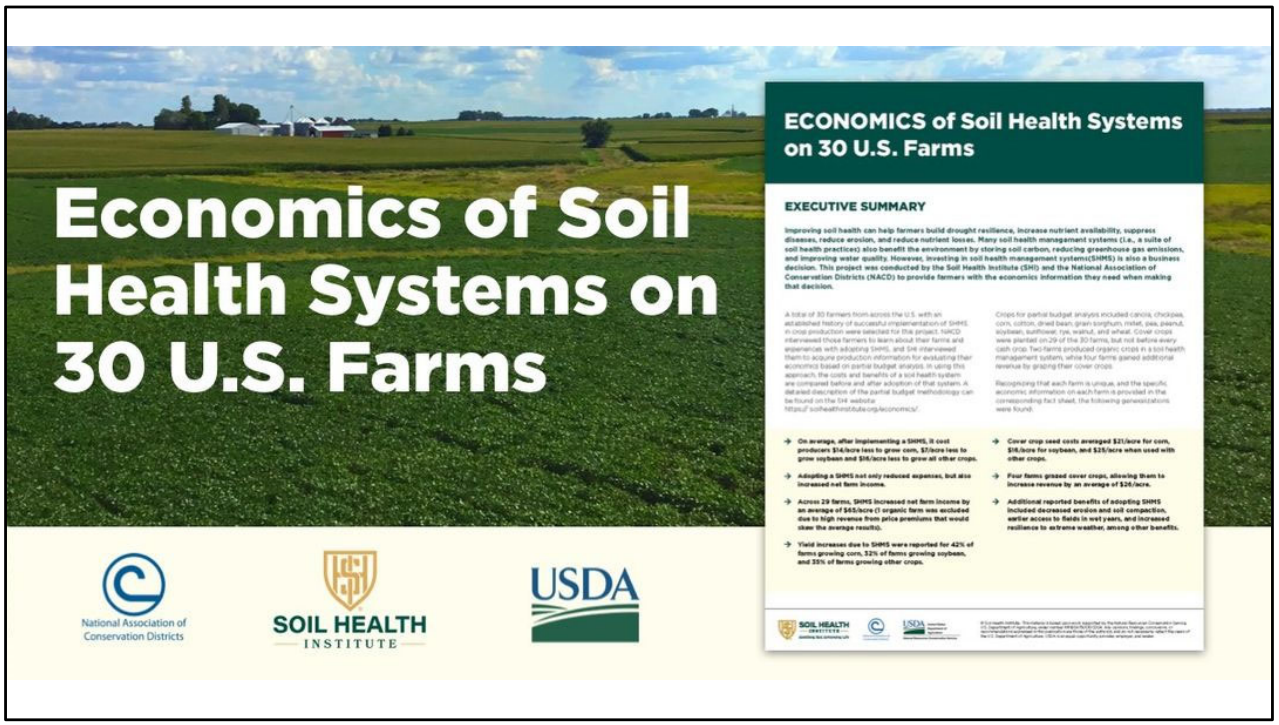

USDA
United States
Department of
Agriculture
Natural Resources Conservation Service
Soil Health
Updates
Candiss Williams, Ph.D.
National Soil Health Specialist
Soil Health Division

PARTNERSHIPS

Natural Resources Conservation Service

nrcs.usda.gov/



NRCS has a strong desire to understand economic and social considerations of producers with and without soil health systems. The Soil Health Division has been working with a number of partners to understand the economics of soil health and social considerations towards soil health systems. One of which is Soil Health Institute who recently released a report on the economic of Soil Health systems on 30 U.S. Farms. We realize that traditionally producers use crop yield as a metric of success. These studies show that by utilizing economic analyses that include whole farm budgets to determine the economic impact of soil health systems, we see across the board so far that when soil health systems are incorporated, producers have less 'inputs' and as a result, an increase in profit.

CONSERVATION PRACTICE STANDARDS

Natural Resources Conservation Service

nrcs.usda.gov/

Practice Standard 336 Soil C Amendment allows producers who have resource concerns that include

Improving or maintaining soil organic matter.

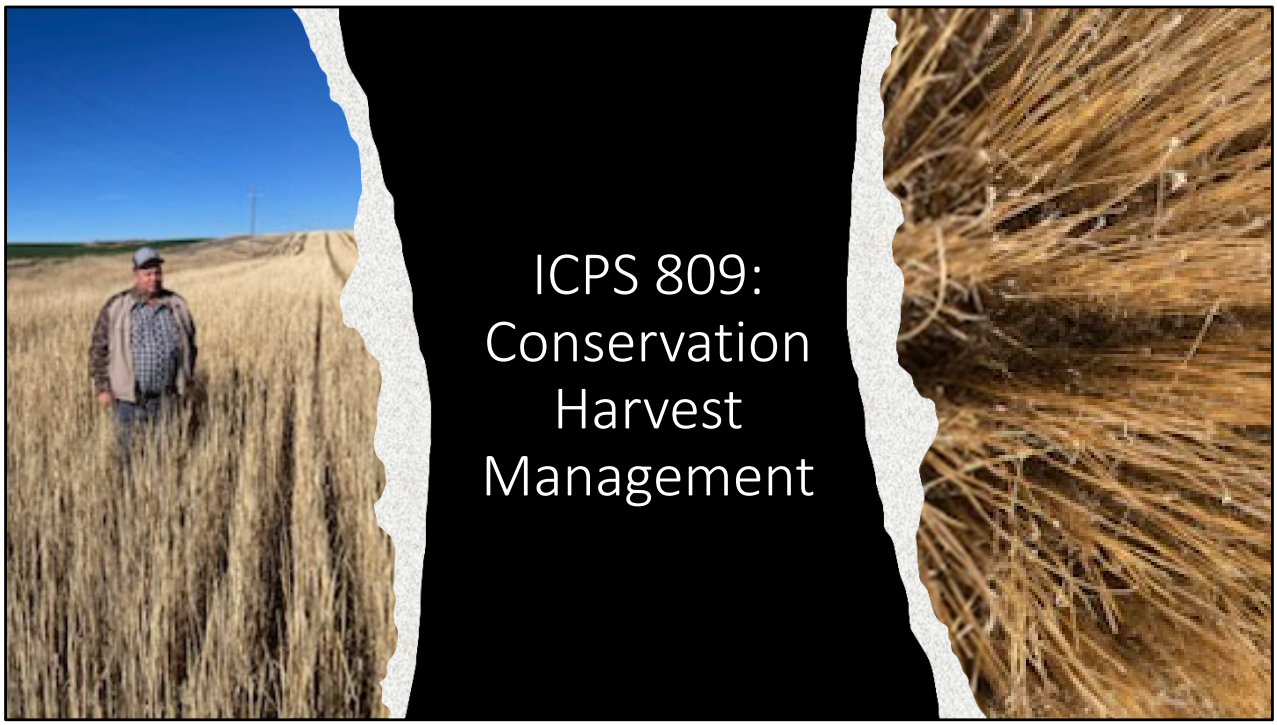
Sequester carbon and enhance soil carbon (C) stocks.

Improve soil aggregate stability, and

Improve habitat for soil organisms,

To use amendments like biochar, compost, bagasse,

and other regional C amendments to improve soil org. matter, sequester C, and improve agg. stability and habitats for soil organisms.



Interim Practice Standard 809 Conservation Harvest Management uses a Stripper header to leave standing residue to capture snow for the purpose of

Increasing naturally available moisture use
Enhancing plant productivity and health
Reducing sheet and rill erosion
Reducing wind erosion and
Increasing soil organic matter

Interim practice is not adopted yet by Nebraska.

ICPS 825: Culturally Significant Plantings for Soil Health

Interim Practice Standard 825 Culturally Significant Plantings for Soil Health is very new. It was led by Washington State and became official 3 weeks ago.

The practice in designed to manage and improve a soil ecosystem by growing two or more culturally significant plants together using biological and cultural strategies that foster the cycling of resources and promote biodiversity.
The resource concerns it addresses include:
Improve soil organism habitat and diversity.
Maintain or increase soil organic carbon.
Improve soil aggregate stability.

Improve naturally available soil moisture use.

IN-FIELD SOIL HEALTH ASSESSMENTS

Natural Resources Conservation Service

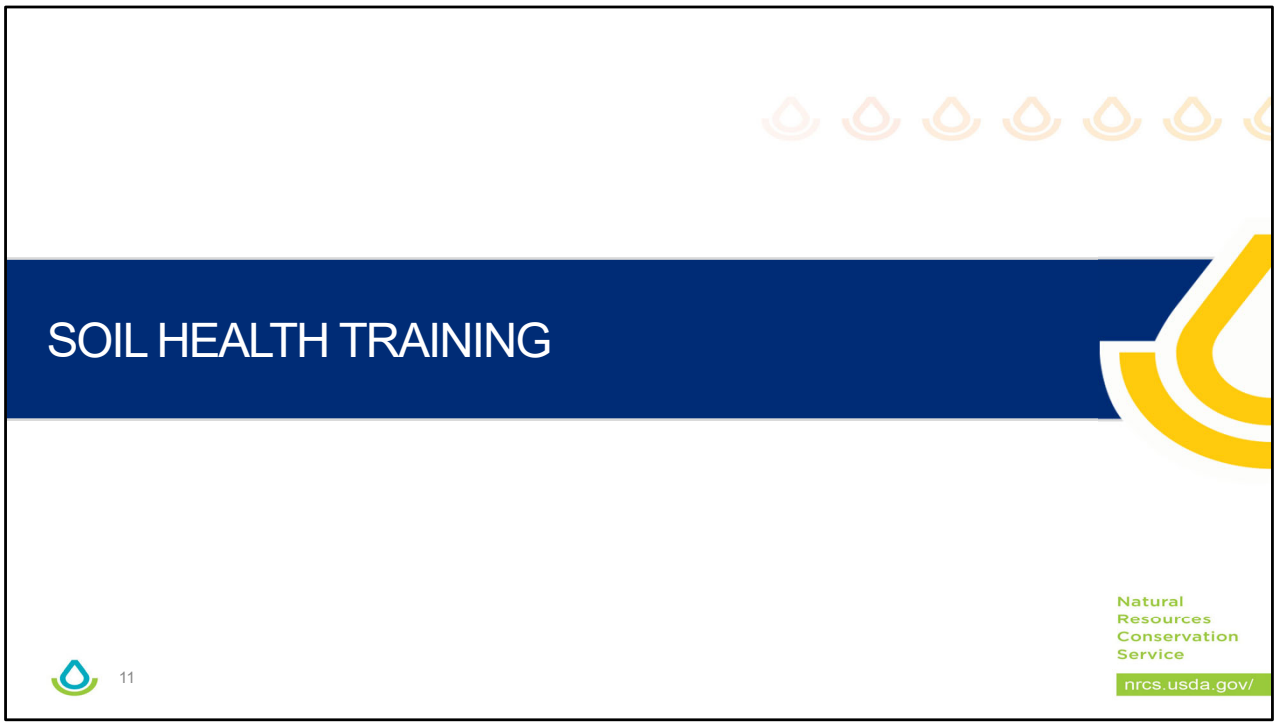
nrcs.usda.gov/

Forest In-Field Soil Health Assessment

SHD completed the pilot for the Forest In-Field SH Assessment. Like the Cropland IFSHA, it allows a field planner and producer to walk their forest stand and evaluate for things like soil platinness, infiltration, qualitative assessments of above and below ground organic matter. This tool can be used to identify resource concerns which can assist the NRCS planner and land owner determine which conservation practices are most suitable to address the resource concern(s).

SHD will be releasing next week the Rangeland In-Field SH Assessment to the states for review. The goal is to complete the pilot and have the tool ready to release for FY2.

Like the Cropland and Forest IFSHA, it allows a field planner and producer to walk their range and evaluate for things like soil platinness, infiltration, and qualitative assessments of above and below ground organic matter, plant community establishment, to name a few. This tool can be used to identify resource concerns which can assist the NRCS planner and landowner determine which conservation practices are most suitable to address the resource concern(s).



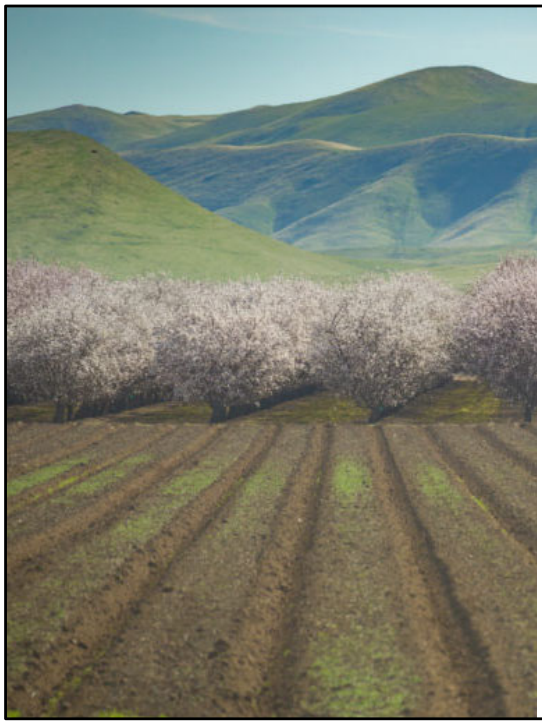
Soil health spans all disciplines. The SH Division is excited to pilot a number of new training this year specific for our technical and field staff to better assist farmers, ranchers, and forest owners. In FY23, the SH Division provided over 300 in-field trainings, webinars, technical assistance, and other support across the U.S.

Training on Rangeland SH in conjunction with the National Grazingland Team and States are conducting multiple pilot trainings this spring. In FY25, these trainings will be offered across the U.S.

The SH Division hired Dr. Tom Sauer, retired ARS Scientist and Greg Brann, retired NRCS Rangeland Mgt Specialist to work with our staff in partnership with the National AgroForestry Center to develop technical notes and fact sheets for both internal and external use; in addition to developing new training and provide relevant content on soil health for existing training. The Division is piloting a 3-day course this spring.

Soil Health Demonstration Trailer

This trailer; the first of four, will be utilized by the division during trainings and presentations to show how management and land use decisions affect dynamic soil properties. These trailers will also be able to be reserved and utilized by NRCS staff from states within the regions at events and trainings they may be hosting. Outfitted with a rainfall simulator, a wind erosion simulator, and other soil health hands-on demonstrations, these trailers will allow the division to increase soil health outreach to both producers and staff.



Advanced Cropland Soil Health Training

This year, the SH Division offered several Advanced Cropland Soil Health Trainings across the U.S. New to the Division, we offered Train-the Trainer, providing content training to state technical leads so that they can provide training to their respective staffs.

Urban Soil Health

A few years ago, USDA stood up Urban Agriculture. To meet the needs of producers in small farms and urban agriculture, the SH Division brought on an Urban SH Specialist. Dr. Joshua Benniston. Recently, the Division released 3 technical notes specific to soil health in urban agriculture. Also, 3 courses were piloted in 3 states, and these courses now make up a 3-day course that will occur in May.

Indigenous People's Team

The SH Division is really excited to support the Secretary's desire to develop new programs or improve existing ones to address the needs of our indigenous partners. The SH Division 's Indigenous People's Team has done outstanding work to develop agreements that address the social indications of SH adoption, evaluate current practices to look for opportunities to support traditional ecological knowledge, and develop new practices that support conservation efforts of indigenous communities that spans hundreds of years. An example I mentioned earlier is the cultural plantings for soil health. I should mention that our conservation practices are program neutral meaning that all practices can be used by any participant regardless of background.

CONSERVATION EVALUATION & MONITORING ACTIVITIES (CEMA)

CEMA 216: Laboratory Testing for Soil Health

Great opportunities to consider:

Conservation Evaluation & Monitoring Activities aka CEMAs are opportunities for producers to monitor and/or evaluate the conservation plans. They can be utilized at any step of the conservation planning process. They can be used to identify or validate a resource concern, determine how well a practice or suite of practices are improving soil health indicators. For example, if utilizing ICPS 825 culturally significant plantings for SH, a producer would add CEMA 216 SH Testing to their plan and would test for something like soil respiration to quantify a baseline. After implementing a new practice to address microbial activity, a producer would test the soil again using CEMA 216 1 to 3 years later for comparison. CEMAs can be planned yearly.

Producers who share their data with NRCS will receive back an SH Assessment Protocol & Evaluation (SHAPE) score for each SH indicator. What this does is compare the soil test results to soil information for similar soils within their area. The SHAPE score ranges from 0 to 100, where 0 suggests that the soil is severely degraded and has a ways to go to meet its maximum potential and 100 suggests that the soil is at its maximum potential. This information is very helpful to the producer because it helps them and the NRCS planner design the management plan in a way for the producer to meet the soil's maximum potential.

CEMA 221: Soil Carbon Stock Monitoring

Similar to 216 is CEMA 221 Soil C Stock Monitoring. This is an opportunity for producers to have C stock data where soils are collected to a 1-m depth and analyzed for C and bulk density to calculate C stocks. The CEMA is designed in a way that the data could be used for those interested in C markets.

The design is also aligned with the USDA national effort to quantify C stocks nationally. Producers who participate in the Citizen Science option of the CEMA, agree to provide NRCS the soil test results as well as a completed management survey. The data collected will be added to the national database and aggregated to provide summaries of C stocks at the regional and national levels. Data collected will also provide the minimum dataset necessary to runt he COMET –Farm and COMET-Planner models that will allow producers to simulate a variety of conservation practices on their land to determine which practice or suite of practices address the resource concerns or mitigate GHG emissions and/or sequester C.

In September, the SH Division began its quarterly Partnership RTs. It's an opportunity for stakeholders to learn about what we are doing within the division to address SH and an opportunity for us to learn about what you are doing to support SH and producers. Please reach out to Carl Koch if interested in joining us.