

Workshop Title: The Permabed System

Speaker: Zach Loeks

Executive Summary:

Zach Loeks introduces his farm and crop planning system based on the concept of "permabeds" to integrate annual and permanent beds into plots together. His goal with this system is to create a "woodland" agro-ecosystem which can be easily accessed for harvest, productive, and sustainable long term.

Notes:

Holistic Planning:

- Holistic planning is really important for helping visual the process of designing property from scratch.
- Zach's holistic planning model is inspired by Allan Savory and his work.
- He says it is important to design your farm and property to take advantage of what is in your community.
- Ikigai - Japanese concept - see slide for diagram: it's a journey towards what you love, you are good at, what the world needs, and what you can be paid for.
- He uses the concept of "guild enterprise production"; rule of 3 as a number that helps him design everything in his life; acknowledges that that sounds silly.
- It is the first number where there is "dynamic action".
- He says three enterprises in a business helps balance risks; on Kula Farm there are mixed vegetables and fruits for CSA, garlic for seed garlic, and education.
- He discusses an example of stream which was drying up and then fencing put up to keep cattle out of stream, solar, adding habitat with turtle platforms and bluebird boxes, which helped to create an environment where the stream would not dry. He also added elderberries for production of fresh fruit and concentrate.

Permabed System:

- Three Main Concepts:
 - 1 guild crop rotation of annuals.
 - 2 soil integrity.
 - 3 permanent perennial system.
- The permabed system is a framework for an efficient system to manage diversity in a market garden context.
- The base unit is "one permanent raised bed" = "permabed".
- The beds is always there and the whole field is not tilled again.
- You can use these beds to create triads, which have a central crop in middle bed and companion crops in the beds beside.

- Then these permabeds are divided into "ana plots" - annual beds and "permaplots" - perennial crops.
- The ratio of annual to perennial beds eventually leads to a "woodland" crop system.
- This is the process to make permabeds from scratch:
 - According to Zach, "You can't put too much manure on when you start farming".
 - First beds are seeded with buckwheat.
 - Next, a winter rye cover crop, under sown with red clover is planted and this can be used as a placeholder until you're ready to use the beds.
 - Zach has 30 acres of beds and he used a tractor mounted bed former.
 - Next, you can apply compost and seed to another cover crop.
 - Because the beds are permanent they hold a "place in space" - beds are "reformed" but not destroyed.
 - This means you're able to become familiarized with your beds.
 - The bed top is cultivation zone, and the "compost paths" are cover cropped with clover and they "generate compost".
 - He makes leaves, weeds, and other debris in the path and flips the "compost" back onto the bed.
 - He also uses "space time partitioning", which is different crops maturing close to each other at different times.
 - He also uses a concept called "grow and mow", meaning you can under sow your early maturing crops with a cover crop.

Soil Health:

- Zach reforms his beds and adds compost to keep fertility high enough for his crops.
- He also uses stale seedbed, meaning you get the beds all ready and then wait for weeds to sprout before flaming or cultivating the surface of the soil.
- "Cover crops are the same as regular crops".

Garden Environment Mapping:

- Mapping the physical environment of the garden - become more familiar with your beds.

Garden Base Map:

- Diagram of your fields/farm that can be made in excel.
- You can use it to map out where your field is wet/dry, rocky, frost etc.

Perennials:

- His goal is a woodland agro-ecosystem, rather than a forest.
- He is designing for the future of the farm
- Zach says when we commit to permanence we commit to a farm ecosystem that will outlive us.
- One design aspect he considers is to create the potential for future mechanization.
- Some of the perennials to consider are neo-hybrid hazelnuts and saskatoons.
- He also keeps hand harvested crops together.
- EME" - emergent hand harvest perennial triad.
- He also uses the concept of "umbrella management" keeping similarly managed crops in the same "triad".

- He says it is important to create access to your crops - such as planning to have fruit trees that have asparagus beds on the sides which you can drive on/mow when the fruit is ready to be picked; "rainbow raspberries" are a crop to consider.
- He suggests looking for local crops you can grow as alternatives to things available in large grocery stores.
- He says it is important to prioritize planting cover crops.
- He suggests gradually integrating perennials.
- The goal is to create a productive forest ecosystem, but organized.
- He says you shouldn't be putting a supply away in the middle of the season, but rather moving it to another area of your farm.
- Another bed preparation strategy is to trap, run over with tiller, and then apply compost.
- Tarping can also be used to prepare beds for transplanting.
- He says you can leave roots of plants such as broccoli to be "bio pore space" after a crop is finished.
- Zach plants cover crops in his squash beds.