

# COLORADO RANGELAND AND EXTENSION RESEARCH

## LARIMER, MESA AND PUEBLO COUNTIES

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### PROJECT INTRODUCTION

This summer internship marked the culmination of my year-long internship with CSU Extension. The primary focus of my internship was to create education materials to deliver relevant science to range and ranch managers. Due to the COVID-19 restrictions, this summer was my first opportunity to gain in person range experience with my mentors.

Making up for lost “in-person” time, this summer I traveled across Colorado to work and learn from my mentors here in Fort Collins, down in Pueblo and across the Western Slope. The distances between my mentors’ locations meant I had a chance to experience the diversity of Colorado rangelands and the unique challenges of different areas.



On route to Grand Junction from Fort Collins!

### HOW DOES THIS APPLY TO YOUR EDUCATION

This fall is the start of my second year of my Masters in Natural Resources Stewardship with a specialization in rangeland ecology and management. I am so happy to have had this internship as the focus on rangeland management and soil health directly relates to my studies and what I am passionate about.

Beyond learning more about range management, I feel lucky to have made personal connections with my mentors. My advisors have already been very helpful in providing me with experience and insight into their work as Regional Extension Specialists and Coordinators.

### WHAT I DID

During my 10 week internship, I:

- Helped plan the Colorado Section for the Society of Range Management (CSSRM) Annual Conference in Grand Junction, CO. This involved reviewing and developing the agenda, creating a budget, researching and contacting venues, designing announcement and agenda fliers and creating a pre and post attendance survey.
- Attended the BLM’s Interpreting Indicators of Rangeland Health (IIRH) training in Monte Vista, CO. During this training I became more familiar with relating rangeland health indicators to ecological site descriptions in order to better gauge rangeland status. I also had the opportunity to network with rangeland professionals from the BLM, NRCS and USFS.
- Assisted in planning and hosting the Nicole Masters workshop on soil health in Cotopaxi, CO. In preparation for the workshop I created a guide to interpreting soil nutrient and biological tests, synthesized soil nutrient, biological and plant tissue tests, attended the Nicole Masters online course and coordinated logistics with the hosting ranch.
- Applied high fungal compost extract to test plots on a working ranch near Sterling, CO. This application was a part of a larger study across eastern CO to test the impact of high fungal compost on production and species composition on native range (modeled after the studies of Dr. David Johnson).
- Collected biomass and percent cover data for a study in Fruita, CO, comparing fertilizer and compost application in the arid lands of the Western Slope. After the time in the field, I created a information sheet detailing the experiment to share with interested local ranchers.

Figure 1. Nicole Masters Workshop in Cotopaxi, CO



Figure 1. A) Nicole Masters giving a presentation on the importance of soil biology in a soil pit. B) CSU Extension’s Mark Rose filming Nicole Masters examining the structure and biology of a pasture in Cotopaxi, CO.

### WHAT YOU LEARNED

During my internship I learned:

- The logistics and organization necessary to plan a major annual conference
- How to identify and grade the 18 indicators of rangeland health
- Methods for measuring rangeland biomass and percent cover, specifically the point-intercept method
- How to use the app, LandPKS, to collect and record rangeland soil and plant measurements
- The importance of fungi and bacteria in rangeland soil health
- How to provide a report as follow-up to a Western SARE grant

Figure 2. IIRH Training in Monte Vista, CO

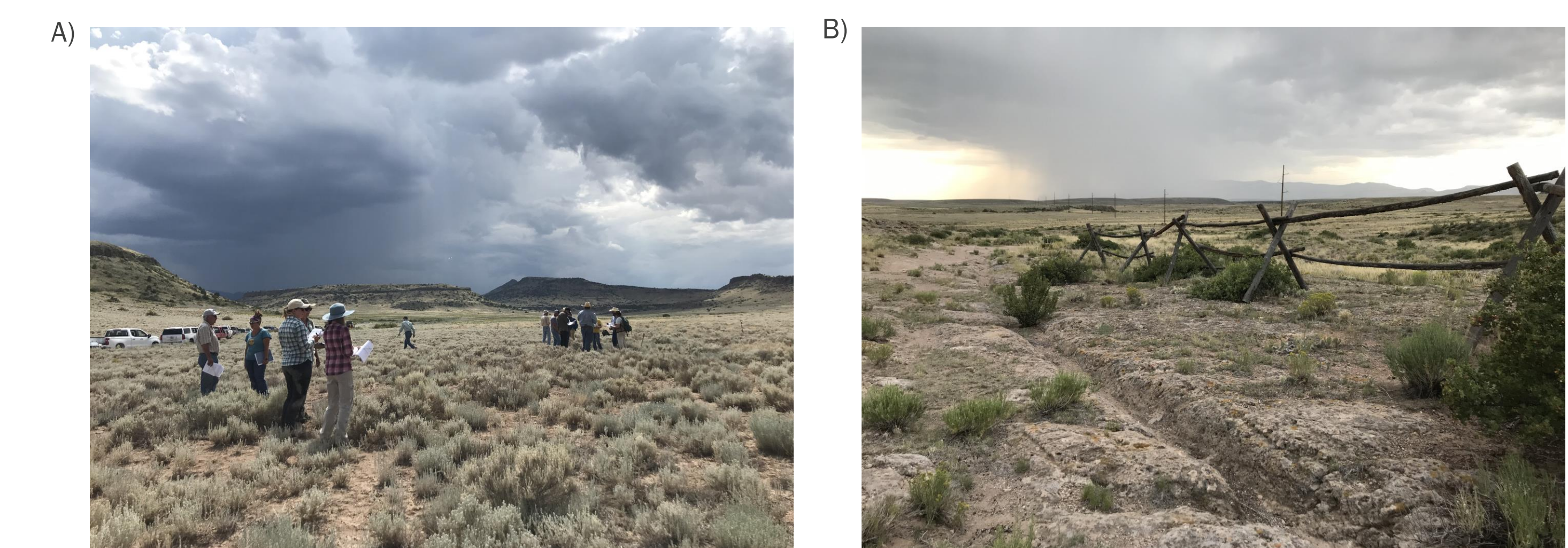


Figure 2. A) A picture of IIRH trainees evaluating a pasture according to the 18 rangeland health indicators. B) A picture of the remains of the Old Spanish Trail wagon ruts near our IIRH training site.

### NEXT STEPS

I am excited to be continuing my rangeland and ranch experiences this fall through the new ranch skills course offered from the Warner College. This class is giving me the opportunities to learn hands on skills that directly apply to the research and management I learned this summer.

This internship has been a fantastic experience and I am looking forward to pursuing further opportunities to work with Extension programs and Colorado rangelands in the near future.