Office of Resource Conservation

MD Healthy Soils Program

March 17, 2026

History

2017 legislation charged department to develop a program that **improves health, yield, and profitability of soils; increases biological activity and carbon sequestration; and increases practice adoption**

Advisory Committee established late 2019, concurrent with grant funding

31 members representing producers, agricultural service providers, academia, non-profits, state agencies, and legislators

Charged with developing recommendations for the Healthy Soils Program consistent with legislation – facilitated by MDA. Allowed alignment to known NRCS practices.

January 2022, voted to overwhelmingly advance 4 recommendations for the Secretary's consideration

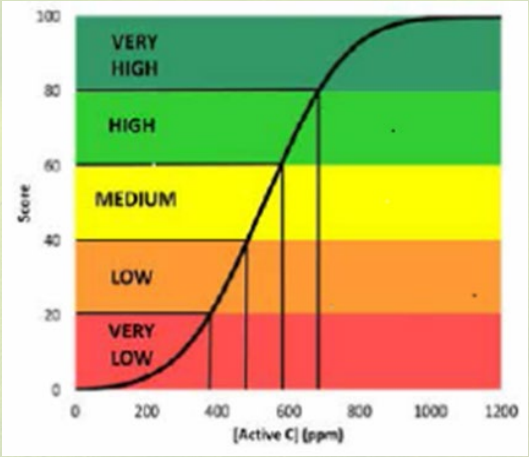
Full report at https://mda.maryland.gov/resource_conservation/Pages/Maryland-Healthy-Soils-Program-Final-Report.aspx

MDA Healthy Soils Program

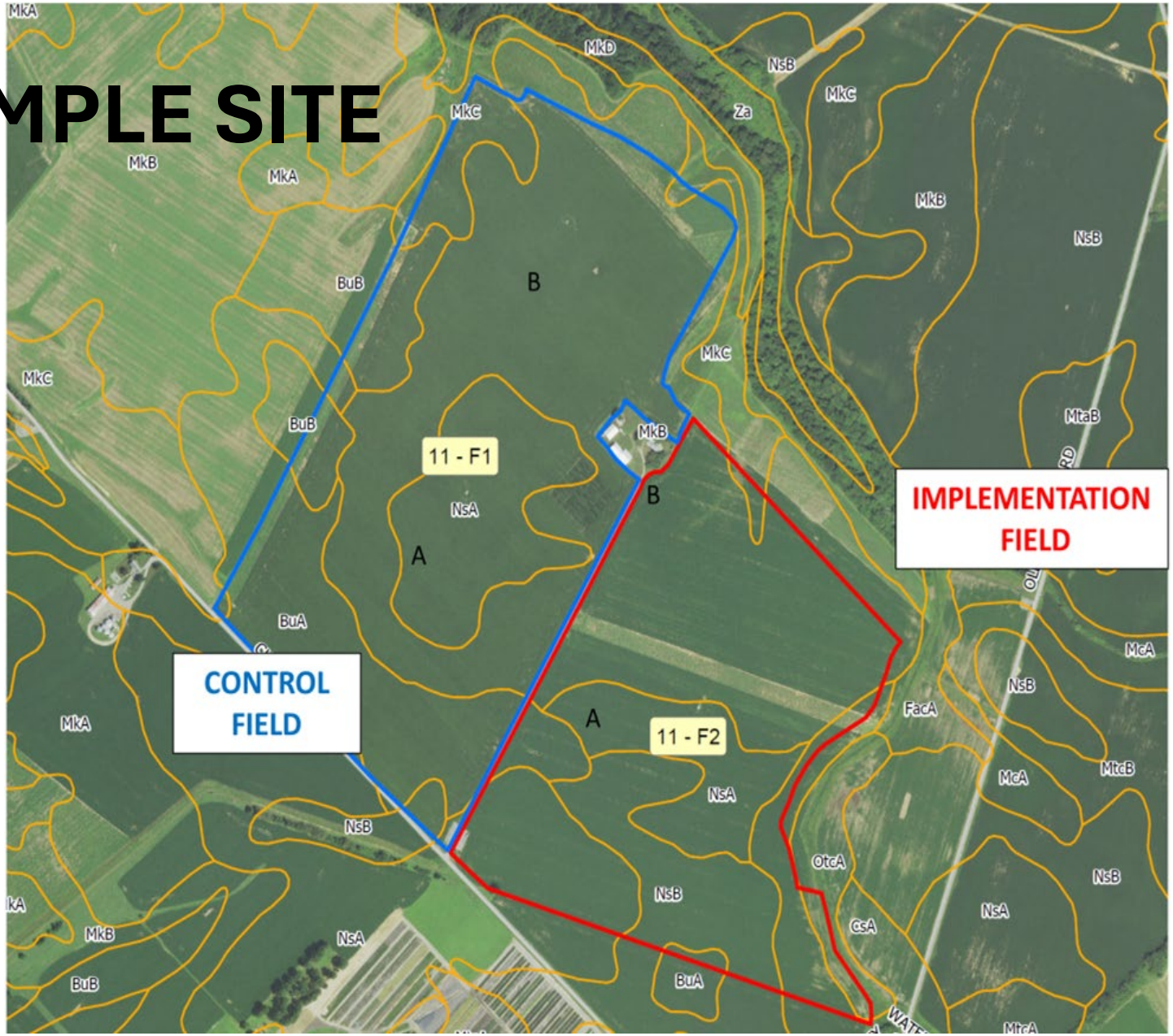
- **Farming for Healthy Soils** grant – Pilot 2020 through 2025, funded by NFWF
  - Concurrent with Advisory Committee
  - Acre rate per eligible practice
- **Healthy Soils Competitive Fund** – Annual funding cycle, round #4 closed for applications @ January 9.
  - Max award $50K
  - Eligible priority practices for implementation, equipment, or research needs
  - Designed to fill program gaps
  - Additional funding for Agroforestry via Climate Pollution Reduction Grant (EPA) starting in 2026
- **Cover Crop Plus** – Reopen summer 2026
  - Focus on enhanced incentives for planting cover crop mixes while managing crop rotations and tillage to achieve maximum water quality and soil health benefits over agreement term

Program Basics

- Financial Assistance for eligible BMPs
- Flexibility
- 3-year contracts on prescribed field(s)
- Since 2019, enrolled farms through the program are being evaluated in Year 1 and Year 3 (i.e. contract duration) using **Maryland Soil Health Card**, and soil sampling for **active carbon and soil respiration**. This is intended to answer farmer/agronomic questions on the benefits of adopting soil health, and supplements **soil fertility** (chemical) analysis. **NRCS-216 as of 2024**
- Modeled nutrient reductions and modeling estimates of GHG reductions



EXAMPLE SITE



Clear Form

MARYLAND SOIL HEALTH CARD

Project Name:	Location:	Assisted By:
Coordinates:		Date:
Crop Rotation and Tillage System:	Current Crop:	Air Temperature/Weather:
Inputs: ☐ Synthetic Fertilizers ☐ Manure ☐ Herbicides ☐ Pesticides ☐ Irrigation ☐ Other:		
Map Unit Symbol:	Soil Series:	Surface Texture:

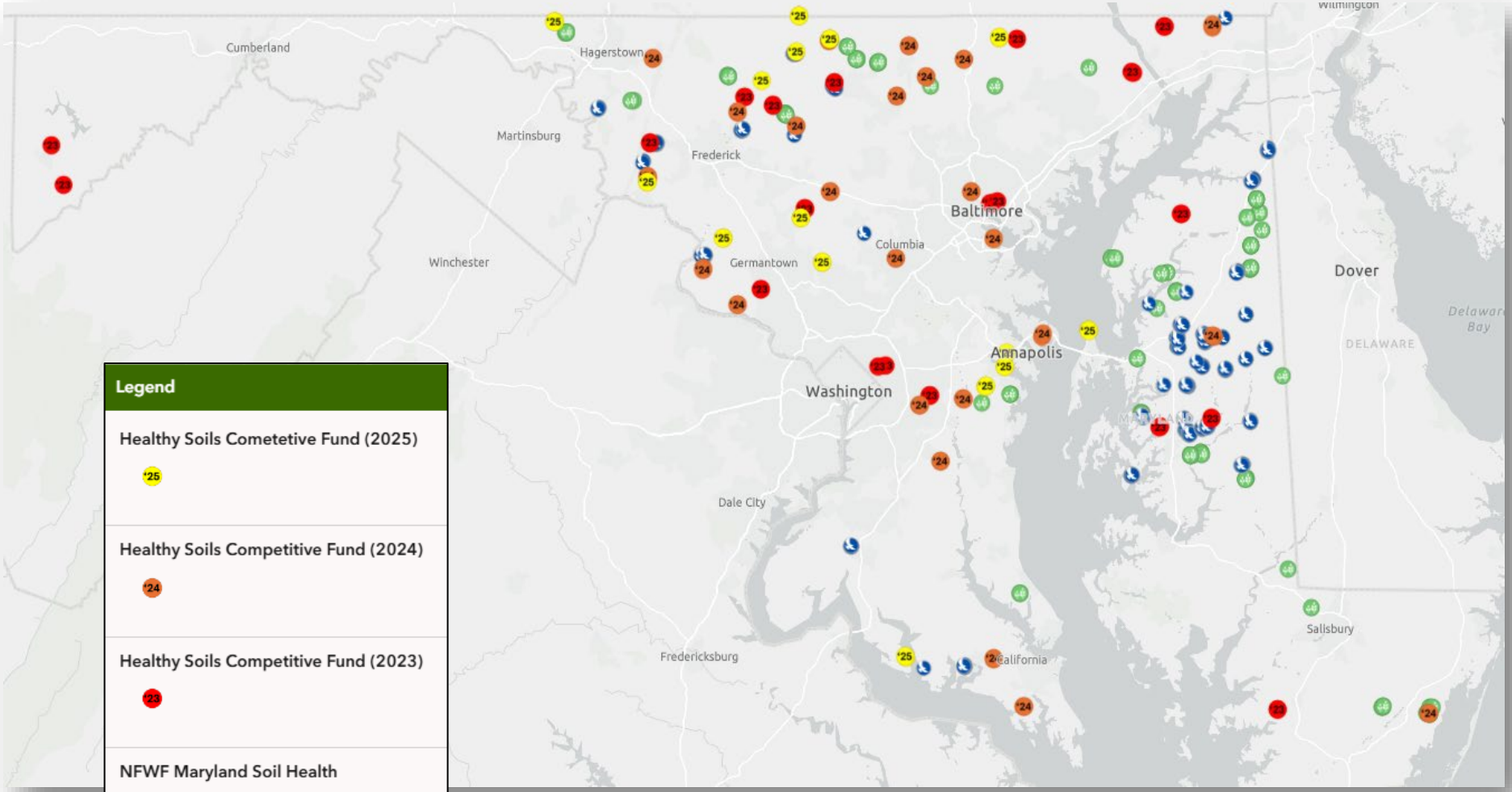
Indicators		Descriptive Ratings and Potential Scoring Points				Score	Notes
		Excellent 9-11 points	**Good 6-8 points**	**Fair 3-5 points**	**Poor 0-2 points**		
Surface Cover – living and dead matter visible on surface		>80%	60-80%	30-60%	<30%		
Infiltration – Based on surface texture, refer to Infiltration Chart		Soil absorbs water quickly and easily	Soil absorbs water in a timely manner and is not susceptible to runoff or ponding	Infiltration rate is within expected range for textural class. Soil absorbs water, but more slowly and runoff or ponding may occur	Soil absorbs water very slowly and runoff or ponding will occur		
Compaction/Root Growth (Based on moist topsoil conditions)		Wire flag easily penetrates soil to 8" with no resistance. Unrestricted root growth.	Wire flag penetrates soil to 6-8" with a little resistance. Requires a little wiggling of wire flag. Little root growth restriction.	Wire flag penetrates soil to 4-6", requires a lot of wiggling of the wire flag and moderate force. Root growth is restricted.	Wire flag penetrates soil 2-4", requires force. Roots may be growing laterally.		
Organic Matter – Compare to soil color book using hues 7.5YR, 10YR, or 2.5Y	0-3" depth	Soil is black, organic matter is visible. Value ≤2 and Chroma ≤2	Soil is dark brown, organic matter is visible. Value =3 and Chroma =3	Soil is somewhat dark in color, little organic matter is visible. Any value or chroma that doesn't meet good or poor criteria.	Soil is light brown to dull colored, no organic matter visible. Value >4 and Chroma >4		
	3-8" depth	(see criteria above)	(see criteria above)	(see criteria above)	(see criteria above)		

Indicators		Descriptive Ratings and Potential Scoring Points				Score	Notes
		Excellent 9-11 points	**Good 6-8 points**	**Fair 3-5 points**	**Poor 0-2 points**		
Soil Structure/ Aggregation	0-3" depth	Soil is granular, soft, and crumbly, like cottage cheese. Roots are covered in a soil film (rhizosheath) and soil is held together with many fine roots. Living roots are healthy, fully branched, and extend into the subsoil.	Soil is granular, but not soft and crumbly. Soil aggregates are held together with some fine roots.	Soil is blocky and firmer with few fine roots.	Soil is platy, single grain, or massive and hard to break apart. Few or no fine roots.		
	3-8" depth	(see criteria above)	(see criteria above)	(see criteria above)	(see criteria above)		
Earthworms and Macroinvertebrates		≥7 earthworms and macroinvertebrates per shovel slice, more than three different types of organisms observed without magnification, or many obvious middens, casts, and channels.	4-6 earthworms and macroinvertebrates per shovel slice, or obvious middens, casts, and pores. Root and earthworm channels extend vertically through the soil with some connecting to the surface.	1-3 earthworms and macroinvertebrates per shovel slice, or few middens, casts, and channels.	No earthworms or macroinvertebrates present in shovel slice. No middens, casts, or channels.		
Soil Odor		Earthy/sweet odor noticeable > 6 inches from nose.	Earthy/sweet odor noticeable when close to nose.	Little odor at all.	No odor at all, or sour, metallic, kitchen sink, rotten egg or stagnant smell.		

Assessment Indicator	
Surface Cover	0
Infiltration	0
Residue Breakdown	1
Water Stable Aggregates	0
Soil Structure	0

Total Score = 0

Excellent: 75-99
Good: 50-74
Fair: 25-49
Poor: 0-24



Legend

Healthy Soils Cometetive Fund (2025)

Healthy Soils Competitive Fund (2024)

Healthy Soils Competitive Fund (2023)

NFWF Maryland Soil Health

Cover Crop +

CC+ Soil Health Cards

100+ farms covering nearly 25,000 acres

Scaling Up Impact

State carbon accounting - all working and natural lands - joint projects with MDE & DNR for incorporation into the GHG inventory. **For agriculture, builds on state data sources rather than EPA assumptions.**

Funding to develop protocol for MD's agricultural soils using COMET-Farm software tools and estimate "technical potential" of carbon flux through 2050 on cropland, toward new Climate Pollution Reduction Plan

Planning Scenarios – county adoption levels (2006-2023):

- Cover crops
- Nutrient Management
- Conservation Tillage

As expected, Maryland farmers early adoption of conservation has sequestered significant soil carbon in our agricultural lands. MDA will expand practices through COMET-Planner

NEW: Regenerative Ag

- 2025 statutory expansion of Maryland Healthy Soils *may include* **'Regenerative Traditions and Practices'** to draw on cultural traditions and practices
- Definition found in HB0506, more colloquially known as the Chesapeake Bay Legacy Act
- Later referenced in Natural Resources article **relative to leasing of agricultural fields on state lands**
- Joint discussions with DNR for language development
- Currently, DNR-Park Service drafting contract language and criteria to launch this process → MDA input

Nick Miller

Healthy Soils Program Specialist

Nicholas.Miller2@maryland.gov

Alisha Mulkey

Program Manager

Alisha.Mulkey@maryland.gov