



WHERE SCIENCE MEETS STORY: EXPLORING THREE NATIVE PLANTS THROUGH ECOLOGY, ETHNOBOTANY, AND PERSONAL CONNECTION IN GENESEE PARK, COLORADO



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Introduction

Plants are more than components of ecosystems — they are rooted in human history, culture, and personal connection. Ethnobotany is the study of the relationships between people and plants (Zimdahl, 2018), combining ecological science with traditional knowledge to better understand the significance of plant species. Native plants support biodiversity, provide essential ecosystem services, have long been used by Indigenous communities for food, medicine, and cultural practices and are a part of our everyday life.

This project focuses on three native plant species found in Genesee Park, Colorado: **yarrow** (*Achillea millefolium*), **alpine sheep sorrel** (*Rumex paucifolius*), and **curlycup gumweed** (*Grindelia squarrosa*). By examining each species through its ecological and biological role, ethnobotanical significance, and my own personal observations, this research explores how scientific knowledge, cultural traditions, and lived experience together create a more holistic understanding of native plants and their importance.

Study Site

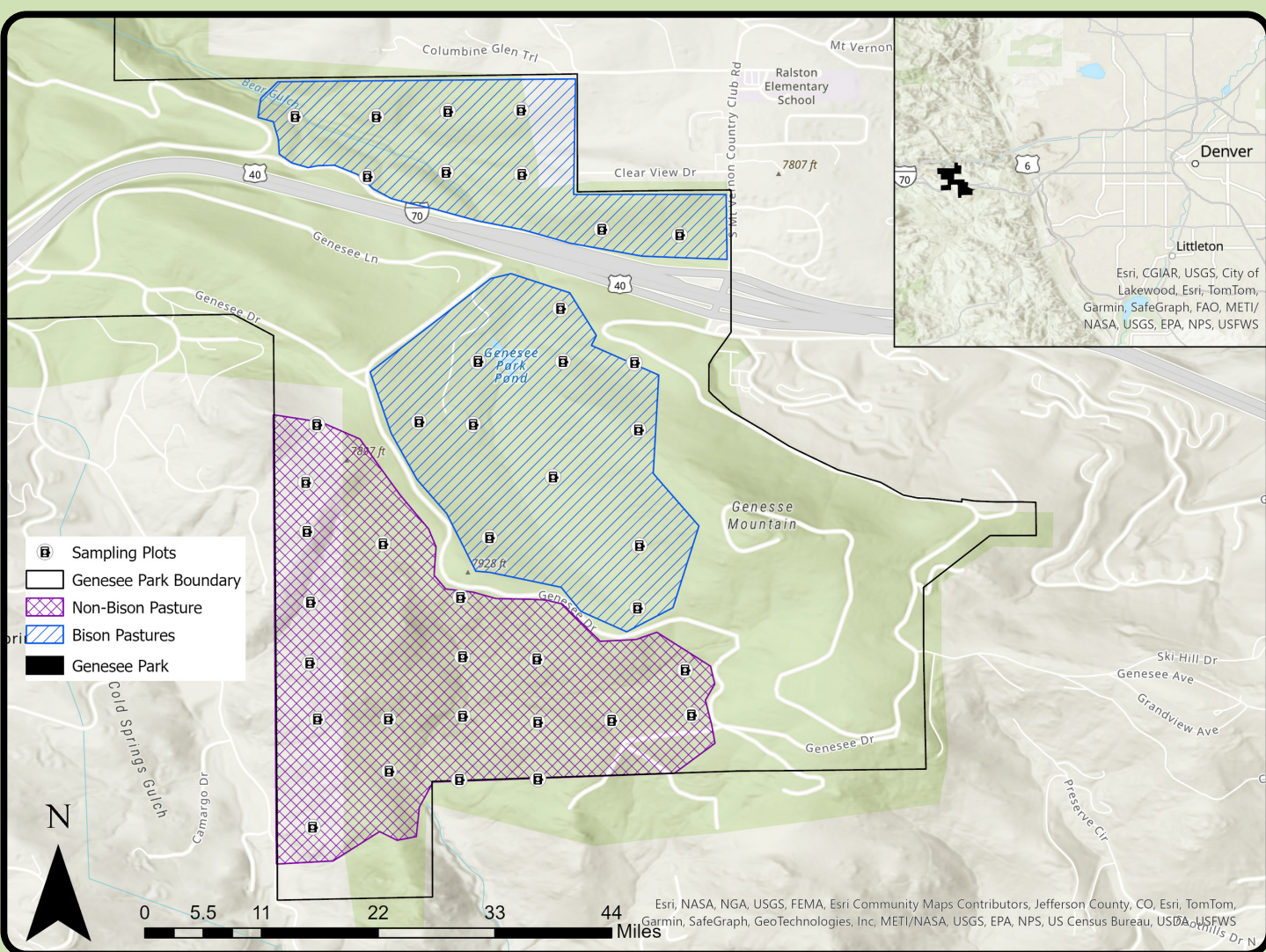


Figure 1: Map of study site in Genesee Park, Colorado

I conducted research in three pastures within Genesee Park, Colorado. Field observations were carried out in these pastures to identify and document plant species, measure plant growth and analyze animal scat to determine which species were using the landscape. This research provided me with the foundation for this ethnobotanical study.

Conceptual Model

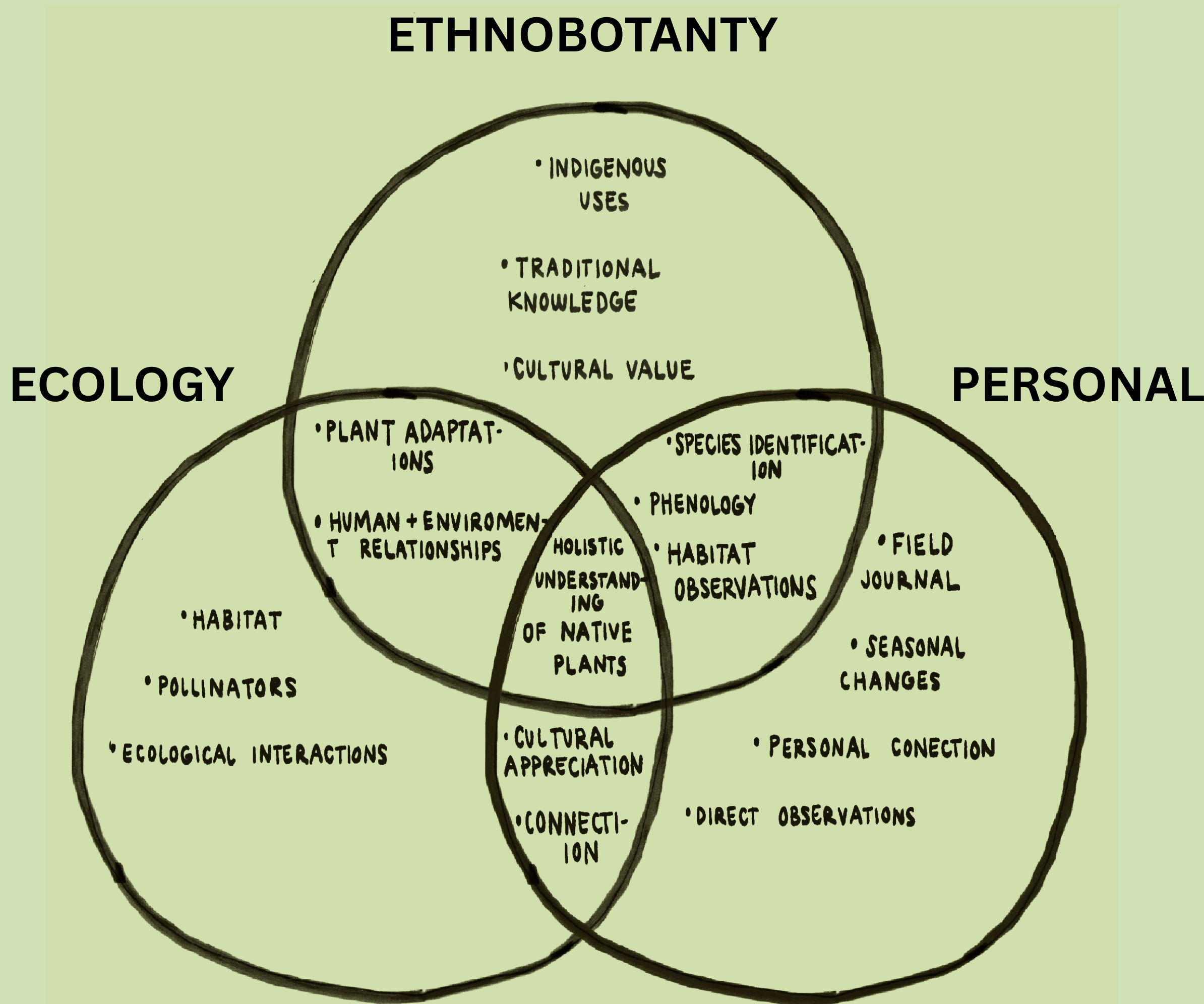


Figure 2: Conceptual model illustrating the integration of ecology, ethnobotany, and personal observation used to examine native plant species in Genesee Park, Colorado.

Methodology

- 1 Conducted field observations of yarrow, alpine sheep sorrel, and curlycup gumweed throughout the growing season in Genesee Park, Colorado.
- 2 Documented each species through plant identification, photography, field notes, habitat characteristics, phenology, and ecological interactions.
- 3 Reviewed peer-reviewed literature, ethnobotanical texts, regional floras, and historical records to investigate traditional Indigenous knowledge, cultural significance, and historical and contemporary uses.
- 4 Maintained a reflective field journal to record personal observations, seasonal changes, and evolving perspectives on each species.
- 5 Synthesized ecological, ethnobotanical, and personal findings into individual species profiles to compare the relationships between native plants, people, and place.



Figure 3: Gathering field data in Genesee Park, Colorado with team.



Figure 4: Sample site, with yarrow growing.

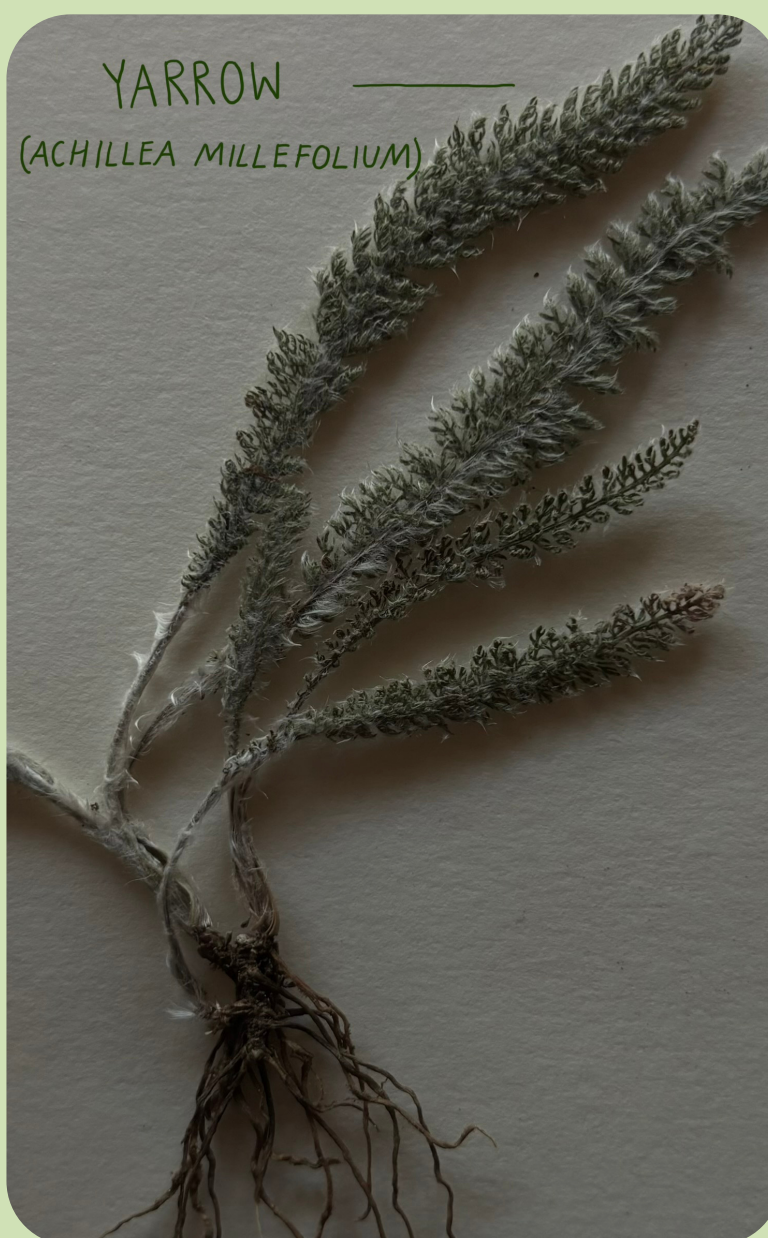


Figure 5: Dried and pressed sample of Yarrow.



Figure 6: Dried and pressed sample of Alpine Sheep Sorrel.



Figure 7: Dried and pressed sample of Curlycup Gumweed.

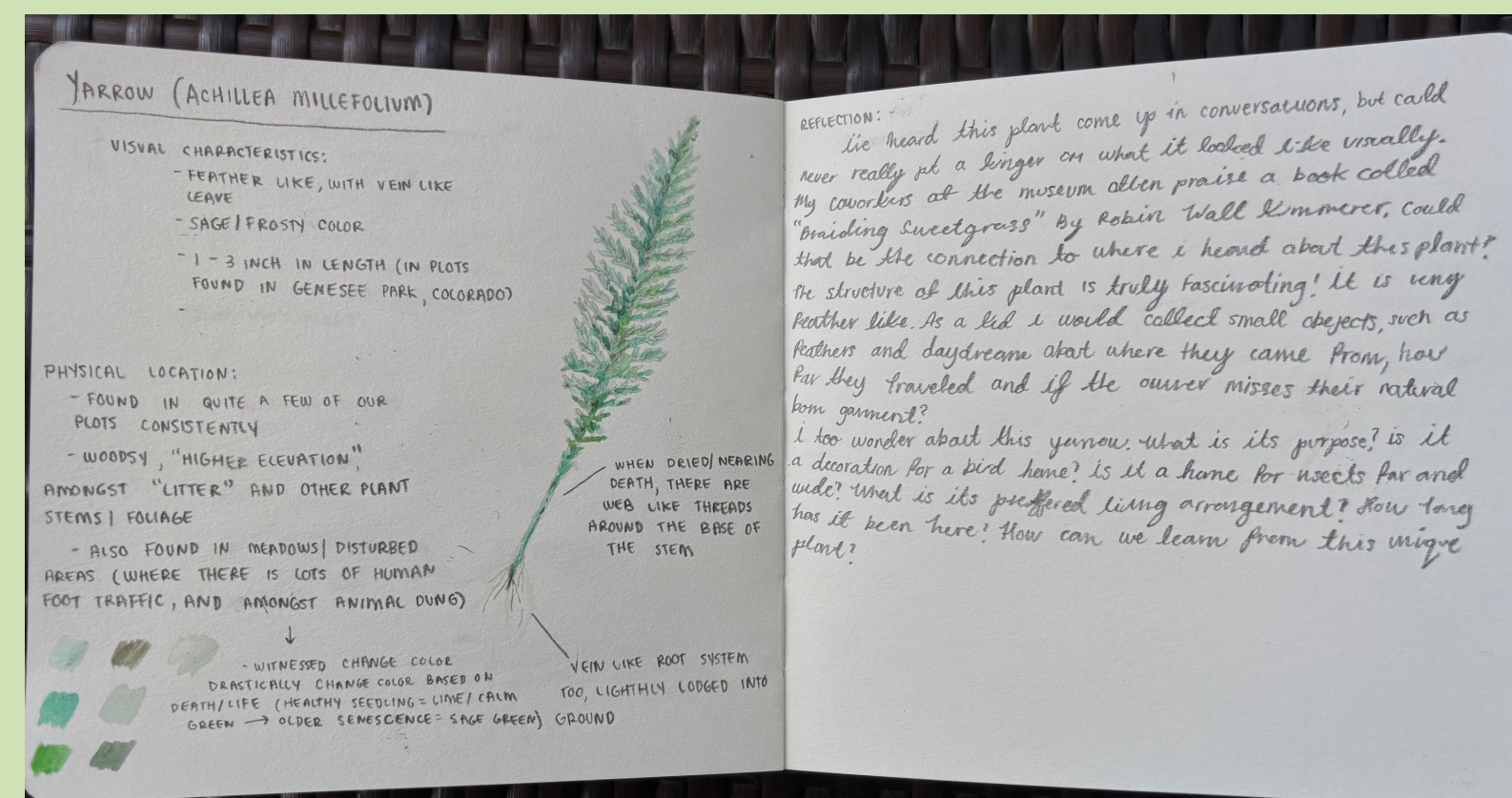


Figure 8: My field journal, documenting visual characteristics of plants, illustrations, observations, and my personal connections through a means of reflection.

Results

Category	Yarrow (<i>Achillea millefolium</i>)	Alpine Sheep Sorrel (<i>Rumex paucifolius</i>)	Curlycup Gumweed (<i>Grindelia squarrosa</i>)
Ecological Finding	Attracts pollinators in meadows and disturbed habitats	Adapted to rocky, nutrient-poor habitats	Provides late-season nectar for pollinators
Ethnobotanical Significance	Traditionally used for wound care and digestive ailments	Limited but documented edible and medicinal uses; the Cherokee, Nuxalk, and Ojibwa in salads	Traditionally used for respiratory and skin conditions
Personal Observation	Frequently visited by pollinating insects	Thrived in higher-elevation environments	Common in dry, disturbed habitats

Figure 9: This table shows a brief breakdown of ecological findings, ethnobotanical significance and personal observation across three plant species.

Use	Yarrow (<i>Achillea millefolium</i>)	Alpine Sheep Sorrel (<i>Rumex paucifolius</i>)	Curlycup Gumweed (<i>Grindelia squarrosa</i>)
Skin ointment (irritations, scratches, bites, rashes)			
Anti-inflammatory			
Respiratory ailments			
Food & beverage			

Figure 10: This table breaks down the ethnobotanical uses of three plant species .

Discussion

This study argues that ecological data alone cannot fully explain the importance of native plants. While ecology is important in identifying the roles species play within ecosystems, we can use ethnobotany to reveal the relationships with people, and personal observation adds context that cannot be captured through scientific measurements alone. The similarities between these three perspectives suggest that plants should be viewed not only as components of biodiversity but also as cultural heritage and lived experience. Recognizing these multiple pieces can strengthen conservation efforts by emphasizing that protecting native plants also helps preserve knowledge, traditions, and connections.

Conclusion & Next Step

My findings show that curlycup gumweed, alpine sheep sorrel, and yarrow are more than plants growing in a field. Each species plays an important ecological role, and carries a history of ethnobotanical knowledge that reflects the relationships between people and plants.

Although this study provided insight into the ecological and ethnobotanical significance of three native plant species, the limited timeframe allowed only a broad exploration of their relationships with people and the environment. For future research I would like to investigate which plant parts were traditionally used, compare and contrast their uses across Indigenous communities, and explore how ecological roles influence cultural significance. Expanding this work would provide a more grounded understanding of the relationships between native plants, people, and place.



Key Sources & Acknowledgements

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