



Oklahoma Soil Health Initiative

Ensuring Sustainable Agriculture for
the Future

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- ❑ “...soil is one of our most important resources...it is the factory of our food – and without healthy productive soil, life as we know it would no longer exist.”
- ❑ “In 1937, President Franklin D Roosevelt wrote...
‘The Nation that destroys its soil, destroys itself.’





Words from Chief White

- ❑ “Feeding the world by helping farmers and ranchers improve the health of our Nation’s soil is one of the most important endeavors of our time.”
- ❑ “...Soil Health Management Systems can help farmers and ranchers feed the world more **profitably and sustainably**, now and for generations to come.”

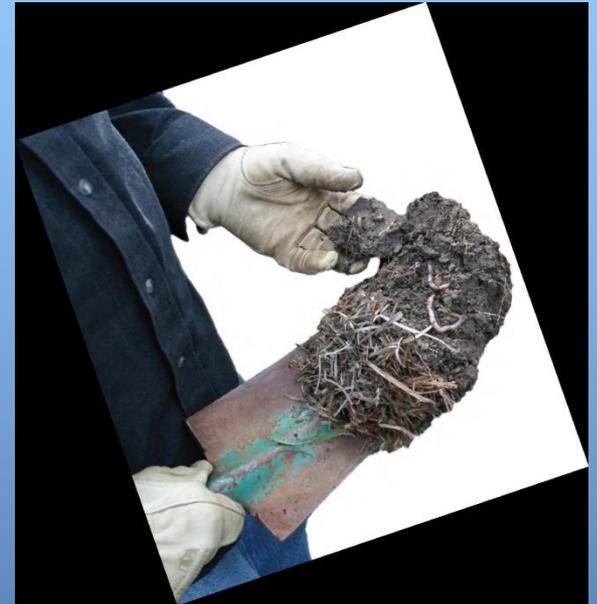


Soil... Important Resource

- ❑ **NRCS – core strength is soils**
- ❑ Focus on soil health is one of the most effective ways for farmers to increase crop productivity and profitability while improving the environment.



- ❑ Is soil health new?
 - Soil Health versus Soil Quality
- ❑ Soil health is ***how well the soil functions.***
 - **Infiltrate** and hold water
 - **Cycle nutrients** to water and **feed** sustain growing plants
 - **Filtering** of potential pollutants
- ❑ Good soil health results in optimized inputs, sustainable outputs and increased resiliency.



- ❑ **Increased Production** - Healthy soils have improved soil structure, aeration, water retention, drainage and nutrient availability.
 - Healthy soils typically have more organic matter and soil organisms
 - Organic matter holds more nutrients in the soil until the plants need them.



- ❑ **Increased Profits** - Healthy soils can increase farmers' profit margins by reducing labor and expenses for fuel, and optimizing inputs
 - Healthy soils may require less tillage
 - Healthy soils aren't over-reliant upon excessive nutrient inputs to grow crops.



☐ Natural Resource Protection –

- Healthy soils hold more available water, increasing water-holding capacity
- Good infiltration keeps nutrients and sediment from loading into lakes, rivers, and streams.
- Groundwater is also protected because there is less leaching from healthy soils.



Managing for Soil Health...4 Keys

☐ Manage more by **disturbing less**

- Tillage is bad? – bare ground, compaction, soil organisms
- Misuse of inputs can disrupt the function and symbiotic relationship of soil organisms
- Allow natural nutrient cycling to take place



Managing for Soil Health...4 Keys

☐ Diversify with crop **diversity**

- Plants and plant roots feed soil organisms – in turn help fed plants
- Assure food and energy chains contain multiple species
- Diversity helps with pest and disease problems



Managing for Soil Health...4 Keys

- ❑ **Grow **living roots** throughout the year**
 - Soil organisms rely on living plants
 - Provide plenty of easily accessible food to soil organisms



Managing for Soil Health...4 Keys

- ❑ Keep the **soil covered** as much as possible with plant residues on soil surface
 - Erosion control
 - Moisture conservation
 - Pest control
 - Nutrient cycle



Sound Familiar?



□ Objectives

- Provide technical and financial assistance to producers wanting to improve soil health.
- Increased awareness, both internal and external
- Increase adoption and implementation of **soil health management systems**





Soil Health Management System - Crop

□ The Key conservation practices are:

Conservation Cropping Rotation

No-till or Strip-till

Cover Crops

Nutrient Management

Integrated Pest Management

Conservation Buffers/Filter Strip





Soil Health Management System – Grazing Lands

❑ Key Practice – Prescribed Grazing

- Management of top growth impacts growth below ground

❑ Reduced root growth diminishes...

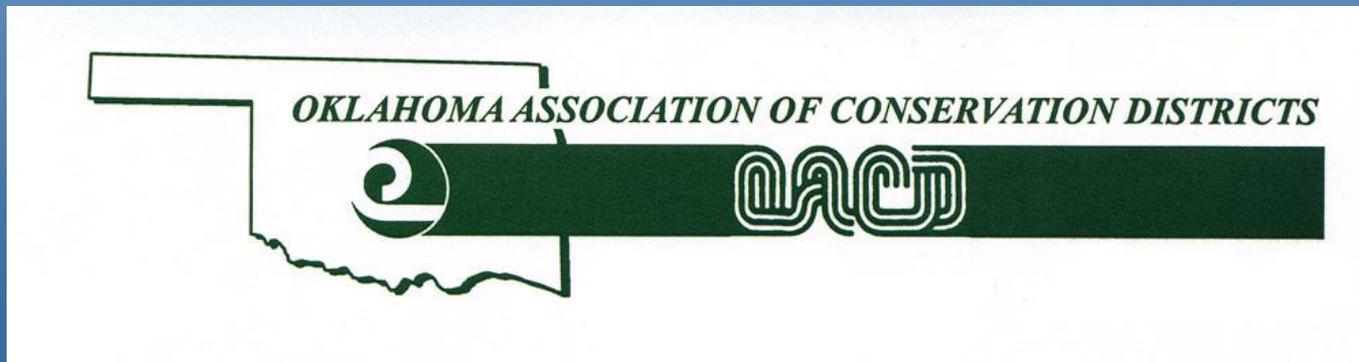
- the contribution of the root system to soil organic matter
- plant health & above ground biomass production
- nutrient uptake and cycling
- the soil biological community
- Hydrologic cycle





Role of Conservation Districts

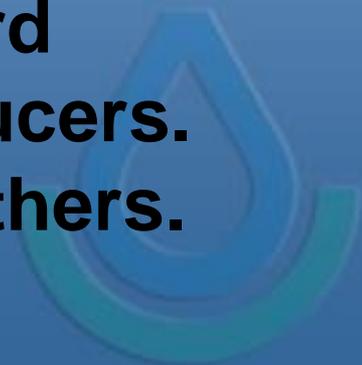
- ❑ Conservation Districts and NRCS have been and are great partners
- ❑ Opportunity to Make Things Happen on-the-ground at the local level, which is key to getting conservation implemented.





Role of Conservation Districts

- Outreach
- Sponsor field days, demonstrations, bus tours, and farmer-to-farmer discussion/support groups
- Learn more about soil health, attend educational opportunities, train yourself to do demonstrations, develop programs...
- Recognize, applaud, support and reward (award) successful soil health ag producers. Spread the good word about them to others.





Other NRCS Activities in Oklahoma

- Partnering with ARS, Noble Foundation, Oklahoma State University Extension and Kerr Center
- Providing input on research needs based on feedback from our producers
- Providing science based training to NRCS and Conservation District staff for planning and guidance to local producers





Other NRCS Activities in Oklahoma

- ❑ **Teaming with Oklahoma producers on demonstration projects and farms**





Other NRCS Activities in Oklahoma

- ❑ **Creating “Profiles in Soil Health” videos with producers from Oklahoma**





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