



United States Department of Agriculture



Soil Health – Drought Monitor Workshop - EAST

July 30, 2020 – Nick Sirovatka, NRCS Agronomist

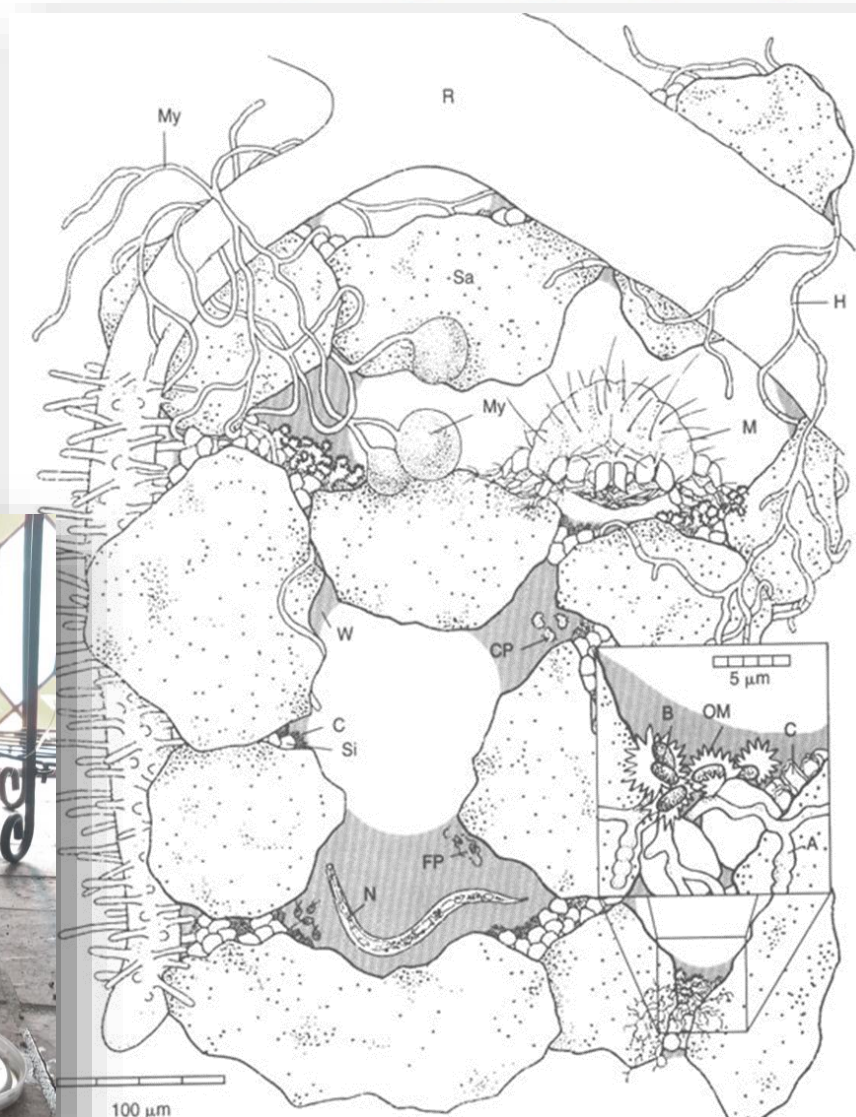
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What is Soil Health?

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

It is considering management activities in the context of the soil as an ecosystem and designing management to build (not degrade) the ecosystem.



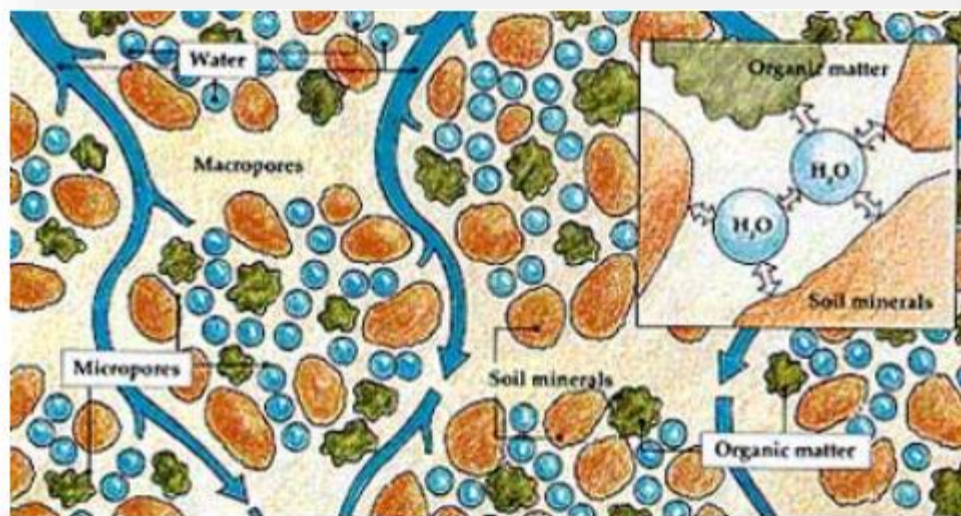
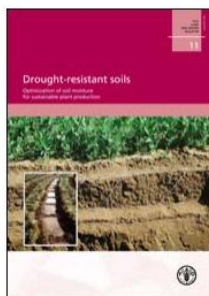
Why does Soil Health matter when you are talking about drought?

High functioning (healthy) soils can buffer against drought by having a functioning ecosystem that stores more water

FAO LAND AND WATER BULLETIN 11

Drought-resistant soils

Optimization of soil moisture for sustainable plant production



Soil can be managed in ways that reduce the need for supplemental watering and increase the sustainability of the farm. Any worthwhile strategy for drought management optimizes the following factors:

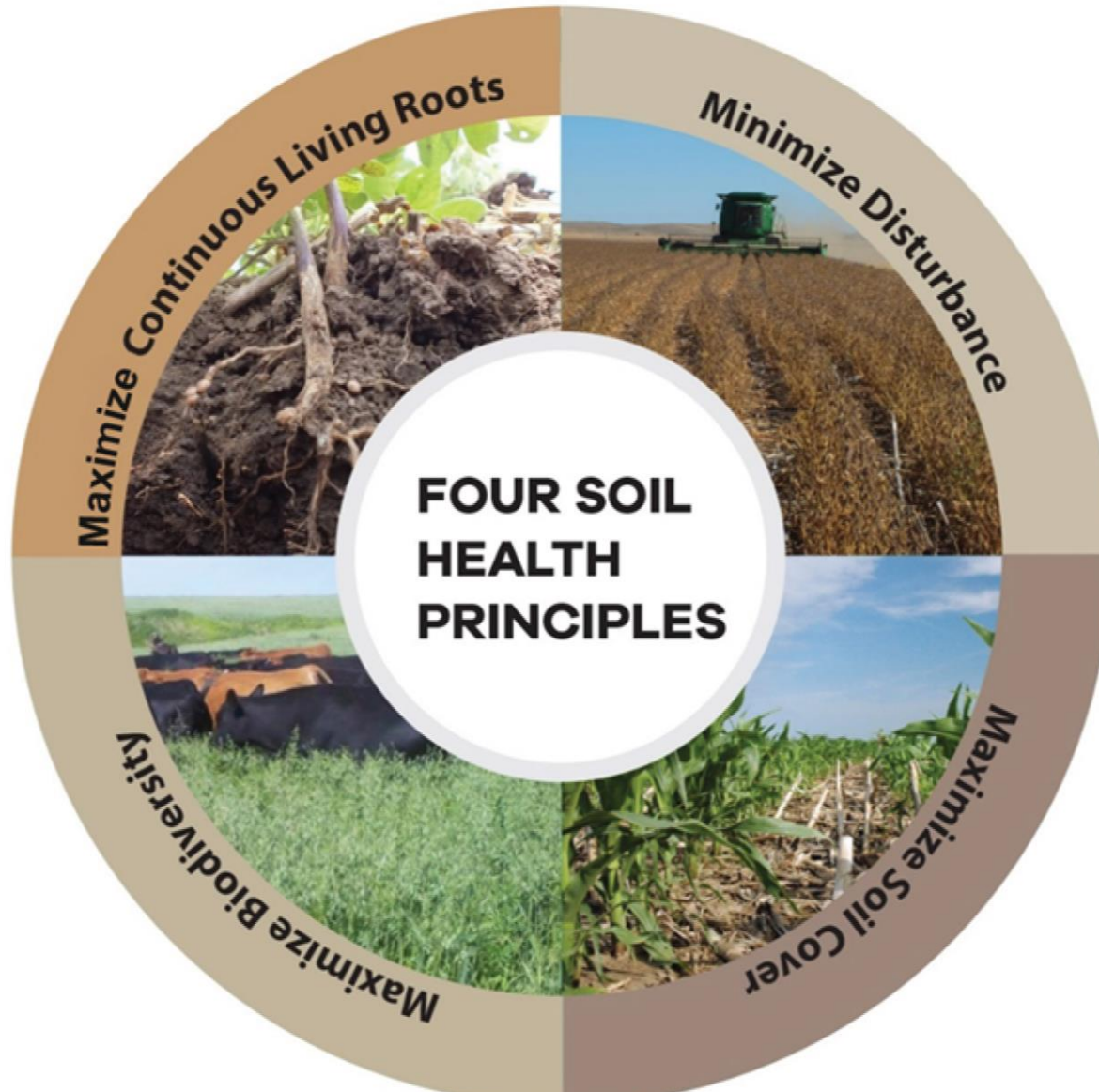
- capture of a high percentage of rainfall (infiltration);
- maximum storage of water in the soil for later use (waterholding capacity);
- efficient recovery of stored water (plant rooting).

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NRCS Focus on Soil Health



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What soil health practices increase Available Water Holding Capacity? EAST

Management Practices that Maintain and Build Soil Organic Matter

Cover Crops

Minimal or No Tillage

Considerations

Pest pressure – Chemical Resistant Weeds

Greater complexity of management

Access to equipment

Seed cost

Timing and Termination



Kenagi Family Farm

“There’s a difference in the top of soils that’s been cover cropped versus what’s been beat by rain and sealed up,” Kenagy says. “The cover crop ground has better infiltration and you don’t get the runoff.”





How do you know if your soil is healthy?

Look at the Soil Health Indicators:

- organic matter
- water infiltration
- nutrient cycling
- erosion resistance
- aggregate stability
- available water holding capacity
- soil biology

A healthy soil protects natural resources

A healthy soil is high performing and productive.

A healthy soil increases efficiencies.

A healthy soil reduces production costs and increases profits.



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How does soil health fit into management systems to reduce risk?



PROJECTED IMPACTS OF TEMPERATURE INCREASES TO NW AGRICULTURE INCLUDE:

1. CROP YIELDS

Increased temperatures may alter germination, harvest and storage timing, impacting crop yield (may be positive or negative, depending on crop).

2. INCREASED PESTS

Higher temperatures for longer periods are associated with increased pest, disease, and weed pressures that may harm crop yields and crop quality.

3. LONGER GROWING SEASON

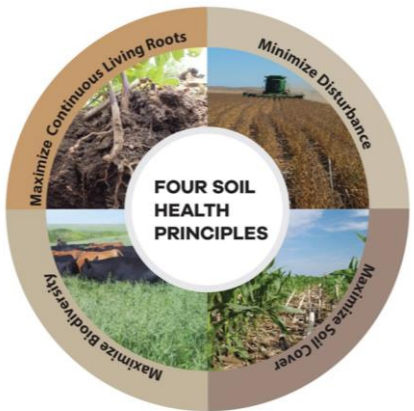
A longer growing season due to hotter temperatures and more frost free days may be beneficial for certain crops and will likely change the suite of crops (species and varieties) that are grown in our region.

1. DECREASED SNOWPACK

2. CROP AND LIVESTOCK STRESS

3. INCREASED FALLOW PRODUCTION

4. INCREASED FIRE RISK





If you want to make small changes, change how you do things.



If you want to make major changes, change how you see things.

-Don Campbell
Canadian Rancher

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Thank-you!



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