



SOIL AND PLANT SCIENCE DIVISION

Technical Soil Services

Northwest Soil Survey Region

Soil Survey Office, Havre, Montana

Technical Soil Services – Highlights from Havre

Purpose

In fiscal year 2024, our staff from the Havre, Montana, Soil Survey Office (SSO) provided key Technical Soil Services to customers across north-central Montana. Some notable events were Envirothon and Cascade County Ag Days.

Background

Envirothon began in 1979 in Pennsylvania as the “Environmental Olympics” as a way to encourage high school students to become interested in natural resource conservation. It did not take long for Envirothon to gain popularity throughout the nation and even internationally, reaching countries like Canada and China. Throughout its history, Envirothon funding comes from local conservation districts, state conservation committees, state, federal, and provincial conservation organizations. Therefore, many of the volunteers come from local, state, and federal agencies.

At this year’s Envirothon, held in Great Falls, Montana, Havre SSO Soil Scientist Jenna Fultz and Montana Resource Soil Scientist Matti Osterman assisted as the soil station leaders. Throughout the competition, each team of five students rotates among five stations: Aquatics, Forestry, Rangeland, Soils, and Wildlife. The teams take a written test at each station and give an oral presentation solving the current year’s problem. This year the students were tasked with the problem of taking a small community of approximately 15,000 people in 3 nearby towns and developing a renewable energy plan to provide power to each town. To win the oral presentation, students need to ensure that each of the five stations are taken into consideration while providing a realistic solution to the problem. The team that gets 1st place overall is guaranteed a spot at the international competition the following summer where they will compete against teams from across the nation, Canada, and China. This year’s international competition will be held in Geneva, New York.

The Cascade County Ag Days offers an educational opportunity for local fourth graders within Cascade County, Montana. Students rotate between nine stations throughout the day: Branding, Butter, Electricity, Farm Charms, Ice Cream, Pasta, Pollinators, Soils, and Water. Each station touches on the importance of our local agriculture system, particularly within the local Golden Triangle.

Jenna Fultz and Havre SSO Leader Scott Brady instructed students at the soils station with assistance from Great Falls Field Office District Conservationist Christine Burke and Great Falls Area Agronomist Susan Massar. Brady led the students through the soil health tunnel, educating them on the 5 Soil Health Principles and the 5 Soil Forming Factors. The students engaged with the graphics provided on the tunnel, and the tunnel offered an exciting visual of what happens within the soil ecosystem (fig. 1). Fultz led the students through each of the major horizons within the soil by making soil pudding cups. This offered a fun and interactive way for the students to learn about the bedrock, subsoil, topsoil, microorganisms, and vegetation.



Figure 1.—Scott Brady and Susan Massar educating students in the Soil Health Tunnel. Photo courtesy of Cascade Conservation District.

Other notable stations include Farm Charms led by Cascade County Farm Service Agency employees. Students made jewelry from common items found on a farm including sheep wool and wheat kernels. Pasta Montana led activities at the Pasta station. Students learned how to make pasta from scratch using flour that comes from wheat grown locally in Montana. The Cascade County Farm Bureau with assistance from Megan Reinarz (former soil conservationist in the Great Falls Field Office) led the Branding section where students learned the importance of cattle management and were able to make a brand of their own (fig. 2).



Figure 2.—Megan Reinarz assisting students with creating their own brand to take home. Photo courtesy of Cascade Conservation District.



Key Outcomes

- Approximately 15 teams, with 5 students per team, competed in Envirothon. Corvallis Future Farmers of America received the highest test score for the soil station. Hamilton High School won the overall competition and will head to the international competition in July 2024.
- Six NRCS employees and partners assisted with Envirothon.
- Approximately 800 fourth-grade students spent the day learning about the importance of agriculture in our everyday lives.
- Four current NRCS employees and one former NRCS employee assisted with Cascade County Ag Days