

SOIL AND PLANT SCIENCE DIVISION

Technical Soil Services

Southwest Soil Survey Region

Tucson, Arizona, Major Land Resource Area (MLRA) Soil Survey Office (SSO)

Conservation at the Ranch: SPSD Staff conduct outreach at the Santa Fe Ranch Day in Santa Cruz County, Arizona

Purpose

On May 19, 2023, the Arizona NRCS and Tucson MLRA SSO staff participated in an educational outreach program through the Santa Fe Ranch Foundation. The Santa Fe Ranch Day event brought in organizations involved in agriculture research and conservation to teach middle school students about the science behind agriculture and inspire interest in the fields of soil science, ecology, and agriculture.

Background

Fifty-five students from Desert Shadows Middle School in Nogales participated in the Ranch Day event held at the Santa Fe Ranch. The working ranch sits on 3,300 acres of valleys, mesas, mountains, and river bottoms along about 1.6 kilometer (1 mile) of the Santa Cruz River in southern Arizona. The Santa Fe Ranch (Paula and Cabot Sedgwick Family Foundation) is dedicated to environmental conservation, preservation, education, and agriculture in the community.

At the event, students cycled between stations facilitated by the Arizona Department of Fish and Wildlife, U.S. Forest Service, Santa Cruz Conservation District, Paul and Cabot Sedgwick Foundation, Santa Cruz County Cowbelles, Santa Fe Ranch Foundation, and NRCS to learn about the many interconnected sciences and partners that are involved in agriculture.

Heather Spieth, Arizona NRCS rangeland conservationist, and Michael Piotrowski, MLRA SSO ecological site specialist, with assistance from Stephen Williams, Santa Cruz Natural Resource Conservation District chairman, held a demonstration for students to practice texturing with clayey, silty, and sandy soils. They also featured games about water infiltration using soils dominated by different particle size classes to introduce students to soils. Students were able to view a variety of soil survey tools and

an effervescent soil. The students also learned about the origins and mission of the NRCS and the importance of soil in their everyday lives.

Key Outcomes

The NRCS staff educated and piqued the interest of middle school students about soil science and soil conservation through demonstrations and activities. Students left with a better understanding of the particle size classes that make up soil, the impact particles have on the hydrology of a soil, the role of soil scientists, and the mission and history of the NRCS.

Due to the NRCS's participation, the Arizona NRCS furthered their relationship with the members of the Santa Cruz Natural Resource Conservation District, Santa Fe Ranch foundation, and local government agencies involved in soil science, agriculture, and conservation.



Figure 1.—Heather Spieth (front) and Stephen Williams (behind) observe soil samples to be used for the soil texturing exercise.



Figure 2.—Michael Piotrowski, Stephen Williams, and Heather Spieth instruct students about the history and mission of the NRCS.



Figure 3.—The demonstration included tools and resources used in soil science.



Figure 4.—Samples of soil to be textured by the students.