

## Goals Articulation for Wixom's Farm

Developed by S. Gabriel 2/22/10

Wixom's Farm is a agricultural ecosystem, producing food and other products while restoring the landscape by building soil, planting trees, increasing water availability, and improving agricultural and wild biodiversity.

### 1. Wixom's Farm demonstrates the design and implementation of an integrated Agricultural Ecosystem appropriate for farms in Northeastern North America.

*a. The farm is design utilizing permaculture principles for efficient production and ecological restoration. Specifically:*

- Each primary **function** of the farm is supported by **multiple elements**:  
WATER: wells, roof catchment, dams, swales, keyline plowing  
FERTILITY: compost, vermicompost, compost tea, plant guilds  
WASTE: septic, composting toilets, greywater systems, const. wetlands  
INCOME STREAMS: brewery, meat, mushrooms, tree crops, education
- Each **element** of the farm performs **multiple functions**. Some examples:
  - Farm animals provide meat, eggs, tillage, fertilizer, and grazing functions
  - The high tunnel supports year round mushroom production, helps keep the chicken coop warm, and provides warm classroom space.
  - The main gardens serve to feed residents of the farm, demonstrate different techniques, and offer covered classroom space.
- The **needs** of one element are connected to the **yields** of another
  - The Hop yard yields a supply of bugs and low ground to browse, which are both needs of chickens.
  - The Winter Coop yields heat and CO<sub>2</sub>, which the greenhouse environment needs
  - Farm Animals

*b. The farm ecology includes areas of wild wetland, recovering forest, agroforestry, forest gardens, integrated orchards, herb and vegetable plots, high tunnel and crop production.*

The farm is separated into zones of use based on intensity of human interaction:

- Zone 1: herb & vegetable plots, high tunnel
- Zone 2: pasture and forage systems/production crops (hops)
- Zone 3: forest gardens/agroforestry
- Zone 4: recovering forest
- Zone 5: wetland

c. Each ecosystem is designed with a matrix that values the importance of each main group in an ecosystem; abiotic factors, producers (plants), consumers, and decomposers.

Example: Hop Yard

Abiotic factors	Producers	Consumers	Decomposers
<ul style="list-style-type: none"> <li>- Hop yard is designed along keyline for water harvesting</li> <li>- Oriented N-S for maximum solar exposure</li> <li>- Hedgerows channel wind and support good air flow</li> </ul>	<ul style="list-style-type: none"> <li>- Hop spp. are overstory vine layer</li> <li>- Clusters of beneficial insectary and pollinator plants throughout yard</li> <li>- Supportive groundcover guild around plants</li> </ul>	<ul style="list-style-type: none"> <li>- Chickens forage, eat ground pests, fertilize</li> <li>- Purple martin and flycatcher habitat supports pest control</li> <li>- Supportive ground cover guild deters rodent browse</li> </ul>	<ul style="list-style-type: none"> <li>- Compost tea applied to roots and leaves weekly</li> <li>- Yearly applications of compost and vermicompost to rhizomes</li> <li>- Groundcovers slashed through summer to provide decaying mulch</li> </ul>

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**2. The farm’s primary yield and economic vitality comes from an interrelated Food Production system with a variety of year – round yields.**

*a. Mushroom Production*

Logs are cut each March/April, prior to budbreak. Logs are brought to mushroom yard and inoculated with varieties of Shitake spawn. Logs are stacked in side high tunnel and in hedgerow. Farm Manager measure quality and quantity of yields over the season and also log longevity under the different environments.

Production in year one will be 200 logs (half indoors, half out) and 200 years each subsequent year until 1,000 logs are in production.

Trials on Oyster mushroom growth in recycled coffee grounds will also begin in year one, with

*b. Farmscale Beer Brewing: Hops & Grains*

The farm produces varieties of beer that come entirely from on farm inputs. Hops, grains, and traditional brewing herbs offer a unique experience for visitors to the farm. Batches are small and available in limited runs. Fresh and dried hops, and d

dry grains are also available for homebrewers. An annual homebrew competition at the farm supports the local brewing community with a fun outlet to share their craft.

*c. Cows, Goats, Chickens*

The farm values the roles animals can have in restoring and promoting positive ecosystems and sees the harvest of meat, eggs, and other products as a surplus to good land management. A maximum of 40 – 50 cows are rotated on management intensive grazing regimes throughout the pasture areas. Following behind at intervals are turkeys and chickens, which spread out patties and enjoy a fest of fecal pests, controlling fly populations. The goats are kept mainly in the forest, where they clear underbrush after coppice thinning and help long term restoration forestry efforts.

*d. Forest Products*

The ultimate goal for much of the landscape is to remain in successional forest of various types, from hardwoods managed as seed trees and timber, integrated fruit and nut orchards for food production, and coppice hedgerows for firewood, animal fodder, and fence posts. The diversity of habitats created by the various systems along with non-forest ecosystems like meadow and wetland provide diversity of wildlife habitat.

*e. Specialty Herbs & Annual/Perennial Vegetables*

A few specialty plants are grown for local consumption and as seed stock. These include: patch of annual three sisters (corn, beans, pumpkins), patch of the “perennial three sisters” (groundnut, sunchoke, mint root), mixed annual veggie gardens (home consumption only), and an extensive culinary and tea herb garden.

### **3. Education & Research**

- a. Tours & Tastings – At the farm gift shop/tasting room
- b. Classes & Workshops – multiple classroom locations and topics
- c. Seasonal Events
  - Monthly Brunch (May – October)
  - Homebrew Fest (harvest time – July?)
- d. Summer Camp – week long day cap during summer for kids/teens

#### **4. The Organizational Structure supports longevity and individual talents of people**

*a. Wixom's Foundation (non-profit)*

- Board maintains vision
- Holds land in agricultural easement
- Owns non-depreciating resources and property deeds
- Facilitates educational efforts of the farm
- Collaborations with other educational institutions
- Grant funded to support education and protection of other farm lands

*b. Wixom's Farm (LLC)*

- Owns equipment, buildings, etc critical for production and processing
- Run by Farm owner/operator and Farm designer/manager
- Profit funded by sales of raw and value added products