

## Project Summary

Climate change threatens the ranching and farming and impacts to society as a whole. Simultaneously, a disconnect between research and application by diminishes the ability of both in an adaptive way. In we are testing a potential intervention for sequestering and beneficial end use of a



viability of poses

between ranchers to respond response,

carbon 'waste'

product (compost), while integrating ranchers into the research process. Compost applications on rangelands and pasturelands may provide a win-win scenario for producers and society. Research indicated a 1-time application of compost increased soil organic matter content, enhanced plant growth, and contributed to climate change mitigation in California's rangelands (Silver et al 2018). Though promising, these results are untested in western Colorado, an area with substantial soil and climatic differences from the locations of the original trials. Further, while compost may sequester carbon, there are potential greenhouse gas emissions from the practice may negate the net benefit, and we must understand the trade-offs before advocating for the practice as a panacea.

Research and outreach are integrated in this project. Producers and stakeholders will participate directly in research through iterative meetings where they will assist in interpretation of the data analyses and ultimately help develop recommendations based on the findings. The project outcomes include 1) recommendations in terms of the appropriateness of the practice for western Colorado pasturelands based on our findings, and 2) an engaged group of stakeholders who have direct experience participating in a scientific process and forming recommendations based on the data.

## Partnerships

This project is a partnership among CSU Extension staff (Seth Urbanowitz, Regional Agronomist and Retta Bruegger, Regional Range Specialist), Soil and Crop Sciences at CSU (Dr. Megan Machmuller), and several ranchers and members of the Shavano Soil Conservation District, including Ken Lipton.

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