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

Soil and Plant Science Division

Technical Soil Services

Southwest Soil Survey Region

Support for the 2026 New Mexico Envirothon Competition

Santa Fe, New Mexico, Major Land Resource Area (MLRA) Soil Survey Office (SSO)

Purpose

From April 16–19, 2026, at the request of New Mexico NRCS, Soil Scientist Logan Peterson from the Santa Fe MLRA SSO served as soils lead for the annual New Mexico Envirothon Competition at El Porvenir Christian Camp and Retreat Center. The camp is within the burn scar of the largest wildfire in New Mexico's history, the 2022 Hermit's Peak and Calf Canyon Fire. This location provided a perfect setting to discuss various topics in natural resource management, including the different ways federal agencies, conservation districts, and landowners partner together in response to wildfire.

Background

The competition tested teams of high schoolers from across the New Mexico on their knowledge of five topics—soil science, forestry, wildlife, aquatics, and nonpoint source pollution. As the soils lead, Peterson provided instruction and technical expertise in soil science and related disciplines and increased NRCS' visibility at the event. Throughout the event, Peterson fielded questions from students, partners, and volunteers on soil science and related topics and on careers with NRCS.

On April 16, Peterson set up a challenging, field-based soils exam, designed to test students' knowledge of such topics as soil texture, structure, and color and interpreting soil properties in such contexts as hydrology and erosion (figs. 1–3). On the afternoon of April 17, students completed field-based exams on the five topics. Throughout April 18, students crafted and delivered conservation plans for a realistic and locally relevant land management scenario, which was largely researched and crafted by Peterson.

Figure 1.—Peterson introduces students to this year's puzzling pedon—a weakly-developed Inceptisol with an artfully-stratified subsoil.

Figure 2.—A student examines an aggregate sampled from the pedon.

Figure 3.—Students perform hand-texturing on pre-sieved samples during this year's soils exam.

As a testament to the New Mexico Envirothon's legacy, four former competitors served as volunteers in this year's competition. These true Envirothon veterans, each of whom has competed at the international level, filled various roles including exam writing, logistical planning, IT support, and late-night exam grading. One of the four, Lorraina Rojas, assisted Peterson in exam setup, pedon characterization, proctoring, and grading. Rojas competed in several Envirothon competitions and earned an international first place in soils at the 2018 National Conservation Foundation Envirothon competition. She is currently a lecturer, lab assistant, and Ph.D. candidate at the University of New Mexico. Volunteers like Rojas and the other veteran competitors share their Envirothon experiences with the teams as well as how the experiences helped shape their careers in areas such as ecology, conservation, horticulture, and engineering.

Key Outcomes

In the mountains of northern New Mexico, April weather never fails to deliver a surprise—often the year's final snowstorm or a morning with single-digit temperatures. This year's challenge was high winds during exams. Through a long afternoon, students served as windbreaks for teammates, chased down airborne exams, and demonstrated a heartening affinity for the soils pit. In the face of adversity and at risk of eating sand, the students smiled and even laughed. This brief exposure to the joys and challenges of fieldwork could prove essential to those considering majors and careers in natural resources.

The annual New Mexico Envirothon Competition marks the culmination of months of learning, planning, and preparation. Peterson has participated in the event for the last 14 years, and over that time, his role has expanded markedly. Beyond drafting and delivering an annual soils exam, he develops and maintains curricula, provides in-person soils instruction at schools, delivers training to event volunteers, fields questions on NRCS careers and programs, mentors aspiring natural resource professionals, and serves as a technical expert and cartographer during the development of oral scenarios. In these capacities, Peterson works with various partners, including conservation districts, universities, high schools, and various Federal and State agencies. This level of service would not be possible without the perennial support of New Mexico NRCS and the Soil and Plant Science Division.