

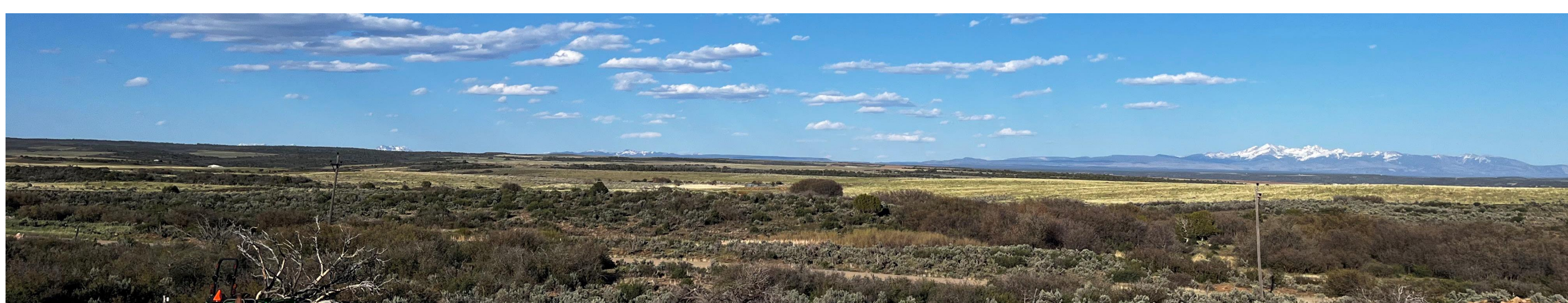
UNDERSTANDING SOCIAL AND ECOLOGICAL TRANSITIONS IN SOUTHWEST COLORADO

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PROJECT INTRODUCTION

Documenting the social and ecological history of a 2300-acre private land in Southwest Colorado

- In 1920, the farm owners' grandparents moved to Colorado from Nebraska to establish a homestead.
- After decades of farming, the family understands the fragility of the region's dryland ecology, which has been degraded by traditional wheat and bean farming.
- Two generations after the original homestead, they now have transitioned their land away from row cropping towards regenerative grazing and native plant restoration.
- Their vision prioritizes soil health and environmental stewardship.
- To support this vision, we conducted a plant community survey and compared it with past formal and informal observations to answer questions about how the shift towards regenerative management has changed the farm's ecosystem.



INTERNSHIP GOALS

To gain practical fieldwork and lab research skills in dryland ecology and landscape restoration.

To learn about climate-adaptive strategies and community-environment interactions, which are crucial for addressing ongoing climate change.

WHAT I DID

I assisted the CSU Dryland Ecology Management Lab research team in the field to examine the plant community and study the social history of the farm.

While conducting fieldwork with the team, I learned about plant identification and various methods of data collection.

I helped conduct narrative interviews and analyze qualitative data about the social and ecological history of the land.

Figure 1. Historical Image of Wheat Row-Cropping in the Area

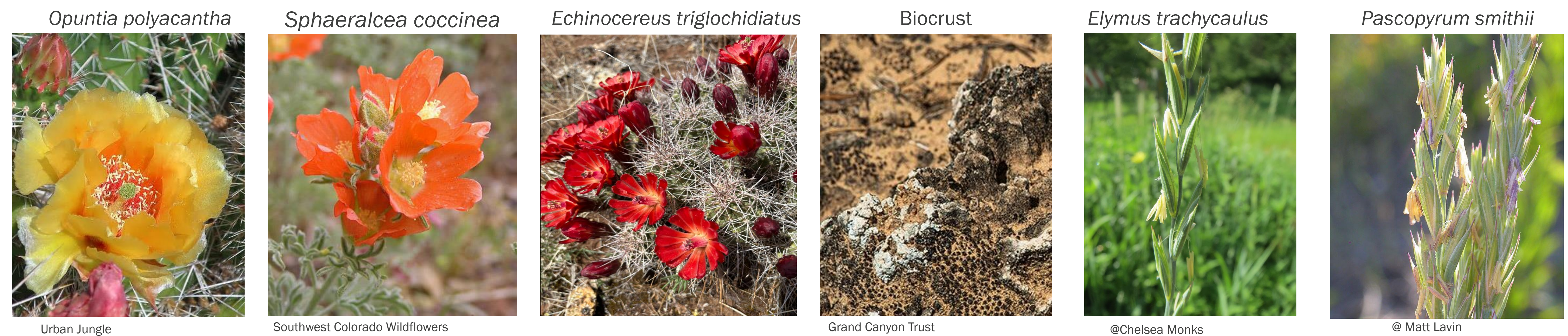


Photo: Colorado Historic Society

WHAT I LEARNED

- Practical skills in ecological fieldwork and data collection.
- How to identify plant species, which is essential for understanding dryland ecology.
- Various ecological research methods, which are important to understand how native and invasive plants respond to different land management treatments.
- The ecological advantages of transitioning from dryland annual crops to perennial systems that focus on biomass production and soil health.
- Ecological restoration is not a static goal but a dynamic, ongoing process that requires constant adaptation.

Figure 2. Current Ecological Community Images



PRELIMINARY FINDINGS

- Several native plants are now common on the farm, such as slender wheatgrass, western wheatgrass, scarlet globemallow, and kingscup and plains prickly pear cactus,
- Different pastures that have been grazed and treated differently may have different species composition and richness.
- Several areas had plentiful biocrusts, which take many years to form and are incredibly ecologically important in dryland ecosystem areas, demonstrating ecological health in minimally disturbed areas.
- The farm owners have said that regenerative grazing practices have made the grass on their land more abundant and have increased water infiltration of the soil.
 - “When the water gets to the land... it's really muddy, but then by the end, it's running clear.”
- Treating the land with herbicide dramatically reduced the presence of invasives and made room for native species to thrive, though there are still many non-target invasive species present.
- Embracing change and adapting with new information has made their farm flourish ecologically.

ACKNOWLEDGEMENTS

We thank the landowners for their generosity in allowing us to study their land. We also appreciate their progressive commitment to science and their willingness to have the land be part of continuous dryland ecological research.