

SOIL AND PLANT SCIENCE DIVISION

Technical Soil Services

Southwest Soil Survey Region



Klamath Falls, Oregon, Major Land Resource Area (MLRA) Soil Survey Office (SSO)

SPSD Assists with a Soil Health Workshop in Siskiyou County, California

Purpose

On May 4, 2023, Chris Gebauer, MLRA SSO Leader, assisted with a soil health workshop in the Scott River Valley in Siskiyou County, California. The workshop was organized by Jacqueline Vega, California Area 1 NRCS Resource Soil Scientist, with assistance from local landowners and the Scott River Watershed Council (SRWC), to train northern California NRCS staff on soil health, dynamic soil properties (DSP), NRCS conservation programs, the new Soil Carbon Amendment (biochar) conservation practice, and a DSP study of biochar soil amendments.

Key Outcomes

The all-day soil health workshop hosted 20 participants and involved three stops on private lands to look at treatments in the soil biochar DSP study, compare soil health under different management scenarios (range, pasture, and grass hay), examine soil health indicators, and review soil survey data. Gebauer reviewed how soil surveys are made, the scale of soil surveys, soil map unit design and composition, soil interpretations in Web Soil Survey like the Dynamic Soil Properties Response to Biochar, and how to access soil survey data.

Gebauer also discussed how NRCS is conducting a DSP study involving two different sites in the Scott River Valley to evaluate the benefits of biochar soil amendments applied under two different management scenarios on Stoner soils (figures 1 and 2). Stoner soils are a common soil series mapped in the Scott River Valley area.

The landowner provided information on management history, changes in practices and soil conditions over time, and experiences with managing for soil health. Workshop

participants were able to compare soil health indicators from different management scenarios and biochar treatment plots.

Dr. Kabir Zahangir, NRCS West Regional Soil Health specialist, and Hud Minshe, California NRCS State Conservation Agronomist, shared information on soil health indicators, how NRCS can help landowners improve soil health, and NRCS conservation practice standards. They also conducted a soil health demonstration for workshop participants that included a slake test and rain simulator display to visually illustrate the impact soil health conservation practices have on soil health indicators (figures 3 and 4). Afterwards, many participants expressed an interest in sharing these demonstrations with others.



Figure 1. Soil cores of the Stoner soil series under different management scenarios (left to right: annually tilled grass hay; alfalfa hay; no-till pasture with biochar amendments).



Figure 2. Chris Gebauer presents information on the DSP study, soil survey data, and site-specific soil properties (Photo by Scott River Watershed Council staff).



Figure 3. The slake test demonstration showed some of the differences between soils under conventional till (left) and no-till (right) (Photo by Scott River Watershed Council staff).



Figure 4. Dr. Kabir Zahangir demonstrating some of the differences in runoff and infiltration between soils under different management scenarios (left to right: pasture with biochar amendment; conventional till grass hay with biochar amendment; pasture with biochar and compost amendments; alfalfa hay with no biochar or compost). (Photo by Scott River Watershed Council staff).