NRCS Demonstrates Rainfall Simulator at the Texas Forest Landowners Council Seminar

Purpose

The Texas Forest Landowners Council held a seminar on Friday, August 10, 2018, in Lufkin, Texas. The event focused on issues that face producers and consultants alike, seeking to provide education and foster communication between landowners and managers and various government agencies. Topics ranged from soil erosion, soil health, agroforestry, fruit production of native trees, and pond management. Representatives of NRCS, Texas AgriLife Extension, Texas A&M Forest Service, The Forest Landowner Council, and BoatCycle, Inc. shared materials reflecting their areas of expertise as well as assistance provided to landowners and land managers in each of their respected fields.

Mike Oliver, NRCS state forester, demonstrates the rainfall simulator.

NRCS Soil Science Division staff Tyson Hart, ecological site specialist and Sara Russell, soil scientist along with Texas NRCS employees Willie Holmon, district conservationist, Justin Parks, soil conservationist, and Mike Oliver, Texas state forester joined Tyler Wayland of the East Texas Natives Project in demonstrating the rainfall simulator. Michelle Moore, of the Texas A&M Forest Service presented the historical importance of forests in East Texas.

Site-specific questions were related to logging/haul roads washing out. Some of the roads are built higher than the surrounding landscape, but the embankments and ditches are not packed down. As the roads gather heavy truck traffic, they become packed. Rains then slick off the roads and erode the softer soil away that is in the ditches, sometimes even back-flowing into planted areas. If the rains are severe enough, this can affect seedling mortality. Other rainfall erosion issues occur when the sites are clear-cut and left with no cover to protect the soil from washing away.

Participants asked many questions, some site-specific, some technical, such as the differences in soil series? what makes some soils different than others (i.e., color, presence of salts or gypsym or carbonates, texture, depth to bedrock). The Foresters fielded questions on the different management practices and what practices were best suited for different soil types/textures (for example, heavy clay is not good for seedlings because their roots have a difficult time penetrating the soil). Tyler Wayland was able to provide information on site indices, as well as, seed mixtures appropriate for specific sites.

A presentation was provided on Pond Management and the benefits of introducing certain fish species (tilapia, for example) into a pond system management program. These fish help filter the water, keep algae growth at beneficial levels, and provide food for other pond dwellers. Healthy ponds play an important part of the ecosystem, which affects the health and population of fish, birds, and small and large animals such as turtles, water fowl, raccoons, deer, and cattle. Pond management can reduce stagnant water, algae, and aquatic plants that can harbor bacteria or diseases, reducing the harmful effects on fish and animals, as well as people.

Background Information

NRCS soils staff have a long-standing working relationship with the following organizations by providing information and demonstrations as well as site specific soils and ecological site investigations.

“The Texas Forest Landowners Council serves to improve the cooperation and communications among county landowner associations in East Texas whose members are interested in managing their forests for wood products, as well as wildlife and environmental reasons. The Council's goals are to share information, provide training, and improve the image of forest ownership.”

The Texas Native Seeds Program (TNS) is “a research and development program. TNS is a visionary effort to do something now, while substantial native plant populations still exist and provide a reservoir for collection, evaluation, and development of tomorrow's seed sources today.” The East Texas Natives Project, part of the Texas Native Seeds Program, “works to develop native seeds that can be produced commercially, in volumes needed by restoration professionals in order to have ecosystems level impacts on native plant and wildlife conservation.” (https://www.ckwri.tamuk.edu)

BoatCycle, Inc., a private company, provided a presentation about pond system management and using certain types of fish to maintain a healthy pond and ecosystem.

Key Outcomes

Using the Rainfall Simulator to demonstrate the impact of water erosion on different types of soil, allowed the group to view and discuss soil erosion and the effects that various land management and pond management practices can have on decreasing soil erosion, increasing soil productivity and improving soil health and water quality. The information was beneficial to all participants as they continue to improve a healthy balance of forested ecosystems and increase productivity of their land.

Soil sample boxes from the rainfall simulator are emptied for display, detailing the effects on soil erosion and stabilization.

Future Goals

The Soil Science Division is committed to providing the best possible soils information for land management. Continuing to work with private landowners and other agencies will ensure the most up-to-date soils maps and soils data are available and ensuring site-specific land management practices as well as pond management practices are utilized will ensure healthy and productive soils, crops, and waterways. By starting at the “ground-level” not only will the land and water benefit, a healthy ecosystem will ensure a healthy livestock and wildlife population.