter Greenhouse

A Winter of Color & Life