

Returning Circles: Exploring Revegetation Pathways for Retired Croplands in The SLV

Rio Grande, Saguache, Conejos, and Alamosa County

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Project Introduction

Due to dwindling aquifers, economic constraints, and state mandates, thousands of acres of irrigated croplands will need to be retired in the San Luis Valley. The CRP (Conservation Reserve Program) revegetation plans are insufficient for the valley, necessitating research to determine the most efficient and cost-effective method for revegetation in the valley's arid environment. This project collaborates with private landowners and governmental organizations, such as the Mosca Hooper Conservation District, to determine the most effective approach for revegetating retired croplands and monitoring these sites to inform management decisions. The central portion of this internship focused on Subdistrict 1 of the Rio Grande Water Conservation District, where the fee for groundwater is being increased from \$150 per acre-foot to \$500, further stressing producers. Alongside the drought and increase of water prices all water use is also dependent on the Rio Grande Water Compact which requires a certain amount of water to be allowed downstream to New Mexico and Texas so the retiring of croplands and decrease of water usage is required to keep the interstate compacts.

Internship Goals

- Design and Implementation of Monitoring on Cropland Restoration Sites. Also, the construction of Permanent Plots that will be utilized as examples of revegetation and for longitudinal studies.
- Community Outreach and Participation in communication with local stakeholders
- Personal development of applicable skills that can be used in further education and employment



What I Did

- Trained at the Jornada Experimental Range in intensive USDA Range Monitoring Methods (AIM) and Soil Analysis.
- Monitored and collected data from the National Wind Erosion Network Site in the San Luis Valley to be used for analysis of the effects of wind erosion.
- Developed a monitoring system for revegetation based on the USDA Monitoring Methods that producers can use to assess the health of their revegetation efforts, including evaluations of vegetation and soil health, as well as the potential for using revegetation lands for grazing. Additionally, implemented a more scientifically rigorous method for long-term research and more detailed analysis
- Community outreach with a wide array of producers in the San Luis Valley and the surrounding area to analyze and ensure ecologically healthy ranching and farming.
- Conducted soil and vegetation sampling on potato fields to evaluate production and advise producers on irrigation and soil practices and to give myself more context of the state of the land and the challenges faced with revegetation
- Helped design and create a Revegetation Test Plot with different native plant species and different planting dates to research the best dates to plant revegetation mixes and best types of grasses to use as wind erosion buffers



What I Learned

- Gained practical field knowledge and experience, especially with the monitoring methods that I was trained in and created.
- Deepened my understanding and appreciation of the importance of cooperation in conservation efforts
- Experience in the agricultural field and the struggles surrounding food production, especially in arid environments
- Expansion of interpersonal skills with other scientists and the local stakeholders
- Soil and Vegetation Assessment Skills
- Land restoration practices and their application



Takeaways and Next Steps

Long-term Monitoring - The revegetation sites require consistent long-term monitoring to assess the effectiveness of the revegetation efforts and to see what possible management actions need to be taken.

Revegetation Test Plot- The revegetation test plot, going into the future, will help tell producers and land managers the best times to revegetate and the possibilities in utilizing native grasses for buffers