Redfield, South Dakota, Soil Survey Office

SPSD Facilitates 2023 Region V and Region VII Collegiate Soils Judging Contest in Scenic Black Hills

Purpose

South Dakota State University, in conjunction with South Dakota NRCS SPSD personnel and other sponsors, hosted both the 2023 Region V and Region VII Collegiate Soil Judging Contest from October 1st through the 6th in the scenic Black Hills of South Dakota. Participating universities take turns hosting this event, and this is the first time since 2017 that South Dakota State University was the host. This contest provides students in higher education the chance to put their knowledge of soils to the test. Students judge the soils and landscape based on concepts of soil morphology, hydrology, profile characteristics, classification, interpretations, and site characteristics. In doing so, students are actively studying the subject of soil science, and, in turn, gaining an appreciation for soil as a natural resource.

Figure 1: A practice pit for the Region V and VII Collegiate Soils Judging Contest.

Background

Several professionals in the field of soil science came together to facilitate this event and promote the most beneficial learning experience possible. Members of the Redfield, Pierre, and Rapid City MLRA soil survey offices (SSOs) and personnel from several South Dakota NRCS field and area offices collaborated to prepare several soil judging pits for this contest. Participants of the contest were exposed to different soil types, landscape positions, and geologic formations across the varying landscape of the Black Hills.

Over 40 universities participate in collegiate soils judging throughout the United States as part of the American Society of Agronomy. The location of this year's Region V contest—near Sturgis, South Dakota—allowed Region VII to participate in the contest as well. Ten four-year universities and three two-year colleges converged on the Black Hills for soil judging in the first week of October. Over 165 students judged in this year's event. Participating institutions from region V included South Dakota State University; the University of Nebraska, Lincoln; the University of Nebraska, Omaha; the University of Minnesota; Iowa State University; Kansas State University; and the University of Missouri. The three participating universities from Region VII were Colorado State University, the University of Idaho, and Utah State University.

Figure 2: Students attempt to describe soils at one of the contest pits with Bear Butte in the background.

At the collegiate level, participants are tasked with judging several key components of a soil to the degree that the soil would be assessed professionally. This involves describing the horizons and layers within the soil and the boundaries between those layers. Participants judge the structure, texture, and color of the soil within each

horizon as well as other key characteristics, such as concentrations, effervescence, water retention difference, wetness class, soil consistence, and effective soil depth. Contestants also judge the landform, parent material, slope of the site, hillslope position, and surface runoff. They use their judged characteristics to classify the soil based on the principles of soil taxonomy and then assign interpretations to that soil for the development of septic tanks systems, roads, dwellings, and landscaping projects.

Based on these key concepts of soil science, NRCS personnel were tasked with developing the sites and pits for student judging. Lance Howe, Redfield NRCS MLRA soil survey leader, Steve Winter, Redfield NRCS SSO soil scientist, and Kent Cooley, NRCS soil scientist, were the official judges for this year's event. NRCS staff prepared a total of 17 soil pits for the contest, each of which represented a unique soil-landscape-geology combination.

Figure 3: Students collaborating to describe soils during the team portion of the soils judging event.

Key Outcomes

All in all, the participants of this contest were able to gain hands-on experience in the world of soil science and natural resources. Though held with the aim of aiding students in their educational development, this event was also an excellent opportunity for several individuals within the NRCS to gain professional experience in describing soils. This event could not have been conducted without the collaboration of several agencies, universities, and sponsors. The total impact of events such as these is profound and supports and encourages the knowledge of soil science.