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

SOIL AND PLANT SCIENCE DIVISION

Technical Soil Services

South Central Region

Bryan, Texas, Major Land Resource Area (MLRA) Soil Survey Office (SSO)

Soil Scientists Prepare Sites for the 2024 Region IV Collegiate Soils Judging Contest

Purpose

Staff from the Soil and Plant Science Division (SPSD) Bryan, Texas, MLRA SSO helped with contest site preparations for the 2024 Region IV Collegiate Soils Judging Contest held on October 17, 2024, in Walker County, Texas. Faculty at the Texas A&M University's Soil and Crop Science Department, which hosted this year's contest for Region IV, reached out to the Texas state soil scientist for assistance with locating and preparing several soil judging pits, documenting the contest scorecards, and providing field assistance on contest day. This became a joint effort between SPSD South Central Region MLRA soil scientists, the NRCS Texas Zone 4 resource soil scientist, and the NRCS Texas state soil health specialist (fig. 1).

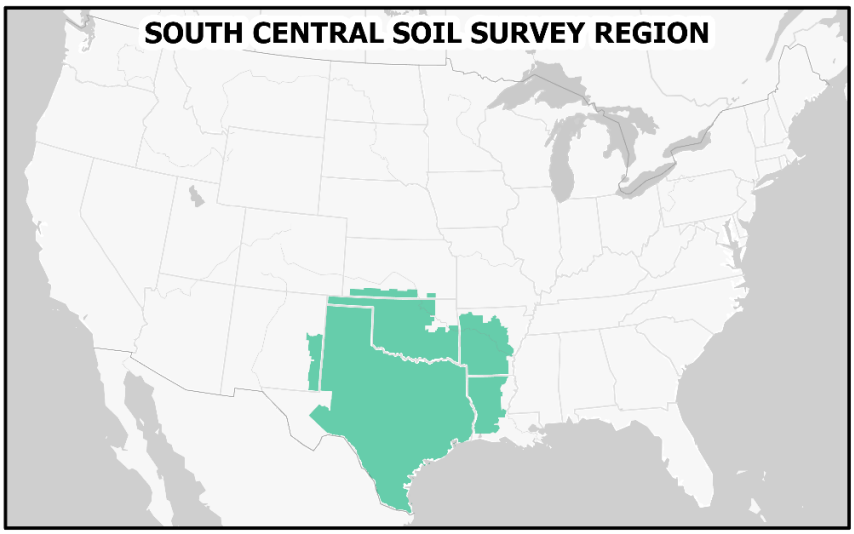

Figure 1.—Extent of the South Central Soil Survey Region.

Background

Collegiate soils judging is an annual competition in which college students apply their knowledge and field skills in describing a soil profile and classifying soils based on observed soil morphology, site and landscape characteristics, and provided soil laboratory data for each soil horizon. Regional contests are held across the nation, and the winning teams move onto a national soil judging contest. This year, the Region IV contest was hosted by Texas A&M University located in College Station, Texas. The contest was held at the Sam Houston State University's Agriculture Science Education and Research Complex near Huntsville in Walker County, Texas.

SPSD MLRA SSO staff and NRCS Texas staff visited the contest site several times throughout the summer to select suitable contest pit locations and to prepare them for the planned contest date. During these visits, all staff assisted with locating good sites for digging the soil pits, describing the soils, documenting scorecards, collecting soil samples for laboratory analyses, and clearing and marking the contest pit walls (fig. 2). The goal for these site visits was to capture a local variety of soils on different landforms at approximately 15-minute hiking distances between soil pits, which were four Alfisols and a Vertisol, within the property (fig. 3).

Figure 2.—A view of a prepared soil judging pit at the contest site.

Figure 3.—Bryan, Texas, MLRA Soil Survey Office Leader Beyhan Amichev (left) and State Soil Health Specialist Dennis Brezina, (right) prepare to lead the contestants.

SPSD staff collected soil samples from each soil horizon in each contest pit to process and analyze at the MLRA SSO laboratory to determine particle-size distribution (clay, sand, and silt percent), pH, and calcium carbonate equivalent. Contestants used these data as references during their soil evaluations (figs. 4). This year's contestants came from Oklahoma State University, West Texas University, Texas A&M at Kingsville, Texas A&M at College Station, Texas Tech, University of Arkansas, University of Puerto Rico, Louisianna State University, and Tarleton State University.

Figure 4.—Bryan, Texas, MLRA Soil Survey Office Soil Scientist Adryn Velasquez assists with monitoring the soil pit while contestants complete their soil evaluations.

Key Outcomes

Collegiate soil judging contests provide an environment that is very similar to the job duties of NRCS professional field soil scientists. During the contest, students combine all concepts of soil morphology, taxonomy, hydrology, and land management to come to a scientific conclusion about the soil's potential and limitations as a natural resource. Students from all soil judging teams demonstrated their ability to complete a full soil profile description, determine the soil texture by hand, and measure site slope with a clinometer, which are very important skills needed to evaluate soils (figs. 5 and 6).

Figure 5.—Contestants measure the slope of the site using a clinometer and stakes.

Figure 6.—Contestants texturing and coloring soil samples from the soil pit face.

Students individually judged four of the soil pits, but they worked together in teams to judge the remaining pit. The team members complete the soil evaluation scorecard together, so the team judging experience teaches the students important skills for working together as a team, such as seeking everyone's input to make a decision. If they choose a career as an SPSD field soil scientist, these skills will be useful since they will be required to work with multiple teams or offices during a single project or event, such as a soil judging contest like this one.

The professionals who came together to organize this event worked as a team to make the contest a success. Faculty and graduate students from the hosting university, Texas state soil health specialist, SPSD MLRA soil scientists, and the Zone 4 resource soil

scientist, all came together to assist with planning, fieldwork, lab work, and pit monitoring on contest day. It is during these events where working relationships for new partners on future SPSD projects form.

All students on the soil judging teams from their respective universities had the opportunity to interact with NRCS soil scientists and ask questions about future careers at NRCS. As SPSD field soil scientists, the Bryan, Texas, MLRA SSO staff had the chance to discuss what they do and the interesting projects that they are working on, as well as increase awareness of the Pathways Internship and Recent Graduates programs as NRCS opportunities. This contest was a great setting for NRCS staff to interact with a large audience of skilled and knowledgeable students from all over the region who also have the aptitude needed for a career as an SPSD field soil scientist or NRCS natural resources management and conservation specialists.