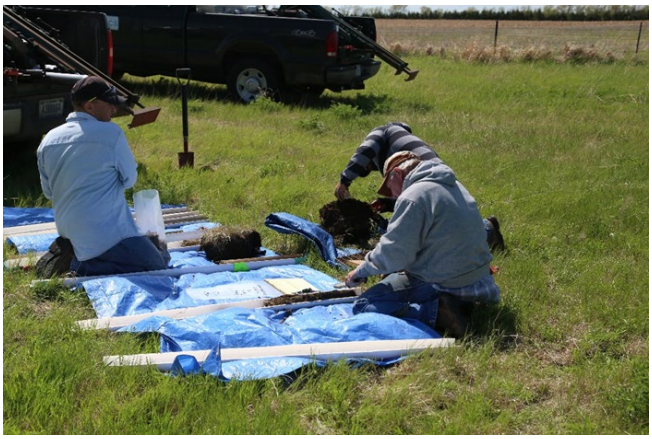
Redfield MLRA Soil Survey Office

Collecting Dynamic Soil Properties Data in South Dakota

Purpose

The soil science staff at the soil survey office in Redfield, South Dakota, assisted in collecting Dynamic Soil Properties (DSP) data in South Dakota. Soil scientists Lance Howe, Steve Winter, and Wilfredo Justiniano assisted South Dakota NRCS with DSP sampling across several MLRAs in eastern South Dakota. DSPs are indicators of soil function and soil change. Information about how soils change due to management and how those changes impact soil functions are crucial to sustainable soil management on all kinds of landscapes. DSP data has been gathered for the benchmark soils in MLRA 102A—Rolling Till Prairie (Barnes soil) and MLRA 53C—Southern Dark Brown Glaciated Plains (Glenham soil).



Redfield soil science staff sampling and describing soil profiles.

Soils were sampled from land managed under the Conservation Reserve Program and from land under three management practices:

- Long-term grass cover
- No-till cropland rotation
- New grass seeding

Soil sampling is only one portion of the DSP as water infiltration and slake tests are also conducted onsite. The soil science staff plans to sample several more sites in eastern South Dakota this summer and fall.

Key Outcomes

The data collected will be used to populate the NASIS database with the range and representative value of the organic matter, bulk density, and saturated hydrologic conductivity of the benchmark soils under different land uses. This data will assist in interpreting soils correctly for engineering and agronomic uses. Landowners can use the data to help implement conservation practices and improve land management.

Side-by-side view of no-till cropland and land managed under the Conservation Reserve Program.

Slake test performed to measure the stability of the soil when exposed to rapid wetting.

Soil infiltration and soil temperature taken at a sampling site.