

Soil and Plant Science Division

Technical Soil Services Report

Southwest Soil Survey Region



Klamath Falls MLRA Soil Survey Office

Soils Field Day

Purpose

The Klamath Falls MLRA Soil Survey Office Leader, Chris Gebauer, and Oregon NRCS Resource Soil Scientist, Jenni Moffitt, provided on-the-job training in the form of a Soils Field Day to NRCS field office staff in Klamath Falls, OR, on June 8, 2021.

The field office requested this training in order to provide staff with an understanding of local soil properties and also to provide information on the soil survey process, how to access soil survey data and use the reports for planning purposes, how to discuss soils with clients, and how to conduct field visits for verification of soil properties.

Key Outcomes

The Klamath Basin currently is experiencing drought, and there is little to no surface irrigation water available this year in some areas. This is a complicated situation, hydrologically, politically, socially, historically, and legally. It has many ramifications, including impacts on soil health.

This Soils Field Day was valuable to both recently hired employees and to more experienced field office staff because it provided opportunities to exchange information and expertise at all levels, and to answer specific soils-related questions.

Outcomes included a better understanding of the following:

- local soil types and properties specific to those soils (e.g., diatomaceous parent materials)
- how soils relate to conservation practice delivery and practice installation
- how to read the soil survey and how it can provide information on potential barriers to practice installations
- how soil survey data can highlight important soil management or protection considerations
- how soil surveys can convey the importance of soils to clients
- what soil survey reports can tell our clients about why they may be seeing variability on their property, even within a single soil map unit
- engineering classifications of soils, how they are determined, and what they mean
- general, common engineering needs and soil-related considerations
- how soil surveys are developed



- how updates to soil survey data can be requested and the process for updating soil surveys
- how soil mapping often involves looking for repeating patterns on the landscape, and how we recognize those patterns
- considerations of scale when using soil survey data, and the importance of confirming your soil in the field
- how soil survey data populated in NASIS typically have low, representative, and high values, but many reports out of Web Soil Survey give only the representative value, which is based on a modal concept
- the range of variability in soils, and how relying on a single number from soil survey data without field verification may cause issues
- dynamic vs. inherent soil properties and how they relate to planning

We visited several sites and two different farms, giving us the opportunity to see several soil types and management practices, talk with clients about their soil management practices, and learn about some innovative practices in the Klamath Basin to address soil health concerns during drought situations. Outcomes from these discussions included learning about the following:

- fall-season fallowing to provide more options for soil cover in the next year, in the event of water shortages
- no-till drilling and the quick and sometimes dramatic responses that farmers see, and the mechanical difficulties of operating no-till drill equipment in soils with compacted surfaces
- the problems that current crop insurance programs present when planting and management decisions must be delayed due to drought conditions.

Future Goals

These types of on-the-job training opportunities will continue in the future, as engineers and planners come across specific questions related to conservation work and project plans. This Soils Field Day laid the groundwork for those future discussions and cross-training opportunities.

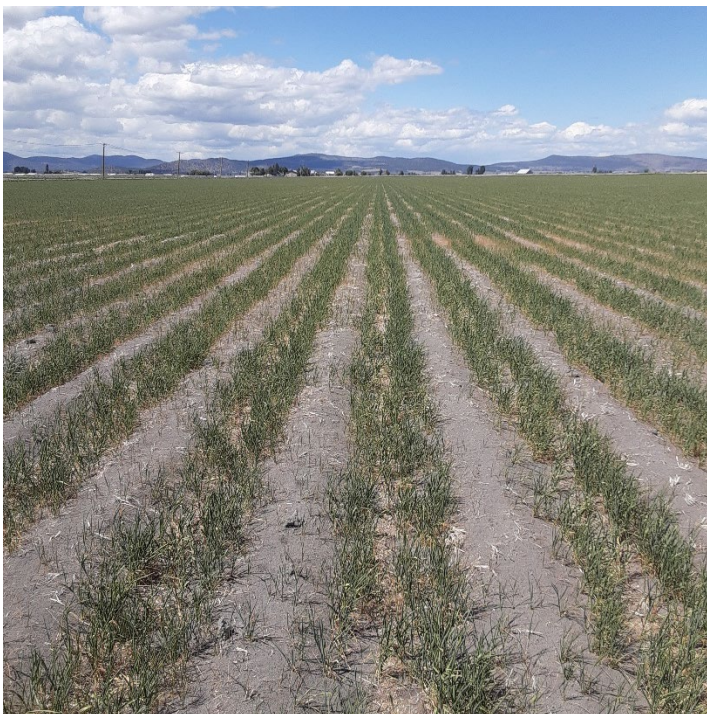
There is considerable interest in soil health in the Klamath Basin, especially in light of the ongoing drought situation, and there likely will be both a need and an interest in the future for trainings and information on soil health and dynamic soil properties.

Managing for soil health in the Klamath Basin presents some unique and difficult challenges, and more work is needed in the future to address these challenges:

- 1) a xeric climate (precipitation comes in the winter, with very little moisture inputs during the growing season, making fallow practices that work elsewhere difficult to implement here)
- 2) a relatively short growing season
- 3) some of the crops grown here (e.g., potatoes and onions) require regular disturbance and re-working of the soil surface.



NRCS staff and landowner discuss soil properties in a field with no available irrigation water this year.



A field prepped for potatoes last fall. Due to drought and the absence of irrigation water, potatoes were not planted, and instead the wheat that sprouted on the sides of the rows was left in place as cover and protection against wind erosion.