

**2017 ACORN Conference & Trade Show  
Best Western Glengarry - Truro, NS**

**Workshop Title:** Whole Farm Mapping and Holistic Planning

**Presenter:** Zach Loeks

**Summary:** This workshop is the second part of Zach's introduction to permaculture and farm ecosystem services, and focuses on farm mapping.

**Notes:**

He begins with three assumptions:

- Everything on the farm is a resource.
- Map the natural reality on the farm.
- Design the farm plan for the natural ecological services (resources) available on the specific property.

Zach says we should ask the land what it wants us to do. Walk the land to gain an appreciation for its reality. Do this throughout the year to account for seasonal differences. Observation is a key feature of permaculture planning and design. He suggests paying close attention to four systems critical to understanding the dynamics and resources on a particular farm:

- Geology - the study of the earth's rocks and minerals, their origins and cycles.
- Pedology - the study of soil, it's types, origins, layers and structures.
- Hydrology - the study of water, it's movements and reserves in the air, surface and below ground. Notice how water flows on the land.
- Ecology - the branch of biology that deals with the relation of organisms to one another and their physical surroundings.

Zach's presentation was illustrated with colourful overlapping maps of the various systems and features on his farm, which was used as an example for workshop participants. Each of the four systems noted above were carefully described and examined. The end result was a comprehensive, rich visual description of his farm. The final map included the following:

**Landforms:**

- Hills, low areas, gradients were identified. Soil types described, as well as their depth and other characteristic. What are the benefits and challenges of various types of soil on a farm? Is it clay? Sandy? Loamy? How well do specific areas drain? Map these aspects to gain familiarity with the fields and other areas.
- The best soil Zach's land is on the top of a glacial Lorraine.

Climate, weather:

- The main climatic features and the micro climates when and where they exist were noted. This included wind direction, rainfall amounts and timing, temperature, frost dates, etc. South facing slopes, for instance, have obvious positive characteristics in terms of warmth and planting times.
- Micro climates are affected by where the water lies and the vegetation and the vegetation in the area. Know where the water lies. Micro climates may also affect where you can plant trees.

Animal Life and movement:

- Where do deer move? What other animals make use of the resources of the farm or are regular visitors?
- Don't forget that humans are animals too. Their movements and use patterns should be included in the map as well.

Resource Ecologies:

- Identify the resource ecologies that can be integrated into the farm.

Humanscape:

- Includes neighbours.
- Extend your design outside the boundaries of your farm. How does the external environment affect or influence your farm and the crops grown?
- Neighbours provide resources as well. Don't buy equipment your neighbours have. Old folks have a lot of resident knowledge. Get to know them.

### **The Mapping Stage:**

All these aspects of a farm, once examined and their relationships understood, can aid in the identification of the resource ecologies available to the grower. A comprehensive map can then be produced.

Zach pointed out that there are many existing map resources to work with. These include:

- Google maps are a great and easily available.
- One can create observation maps of your farm. Shade in areas of frost pockets, wind damage, snowfall etc.
- Overlay all the elements discussed above; soil, resources ecologies, etc.
- Provincial soil survey maps for your area will give you an idea of your soil but do your own exploration to check for variation. Carry a shovel and dig a few holes on your property to accurately map soil profiles.
- Department of Natural Resources maps will identify contours and elevations, wet areas, stream and brook locations, etc.
- Then layer your findings on top of each other.

- On your farm map, layer resources ecologies, identify with circles potential uses or grouping of resource ecologies. These allow for overlap. Then one can add the microclimates that have been observed. Also add geology, soil, animal movements, etc.
- There will no doubt be surprises when a map is completed. However, areas of potential will be identified as well as challenges.

The exercise of mapping turns space, the farm, into place, reflecting a much more intimate and personal understanding of the farm. One can name or characterize various areas that are designated for specific purposes or have certain characteristics. For instance: the brook meadow, the early garden, Sally's pasture, the warm knoll...

### **The Design Stage:**

Once the resources of the farm have been mapped, the farm design phase can be completed. Identify garden, orchard, pond, sugar bush, woodlot, berry patches, hay fields, etc. Be mindful of relationships between various functional areas. For example, vegetable processing area should be located near cold room, beds, etc. Examine how can one create relationships between areas and optimize work between areas. Relationships can be mapped by using circles.