

Soil Health is the capacity of the soil to function to sustain life, while not damaging the environment. Soil health constraints that currently limit agricultural productivity, resilience, and environmental progress, are often biological and physical in nature. The use of now-standard soil test thresholds that guide nutrient recommendations has been foundational to national agricultural success by guiding management of nutrient constraints. However, the focus on managing specific nutrients has come at the expense of organic matter management and associated biological and physical benefits. Carbon inputs into agricultural lands have decreased, while intensive tillage, use of heavy equipment, low organic matter returns, low-diversity cropping systems, and improper field operations have resulted in biological and physical soil degradation. The [Cornell Soil Health Test](#) is a soil test package, publicly available through Cornell University – it provides field-specific information on soil health constraints in physical and biological processes in addition to standard nutrient analysis, and thus guides better soil health management.

Managing for better soil health builds more dependable productivity and increased resilience into agroecosystems, while decreasing external input needs. Better soil health management can help growers adapt to and mitigate extreme weather, climate change effects, and other environmental impacts through carbon sequestration, better water availability buffering, better temperature buffering, lower environmental losses and improved ecosystem services. Management practices such as reducing tillage, using cover crops, developing better crop rotations, importing organic matter, nutrients, and other amendments as needed, and preventing damage to soil while it is wet, can all help build better soil health. The Cornell Soil Health Test can be used to assess a soil's current soil health status (see soil health testing and interpretation), and identify specific management practices to address the identified constraints and maintain better soil health (see soil health management planning).

Soil Health Testing and Interpretation

The Cornell Soil Health Test can be used to assess a soil's current soil health status. Soil health indicators measured on samples submitted to the lab provide standardized, field-specific information on agronomically important constraints in biological and physical, as well as chemical processes. The measured indicators are relevant to agricultural production and are sensitive to management changes. They can thus be used to assess whether a grower's soil management practices are detrimental or beneficial for soil health, and for monitoring change over time.

For information on which indicators are measured, what important soil processes each represents, and why these are important, see the [Cornell Soil Health Training Manual](#) available for download. Greenstart usually has some paper copies of the manual available as well.

For information on available testing packages, pricing, how to sample, and how to submit soils for soil health analysis, see the [Cornell Soil Health website](#) or work with your local NH NRCS representative. The NH NRCS may provide cost-sharing for soil health analysis for qualified operations.

Soil Health Management Planning

A collaborative effort funded by NH NRCS and a Specialty Crops Block Grant has been building on the above work since 2010 to develop a framework for Soil Health Management Planning (SHMP) and implementation (Project collaborators: [Bianca Moebius-Clune](#), Cornell Soil Health Team; [Dorn Cox](#), Greenstart NH Executive Director; Brandon Smith, NH NRCS Agronomist; NH Conservation Districts staff; County NRCS staff; Producers).

Soil Health Management Conservation Activity Plans are analogous with the NRCS's Nutrient Management Plans in that soil testing is used as the field- or sub-field specific basis for data-driven management. The new SHMP framework provides structured guidance for choosing specific and effective combinations of practices (e.g. specific cover crop types, targeted deep tillage, mulching, forage planting, organic additions) that are feasible for the operation developing the plan. A schedule for implementation of chosen practices is then established for each field. Pilot soil health management plans for eighteen cooperating farms in four NH counties are currently being developed.

An example of the process, and a table with management options by indicator, are provided in the downloadable documents made available for Soil Health outreach events:

-

[Soil Health Testing and Management Planning Handout](#) (.pdf, 2 page, 1.4 MB) – provides an overview of testing, interpretation, and the management planning process.

-

[Soil Health Testing and Management Planning Poster](#) (.pdf, 56"x36", 2 MB) – provides an overview of testing, interpretation, and the management planning process.

-

[Management Options Table](#) with NRCS practice codes (.pdf, 2 page, 72 KB) – links measured constraints (e.g. low aggregate stability) to multiple short-term management options (e.g. growing shallow rooted cover crops), and long-term management options (e.g. reduced tillage) to address these constraints. Many of the suggested practices are cost-shared by NRCS funds through EQIP and CSP for qualified producers.

//