



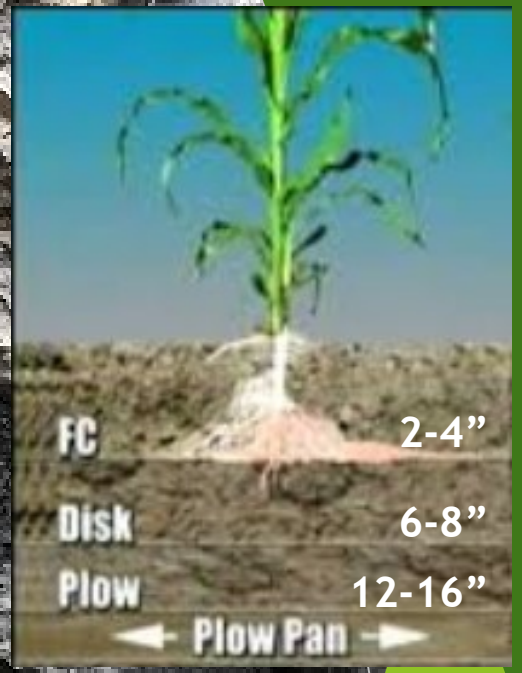
Understanding Healthy Soil

The Nebraska NRCS Soil Health Initiative

Soil Health Defined:

- The continued capacity of the soil to function as a vital living ecosystem that sustains plants, animals, and humans.

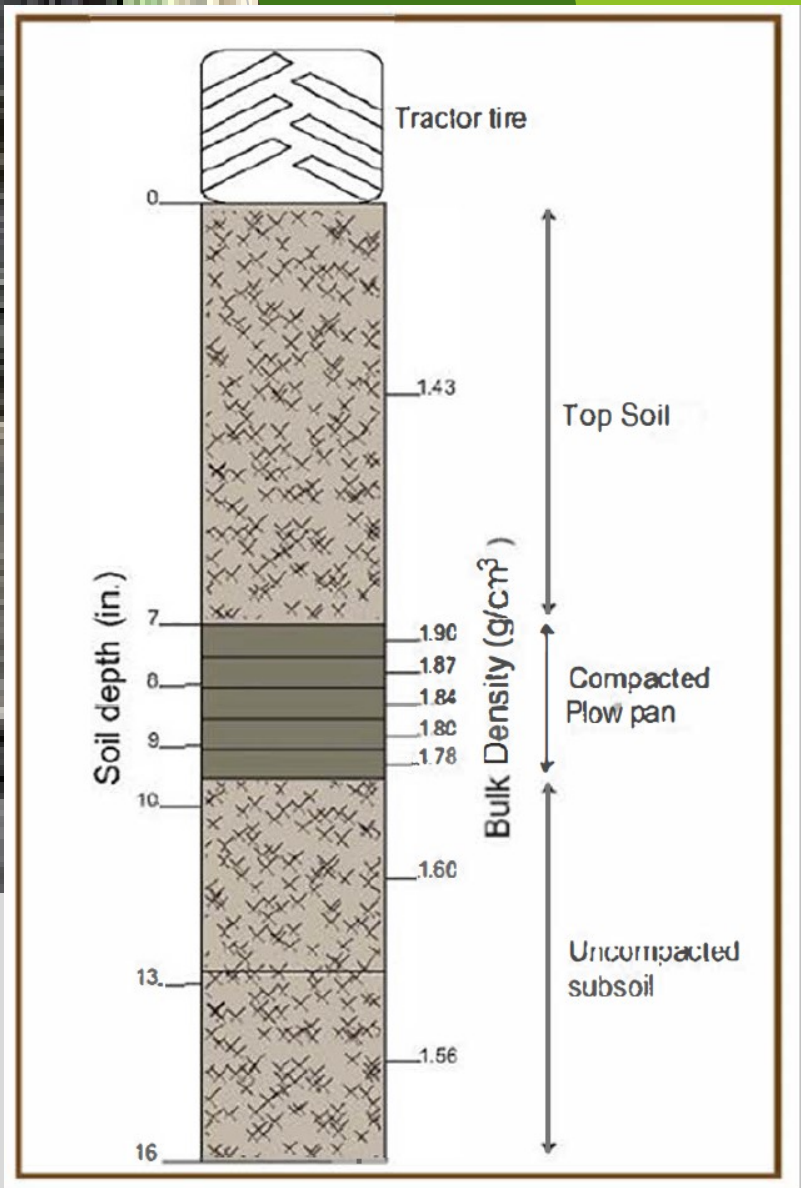
A Common problem in Nebraska:
Tillage Induced, Root Restrictive, Compaction Layers



In many soil types we have farmed the soil’s ability to withstand disturbance out of the top soil!

Root Restrictive Bulk Density

Soil Texture	Ideal bulk densities for plant growth (grams/cm^3)	Bulk densities that affect root growth (grams/cm^3)	Bulk densities that restrict root growth (grams/cm^3)
Sands, loamy sands	< 1.60	1.69	> 1.80
Sandy loams, loams	< 1.40	1.63	> 1.80
Sandy clay loams, clay loams	< 1.40	1.60	> 1.75
Silts, silt loams	< 1.40	1.60	> 1.75
Silt loams, silty clay loams	< 1.40	1.55	> 1.65
Sandy clays, silty clays, clay loams	< 1.10	1.49	> 1.58
Clays (> 45% clay)	< 1.10	1.39	> 1.47

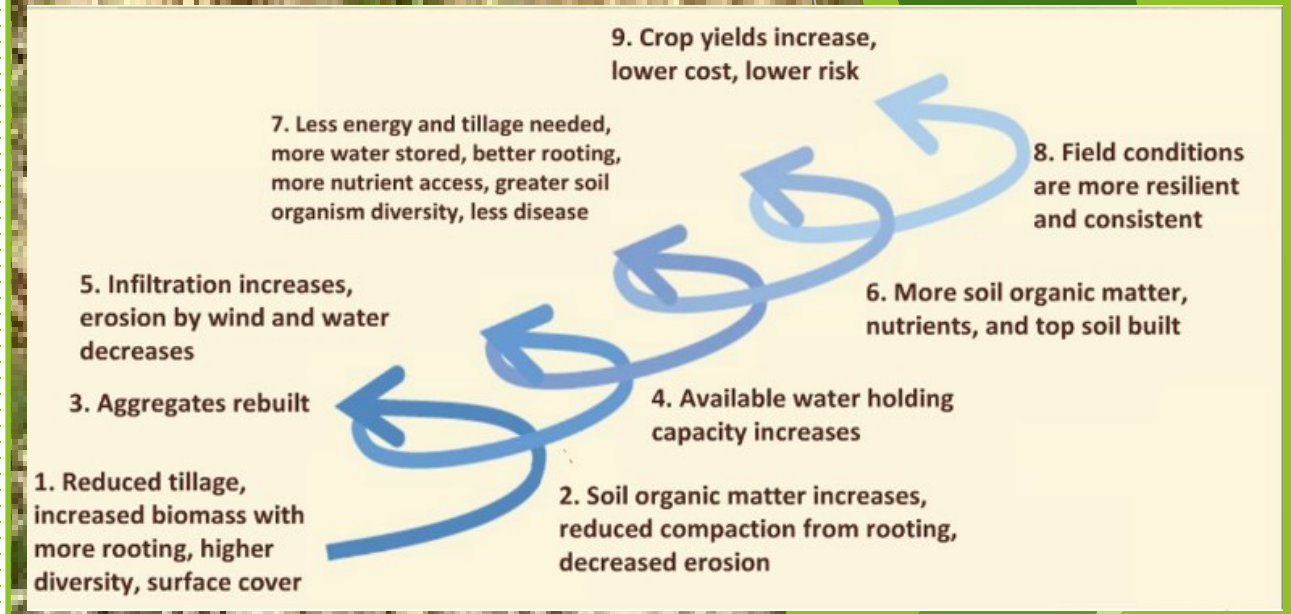


Note: The engineering standard soil bulk density is 1.33

- Top Soil = 1.43, Plow Pan starts at 1.90, ends at 1.78
- No Tillage systems **Retain or Sustain** soil structure.
- Biological Activity **Regenerates** soil structure.
- Cover Crops can have a HIGHER Rooting Pressure Tolerance

Building Resilient Soil is achieved by taking Step 1 - Implement the Soil Health Principles.

Integrating livestock is like greasing the wheels



Handouts provided

Program Incentives support a Learning Curve

- The USDA/NRCS conservation incentives reduce the financial risk of the application of conservation work.
- EQIP – 3 year contracts with incentive money
  - Representing 50% of the estimated cost of the Conservation Practice
- CSP – 5 year contracts providing stewardship payments
  - Representing the cost of enhancing the Stewardship Practice
- CTA – Technical Advice offered upon voluntary requests