

# Soil Health Resources in Maryland

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# State Programs

- ▶ *Farming for Healthy Soils* Grant Program, 3-year funding from National Fish and Wildlife Foundation
- ▶ Maryland Agricultural Water Quality Cost Share Program (MACS)
- ▶ Forthcoming: Maryland Healthy Soils Program (intended to replace the *Farming for Healthy Soils* Grant Program)



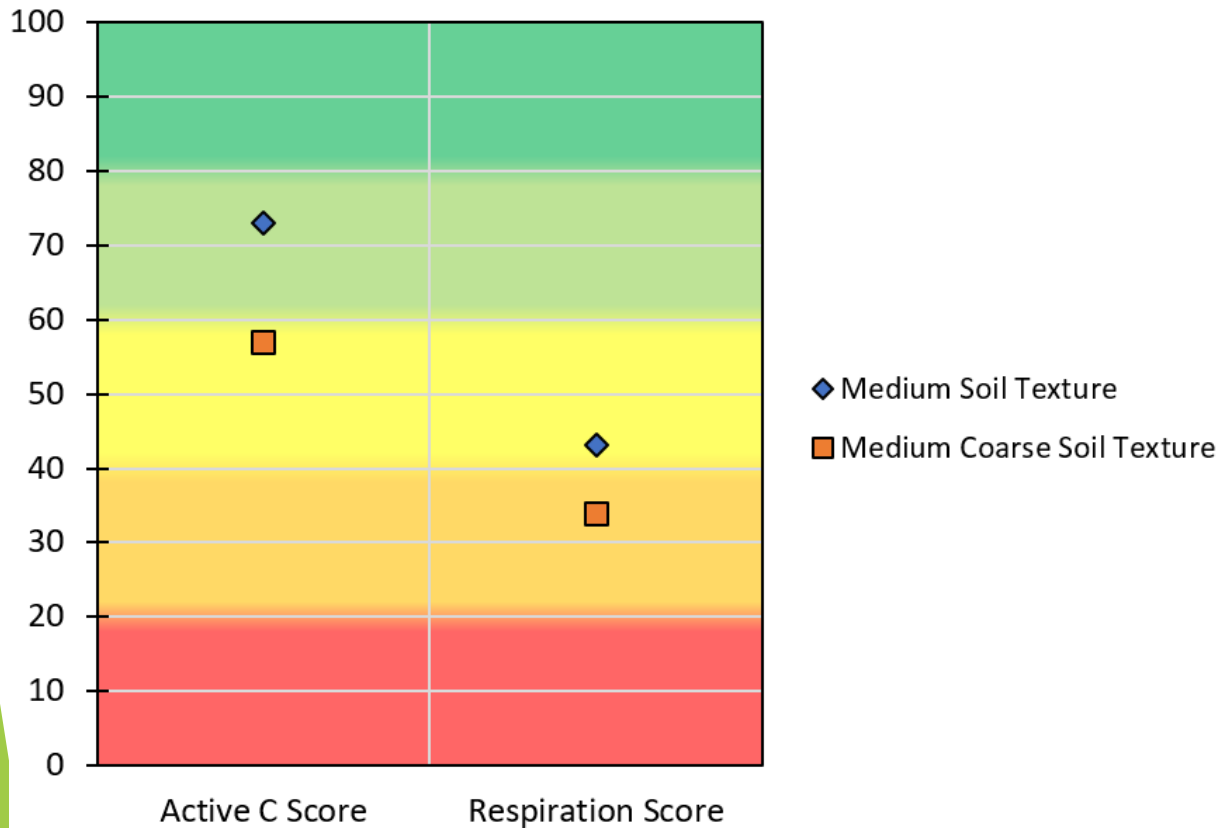
# Farming for Healthy Soils Grant Program

- ▶ Supports *new* practice implementation of:
  - ▶ Cover Crops
  - ▶ Prescribed Grazing
  - ▶ Nutrient Management
  - ▶ No Till/Reduced Till
- ▶ MDA staff collect soil samples for active carbon and microbial respiration testing and the Maryland Soil Health Card
- ▶ Financial and technical assistance available
  - ▶ Cost share limited to \$5000 per year
- ▶ Available until 2023

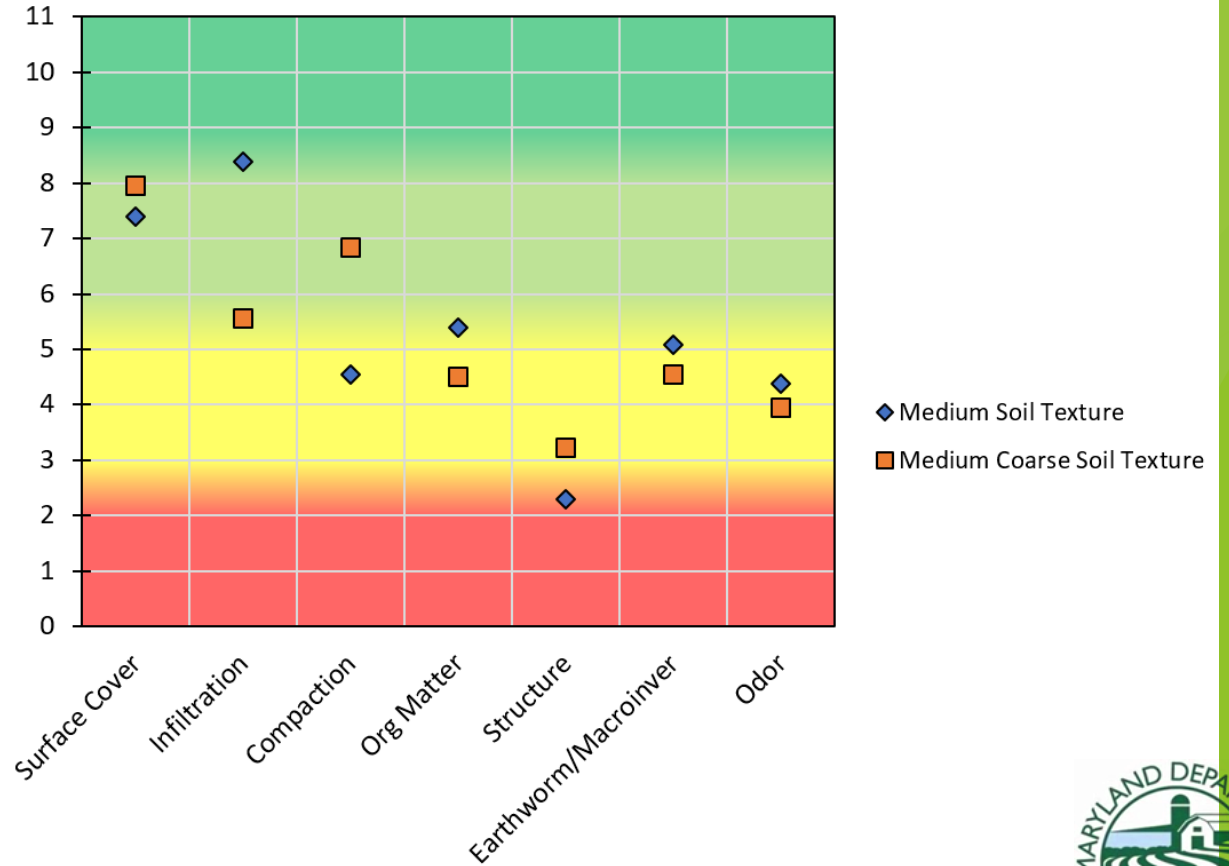


# Farming for Healthy Soils Grant Program: Example Results

## Average Cornell Soil Health Lab Results



## MD Soil Health Card - Row Crop Average



# MARYLAND SOIL HEALTH CARD

Farm/Tract/Field#s:		Assisted by:		Date and air temp:			
Current Tillage System with number and kind of crops in rotation:		Soil Series and Map unit sym:		Soil Surface Texture at site:			
Data from recent soil pH and/or organic matter analysis (if available):							
Indicators	Descriptive Ratings and Potential Scoring Points					Score	Notes
	Excellent 9-11 pts	Good 6-8 pts	Fair 3-5 pts	Poor 0-2 pts			
<i>Surface Cover (Count living plants and dead residue)</i>	>80% living plants and dead residue visible on soil surface. <input type="checkbox"/>	60-80% living plants and dead residue visible on soil surface. <input type="checkbox"/>	30-60% living plants and dead residue visible on soil surface. <input type="checkbox"/>	0-30% living plants and dead residue visible on soil surface. <input type="checkbox"/>			
<i>Infiltration (Based on soil texture, refer to Infiltration Chart)</i>	Infiltration rate at least two classes higher than listed range, indicates soil absorbs water easily. <input type="checkbox"/>	Infiltration rate one class higher than listed range, indicates soil absorbs water in a timely manner and is not susceptible to runoff or ponding. <input type="checkbox"/>	Infiltration rate within listed range, indicates soil absorbs water, but more slowly, and runoff and ponding may occur. <input type="checkbox"/>	Slower infiltration rate than listed range, indicates soil absorbs water very slowly, and runoff and ponding will occur. <input type="checkbox"/>			
<i>Compaction/Root growth (Based on moist topsoil conditions)</i>	Wire flag penetrates easily into 8 inches or more of soil with no resistance; unrestricted root growth. <input type="checkbox"/>	Wire flag penetrates into 6-8 inches of soil with a little resistance; requires a little wiggling of pin flag; little root growth restriction. <input type="checkbox"/>	Wire flag penetrates into 4-6 inches of soil with a lot of wiggling of pin flag and moderate force; root growth restricted. <input type="checkbox"/>	Wire flag penetrates into 2-4 inches of soil with force, roots maybe growing laterally. <input type="checkbox"/>			
<i>Organic Matter (Compare to samples or Munsell book using Hues 7.5YR, 10YR or 2.5Y)</i>	Soil is black in color; organic matter is visible in the topsoil layer. Value $\leq 2$ and chroma $\leq 2$ . <input type="checkbox"/>	Soil is dark brown in color; organic matter is visible in the topsoil layer. Value = 3 and chroma = 3. <input type="checkbox"/>	Soil is somewhat dark in color; little organic matter is visible in the topsoil layer. Any value or chroma that doesn't meet Good or Poor numbers. <input type="checkbox"/>	Soil is light brown to dull colored; no organic matter is visible in the topsoil layer. Value > 4 and chroma > 4 <input type="checkbox"/>			
<i>Soil Structure/Aggregation</i>	Soil is granular, soft and crumbly, held together with many fine roots. Looks like cottage cheese. <input type="checkbox"/>	Soil is granular, but not soft and crumbly, held together with some fine roots. <input type="checkbox"/>	Soil is blocky and firmer with few fine roots. <input type="checkbox"/>	Soil is single grain, massive or platy and hard to break apart. It has few or no fine roots. <input type="checkbox"/>			
<i>Earthworms and Macroinvertebrates</i>	Earthworms/grubs etc. >7 per spade, obvious middens and casts, and many pores. <input type="checkbox"/>	Earthworms/grubs etc. 4-6 per spade, obvious middens, casts, and pores. <input type="checkbox"/>	Earthworms/grubs etc. 1 to 3 per spade, few middens, casts, and pores. <input type="checkbox"/>	Earthworms/grubs etc. None present per spade, no middens, casts, or pores. <input type="checkbox"/>			
<i>Soil Odor</i>	Earthy/Sweet odor noticeable > 6 inches from nose. <input type="checkbox"/>	Earthy/Sweet odor, noticeable when close to nose. <input type="checkbox"/>	Little odor at all. <input type="checkbox"/>	No odor at all or sour, metallic, kitchen sink, rotten egg, stagnant. <input type="checkbox"/>			

**Total Score =**

### Interpretation of Total Score Results

Excellent 60-77 pts	Good 40-56 pts	Fair 20-39 pts	Poor 0-19 pts
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# MACS Capital Program

- ▶ 40+ NRCS practices are eligible for cost share
- ▶ High priority practices eligible for 100% cost share (nearly half) and
- ▶ Rates up to 87.5% for remaining.
- ▶ Established to focus on water quality, recent legislation expands the eligibility of MACS programs to recognize environmental co-benefits including soil health
- ▶ More information here:  
[https://mda.maryland.gov/resource\\_conservation/pages/macs.aspx](https://mda.maryland.gov/resource_conservation/pages/macs.aspx)



Photo credit: USDA National Agroforestry Center



# MACS Cover Crop Program

- ▶ Focused on water quality outcomes - soil health co-benefits
- ▶ Average nearly 462,000 acres planted each year over past 5 years
- ▶ New incentives this year for multi-species and extended season plantings

*Do You Plant Cover Crops on Leased Acres?*



**Check out resources for farmers and landowners with  
conservation practices on leased farmland  
[go.umd.edu/conservationleasing](http://go.umd.edu/conservationleasing)**

Photo by Edwin Remsburg



# Forthcoming: Healthy Soils Program

- ▶ Grant Program: focused on small farms and soil health research plots
- ▶ *Cover Crop+*: longer term (5 year) contracts with producers to plant extended season and/or multi-species cover crops
- ▶ Additional details available pending Advisory Committee input and future program development





# Other Farm Operation Resources

- ▶ Conservation Reserve Enhancement Program
- ▶ Manure Transport Program
- ▶ Maryland Income Tax Subtraction - for certain types of conservation equipment
- ▶ Low Interest Loans for Agricultural Conservation - available to fill gaps between cost share and equipment costs
- ▶ Manure Injection Cost Share

# Regulatory Requirements

- ▶ All producers participating in state programs are required to have an active nutrient management plan
- ▶ In some cases, an active conservation plan is also required (e.g. higher cost share for MACS Capital projects)



# MD Healthy Soils Program Contact Information

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