Health Begins in the Soil

Presented by Kris Larson, Farmer, Riverbend Roots

First Thoughts

- Trust Your Instincts
- Be Humble
- Keep Learning
- Build Soil
- Keep it Simple

Basic Definitions

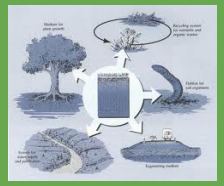
What is soil?
What is ecological management?
What is the goal of ecological management?
What is fertility?

What is soil?

Sand, silt and clay, as well as living organisms

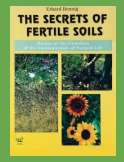
Natural Functions of Soil

- Regulate water
- Sustain plant and animal life
- Filter potential pollutants
- Cycle Nutrients



What is Ecological Management?

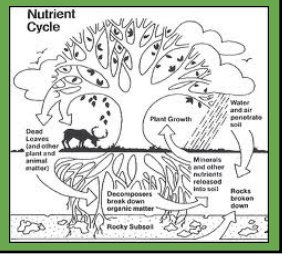
What is the goal of ecological management?



Soil Fertility!

What is Fertility?

- Capacity to nurture healthy plants
- Ability to regenerate nutrients

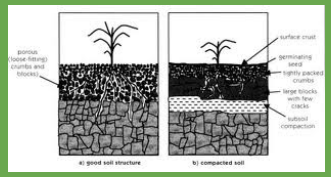


Properties of Soil

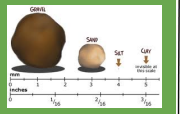
Physical, Chemical, and Biological

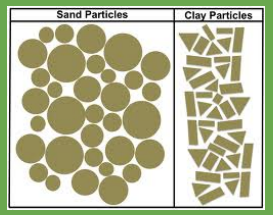
Physical

- Tilth= state of health/ how well the soil works
- Texture



Sand, Silt and Clay





Sandy/ Clay/ Silty Soils

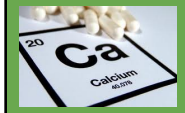
Other Physical Attributes

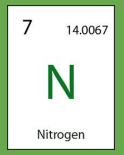
- Aggregation
- Structure
- Density & Porosity

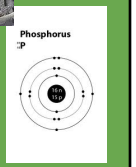
Chemical Properties of Soil

- Balance of nutrients
- Cation exchange capacity
- pH

Soil Nutrients



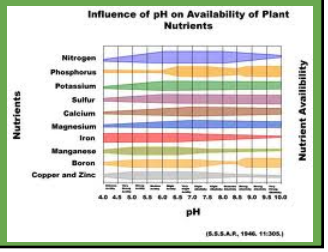




Cation Exchange Capacity

Soil pH

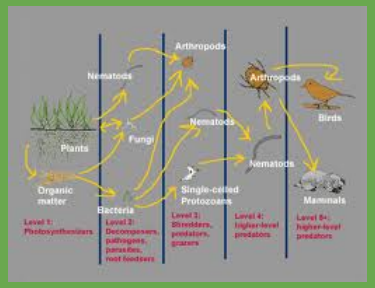
- Measure of acidity vs. alkalinity
- Influences nutrient availability



Soil Biology

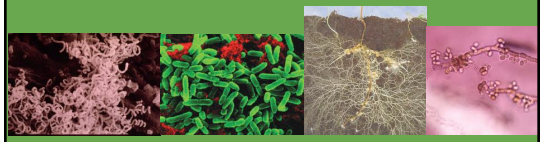
Soil organisms drive all processes in soil!

Producers, Consumers, and Decomposers



Microflora

bacteria, algae, fungi and actinomycets



Microfauna

nematodes and protazoa

Earthworms

Insects and molluses

Mammals

Plant Roots

Ecological Management

How Do We Feed the Soil?

- Cover cropping
- Mulching
- Soil Amendments

Cover Cropping



- Protect bare soil
- Suppress weeds
- Roots aerate soil
- Draw particular nutrients from the soil

Mulching

Cover bare soil with organic matter—straw, leaves, compost, etc.

Amend Soil with Manure & Compost

Soil Testing and Amendments