

SIMPLE SOIL SOLUTIONS

Unlock Productivity Using Nature's Principles

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What Are Nature's Principles?

Biological Based Soil Fertility

- **Plant is in control of its own life** and needs - bio-chemically interacting with the life around it to get the minerals and habitat it needs. Support this system (rather than micro-manage the plant) with well timed interactions that address the system's weakest link.
- **Pests, Insect Predation, and Disease are just signs that the system is sick.** Nature uses these things to wipe out sick plants - that do not have enough minerals and enzymes to support higher life. Don't kill the messenger - instead focus on what you want to create.
- **Biology, Chemistry, Physics all Integrate to create Health** - there are many windows into healing and they are all related. Learn how to apply solutions that address multiple aspects with one use of time, money or energy
- **Minerals make the world go round** - esp trace minerals plug into enzymes to make all of the bodies functions run. Major minerals are like the structural beams - trace minerals are more like the gasoline and enzymes the fasteners - needed in smaller quantities but necessary to put together the big pieces and make the system run.
- **Plants, Microbes, and Animals need minerals and enzymes to grow and reproduce** - if the soil environment is not providing them fast enough, yield and health will be negatively affected.
- **Feed the soil microbes first, then assess what plants need from you in the short term.**
 - Give the plants what they need to make yield. To get started, use bio-friendly and forms that will help the microbes as well.
 - The microbes will feed your plants, although not always perfectly in the beginning, so sometimes it takes an investment to jump start them to get something growing well to feed microbes and help get things going.
- **Nature always moves in succession, and will try to keep the soil covered, despite periodic disturbances happening** (natural or man made). Weeds will come to cover & decompact soil and make minerals more available from deep and deposit in the topsoil.
- **Nature expresses itself in patches** - which show the different patterns and cycles functioning

- **Weeds and pests are nature's way of healing the system** - we can accelerate this process!

Permaculture System Design

1. Everything In Nature has Multiple Functions
2. Every Critical Function in the system has multiple ways it can be filled
3. Proximity, Location & Flow - Use slopes, aspect, gravity, sun, and natural water flow to do the work for you. Create micro-climates where needed.
4. Waste of one system is the needed input of the next

Permaculture Principles

1. Creatively Use & Respond to Change
2. Observe & Interact
3. Catch & Store Energy
4. Obtain a Yield
5. Self Regulate - Accept Feedback
6. Use & value Renewables
7. Produce No Waste
8. Design from Pattern to Detail
9. Integrate - capitalize on how to work together
10. Use Small, Slow, Solutions
11. Use & Value Diversity
12. Use Edges; Value the Marginal (important things happen at the intersections)

Holistic Management Principles & Key Insights

1. Nature Functions in WHOLES (patterns and cycles)
2. Understand the Environment You Manage
3. Brittleness Scale - Same action will have different effects in brittle versus humid environment
4. Feedback Loops - Plan (assume wrong), implement, monitor, control and/or replan, repeat

NRCS Soil Health Principles

1. Keep Soil Covered
2. Minimize Disturbance
3. Maximize Diversity
4. Energize with Living Roots

Principles for Health, Prosperity & Happiness

- Keep open to a **new idea of beauty** as you see new plants and flowers really see them as Nature's healing and not as a nuisance. What is their function?
- **Practice open observing using your senses - and not always judging or thinking about your perceptions.** Practice time in your natural systems in open observation. Let the sounds, smells, sights all blend into one sensory input and do not try to label or distinguish between them. In this aware space, you will connect more deeply and gain insight. Often coming out of this you will be led by nature (a bug or a bird or something) to the next step in the answers you seek, or a new idea that will help you along your journey. We call this "following the breadcrumbs". So pay attention!
- **See the problem as the opportunity** - learn to think in new ways
- **Focus your attention / resources on creating what you want**, not fighting what you don't.
- Always Plan, Monitor, and Re-Plan - **assume your plan is wrong**, and be willing to change it and **adapt to what is actually happening** on the ground
- Always re-examine your idea of "success" and your **Holistic Context / Goal** - are your decisions taking to where you really want to go?
- **Honor the happiness of the plants, animals or herd - this includes yourSELF and your family!**
- **Focus your positive intention into the land and animals**
 - See, hear, and feel them healing and vibrant!
 - When you walk the land, have each foot touch the plants and soil with love and care
 - When you see your animals, picture them healthy and happy