

Soil Health Research Based Extension Program for Arizona: An Outlook

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What is *Soil Health*?

The continued *capacity* of soil to **function** as a vital **living system**, within ecosystem and land-use boundaries, to *sustain* biological productivity, promote the *quality* of air and water environments, and maintain *plant, animal, and human health*



rangerrick.org

(Doran and Zeiss, 2000)





Soil Armor



Maintain Living Roots



Minimize Soil Disturbance

Soil Health Principles



Ecosystem Diversity

*Conserve
Soil moisture*



Integrate Livestock

*Minimized
Chemical use*



Soil Health Challenges in Arizona

◆ Arid soils characteristics:

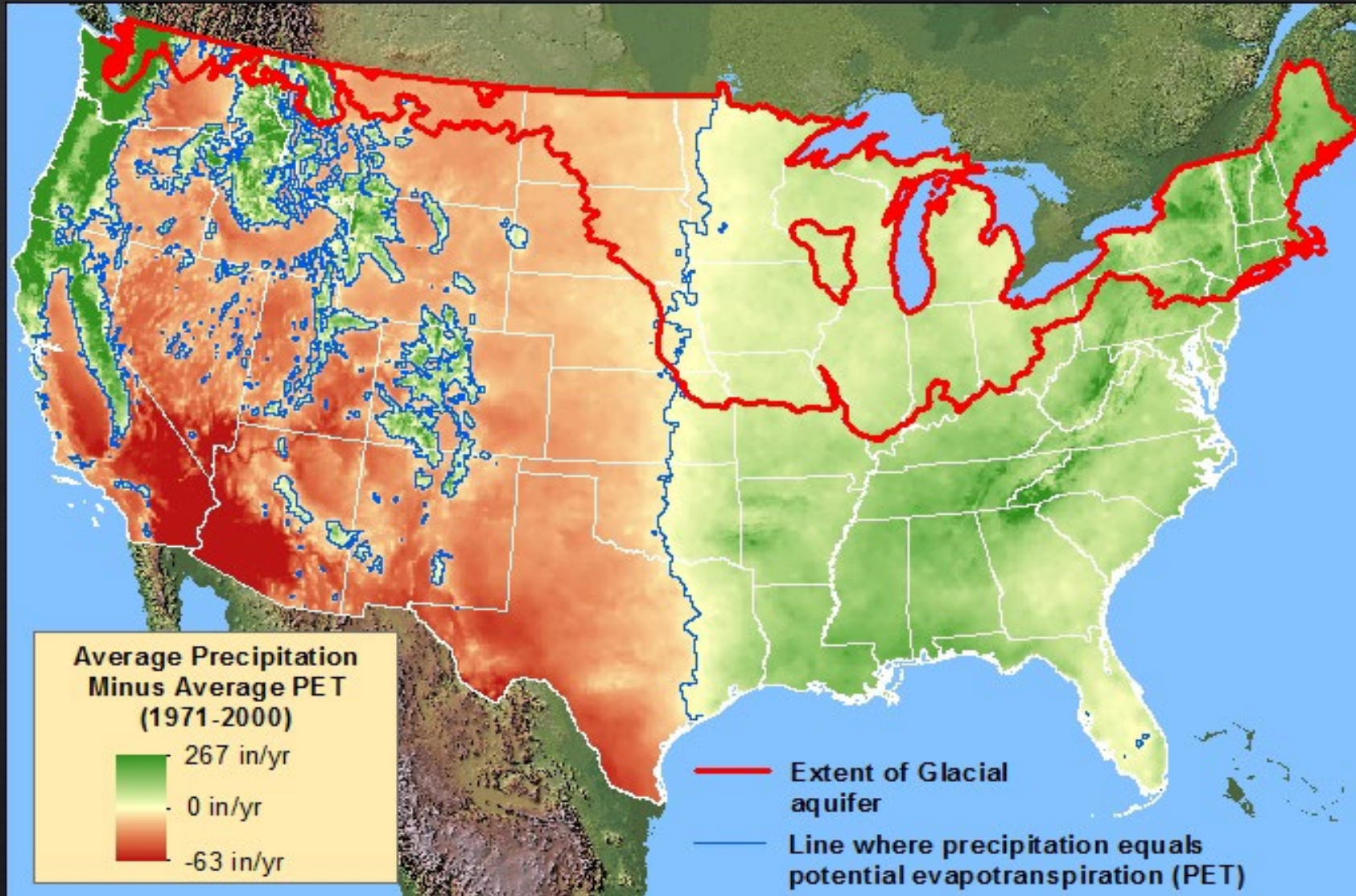
- Higher temperatures
- Little annual precipitation
- Salt-affected soils

◆ Primary *challenges*:

- Water: scarcity; quality
- Salt-affected soils
- Organic matter decomposition
- Survival of soil organisms



Precipitation < Evapotranspiration



Scarcity and Poor Quality of Water



Salinity issues: Carbonates in Soil



SOM: Decomposition > Build-up

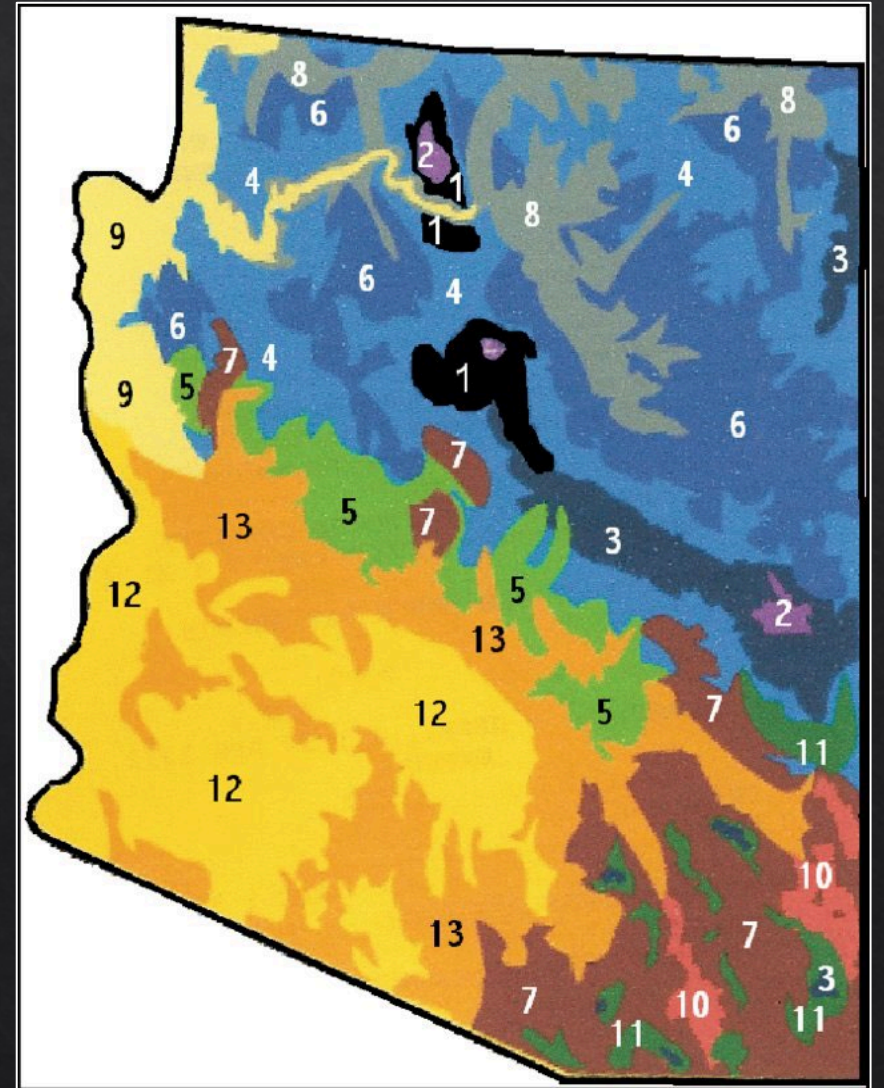


Soil Health Extension and Research Program



Soil Health Needs Assessments

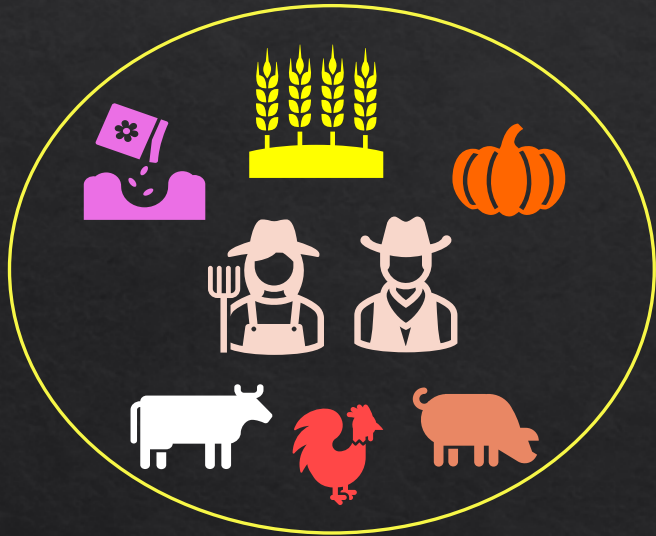
- Regular **meetings** with Stakeholders
 - Expectations
 - Ideas
 - Urgent needs
- **Survey** for soil health needs
 - Soil health practices
 - Soil & plant tissue sampling
 - Thermal and infrared images
 - Short term applied research



Please take the Survey



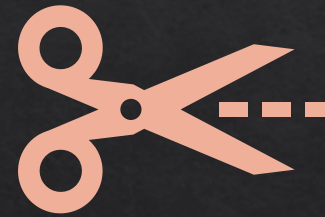
Soil Health Extension Research



Mission Oriented



Applied



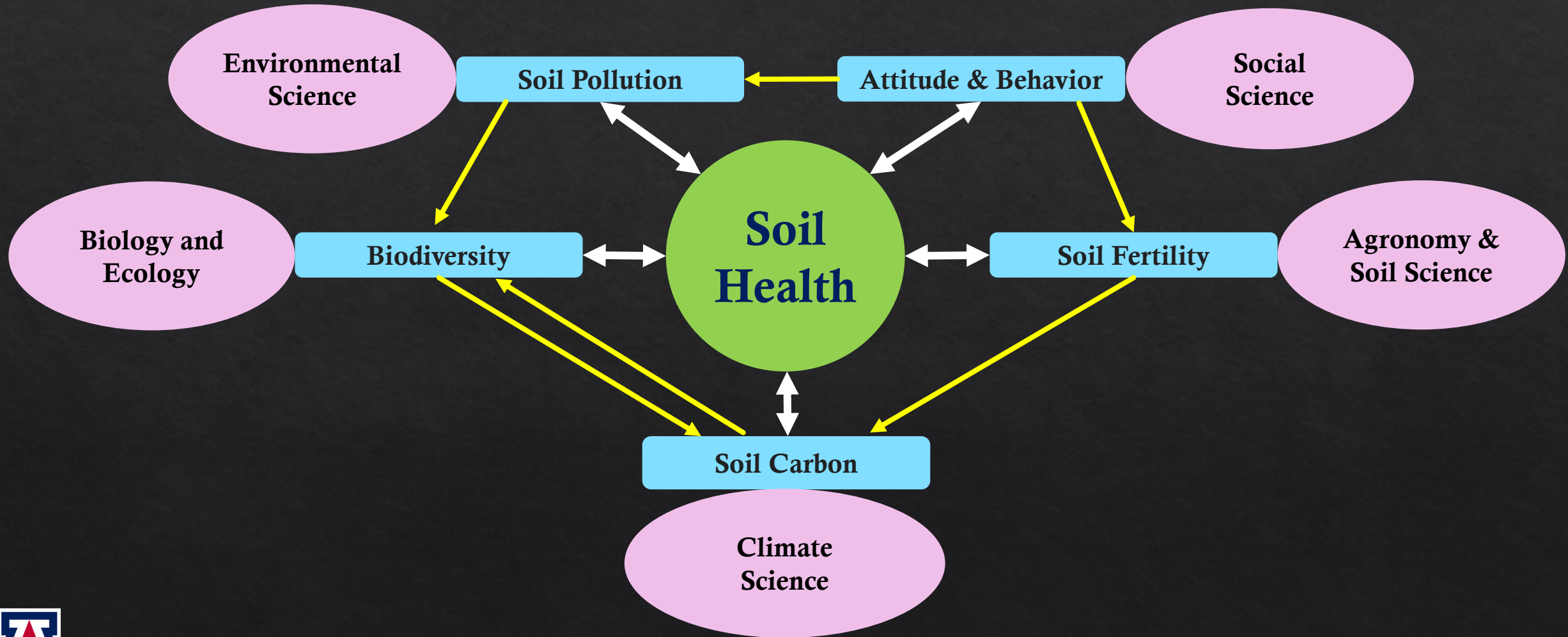
Cutting-edge



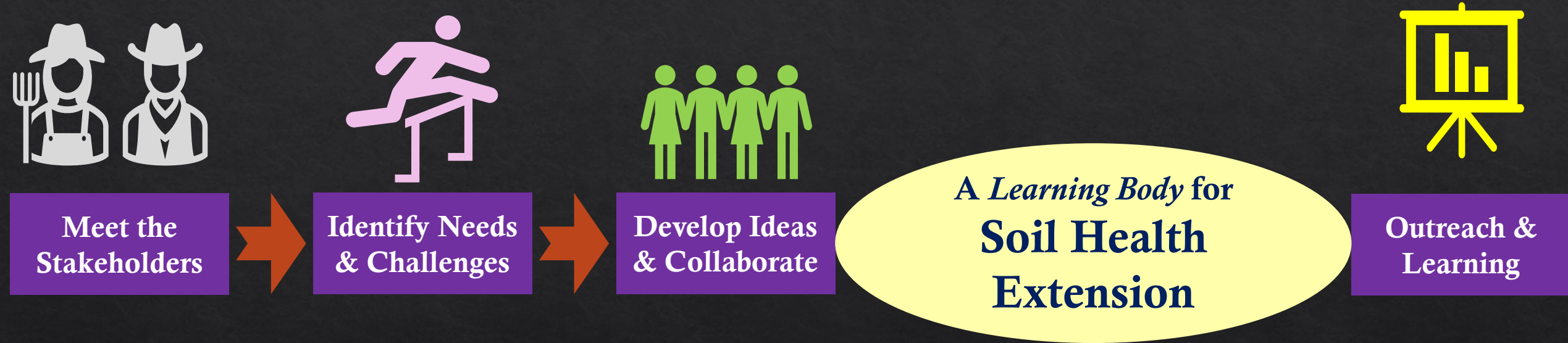
Modern Tools



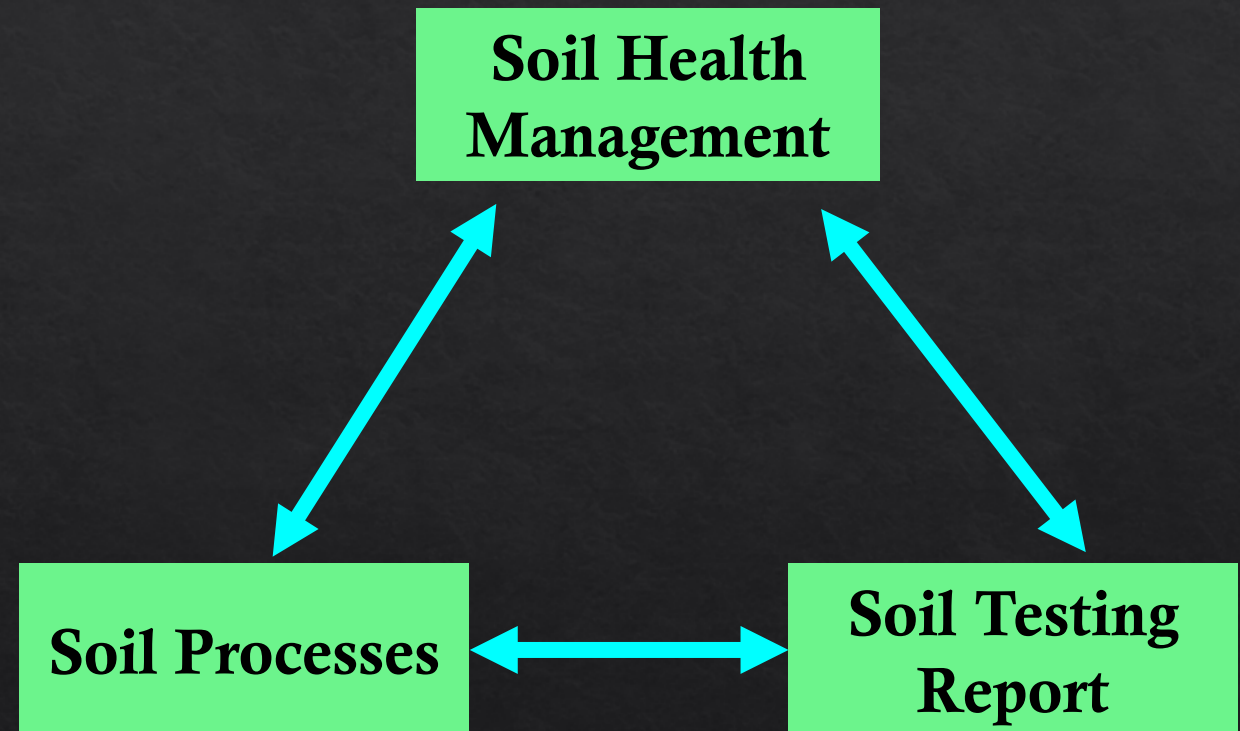
Soil Health Extension: Multidisciplinary



Soil Health Learning Community



Soil Health Management



Soil Health *Tools and Practices*

Conservation Tillage



Manure



Crop Diversification



Soil Armor



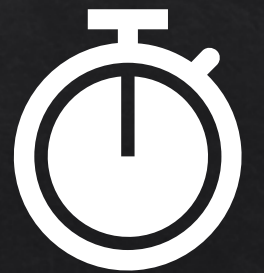
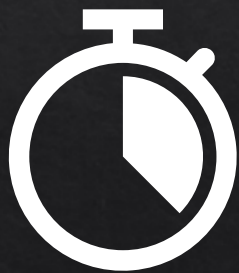
Crop Residue



Legumes



But building Soil Health takes
time!



Major Goals

- ◇ Soil Health **Needs Assessment**
- ◇ Soil Health **Extension and Education Team**
- ◇ Applied Research: **test/update/modify** soil health practices
- ◇ **Collaboration** between UA Soil Health team & Stakeholders
- ◇ Drafting **proposals** on Soil Health Needs with NRCS



Thank you!

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