USDA Natural Resources Conservation Service
U.S. DEPARTMENT OF AGRICULTURE

Soil and Plant Science Division

Technical Soil Services

Northwest Soil Survey Region

Major Land Resource Area (MLRA) 44B—Central Rocky Mountain Valleys

Natural Resources Inventory Fieldwork in Southwestern Montana

Purpose

From May through September 2025, Soil and Plant Science Division (SPSD) staff in the Dillon, Montana, MLRA Soil Survey Office (SSO) are assisting Montana NRCS with the annual Natural Resources Inventory (NRI) data collection effort. Montana NRCS split its NRI workload between MLRA and state staff and gave 35 sites to the Dillon MLRA SSO staff. While all 35 may not be completed by the end of the fiscal year, the sites that are completed will increase the total collected by state staff and other MLRA offices.

The fieldwork concentrates on rangeland points within 2 hours of the office to most efficiently use time in the field and complete more sites. This assistance means that additional data can be collected beyond the Montana NRCS staff capabilities, which are currently restricted due to a limited field season and distance from work locations.

Background

The NRI program involves data collection to show trends of natural resources across the United States. In southwestern Montana, Northwest Regional Ecological Data Quality Specialist Grant Petersen, MLRA SSO Leader Ben Moore, and Soil Scientist Tess Wolf work to collect vegetation and soils information for the annual NRI data call. The rangeland protocol requires that points not be in pasture, cropland, forest lands, and infrastructure areas. Each site has three points to collect data in, which includes two intersecting transects for line point intercept, plant height, sagebrush shape, gap intercepts, and soil stability. Figure 1 shows an example of line point intercept along a transect. Additionally, Dillon MLRA SSO staff collect data via plant census, soil pit (see figs. 2, 3, and 4), disturbance indicators, and rangeland health assessment.

Figure 1.—Grant Petersen and Ben Moore collect transect data at an NRI point, which featured a sandy-skeletal, mixed, frigid Aridic Calciustept.

Figure 2.—Soil horizons arranged on a shovel. This pedon classified to a fine-loamy, mixed, superactive, frigid Calcidic Haplustalf.

Figure 1.—Soil profile from Madison River stream terrace.

Figure 2.—Corresponding soil pit, which classified to a sandy-skeletal, mixed, frigid Aridic Calciustoll.

Key Outcomes

This work supports NRCS programs and provides valuable information to inform future conservation work by the NRCS. Additionally, the collaborative effort strengthens relationships between the SPSD and Montana NRCS staff. These field days are also an excellent opportunity for the soil survey staff to learn more about the work area and make observations for future ecological site description and soil update work.