

Charlie Flint

Charlie Blumenstein Stewardship Internship

Final Reflection

Carpenter Ranch Preserve in Hayden, Colorado for the summer of 2025

Introduction

It was an honor and a great privilege to spend the summer on The Carpenter Ranch in Hayden, Colorado. By rolling up my sleeves and living on the ranch I was able to get a bird's eye view and gain a deep understanding of the crucial role that a place like the Carpenter Ranch serves.

My daily chores and tasks, learning and settling into the rhythm of the ranch, allowed me to see the connection between the incredibly tenuous and complicated relationship between protecting and conserving the land and wildlife and supporting the needs of farmers and the agricultural community.

In addition I also gained an opportunity to live independently. After spending two years in a dorm, surrounded day and night with classmates, eating, going to classes, socializing, exercising, always in the company of others, I had the opportunity to experience living completely on my own, finding new ways to fill my time. I cooked up a storm, baked, tried brand new recipes, hiked and ran up every trail nearby, including summiting Mt. Zirkel three times. I also took up a new sport, gravel biking. This let me travel roads and trails I might not have found or looked for if I was running or in a car. I passed by miles and miles of local ranches and farms, quietly observing the life around me. These activities and this job allowed me to get a better view and understanding of the lay of the land and how it has grown and developed over the years. I gained a better understanding of the livelihoods that the sloping mountains sustained, and the homes it provided for elk, marmots and eagles. The independence I developed during these months gave me a renewed sense of confidence, and I began to appreciate the quiet pace of rural life in ways I never expected.

One of my favorite experiences was learning the history of the Carpenter Ranch. In one of the buildings, someone or likely many folks have taken the time to document Ferry Carpenter's start, how he got to Hayden, his family, what life looked like over the years. It was captivating and compelling to see and get a sense of the drive and determination to establish what eventually would become the Carpenter Ranch. To see those that have lived in the intern house before me, those responsible for the painted walls or wildlife cameras, and the families that have called the Carpenter Ranch their home gave me a sense of community in my summer alone.

At the end of the summer, I was lucky enough to meet many of the Carpenters at the family reunion this summer. From the newspaper clippings on the wall from decades ago to chatting with the Carpenter family was wonderful. They told great stories about the local train, carrying coal and passing right through the ranch. They brought to life the time the rain flooded the fields to such a degree it became a duck pond which made the locals skeptical of what was happening at the ranch. These were just some of the stories that were shared with me. I appreciated getting to know the Carpenters and spending time with them. Hearing the Carpenter family's memories gave me deeper insight into how people are shaped by the land they grow up on, and how the ranch continues to serve as a bridge between generations.

A Typical Day at the Ranch

I had a great working relationship with Matt Ross, the Carpenter Ranch Manager. He would give me assignments but also allowed me much independence. Mowing lawns and trails took up a lot of time, and left me feeling exhausted but capable. I also fixed many a fence, painted signs and more fences. I would walk the perimeter of the ranch, opening, closing, and checking on the wildlife gates. These tasks also helped me better understand the habits of wildlife and all of the thought that went into making the land habitable for all. A thick white wire was used to fence in the cows on the property, but visible enough to protect the elk and the deer. I set a lot of mousetraps, fed the dogs, learned that I could make and install a corrugated metal roof for a shed, gardened, and made the beds and cleaned the guest house for visitors who came through from various organizations. Every day demanded a different combination

of physical work, problem-solving, and awareness, which made the ranch feel like both a classroom and a living organism, constantly teaching me something new.

Driving the four by four all over the ranch, checking on this fence or gate, seeing where the cows were, became a fixture of my day and the perfect vehicle to take my occasional friends and family around to show them my work.

I also worked with youth from the Rocky Mountain Youth Corps. We painted and fixed fences and gardened. Their enthusiasm, energy, and curious young minds gave me yet another perspective to see and watch the workings of the Carpenter Ranch. This expanded my connection to the land outward, by building a connection with the community. Working alongside them reminded me that conservation thrives when people of different ages and backgrounds come together with a shared purpose.

I had the opportunity to sit in on several meetings with various non profit organizations, including Friends of the Yampa River. Literally sitting at the table and listening to the discussion allowed me to see all the factors at play, weighing the consequences of taking this or that action, and how they would make decisions. These meetings highlighted how complex conservation work truly is, requiring constant communication, compromise, and creativity among groups with overlapping but sometimes competing priorities.

Research

My favorite part of the entire summer was the research I was able to conduct. Much of the internship at the Carpenter Ranch focused on the need to protect and conserve water along the Yampa River Basin. I was curious about the needs of other resources beyond water. I am a chemistry major and seeing the world through the lens of chemical reactions has become the most tangible way for me to process and understand how things work and the world around me. The Bobolink, a North American songbird in the American blackbird family, breeds in the grasslands and meadows in parts of Colorado, including the Carpenter Ranch. In order to protect their nests and breeding, the Nature Conservancy changed its contract with the farmer who leases the land to delay haying. I was curious and wanted to see

if the hay at the beginning of the summer was different in any way from the hay later in the season. So I opted to test the nutritional value of the hay at three different points over the summer. This project had the goal to determine if this difference could be financially compensated as to maintain a positive relationship with the local farmer and The Nature Conservancy. The local farmer sells the hay harvested on the land for profit, so the change in contract had the potential of costing the farmer a lot of money. I tested samples for the fiber and protein composition, as well as ability to be digested by the cows. I compared these values of the same plot of hay at three different points in the summer, comparing the quality and observing trends. In addition to this experiment, I spent time researching what was happening on a molecular level, and why the delayed haying made these reactions occur. My research anticipated that as the grass dried in the field, its fiber content would increase and the subsequent total digestible nutrients would decline. As hay matures, it physically changes. The amount of leafy tops becomes smaller as the hay dries, while the tougher stems make up a larger portion. Despite this expected outcome, a very small difference in the nutritional value of the hay was observed at the three different dates. Either due to a true lack of change or to error, my results did not show the nutritional decline that would normally be anticipated.

Conducting this research was interesting and exciting. I got a chance to plan and execute my own study, had to find resources to test the hay, and got a hands-on opportunity to apply what I had learned in my classes to real world applications. I left this summer job understanding how exactly the needs of conservation and agriculture can directly impact one another. I also talked to the laboratory staff, local farmer, and CSU extension employees in Steamboat.

Appreciation

I would like to express my appreciation to The Nature Conservancy, Matt Ross, the Blumenstain family, and the entire steering committee. Your support and generosity made this summer possible and was an incredible opportunity. The patience I was shown while I learned how to move stretch gates and asked question after question through every daily task truly improved this experience and taught me hard and

soft skills that will stay with me throughout all of my future endeavors. I am so grateful for the trust that was placed in me, and the opportunity to learn about the ideas that connect the chemistry I study to real-world conservation.

Reflecting back on my summer at the Carpenter Ranch, I can see and understand from many perspectives all that I gained in my time there. You can spend countless hours reading textbooks, watch documentaries, and study in the classroom, but it still does not compare to living, working, and experiencing first hand how the natural environment and inevitable development interact. I learned that with planning and truly understanding the needs of all involved, that it is possible to create systems and structures that work. The relationships I formed with people, with the land, and with the work itself will stay with me long after the summer that I spent on the Carpenter Ranch. This internship reaffirmed my passion for science and conservation, and it strengthened my desire to study science. Because when I understood the science of the ranch, I was able to see inequities and the systems of the land around me.