

SOIL AND PLANT SCIENCE DIVISION

Technical Soil Services

Southwest Soil Survey Region



Templeton MLRA Soil Survey Office

Soil Climate Analysis Network (SCAN) site in Templeton, California, Documents Climate Change Trends in Arid Region

Purpose

On October 26, 2022, the Soil and Plant Science Division (SPSD) assisted the National Water and Climate Center and Bureau of Land Management (BLM) with the installation of a Soil Climate Analysis Network (SCAN) station in a remote part of San Benito, California. The installation of this station allows for near real-time monitoring of soil water and temperature, as well as environmental conditions such as wind, ambient temperature, humidity, and precipitation. It will become part of a network of over 200 SCAN stations across the United States.

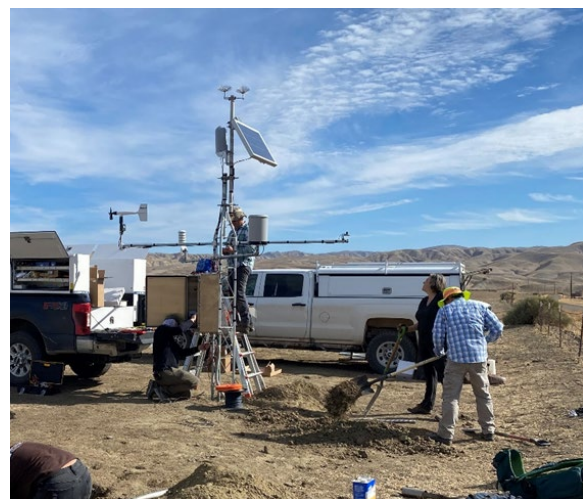
Background Information

The Climate Hub and BLM contacted the SPSP in February of 2022 to conduct a general site assessment for the suitability of the installation of a SCAN site. Installers were concerned that the sandy or rocky soils might give poor climate data. As such, the Templeton soil survey office assisted with locating a more suitable soil on a BLM easement near Idria, California, in San Benito County to install the SCAN site.

Key Outcomes

In October, SPSP soil scientists, Climate Hub scientists, and a BLM soil scientist descended on the site to install the SCAN equipment and grab soil samples for lab analysis. The new SCAN site is in a remote area, near the aridic-xeric break of Major Land Resource Area (MLRA) 15. Limited climate data exists for this area beyond two small office sensors near a highway and a generalized raster product of precipitation and temperature. There is no laboratory characterization data for the soils where the sensors are installed nor for the eastern, more arid side of San Benito County.

Due to the arid nature of the east side of the Coast Range, the primary land use is recreation and grazing. Irrigated farming is practiced in small allotments but comes with high water utilization.



Soil scientists fill in the sensor hole after installing the SCAN station.



Grazing is similarly impacted, as available water and the climate does not support high forage production. With the installation of this SCAN site, greater understanding of the soil climate and climate change trends will help inform rangeland professionals on what peak and expected forage may be, especially in years of drought as we have seen across this area for several years.

Future Goals

During the installation of the SCAN site, the SPSD and BLM staff agreed that there was the lack of soils information for certain aridic soil types and the general aridic and xeric mapping in the area. From this discussion, a soil survey project was created to examine the serpentine soils more closely in eastern MLRA 15 and possibly set up aridic serpentine soil series which do not currently exist in MLRA 15. With the lack of approved ecological site information on the more aridic side of San Benito County, the soil climate data and environmental climate data will prove useful in developing new, meaningful ecological site projects.



Staff from the Hanford and Templeton soil survey offices describe and sample a Panoche soil series at the SCAN site.