

## OBJECTIVE

Learn more about the available tools and calculators to help you understand the relationship between crop management and carbon

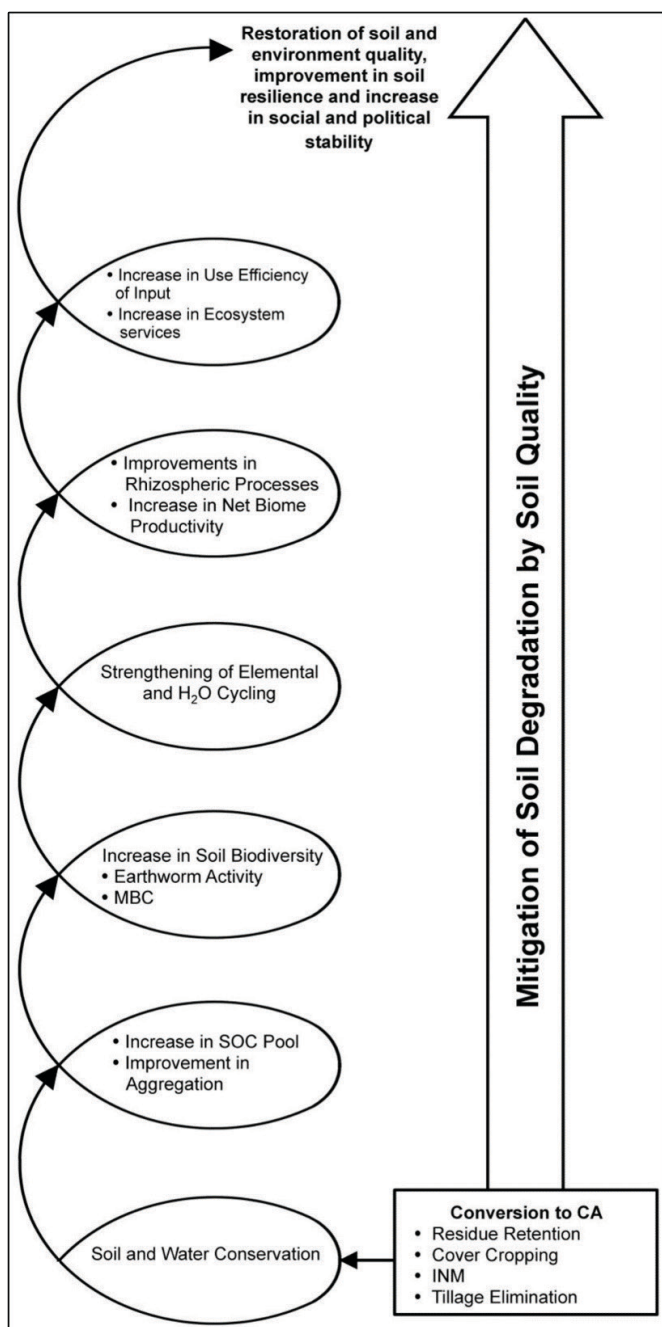


eFields Collaborating Farm

OSU Extension

Statewide

## CARBON FARMING, CARBON CREDITS, AND CARBON MARKETS – WHERE TO START?



Carbon farming is a farm approach to reduce carbon emissions by adopting certain practices that sequester carbon into the soil. It has associated agronomic and environmental benefits such as improved soil health and water quality, better agronomic productivity, and reduced greenhouse gas (GHG) emissions (Figure 1). The USDA Natural Resource Conservation Service (NRCS) has identified thirty-five carbon farming practices that improve soil health and sequester carbon. Some examples include cover crops, filter strips, residue and tillage management, etc. Farmers can get carbon credits for adoption of these practices by enrolling into carbon markets for sequestration of CO<sub>2</sub> and reduction of GHG emissions. These markets are created by private and governmental entities and rely on voluntary enrollments by producers/landowners. Carbon credits are measured in units of carbon dioxide equivalent (CO<sub>2</sub>e) by quantifying the GHG emissions reduced, or carbon sequestered by a specific practice. If you are wondering about whether your current or future practices would help, get into the carbon markets, some farm and field-scale decision tools may come in handy. Here is a list of tools and calculators you can refer to for some initial estimates. Feel free to reach out to OSU Extension if you need more help with these tools or have additional questions.

Figure 1: Carbon Farming – Conservation Agriculture (Lal 2015). (SOC - Soil Organic Carbon; MBC – Microbial Biomass C; INM – Integrated Nutrient Management)

Citation: Lal, R., 2015. Restoring soil quality to mitigate soil degradation. *Sustainability*, 7(5), pp.5875-5895.

## HELPFUL TOOLS AND CALCULATORS

**OSU's Soil Organic Matter (SOM) calculator** - Predicts the soil organic matter and CO<sub>2</sub> emissions/sequestration in response to cropping pattern, tillage, manure application, erosion, cover crops and stover removal.

[www.go.osu.edu/SOMcalculator](http://www.go.osu.edu/SOMcalculator)

**COMET Planner Scenario Tool** - Estimates potential greenhouse gas mitigation and carbon sequestration adoption of NRCS conservation practices on cropland and grazing land.

<http://comet-planner.com/>

**COMET-FARM™** - COMET-Farm is a whole farm carbon and greenhouse gas accounting system from the USDA and Colorado State University. The tool guides you through describing your farm and ranch management practices including alternative future management scenarios. Once complete, a report is generated comparing the carbon changes and greenhouse gas emissions between your current management practices and future scenarios.

<https://comet-farm.com/>

**NRCS STEP Tool** - Evaluates ecosystem metrics, such as water quality, soil carbon, greenhouse gas emissions in response to farm-scale management, practice adoption, and actions.

<https://calculator.fieldtomarket.org/>



### TOOLS OF THE TRADE

*Knowledge Exchange Carbon Central*

*A landing page for the latest information from OSU experts about carbon.*



### PROJECT CONTACT

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