Multispecies Entanglements and Misrecognition in the American West

by

Kimberly Susan Sanchez

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Doctoral Committee:
Professor Stuart Kirsch, Chair
Associate Professor Krisztina Fehérváry
Assistant Professor Pablo Gaston
Professor Erik Mueggler
Assistant Professor Alyssa Parades

Kimberly Susan Sanchez

kimsusan@umich.edu

ORCID iD: 0000-0001-5633-6708

Kimberly Susan Sanchez 2025

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Table of Contents

Acknowledgements……...……...……..ii

List of Figures……v

Abstract……...……...……..…….vi

Introduction…….……...……1

Chapter 1: Rhythmic Multispecies Labor and Place-Making….……33

Chapter 2: Negotiating Access and Mutual Living Off the Ranch…..…….,,,.……65

Chapter 3: Agrarian Kin-Work, Gender and Reproductive Strategies..…….....101

Chapter 4: Political Economy and the Value of Animal Difference…….……....135

Chapter 5: Devotional Praxis, (In)Divisible Bodies, and Economies of Meat…….172

Conclusion……..……206

Bibliography……...211

List of Figures

Figure 1. A drawing from follow up fieldwork of Jason's place……...36

Figure 2. A drawing by Jason's wife of their house and nearby buildings……37

Figure 3. A drawing from fieldwork of Tracy's place……...43

Figure 4. A drawing from fieldwork of Jose's place…….56

Figure 5. Map of Land Ownership in Wyoming [Bureau of Land Management]……70

Figure 6. United States Geological Survey diagram of Public Land Survey System:

https://www.usgs.gov/media/images/public-land-survey-system-plss.....71

Figure 7. United States Geological Survey map of principal meridians and base lines:

https://www.usgs.gov/media/images/PLSS.....72

Abstract

This dissertation seeks to understand how ranching communities in Wyoming, comprised of both humans and animals, sustain themselves during times of social disjuncture. This inquiry is positioned in the context of ranching during and after the COVID pandemic. The findings stem from 18 months of fieldwork from January 2021 to July 2022 in three counties of southeast Wyoming and relied heavily on in-person participant observation and semi-structured interviews. It asks the following questions: How do livestock producers in southeast Wyoming confront popular misunderstandings that denigrate animal agriculture as always already corporate, alienating, standardized, and unsustainable? In what ways are the strategies and alliances ranchers make with others, both human and non-human, in response to the increasing misrecognition by non-ranchers shaped by varying experiences of identity, kinship, and power? Through attention to the everyday experiences of a diverse range of ranchers and livestock, I explore how humans, non-human animals, and lands are nurtured and changed through embodied acts of care in the rangelands of the high plains, and why ranchers seek to establish or strengthen links between themselves and those who find ranching worthless if not outright harmful. As the following chapters highlight, for my interlocutors there is no other life worth living or life that is recognizable without their livestock and the rangelands which sustain them. While they are typically conceived of by non-ranchers as free, self-sufficient persons who care most about private property, ranchers are fully engaged in collective life. Thus, they have come to rely on a variety of strategies, material actions, and behaviors undertaken toward a goal that should be

thought of as less individual choices and more as moves within a certain social field (Bourdieu 1977) to maintain their livelihoods. I argue that not only do prevalent portrayals of ranching not align with the experiences and understandings of ranchers but also that those popular misconceptions obscure the heterogeneity of life within ranching communities.

Introduction

I hopped into the cab of an old, dusty truck and headed out to feed a herd of cattle with Tracy, one of the several women cattle ranchers who I'd come to know in southeast Wyoming. The air was tense as she began backing out of her driveway and onto the dirt road that would take us to the interstate and eventually to her herd of Angus cattle. Her normally relaxed and cheerful tone was hard as she told me that last night Beau, the small calf whose body lie in the back of the truck, had died. He had spent most of his life in the corrals outside her home as a bottle-fed calf, which are either orphaned, rejected, or in need of more care than other calves who remained with the herd. Like numerous other "bottle babies," as Tracy lovingly referred to them, she had grown very attached to the small calf through hours upon hours spent feeding, caring for, getting to know, and loving them. The cows who were once bottle-fed and remained in her herd had become individuals and are afforded extra privileges, given another year to be bred, or enjoying scratches between the shoulder blades. His passing was hard to bear, and it came at a time of more sadness.

Her voice began to quiver as she then described how she had made the difficult decision to sell over fifty cows who had failed to be bred this summer, several of which were previous bottle-fed cows. On top of that, two bottle-fed steers, Spence and Bugs, were set to head to outfits that would grow them out and then slaughter them. Tears rolled down her cheeks freely as she talked about the specific cows who had to go and explained that "the grief comes in waves," "you've had them for so long," and "each has their own personality." As we drove down the

interstate, onto dirt roads to the gently rolling hills on which her pasture grew and eventually to the place we'd leave Beau's body, I asked if in her opinion such strong grief for livestock was widespread among ranchers. She had answered by saying that the pain comes with spending more time with some of the cattle. "Some operations have more of a business approach, while others are more connected [on an emotional level] to the livestock," she had said. A comment, then, from me suggesting that bigger operations were probably less emotional than others since they have plenty of stock and could afford to lose more than smaller operations caught her off guard. With a look of shock that instantly shamed me, she stated simply, "loss is loss," and drove to feed the rest of her herd.

As a non-rancher, my callous words belied a lack of awareness of the centrality of livestock to ranchers big and small. Although unexpected death, culling herds due to drought, poor pregnancy rates, or changes in life circumstances were normal parts of her work and life as a rancher, the grief she expressed at that moment in time seemed to indicate her world was coming apart, even if only a little. However, it never did. She went back to work and is still raising cattle. The moment I shared with Tracy years ago and that I am sharing now is significant in how it underscores the strong bonds between rancher and livestock and how despite all the set-backs and failings that challenge ranchers, she and my other interlocutors continue to care for their livestock on the rangelands of the American west.

This dissertation seeks to understand how ranching communities in southeast Wyoming, comprised not only of humans but also their nonhuman livestock, sustain themselves during times of social disjuncture. This inquiry is positioned in the context of ranching in the American West during the COVID pandemic. It asks the following questions: How do livestock producers confront popular misunderstandings that denigrate animal agriculture as always already

corporate, alienating, standardized, and unsustainable? In what ways are the strategies and alliances ranchers make with others, human and non-human, in response to the increasing misrecognition by non-ranchers shaped by ideologies focused on identity, race, kinship, and power? Through attention to the everyday experiences of a diverse range of ranchers and livestock, I explore how humans, non-human animals, and lands are nurtured and changed through embodied acts of care in the rangelands of the high plains, and why ranchers seek to establish or strengthen links between themselves and those who find ranching worthless if not outright harmful. As the following chapters highlight, for my interlocutors there is no other life worth living or life that is recognizable without their livestock and the rangelands which sustain them. While they are typically conceived of as free, self-sufficient persons by non-ranchers who care most for their property and themselves, ranchers are fully engaged in collective life. Thus, they have come to rely on a variety of strategies, material actions and behaviors undertaken toward a goal which should be thought of as less individual choices and more moves within a certain social field (Bourdieu 1977), to maintain their livelihoods. I argue that not only do prevalent portrayals of ranching not align with the experiences and understandings of ranchers but also that those popular misconceptions obscure the heterogeneity of life within ranching communities. By keeping livestock close throughout the following chapters, this dissertation aims to highlight the value of a multispecies approach to anthropological investigations of misrecognition (Barrett and Hall 2024).

Unplanned ethnography in Wyoming during the COVID pandemic

Wyoming is located in at the juncture of the Rocky Mountains and Great Plains in the western United States. With open grasslands in the east that transition irregularly towards

forested mountains in the west, broken up along the way by smaller peaks and mountain chains, valleys, basins, buttes, and desert, the state is the least densely populated among the lower 48 states with just under 600,000 mostly white inhabitants. It is also my home state and a place I never intended to do anthropological research, having prepared to carry out an examination of kinship and property relations with pastoralists in post-socialist Mongolia. Much like Bronislaw Malinowski, a founding father of anthropology who pioneered the method of long-term participant observation that remains a defining feature of the discipline today, my work was shaped by factors beyond my control. While there are undoubtedly elements of his situation that have been mythologized or embellished, the outbreak of World War I kept Malinowski in the Trobriand Islands for far longer than intended since as an Austro-Hungarian subject he would be imprisoned as an enemy alien if he returned to Europe. Prior to his fieldwork, anthropologists carried out short term work, collecting information while being mobile. However, wartime conditions pushed him to live with indigenous communities and make a virtue of it.[1] At the time of my own disrupted fieldwork, it was somewhat comforting to know that at least I was not the only anthropologist to have my work so effected, even if it was a global pandemic rather than war which was fundamentally altered my research plans and resulted in the present study.

This at-home ethnography (Anderson 2021) was not only brought about by the COVID pandemic, but was made stronger by the prior experiences and work I did in a similar yet distinct society where animal husbandry is valorized. In late summer of 2019 I headed to Ulaanbaatar, the capital of Mongolia, to undertake language instruction before leaving for the countryside in the very northeast to live with relatives of my language teacher. Baatar, the head of the young

[1] In his seminal monograph *Argonauts of the Western Pacific* (1922), Malinowski describes how he conducted six years of fieldwork over the course of three expeditions to the Trobriand Islands.

Buriat Mongol household I'd live with, picked me up from the side of the road and took me on his motorcycle to their summer encampment outside Bayan Uul. Under a clear sky I'd only ever seen back home in Wyoming, brilliantly lit by thousands of stars and the soft glow of the milky way, I arrived at my future field site the day after my 27th birthday. It seemed an auspicious start to begin research and soon enough I began the engrossing work of establishing relations, gaining fluency in Mongolian, taking notes, and participating in familial and collective life. In January, five months after I had arrived, news had begun to spread among locals of a virus in China that was stirring alarm. As a Fulbright Fellow I had been in contact with the staff at the American embassy, who were calm but alert to the emerging coronavirus. But life in the countryside had its downfalls, among them being a lack of stable internet connection and phone signal. After Tsagaan Sar, the Mongolian lunar new year, celebrations in late February, I returned from days of visiting other households with my host family, where we ate, sang, and drank ourselves silly, to an ultimatum from Embassy staff via phone call: leave tomorrow to return to the U.S. or stay in Mongolia under potential lockdown for the foreseeable future. Out of an abundance of caution, I left despite feeling like I had reached a turning point in fieldwork, with interviews coming easier and the pool of participants growing. I arrived back in Michigan just in time for the World Health Organization's declaration of the new coronavirus a worldwide pandemic and the closure of many international borders. I waited to return to Mongolia until September of that year when it became apparent that the virus wouldn't subside quickly. Deciding to pivot to a new project on animal husbandry in the only other place I knew with people who raised cattle and sheep in large numbers, I returned to my childhood home in Wyoming in January 2021.

The research I undertook in Mongolia on post-socialist pastoral property and kinship informed how I'd approach ranching in Wyoming. Having read in the Mongolian state archives

the ways in which pastoralism on the steppe was shaped by larger histories of state governance and by religious institutions and beliefs, and then seen this first-hand, I was primed to notice how, why, and with what effect the state intervened in ranching activities. Far from being the self-sufficient and free individuals they are often portrayed as, ranchers in Wyoming find themselves tangled up in webs of collective life, depending on both assistance from friends, family, and the wider community and on resources held by the state. Though miles of maintained barbed wire fence suggest a landscape of independent and well-defined households and persons, each separate from one another, this dissertation shows how enmeshed ranchers are in each other's lives. Whereas in Mongolia livestock herds were never monotone nor mono-species – different colored cows, sheep, goats, horses, and camels intermingled fairly freely on the rangelands, in Wyoming, cattle, especially black Angus cattle, are prized above all other livestock. Coming from a context of rampant diversity, I observed immediately how livestock are largely separated on the basis of production, such as beef versus dairy cattle, by breed, such as Hereford cattle and Angus, and by species, such as sheep and cattle. Going further, these differences come to be valued and operationalized at various times and places. They contributed to as well as stemmed from ethnic discrimination, as I discuss in chapter 4.

In both contexts, livestock keepers typically had individual relationships with their animals, knowing their particular habits, desires, and behaviors in the specific landscapes they lived throughout a year. Much like my Mongolian interlocutors, the ranchers I worked with knew when cattle or sheep were acting strangely (see Caine 2024), where they liked to go, and had favorites among their charges. Such intimate and embodied interactions have been recognized as acts of co-domestication (Fijn 2011) that shape the social lives of livestock and humans. However, while inhabitants of Bayan Uul sum and Albany, Laramie and Goshen counties prided

themselves on their histories of livestock rearing and their animal-centric lifeways, the actual contribution of livestock production to state and national economies differed widely. Despite its nickname as the Cowboy State and constant declarations by legislators and others of the significance of ranching to Wyoming, agriculture plays a very small role economically, employing only 3% of the population directly and contributing far less than most other sectors, especially extractive industries, to the state's GDP. By comparison, herding and farming contribute 13% of the Mongolia's GDP and employ nearly one fourth of the population. Even here, however, extractive industries currently contribute more to the GDP than livestock products in a state that has seen itself as a nation on horseback since the time of Chinggis Khan and the Mongol Empire. Thus, ranching seemed to occupy a larger space in the public imaginary than in actual life compared to pastoralism in Mongolia. The fact that fewer people are knowledgeable about ranching realities despite sharing and celebrating a Western, cowboy culture, has unfortunately led to widespread misconceptions about animal husbandry on open rangelands in Wyoming and the broader region. In the sections of the introduction that follow, I detail how the vilification of animal agriculture, growing disconnection between producers and consumers, and precarious access to lands and fair markets comes from and contributes to misunderstandings.

Environmental degradation

During fieldwork, a major concern for interlocutors was the vilification of animal agriculture on two fronts: environmental degradation and animal welfare. The 2006 United Nations report "Livestock's Long Shadow: Environmental Issues and Options" was referenced during a recruitment meeting with a potential research participant and it remains a key text portraying livestock as a major source of ecological damage from local to global levels. The

report puts the burden of numerous negative environmental problems on livestock agriculture directly, though it also includes analyses of how pollution, greenhouse gas emissions, water depletion, and biodiversity loss result from the raising of forage crops and transportation of livestock and crops across space. At the national level, accounts of ranching and animal agriculture are similarly harsh, though more hopeful. The book *Cowed: The Hidden Impact of 93 Million Cows on America's Health, Economy, Politics, Culture, and Environment,* argues that while human-cow relations were once very beneficial, in the current era our obsession with dairy and beef have contributed to ecological calamity such as depleted aquifers, increased methane emissions, and ecological degradation (Hayes and Hayes 2015). Indeed, there is no denying that some forms of ranching have and continue to disrupt and destroy ecosystems, particularly those which have not historically been grassland biomes. For instance, "grass mining" or the expansion of pasture for cattle ranching, is a leading cause for deforestation in the Amazon Basin (Barona et al. 2010). However, even in this seemingly clear-cut situation, scholars have argued against viewing cattle as solely ecological anti-heroes by examining what has "made cattle raising socially, economically, and culturally more appealing than forest-based or agricultural livelihoods" (Hoelle 2015, 5), and by examining historical patterns that reveal varying relationships between cattle ranching and the environment. For example, Robert Wilcox (2017, 11) argues "in regions like Mato Grasso, where ranching grew slowly, the interaction with local ecosystems was more complex, and often cattle co-existed with local fauna and flora for decades."

Scholars of pastoralism such as Ella Houzer and Ian Scoones (2021) have criticized the portrayal of animal husbandry as always environmentally harmful and argue that there is often a failure to properly differentiate between extensive livestock production and more intensive,

industrial systems. In doing so, they assert that simplistic debates equating emissions from cows to those from cars obscure the benefits which livestock bring to environments and communities around the world. This dissertation further complicates these debates by showing how livestock production can exhibit varying degrees of profitability, environmental sustainability, and efficiency. Extensive, pastoral systems are generally more environmentally friendly, but less profitable since they rely on access to large amounts of land. Intensive systems, associated with industrial agriculture, are far less ecologically sound, but are very efficient and profitable, relying on more labor, technology and material inputs like fertilizer than extensive systems. Although there certainly are ranchers who fail to care for lands and waters in sustainable ways, nearly all participants in this research project were critical of the negative way in which ranching and meat production are being portrayed. One woman, during an interview in her home, argued that American society's wasteful and consumerist habits are largely to blame for many of the environmental issues for which animal agriculture is faulted. She said, "we are horrible at wasting food and we are ignorant at how even 'green practices' rely on 'bad' resources such as fossil fuels and minerals - driving electric cars and not eating meat will NOT solve our climate and environmental crises." In her view, being more conscious of *how* we produce food and raise livestock and *how* much we consume are more important. Indeed, focusing attention only on the negative aspects of ranching diminishes positive changes in the industry and obscures the ways in which animal husbandry can contribute to sustainable futures. For example, one young rancher, just starting to raise a herd of cattle after a military career, described the push for "environmentally friendly" cattle.[2] These smaller framed cattle are more efficient and produce

[2] Although "environmentally friendly" cattle are not a separate breed of cattle, certain breeds are more ecologically efficient than others due to phenotypic traits such as smaller bodies.

calves and live on less forage and water than larger cattle. In addition to environmental degradation, ranchers must also contend with portrayals of commercial animal agriculture as innately harmful to livestock.

Animal welfare concerns

During the first half of 2021, ranchers and regional ranching publications were focused on one ballot proposal in northern Colorado, which if successful would have criminalized certain ranching and veterinary practices. While the proposal ultimately failed since it was deemed unconstitutional by the Colorado Supreme Court for violating the state's single-subject rule, *Initiative 16: Protect Animals from Unnecessary Suffering and Exploitation* (otherwise known as the PAUSE Act) sent shock waves around the region. The bill sought to accomplish numerous things. It sought to include fish as a form of livestock, define "natural lifespans" for livestock, make slaughtering livestock that have not reached one fourth of this natural lifespan a form of animal cruelty, and remove current exemptions for animal husbandry and veterinary sectors. For most of my interlocutors, one major element of the initiative was especially concerning. The PAUSE Act sought to expand the definition of "sexual act with an animal" to include conventional animal husbandry and veterinary practices including but not limited to artificial insemination, breeding soundness exams, castration, neutering, spaying, pregnancy verification, rectal temperature measurement and perhaps most troubling birthing assistance. These are all regular forms of care in Wyoming and throughout much of animal agriculture.

Moreover, scientists have recently discovered that methane emissions are partially influenced by genetics (Worku 2024).

This legislation came at a time of increasing anxiety over the treatment of livestock in the animal agriculture industry. After WWII, production methods were altered and intensified to feed a rapidly growing population cheaply. Ruth Harrison's 1964 expose *Animal Machines: The New Factory Farming Industry* and Peter Singer's 1975 book *Animal Liberation: A New Ethics for Our Treatment of Animals* were among the first to critique this new factory farm and the subsequent changes that often led to restrictive environments, more additional health issues, and an overall diminished quality of life for livestock. Within anthropology, scholars have continued to illuminate the figure of the animal-machine and the numerous ethical dilemmas inherent in large-scale industrial agriculture (Beldo 2017, Blanchette 2018, Pachirat 2011, Wallace 2016). At the heart of these discussions and critiques is intensification through vertical integration – the control of two or more stages of production within an industry – as well as the values of uniformity, control, cheapness, and convenience that vertical integration not only (re)produces but also relies on. In these highly integrated, totalizing systems, attempts to standardize life necessitate and involve thinking about THE animal as opposed to AN animal. As Alex Blanchette writes, vertical integration in the pork industry in particular strives "to transform actual hogs into tokens of an increasingly interchangeable capitalist animality" (2019, 17).

Unlike the poultry, dairy, and pork industries, the beef and lamb industries are less vertically integrated in the U.S., and as the following chapters show, ranching as it is practiced in Wyoming and elsewhere should not be conflated with factory farming. Not all forms of commercial animal agriculture are necessarily harmful. As a forage-based industry spread throughout the nation, cattle and sheep ranching often lack the same kinds of restrictive and standardizing dynamics which are present in vertically integrated systems (see Ward 1997 for a discussion of pork, poultry and beef industries; see Frisvold 2002 for dairy; and see Boland,

Bosse, and Brester 2007 for lamb). Based on my fieldwork experience, I would argue that the quality of life for livestock on ranches is far better than most know or would care to admit. As the following chapters show, my interlocutors care deeply for their livestock and often see them as co-workers (Porcher 2017) with unique dispositions and histories in addition to key partners in maintaining the health and well-being of rangelands. During a lunch break after a morning ultrasounding sheep to determine pregnancy, discussion ensued over the PAUSE Act. Alice, a Mennonite neighbor and farmer, expressed confusion when the veterinarian present brought up the new ballot initiative. "Wouldn't it be animal cruelty to NOT palpitate?" she asked. Palpitation is the act of examining livestock through touch for the purposes of administering medical care and is widely practiced among ranchers as well as veterinarians. Her words echoed later on when Jason, the owner of the sheep we'd all been working, said, "we rely on those sheep and sacrifice for them and they sacrifice for and rely on us." Statements such as this echo timeless dynamics of symbiotic encounters between humans and livestock (Evans-Pritchard 1940[1969]) and also speak to modern mutualisms that occur around the world (Fijn, Gressier, and Kavesh 2023). Moreover, these kinds of statements demonstrate how both ranchers and the "enviros" they often blame for making their lives more difficult (by proposing such radical ballot initiatives, for instance) exhibit shared concerns over how to properly care for and steward animals and lands. However, each group believes in very different ways that care should be enacted – for ranchers, caring is close and intimate laboring alongside livestock and with lands, whereas for animal and environmental activists caring for animals and lands is akin to leaving them alone, untouched as much as possible by human hands.

Growing social distance

The anxiety over how animals are treated and lands used to produce food and other goods is related to a what historian Richard Bulliet calls "postdomesticity" (2005). This condition of numerous, largely Western societies is defined by people who 1) are physically and psychologically far removed from the animals which provide the food, fibers, hides, and other goods they depend on and 2) continue to consume animal products in abundance despite feeling morally ambiguous about doing so. For ranchers in Wyoming, consumers were often generalized as urbanites who lived far away and had little to no understanding of even the basic facts of where food comes from and how it is grown. Conversations abounded with specific examples of how consumers for whom food came from the grocery store, ignoring its connections to livestock, lands, and producers. One ranching husband and wife, who had moved out from Illinois after retirement to raise and sell Dexter cattle (an Irish dual-purpose breed prized by homesteaders) used their own memories of agriculture growing up to present a stark difference. Chris, the husband, mentioned that in the 1960s when he and his wife were kids people lived more rurally and "it was very natural to butcher chickens in your backyard…everyone did this." These backyard butchering events were communal since they often brought family and friends together to help. Such common, collective agricultural experiences have become rare for most and, in Chris's words, "now it's sterile."

In many ways, sterile is indeed a perfect word to describe the ways in which consumers often encounter livestock and I suggest that such sterile imaginaries in contemporary American society valorize disconnection, advance notions of human control over nature, and contribute to social division. When they are alive, we often see livestock in commercials, children's books and on labels as clean, healthy and typically not very diverse. Perfect bovine, pig, sheep and chicken bodies are the norm rather than the exception. Fairs and petting zoos too offer a very cultivated

experience which is far removed from lived realities, as I discuss in chapter 4. Animal excrement, illness, injury, sex, nursing, and birth are largely hidden from view. What happens at and directly after death is even more obscured with most people understanding what "farm-to-table" means but having little exposure to or knowledge of how it happens. At the store, eggs come pre-sorted and washed while meat is not only already separated from organs, bones, and hide, and disassembled into various cuts, but also is bloodless and wrapped tightly in plastic and white styrofoam packages. Often seen as alternatives to sterile, conventional food systems, organic and local food movements try to engender awareness in consumers about where the food one consumes comes from and promote more ethical relationships with food and environments. Anthropologists who examine these kinds of value-added certification programs and food systems have revealed the ways in which food, place, and people are connected, and what kinds of skills, in-depth knowledges, and power dynamics permeate these networks in the U.S. (Guthman 2002, Paxson 2010, and Weiss 2016).

Ranchers' perceptions of an increasingly distant consumer are also connected to less than accurate media representations of ranching they see. These especially are prevalent in popular culture through shows like *Yellowstone,* a television series which focuses on the affairs of a large Montana ranch, which put drama and plot before more accurate portrayals of ranch work and life, as is typical for Hollywood – after all, ranching is quite boring most of the time. While the show does reveal important concerns my interlocutors identified, such as familial conflict, predation by wildlife, tight profit margins, fragmentation of land, and development by wealthy corporations, numerous other realities are left un- or under explored such as participation in and reliance on communal groups and organizations and the adoption of new technologies including virtual fencing, drones, radio-frequency identification tags, and social media platforms. This

dissertation makes visible the importance of kinship and how relying on family to a high degree is both valuable and problematic in chapter 3.

It is worth noting that the perceived social marginalization and a lack of appreciation felt by ranchers during fieldwork took place at the height of the COVID pandemic, as large numbers of professionals moved away from urban areas to more rural locales. Rather than diminish the social distance between producers and consumers, however, increased proximity has only entrenched ranchers' opinions of non-locals and non-ranchers as ignorant, as chapters 2 and 5 describe. Such conflict between new residents and established locals has been examined by sociologist John Canfield, who offers the expression Nouveau West to describe the ways in which ranchers use their cultural capital to push back against the economic capital wielded by newcomers. As he writes, "more than a physical place, the Nouveau West denotes a relational Bourdieuian social space of contestation—one where Old West insiders and New West outsiders compete to determine appropriate forms of land use and ownership" (2024, 970). Both ranchers and consumers share concerns over how to live a good life with others and what it means to be an active part of American society while experiencing social isolation. However, while consumers are thought to enjoy multiple choices when it comes to the food they buy, ranchers find themselves trying to rekindle relations with their "city cousins" and persuade non-producers of the value of ranching and of beef in the face of these other options, including "fake" meat.

Precarious land and markets

Underlying all of the aforementioned concerns of ranchers is the perception that ranching is not as stable as it once was for most due to scarce and unaffordable land and unsteady markets. Over time a once very agrarian nation has become less populated by producers. In the early 20th

century 25% of Americans were farmers or ranchers, but by the close of the century only 2% pursued this profession. While the Jeffersonian ideal of a nation of self-sufficient small-holding agricultural producers has long shaped America and still carries cultural and symbolic capital (Hagenstein, Gregg, and Donahue 2011), the actual work of ranching and farming is becoming more tenuous. The most important things to remember going forward are that 1) ranching is business as well as a lifestyle and 2) there is no one kind of rancher or ranch and, as this dissertation shows, certain populations and kinds of ranchers enjoy more stability than others. Complicating matters further is the fact that there's no standard scale used among researchers in the U.S. that can be used to compare different kinds of agrarian operations. As argued by anthropologists Jennifer Thompson and Ashley Stinnett, "agricultural scale is operationalized across a number of trajectories: farm size (e.g., acreage), volume (e.g., number of head), sales (e.g., gross cash farm income or GCFI), and, to a lesser degree, practice (e.g., wholesale or direct sale; family or corporate proprietorship)—often within the same organization" (2018, 77). This dissertation finds that larger family operations who have typically built up their ranch, and especially land holdings, over the course of several generations tend to have greater economic success. For instance, one older couple emphasized that their self-sustaining ranch was not quite common; they own all 10,000 acres of their land, they harvest their own hay which they grow, and they own their equipment. Some others do this, but they "are not in an average situation." He said his dad was a trader in land and it was the profit he made in buying and selling land which helped provide the financial foundation on which the ranch has been able to endure. There are very few places and pieces of land which "can pay its way," Oscar explained.

This leads to another issue for ranchers today – the scarcity of affordable land. Land is a necessity for raising sheep and cattle and is increasingly difficult to access. Development is

commonly seen as the major barrier to continued, future agricultural production as described in chapter 3, with rising land prices indexing that ways in which rangelands are now valued more for their real estate potential than for their actual agricultural production (Sayre 2022, Sheridan 2007). In areas of high development, formerly rural and agrarian lands are often sold to the highest bidder for the construction of housing. High prices for even marginal rangeland also make it extremely difficult for new and beginning producers to buy land. An interlocutor told me of a time he spoke with an older producer, who was trying to sell his land, about a younger couple who was trying to buy land to start out. The older man described how he had purchased his land way back for something like the price of two wheat harvests. This prompted my interlocutor to suggest that he could sell his land to this struggling couple for a similar price (i.e., what two wheat harvests today would sell for) and the old man just balked and said he couldn't do that. His response led the rancher to conclude that "people are selling land for what they can get rather than what people can afford," effectively excluding new generations of producers. As only the wealthy can afford expensive land, consolidation has become another barrier, with smaller ranches sold to larger operations in areas where development is less prevalent. Though her words came from examining land enclosure in Indonesia among indigenous highlanders, Tania Li's rendering of "land's end as a dead end" speaks to the ways in which land scarcity, brought about through the commoditization of land, exacerbates the precarity of small-scale agriculturalists around the world (2014, 180). Although leasing land is a strategy that some new and beginning producers are turning to, current laws, leasing practices, and variations in land ownership and use privilege private landownership as described in chapter 2 and by other scholars (Merrill 2002). What's more, for those who do lease public lands, whether federal and/or state, they face a high degree of scrutiny and controversy. Authors have regularly written

about public lands grazing as a form of exploitation and a growing ecological calamity, arguing against that we do more as a nation to protect western public lands, whether that's in the form of less privileges for ranchers to complete rewilding without human interference (Jacobs 1992, Ketchum 2020, Wuerthner and Matteson 2001).

While land values are rising, prices for livestock raised by ranchers have stagnated. Over the last three decades agricultural producers have seen little improvement in the farm share of the U.S. food dollar – the amount of every dollar that consumers pay for their food which goes to agricultural producers. It reached its lowest point in thirty years in 2021, the year I began fieldwork, when it sunk to 14.5¢ for every dollar. During my first trip to a sale barn where calves were sold to buyers farther along the supply chain, a pair of ranchers and distant neighbors fondly remembered the days when their cattle would fetch up to $2.50/lbs. By comparison, that day I saw no sale break past the $2/lbs price although one of the ranchers before me had been close when they sold their 200 or so head of cattle for around $1.85/lbs. As I listened, not wanting to interrupt, they attributed the drop in prices to a drop in consumer demand, but even more so to greed, "the packers are keeping more profits away from the stock growers." Such accusations of greed not only highlight rancher's recognition of inequality in capitalist systems, but also belie a more collective, morally informed ethos than is often attributed to these communities of cattle and sheep growers. Indeed, a century after the Packers and Stockyards Act of 1921 was passed to ensure fair and competitive livestock markets it was widely known by my interlocutors that monopolies still existed that prevented them from receiving a fair price for their livestock. According to a report by the USDA, the four largest beef packers control approximately 85% of all steer and heifer purchases in the U.S. These meatpackers, Cargill, Tyson Foods, JBS, and National Beef, began concentrating in the 1980s and quickly squeezed

out smaller meatpackers and butchers. Until recently, ranchers typically had little recourse to address such collusion. As described in chapter 5, however, the disruptions of the COVID pandemic made the packer's oversized role in the American food system visible and illuminated how concentration had resulted in fragile meat supply chains. Legislation and programs enacted during the pandemic have bolstered local food markets and spurred the building of more independent meat processors to the benefit of ranchers throughout the region. Though concentration and corruption in the meat industry seems hardly resolved, newer, collaborative butcher shops and processing facilities are a win-win for both producers who want to keep more profit for themselves and for consumers who were faced with sporadic meat shortages during the COVID pandemic. Both non-ranchers and ranchers share concerns over how to make a living in a capitalist system at a time of increasing socio-economic inequality, as acknowledged by one producer who commented that "we used to be far more reliant on our neighbors for our livelihoods and standard of living than we are today." However rather than turn away from or look outside of capitalist systems, my interlocutors see the market as an important route to future prosperity.

Co-domestic laboring and misrecognition in an age of ruination

This dissertation is an account of everyday co-domestication and labor in a context of social division and disenchantment in the American West. It is being written at a time of increased attention to human-animal-plant-microbe relations where "becoming-with" (Haraway 2008), "biosociality" (Ingold and Palsson 2013), "more-than-human sociality" (Tsing 2015), "multispecies relatedness" (Govindrajan 2018), "anthropology of life" (Kohn 2013) and other terms signal a shared commitment to expanding the focus of anthropological work beyond the

human in the examination of social relations. Focusing on ranching practices and relations as forms of everyday co-domestication, processes of mutual adaptation and social engagement between humans and non-human organisms (Fijn 2011) highlights how animals are not solely commodities or things. In doing so, co-domestication acknowledges the role of "nonhumans as active participants in social relationships, through which both human and nonhuman beings learn to be responsive to each other" (Schroer 2018). Co-domestication is an ongoing, embodied, nonlinear, and highly unpredictable process. Heather Swanson argues for including landscapes in analyses of domestication, stating, "landscapes show us that even when domestic creatures are kept more-or-less contained, the effects of their domestication is not. Outside pens, we see that domestication goes *wild* altering worlds in all kinds of unexpected ways" (Swanson 2019, 152). This dissertation follows Swanson in expanding the site of concern from specific human-animal relationships in the here and now to include larger physical landscapes and historical processes which affect how domestication happens, which forms it takes, and its significance beyond the boundaries of the ranch. Domestication is not merely a collective project entangling humans and more-than-human actors, but speaks to and feeds from larger political economies and social identities.

This leads me to ideas of labor and value. Fundamental to dynamics of co-domestication in Wyoming are capitalist markets. While ranchers, veterinarians and others involved in ranching systems care for livestock and lands in highly affective, non-commodified ways, overall, animal husbandry in the American West is geared towards the production of capitalist value. At no time was this so apparent than when a retired state veterinarian described his former position as more about economics than about the general welfare of animals, whether wild or domestic. While working to shear his small flock of sheep, he said during his tenure as State Veterinarian he

primarily worked with politicians to "keep commerce going between and within states." Notions of "lively capital" (Haraway 2008) and "breedwealth" (Franklin 2007) that speak to economic aspects of life have highlighted the ways in which animals, in these examples dogs and sheep, "*are* commodities, and commodities of the type central to the history of capitalism" (Haraway 2008, 52). By exploring how livestock are at once valued and active partners in value production, this dissertation builds on understandings of contemporary labor as a collective ecological act (Besky and Blanchette 2019).

Spread throughout much of the anthropological literature on human-animal relations, the relationship between capitalism and the environment invokes concerns about ecological upheaval and ideas of ruination, disaster, and apocalypse. Writings of extinction describe how "humans – as individuals, as communities, and as a species – are implicated in the lives of disappearing others" (van Dooren 2014, 5, Parrenas 2018, Rose 2012, Weston 2017). The *Anthropocene*, as a geological era defined by the overwhelming impact of humankind on the planet, erodes the western division between nature and culture (Mathews 2020, Haraway et. al 2016) and often focuses on how capitalism's imperative for constant economic growth often leads to negative ecological and social changes. Other scholars, including Jason Moore (2017), prefer the concept of the *Capitalocene* as a way to center the political and economic system which he argues have instigated our current ecological crises, while Donna Haraway's concept of the *Chthulucene* focuses less on rupture and "is composed of continuation histories and cross-species practices of becoming with one another" (2016, 80). Lastly, the concept of the *Plantationocene* is used by some to present "situated accounts of planetary change whilst being attentive to histories of colonialism and the persistence of race" (Barua, Martín, and Achtnich 2023). Drawing from scholars in these traditions, geographer Kathryn Gillespie (2021) argues that "colonial-capitalist

animal agriculture is a site of ruin and a process of ruination." Her argument finds good company in the concept of "self-devouring growth" described by Julie Livingston (2019), which illustrates the ways that uninhibited consumption is linked to environmental destruction. In examining how ranchers, those staunch contributors to and beneficiaries of capitalism, now find themselves being abandoned or worse yet devoured by the very society they helped build, this dissertation complicates narratives of ruination as an inevitable process that happens to marginalized people, in peripheral places. By focusing on social disjuncture and misconceptions about ranching from the perspective of livestock producers, this work also brings the concept of misrecognition further into anthropological discussion.

Throughout the following chapters, I describe how ranchers and their productive labors are misrecognized by society, particularly by non-producers who live far away from pastures, barns and other sites of extensive, pastoral animal agriculture. Heavily examined in sociology, misrecognition and recognition have numerous interpretations and meanings, many of which have roots in G.W.F. Hegel's book *Phenomonology of Spirit*. He describes self-consciousness and the self as an entity created through a "unity of duality" and states that "a self-conscious being exists in and for itself in and through its existing this for another self-conscious being: it exists only as a being that is *recognized*" (1807[2019], 91). For Hegel this duality is located within one person's self-conscious and is inherently inequal, with one being independent and the other being dependent; "the former is master, the latter slave" (1807[2019], 95). Contemporary social scientists have drawn from Hegel's ideas and expanded the locus of the self from the individual to society. (Mis)recognition has become a useful way for scholars to examine issues of ethnic and religious (Meer, Martineau and Thompson 2012), sexual (Barrett and Hall 2024), gendered (Butler 1998) and class marginalization (Rohr 2020). Some discussions however,

particularly those which draw from Bourdieu (1977), conceive misrecognition as the extent to which individuals are unaware of how their social position and practice are shaped by social structures that are naturalized.

Although there are certainly elements of animal husbandry which are misrecognized in the Bourdieuan sense, this dissertation follows Hegelian ideas and the "status model" proposed by Nancy Fraser in which misrecognition is less about identity politics and more about social subordination. In this light, "to be misrecognized…is not simply to be thought ill of, looked down upon or devalued in others' attitudes, beliefs or representations. It is rather to be denied the status of a full partner in social interaction, as a consequence of institutionalized patterns of cultural value that constitute one as comparatively unworthy of respect or esteem" (Fraser 2000, 113-114). For ranchers in Wyoming like Tracy, whose sense of worth is intricately connected to that of their livestock, to be misrecognized is to have dignity denied (Taylor 1994) to their livestock as well as themselves. Where ranchers see and understand themselves as caretakers of lands and animals who provide food, ecosystem services and other benefits to society, the images and descriptions of their work from non-producers, particularly environmental advocates and animal activists, make them out to be unimportant and uncaring if not outright selfish. Much like a fun house mirror which reflects a distorted image back to whoever stands before it, my interlocutors refuse to accept as accurate many portrayals of their work. This dissertation seeks to offer a counter to all those narratives and images by revealing how ranchers themselves see their work and most importantly their relations with their livestock.

In exploring how livestock producers seek to avoid destruction and be recognized through (re)building social relations within and outside ranching communities, I assert that enacting just and good multispecies futures necessitates the willingness to attend to not only to

friends but to perceived foes as well. This means ranchers and non-ranchers striving to better understand and connect with each other as equal social partners.

Research Methods

My overarching goal for this research was to work with a variety of livestock and ranchers in different landscapes who operated various kinds of ranches throughout southeast Wyoming to examine how ranchers in this geographic area understood animal husbandry and how they tried to sustain themselves, their lands, and their herds. Throughout my 18-months of fieldwork from January 2021 until July 2022, I relied heavily on personal relations to identify and recruit participants. My first contact was established through my sister's grandmother-in-law, who was friends with one rancher from whom she occasionally bought straw for the few animals she kept in her backyard. Once she introduced me to him, he agreed to participate via a written consent form after I explained my research and answered his questions about the project. Through him I met two more interlocutors who eventually provided me with information for a couple of other potential participants. While I thought my status as a Wyomingite, born and raised locally, would help me, I came to quickly realize that being recognizable as part of their community had less to do with physical proximity than involvement in ranching. For my interlocutors, it was not enough to live nearby and rather than being instantly trusted and accepted as a part of their community, many were hesitant and guarded. Being a "local" in the ranching sense means partaking in a broader, rural community and sharing certain life and work experiences. I had neither since I lived and grew up in town, though the fact that I had farming and ranching kin in North Dakota and was familiar with some aspects of their lives did carry a little weight.

It was in this way that I eventually recruited most of the interlocutors in Swain, my principal research site in Laramie county, Wyoming. These relationships were largely kin-based since most of the long-term residents in this area were either consanguineal or affinal kin. Numerous interlocutors were related to each other as siblings, parents, children, aunts, uncles, and cousins. "Although meeting people this way typically was successful, since ranchers and rural folk trust a stranger more if someone they know is willing to vouch for them, it was not always the case. Once a ranching couple referred me to one of their cousins who, had seemed willing in participate in my research project upon meeting them, but who then became unreachable when I called to arrange a visit. It was only after being asked how things were going with their cousins that I explained the situation and was subsequently called by their relatives who no longer wished to participate. I suspect what had happened all along was that the cousins of my interlocutors had not been keen to join the study but had not declined to participate initially due to expectations that they should help. Thus, while recruiting interlocutors through personal channels was useful, doing so can be potentially coercive since individuals can feel obligated by family to participate.

As research progressed and I reached the limits of these personal relationships in terms of recruitment, I turned to public registries and ranching associations to identify potential participants. Although becoming a member in some of these associations require payment to access the contact info for members, breeding associations published the contact information for ranchers who raise and sell purebred livestock for free. Since these ranchers rely on private treaty sales[3] and their own auction events to sell livestock rather than taking them to sale barns, being

[3] Private treaty sales are direct sales of livestock from sellers to buyers without any intermediary such as an auction company or sale barn.

listed on association websites was akin to free advertising. I contacted several pure-bred operations who were members of the Hereford Breeders Association and were based in southeast Wyoming. ~~C~~alling by cell phone, I ended up establishing connections with three ranches and a handful of interlocutors on those operations. My decision to search specifically for Hereford breeders was intentional since by that point I had become interested in speaking with non-Angus cattle growers. My mother along with several other interlocutors had told me how Herefords rather than Angus were once ubiquitous in pastures and, as I discuss in chapter 4, the gradual replacement of Hereford by Angus cattle was neither accidental nor natural.

Phone calls to my interlocutors after the first few months of recruiting participants, especially during inclement weather, would become a routine feature of my research, and I'd make notes about these calls much as I would when conducting an in-person interview. Using my phone to reach interlocutors helped solve practical issues of expanding beyond my primary site without wasting gas and travel time given that my informants were distributed across an area of roughly 2,400 square miles. Moreover, although I felt comfortable for the most part moving around unnoticed, I was still very cognizant of safety issues when it came to driving through remote Wyoming spaces. In rural areas, getting lost, especially during winter or in storms, or encountering less than friendly individuals is a not a minor concern, especially given that cell phone reception is often patchy.

Attending church services and meetings of a women's ranching organization allowed me to gain recruit further interlocutors in and around my primary site. I attended church services once or twice a month, depending on which ranch visits I had planned with interlocutors in the secondary sites, and I tried to participate in church events when possible, such as potlucks and celebrations. Although county level organizations for and by ranch women existed in all the

three counties I worked in, I focused exclusively on a Laramie county group that met once a month. The in-person meetings had been cancelled to avoid spreading COVID in 2020 and did not resume until January of 2022. While I ended up only able to participate in six meetings, I was able to document, analyze, and assist with an annual event they put on to increase awareness and appreciation for agriculture. In addition to these communities, I also attended annual and semi-annual conferences and ranching tours in the local and regional areas. These ranching expos, meetings, and conferences were not only attended heavily by ranchers, some of whom lived and worked in Wyoming, but also by industry experts. While meetings facilitated by state and local ranching organizations were better for recruiting participants, each offered a wider view of industry trends as well as wider rancher sentiments. I was able to observe which topics were covered, which sessions drew more attendance, and how audience members expressed their positive or negative responses to a speaker or discussion topic. For example, at the Range Beef Cow symposium, I noted that among concurrent workshops a session on virtual fencing was by far the most heavily attended, indexing strong interesting by ranchers in adopting this new technology.

In the course of everyday research, I relied almost exclusively on participant observation and to a lesser extent formal interviews. I often would accompany ranchers as they went about their daily chores feeding, watering and doctoring livestock, loading livestock in trailers or moving them with ATVs to different pastures, selling or buying livestock at markets, taking animals to the veterinarian, and harvesting and baling forage crops and hay. Since this work occurred outdoors in the wind with noisy livestock, I almost never recorded any discussions or informal interviews and instead took notes by hand during or directly after work. Long drives in a truck or kitchen tables were generally the locations of my interviews. I also regularly read three

livestock publications which focused on ranching and aspects of rural life and work: *The Fencepost*, *The Wyoming Livestock Roundup*, and *The Western Livestock Journal*. Each were weekly publications, mailed to my home, that published major events, recipes, advertisements, public notices, and opinion pieces about animal and crop agriculture, natural resource governance, public lands, and ranching lifeways. Often times, my interlocutors would mention things they read in the papers or I would use a specific story to ask about topics which had not come up naturally. I also attempted to make maps with a handful of ranchers in order to elicit emic, nonverbal representations of their ranches and carried out a month of archival research at the American Heritage Center at the University of Wyoming to discern past ranching dynamics in the area.

Sites

Swain – My primary site is located in Laramie county. As the home of the state capital, nearby areas were undergoing near constant development and expansion during my fieldwork. Residents and research participants who resided here own a mix of dryland farms, irrigated pastures, cow-calf operations and retirement and hobby farms, whose purpose was less commercial and more recreational. At an elevation of around 6,500 ft above sea level, the topography is fairly flat with rolling hills, small streams, and dry creek beds. This is an area of substantial contestation over water and was listed as a special area of concern regarding water governance on state websites.

Blue River – This secondary site is located in Goshen county. At a notably lower elevation, around 4,000 ft above sea level, this area is more amenable to crop agriculture. Irrigation systems are prominent features of water use and governance, with water emanating from the North Platte

river as it flows out of the state towards Nebraska. The area is far more rural than either Swain or Lovejo and real estate development and construction are less important features of everyday life since little draws new residents to the area.

Lovejoy – This secondary site is located in Albany county. Sitting over 7,000 ft above sea level, this area is nestled in a valley surrounded by mountains. There is little irrigation and more dryland farming. According to my ranching interlocutor here, the area boasts more small, natural lakes than either Blue River or Swain. The area is far more ethnically and politically diverse due to the presence of nearby University of Wyoming.

It should be noted that sheep ranchers were far less prominent in all three sites compared to areas in the state to the north and to a lesser extent to the west, which have been and still are centers of the state's sheep industry. Towns in these areas, such as Buffalo, Thermopolis, Gillette, and Kemmerer, are often sites of sheep festivals, sales, and the state's lone wool mill. Although I include sheep in my analyses as much as I can, there were far fewer producers of sheep than there were of cattle. Thus my dissertation, while not being specifically focused on cattle, emphasizes cattle ranching operations and practices more than sheep ranching.

Plan of the dissertation

Chapter 1 sets the stage for subsequent chapters by introducing key interlocutors and draws on anthropologies of place-making and scholarship on time and temporality to examine seasonal multispecies dynamics and engagements with landscapes. I ask: in what ways do humans, domesticated plants and animals, weather, and wildlife "become with" (Haraway 2008) each other and at what times of the year do relations wax and wane in significance? Using maps

made with interlocutors, I explore the histories and seasonal activities of four ranchers within the boundaries of their "place." While these boundaries are permeable and mercurial, they typically delimit a large portion of ranchers' experience and knowledge, and incorporate an intimate set of relationships within an area in which most care and work is carried out on an individual scale. I argue that though ranchers engage in similar work across time and space, there is no one kind of ranch with some exhibiting characteristics of more industrial, intensive systems that merge farming with ranching and others appearing very similar to extensive, pastoral dynamics which rely more on natural resources and processes.

Chapter 2 brings together the literature on property and scholarship on the public and anthropologies of land and water use to examine how natural resources are used, by whom, and with what larger impacts. I ask: what does it mean to live and work seemingly out in the middle of nowhere, but not alone? How is one's access to grassland and water supported or challenged by the actions of more-than-human entities and actors in addition to fellow humans? I argue that access rather than explicit ownership is key to ranching success in Wyoming and in much of the American West. Discussion of land ownership, water usage, and environmental stewardship demonstrate that the ability to benefit from something is not contingent solely on webs of power among humans, but also includes multispecies and more-than-human entities and actors. Additionally, though ranchers value private property and this form of ownership is ideologically dominant, ranchers recognize themselves as part of larger collectives that insist upon communal negotiation and cooperation.

Chapter 3 examines the ways in which ranchers generate familial relations in both their herds and in their personal lives by asking: what does kinship do for ranchers and who works to maintain kin relations? With a generous and broad understanding of reproduction that includes

socially and physically generative processes in both humans and livestock, I argue that cultivating familial relations is an essential focus of ranch work. Kinship is an important way in which risk is managed in ranching and it is ordinarily through marriage or birth than one becomes a rancher. Thus, new and beginning ranchers without these kin ties face difficulty in building their operations. Through attention to an agrarian form of kin-work, I bring together works from feminist political economy that point out the importance of social reproduction, pastoralist scholarship that demonstrates the dialectical relationship between humans and non-humans, and the extensive anthropological literature of kinship.

Chapter 4 illustrates the political economy of ranching and the value of livestock breeds and species in Wyoming. I ask: what is the nature of ranching economies? How and when do livestock become commodities and what is the significance of breeds? And who benefits from this labor? In asking these questions, I draw on a large body of scholarly literature in history, economic anthropology, and multispecies ethnography. I argue much of the political economy of ranchers is embedded in values of the American west which valorize manual labor and reward socially actions which support the wider community. Through descriptions of performances at county fair, breed advertisements, and cattle-centric policies and practices, I illustrate how these embedded economies are not only culturally and historically interconnected in Wyoming but also connected to disembedded national and global economies. Though they are companions and co-workers of a sort who co-produced their own value with humans, livestock are undeniably commodities.

Chapter 5 draws together literature on morality and anthropological accounts of food to examine how religious practices and networks undergird ranching communities. What can we learn from thinking about meat production as sacred and morally good? Additionally, this

chapter illustrates how the COVID pandemic altered markets. My argument here is two-fold. First, I contend that religious beliefs and networks play important roles in the lives of ranchers and in their understandings of how society should work. Second, provisioning meat is a crucial component of their understandings of their ranching work and was severely impacted by COVID disruptions albeit not necessarily for the worse. While ranchers faced difficult decisions in navigating meat supply chain bottlenecks at the height of the pandemic, interest in local foods and legislation has spurred the proliferation of small, independent butchering facilities, which have benefited ranchers.

Chapter 1: Rhythmic Multispecies Labor and Place-Making

Willy's mom tended the garden when he was younger and moved it around over time, digging into earth here and there to plant vegetables, fruits and other kinds of succulent and tender plants. He mentioned this to me one day as we were outside near where the garden presently stood, to the south of the house and next to the chicken coop. A meager plot fenced off, no bigger than a few parking lot spaces, and overtaken with grass, it seemed to have been left to itself for a while although Willy did pick what grew and had planted squashes in the past. While I never saw him till the soil, dig holes and drop in seeds, weed or water, he had shown me the reused glass jam and pickle jars which contained many, many pumpkin seeds from previous year's harvests. And although I was more interested in helping him care for his cows, one day in late May I helped him gather asparagus. We started in the garden where a crooked and uneven row of young asparagus were standing thin and fat, short and tall, and even curved, but soon we were fanning out all around the front and side yards searching for other shoots. With an adventitious root system that grew this way and that at irregular intervals, the old-world perennial was both everywhere and nowhere it seemed. We walked about the grassy areas near the barns and in the stands of trees to the north and west of the house, occasionally finding a single shoot here and a couple shoots there. By the end of our search, we'd scoured all the grassy areas we could and ended up with a couple handfuls. As we pooled the shoots together, Willy

explained that asparagus seeds had over the years "gone this way and that," taken by the wind to occupy the various corners of the property, making it their home as much as it was Willy's.

This chapter brings together anthropologies of place-making, phenomenological works, and scholarship on time and temporality to examine seasonal dynamics of more-than-human landscapes. Moreover, the following ethnography sets the scene for subsequent chapters and introduces key interlocutors. I ask: in what ways do humans, domesticated plants and animals, weather patterns, and wildlife contribute to place-making? At what times do relations wax and wane in significance? Maintaining the important connection between space and time, I rely on Martin Heiddeger's concept of "dwelling" (1971) and Tim Ingold's concept of "taskscape" (2011) to examine how "places," as inhabited ranches are colloquially called in Wyoming, are made temporally as well as spatially. Through attention to four different ranches at four different times, I argue that "places" are made through embodied interactions between humans, plants, weather, and animals. Each ranch then is not only unique but more than a simple empty background on which human activities unfold. The actions and ideas ranchers have are not made independently of the places in which they dwell but rather come directly from these interactions (Casey 1997). Examining how a rancher cares for a cow necessitates considering past and present actions and characteristics of other humans, plants, insects, and wildlife. Weather too, though not considered an animate being by my interlocutors, shapes place-making. Moreover, in showing the great variety of different ranching places and labors which take place in southeast Wyoming, this chapter illustrates the lack of vertical integration and the ways in which ranchers both are and are not similar to pastoralists. Lastly, I take inspiration from Alfred Gell in examining time not as a transcendental phenomenon but as a factor of everyday life. As he wrote, "there is no fairyland where people experience time in a way that is markedly unlike the way in

which we do ourselves … there are only other clocks, other schedules to keep abreast of, other frustrating delays, happy anticipations, unexpected turns of events and long stretches of grinding monotony" (1992).

In the following four sections I explore the decision making and mutual becomings of individual ranchers, their herds, and the wildlife and plant communities within the boundaries of a ranch. While these boundaries are to a great extent permeable and mercurial, as I discuss in the following chapter, they typically delimit a large portion of rancher experience and knowledge, an intimate set of relationships, and an area in which most care and work is carried out on an individual scale. It is also important to note that place is both an analytical concept and a local category. Heavily debated by philosophers, space and place are often distinguished and rendered not interchangeable (Lefebvre 1991). My use of place rather than space doesn't draw from any theorist but rather from my interlocutors, for whom ranches, as physical and social spaces, are often invoked as "so-and-so's place." This is sometimes the case even if past residents are dead or absent. For example, a ranch bought by one couple is still referred to by their neighbors as the "Virgil place" even though their own last name is not Virgil. Another ranching family, who bought land from the Blevin family, still calls the pastures there the "Blevin's place." In referring to ranches by both present and past occupants, ranchers illuminate both a tension in thinking about places as coming from and constituting unique relations and as forms of alienable property as well as the idea that wherever one goes there are always traces of collective memory (Basso 1996) amid highly individualized assemblages.

I begin with Jason's place in winter, which emerges as a time of survival and increased economic activity with producers taking livestock to markets and giving more attention to what and how often they are feeding livestock since grasses have become dormant under snow and

ice. Then I move to Tracy's place in the hustle and bustle of spring calving season, which is a time of emergence and increased attention to livestock which are more vulnerable to predators and lingering cold weather and storms. Next, I move to Willy's place at the height of summer. Summer is a time of increased activity with plant communities, as ranchers prepare winter fodder and hay. Finally, turning to Jose's place in fall brings attention to the ways in which bodies move or don't move together over space. A time of harvesting forage crops, weaning and shipping livestock, breeding and pregnancy checks, late summer and fall are seasons of movement and of gathering.

Jason's Place

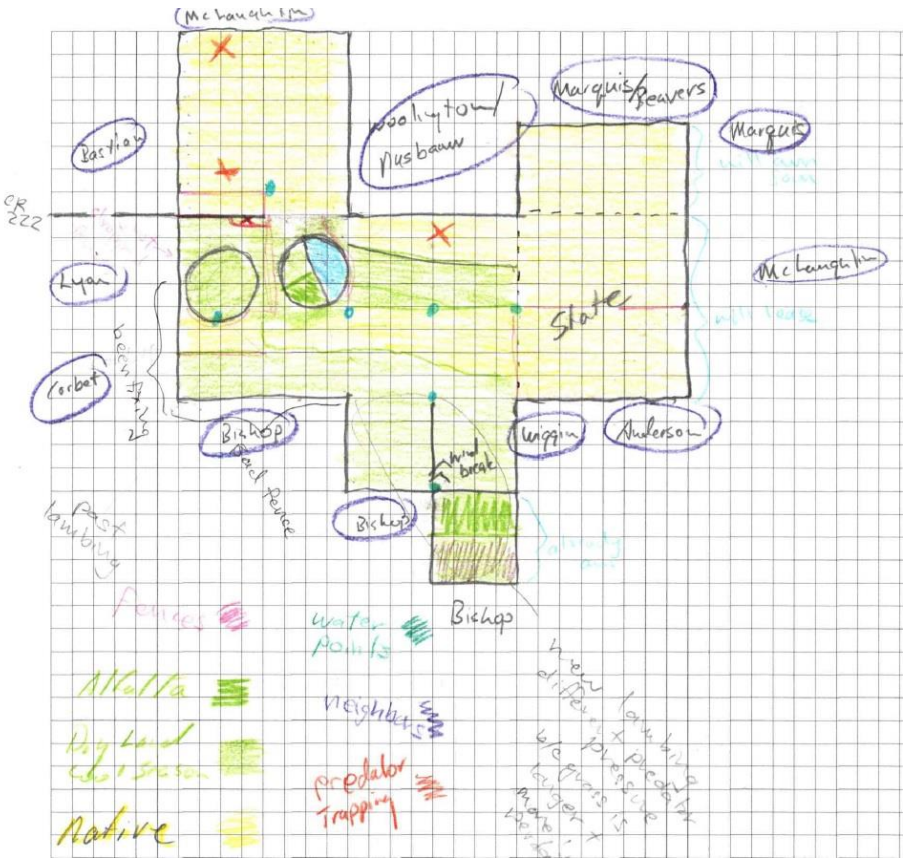


Figure 1. A drawing from follow-up fieldwork of Jason's place. Different colors delineate kinds of grasses (alfalfa, native, and seeded, cool season grasses), water points, neighbors, predator

traps, and new fence lines being built. A ‘state’ land section is singled out as well as new sections leased or bought. One square is 10 acres on this map.

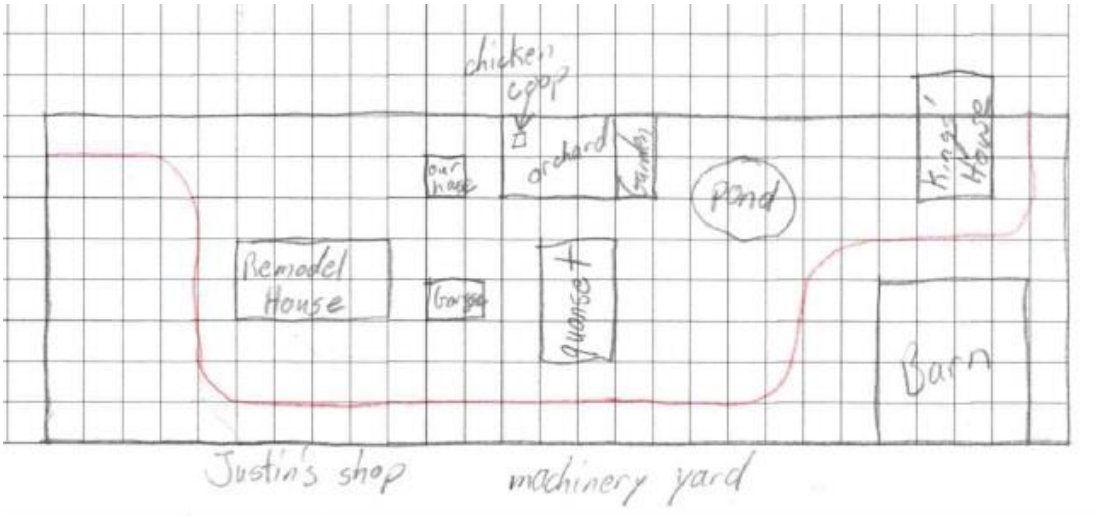


Figure 2. A drawing by Jason’s wife of their house and nearby buildings. On the larger map, this place is delineated by the red box with an ‘x’ inside.

I arrived to the ranch at the end of a county dirt road just a little after noon and saw movement in the corrals to the east as I drove up to Jason’s small house. His heavily pregnant wife, Rachel, was inside preparing lunch and confirmed my suspicions that her husband, along with a couple of their daughters, were finishing calf vaccinations with the help of a friend from their church. “It was a cloudy and chilly day as we neared the end of the year. I’d come to work sheep and ask some questions and after some waiting finally felt useful as I hopped onto an ATV with Jason and his eldest daughter to push the vaccinated calves out to and bring in the ewes in from pasture with the friend and second eldest daughter on a second ATV.

As winter sets in, selling and buying of livestock becomes more common since breeding is finished and many producers have pregnancy checked their herds for any non-bred or “open” cows or ewes. Most do not want to feed an open cow or ewe, considering it an unfair trade since the rancher will get no calf or lamb in return for the feed and shelter they provide. Going to

winter sales at the sale barns was common for ranchers with whom I spoke as their days were less busy after harvesting and fall planting of winter wheat and before the hustle of calving and lambing seasons. For Jason, his desires to sell his white-faced sheep were complicated by his usual buyer not wanting to pay the desired price. He'd planned originally to sell 200 or so of his lambs and keep his steer calves to raise as yearlings and eventually sell for more profit, using the money gained to buy heifers to add to the cattle herd. However, his buyer had been unwilling to buy at Jason's price and so he was considering holding onto the lambs, since their market price had not yet peaked, and selling off the steers instead. In fact, he was vaccinating and dehorning calves today to prepare for them for sale should he decide that was what was going to happen.

As we approached the calves, he described what he thought about when buying and selling livestock. First, breeding ages of livestock vary and thus require consideration. First calf heifers typically take two years to reach maturity whereas a Dorper ewe lamb can be bred as a lamb in the first year of life. White face ewe lambs however take longer to reach maturity. Thus, these kinds of lambs have a similar kind of profitability cycle as a heifer. Second, he also takes into consideration the fact that new animals will need to be trained and acclimated to the land and everything it contains, including fences, sheep dogs, humans, and watering places. Other ranchers too pointed out that new additions to herds can take some time to learn where they can find good shelter from storms or where the best grazing is located compared to their established herd or flock-mates. As we approached the flock of grazing sheep in a far eastern pasture, Jason mentioned a final thing taken into account: body condition. Body condition is a term and system of scoring which essentially rates how thin or fat livestock are. Pointing to a couple ewes which looked thinner and bonier than those immediately around them, he mentioned if they are having trouble now, they will probably be in worse shape later in the winter.

Before we began pushing the sheep in the direction from which we came, we stumbled across a dead coyote at the bottom of a draw. Coyotes were a constant problem for Jason, who trapped and killed as many as he could that ventured onto the property. During bad periods coyotes could kill a sheep a night and had done so before he'd taken more aggressive action. While this pup, no more than six or eight months, had not been trapped or killed by Jason, he knelt over the carcass and with a pocket knife cut off the ears, which he'd send into a local program that paid a bounty for evidence of certain predator deaths.

As we started gathering and pushing the sheep to the barns, I noticed the pasture they were in was fairly degraded, with lots of soil peeking through what grass there was. Seeing me look downward, Jason explained that while he does have winter pasture, he had yet to put up the fence on it. After he cuts out what he is selling and not selling, he'll put the lambs he keeps with the ewes onto a breeding supplementation program. There he'll put out tubs and feed corn in order to fortify them and have them keep if not gain weight before breeding. He planned to send a few hundred lambs out to good pasture and let the degraded pasture rest until the grass grew back. The guard dogs always with the sheep followed along. Even Johnny, a younger female dog, was let off her tire to join the flock and take a break from dragging the large black rubber item around. She had a very playful and physical personality even though she was as trained as well as the other guard dogs. Unfortunately, her play had cost at least two sheep their lives. As a guard dog whose job was to be with and protect the flock at all times, Johnny's rough play with her charges had left Jason little option but to try and weigh her down so the sheep could escape her sharp teeth until she outgrew her puppy-like behavior. Although it was only play and she was trained to stop when called, which he did after she began nipping at the sheep, he was not always with the sheep to watch her and her aggression seemed worse in winter, he explained. While

there is a slow down in work and more time for socializing in winter, there is not an all out reprieve from livestock care.

In winter the air grows cold, grasses not already yellow and brown become so and days shorten while nights grow longer. Daily feedings of hay, silage or grain become necessary as cattle and sheep are no longer able to forage on their own in the pastures. Colder weather is rough on everyone and many feed some kind of high energy hay, such as millet and wheat hay to cattle, as they huddle together in the frigid temperatures. For Jason, corn and other high protein cakes or pellets are the chosen supplement. Snow was on the ground and temperatures were low when I accompanied him, and a couple of his young daughters, on a January feeding trip out to his cattle and sheep. He explained, as we drove in his old red pick-up through frozen pastures after gathering the supplemental cake and corn from the old barn, that white faced-sheep need more energy than Dorpers and while he'd just dispersed (i.e., sold) his white-faced herd through the sale barn, the remaining Dorper sheep could also benefit from high energy corn. As easier fleshing sheep better able to put on pounds, feeding them now with corn was a means to improve the body condition and potentially the twinning rate later on during lambing season. For Jason, feeding was not only about surviving the winter it was also about setting up the livestock for success in the coming spring lambing season. He aimed to maintain their weight rather than losing it due to the cold. How long he feeds, however, is dependent on the availability and "personal goals," he said. When I visited, corn was fed every two days and a protein supplement was given on the two intervening days. The protein supplement he uses is a distillers grain and one quarter of this protein cake is also fed to the cattle. When we drove through the cow pasture southeast of the main houses and barns, all the cattle came to the truck, expecting the little dry pellets that were colloquially called "cake." We headed east and then turned south, driving

through the pasture with the cows in it. Noticing the red truck which Jason habitually uses to feed, they approached the truck in anticipation of cake or other delicious supplements. But we didn't stop, continuing over the dirt roads and gentle hills out to the sheep with the light dwindling behind us.

Once we arrived to the far eastern pastures on which the sheep were put for the winter, they saw us as soon as we saw them and many instantly started to run towards the truck in excitement, much as the cattle had. When we finally reached the sheep, Jason got out and ran with a bag of corn, causing the sheep to frantically follow. He took another bag and did the same in the other direction. He said he sometimes goes in a circle, especially when he takes the ATV to feed. This time he took the truck to accommodate all the ride-alongs he had. This pasture was state land and the ranch leased it for grazing. On one of my previous visits, Jason had pointed out the numerous glass bottles and glass shards which dotted the area near a signpost at the far eastern end of the section. Here, he said, drunks would come throw things at a sign which pointed out state land, angry at something the state has or hasn't done and taking out their frustrations on the closest material manifestation of it. He went on to say that Kenny had wanted to take down the sign so people would stop throwing things into the pasture, which could harm the livestock.

After he fed the sheep he took dog food, which had been gathered while we were in the barn, and parceled it out some distance away from each pile for the three guard dogs. He gave Johnny more to help make up for the fact that she is still carrying around the tire, chained to her neck, since she hasn't yet learned to be gentler with the sheep. Seeing blood on her face, checked the area to see if Johnny had injured a sheep but we found no injured animal. We hurried out of the pasture and from there went to break water for the heifers in another pasture to the west.

Another tedious but essential chore in winter, breaking ice is just how it sounds – taking a heavy instrument and breaking the icy layer which forms every few days, or even overnight if the temps are cold enough, over water tanks. My Mongolian herding host family had done the same, breaking ice in a metal trough and in their well before being able to hoist up and fill the trough with fresh water for thirsty livestock. Before finally making it home, he stopped by the cow pasture to check the cattle's water tank for ice and show me what remained of the wind rows he'd made earlier last year. He'd cut and made neat wind rows out of hay just as Willy had, but rather than baling it all, Jason had left it lying on the ground. Now it was being utilized by the cattle for forage.

Tracy's Place

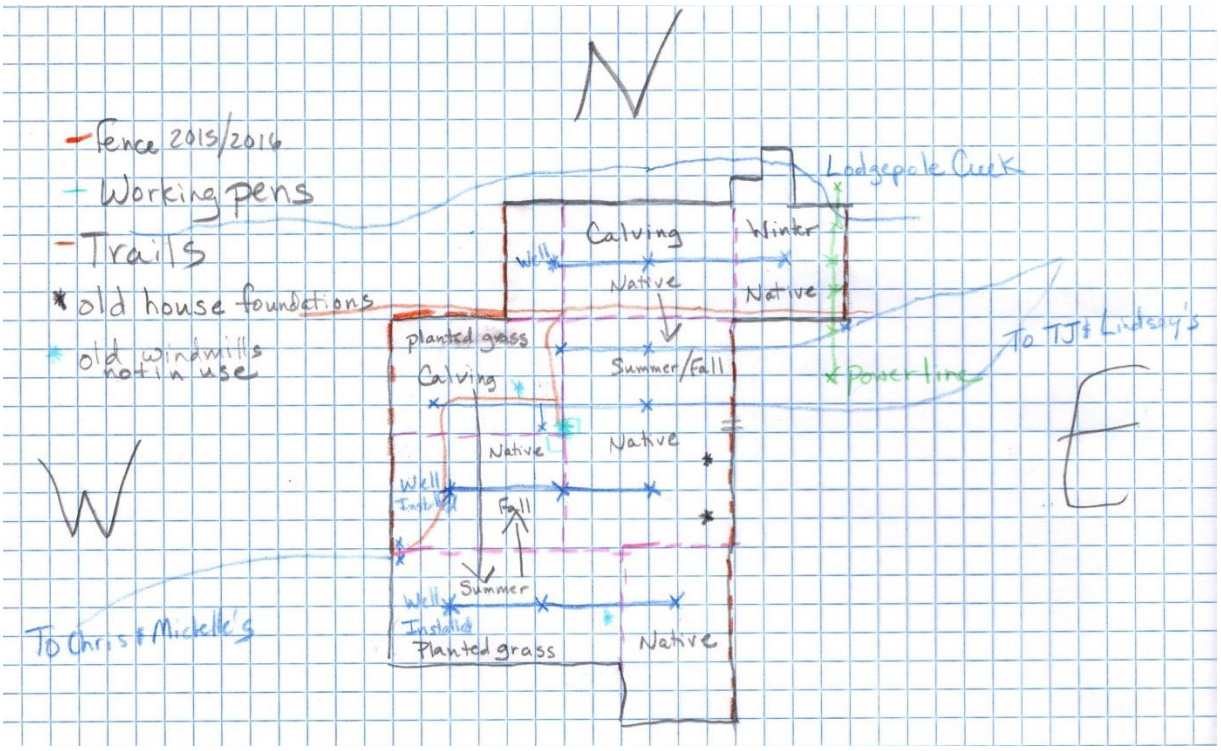


Figure 3. A drawing from field work of Tracy's place. Prominent features as well as directions of rotational grazing are marked in grey. Pink dashes reference fence lines while blue is used for the road and creek. One square is approximately 40 acres and total area is a little over 8,000 acres.

The emergence of the first calf or lamb begins the most important time of the year for ranchers, though when this occurs is entirely dependent on each ranching operation with some beginning as early as January and February, some waiting until May and a few opting for fall calving before the snows come. For Tracy, a former teacher and mother of three teen girls, calving starts around April and goes into May and June. With her husband away from home for work most days out of the month and little interest in ranching, she was often responsible for her herd on her own and she relied to a large extent on traded labor with her parents and two younger sisters, who raised cattle with their husbands as well. Once the first calf "drops," she makes careful observations after her morning feeding. I often would accompany her on these rounds in her side-by-side, a small, fast vehicle capable of transporting a handful of people along with a small cooler of vaccines and other supplies including a yellow, hard plastic shepherd's hook

called a "calf catch," ear tags, and the all-important calving booklet. Tracy had two places really, given that her household was about a thirty-minute drive away from her pastures. Lack of electricity on her land was the main reason for not living out amidst her pastures and herd, which themselves were sandwiched in between both her sisters and their families' places. Lived in decades before by her grandparents and bought by her father before being divided up among the siblings, nearly every day she makes the drive to her pastures in order to feed, water, and care for her cattle and grasslands as well as maintain or build new infrastructure including fencing and water wells. On one early March morning, we headed out to feed and go through the pastures to check for any newborn calves after we fed the cows. With her "Hydra-bed" truck, which has two mechanical arms attached to a metal truck bed with no sides or tail gate to pick up, transport, and unroll large round bales of hay,[4] Tracy loaded up two bales and we headed to her winter pasture.

The drive always seemed long after we loaded up and we passed through at least two gates on our way up and down hills to where small black forms eventually turned into large, hungry cows. Although she did not tag calves while feeding, Tracy was constantly scanning the landscape for small black bundles curled in the grass and snow, or cows alone and far away from the group. As I discuss in chapter three, these are signs of a new calf or of a cow potentially in labor. She'd point out that "now that I've had calves I have to be especially careful when I am feeding to make sure nobody is in front of me." Alternating feeding routes so as to avoid a build up of hay and manure all in one spot, she unrolled the two bales she'd managed to fit on the back of the truck. Usually, as was the case this day, the cows would run to the hay, glad for the faded

[4] Each round bale is wrapped with patterned netting. The exact colors and markings tell ranchers in which direction to unroll the bale. Tracy's bales had green netting which had a large, darker colored solid stripe on one side and a few smaller stripes on the other. Incorrectly loading a round bale can cause it to bounce around behind the truck rather than smoothly unroll into strips of hay on the ground.

green forage since the winter pasture was fairly depleted and grass had yet to begin growing again. On other occasions we'd seen them approach at a leisurely pace rather than running. Tracy said this was an indication that they were not too hungry and her suspicions were confirmed after going over a hill and seeing more hay left over from the previous day. Taking into account, the cow's behavior and previous food remains, she constantly adjusts what and how much she feeds to conserve hay.

The weather also informs her interactions with cattle and lands. For example, if there is a snowstorm coming in she'll feed the night before in a draw or other sheltered area with the knowledge and hope that the cows will hunker down and not drift in the wind and snow. Cattle are known in the area to "drift" just as snow does when they are pushed by strong, snow laden winds. I was told multiple times that cattle will move with the wind, even breaking through fence lines in the process, rather than remain standing or moving into the wind as bison do. Such acts support the idea that "dwelling with weather is a skillful practice, a way of shaping our place in the world" (Vannini et al. 2012, 368). We finished feeding, having to go back for another two bales, and proceeded to transition to her small side-by-side with the calving kit of vaccines and ear tagging materials in hand.

With the more maneuverable vehicle we began driving all over the winter pasture looking for calves and talking. Going up draws and checking along ridge lines, I asked about a saying I had heard that cited low pressure weather systems as a catalyst for calving. Laughing, Tracy replied, "mhmm, when the [barometric] pressure drops so will the calves. Unfortunately, that's why we tend to have a rush of 'em when a storm comes in. And we are supposed to have some showers later this afternoon. I'm glad to see all these [calves] up and running around." She'd go on to explain that if storms are frequent this pattern doesn't hold as much. We saw Pandora, a

former bottle-fed calf, with a little calf of her own and drove down a draw towards them. Preparing a white ear tag and then a live vaccine to administer, I tried to help from inside the vehicle while Tracy got as close as possible before leaping out with the calf-catch, hooking the calf by the back leg and then gently dragging it back to the side-by-side where she could use the door as a shield should Pandora get too upset or angry. Talking in a soft voice to both calf and cow, she tagged and vaccinated the big bull calf and climbed back in the side-by-side. After each calf tagging, she or I would enter in the event in a small red, calving booklet, noting the date, sex, coloring, cow's ear tag number, and other information to be used when Tracy had to make culling decisions. Other ranchers also record in notebooks or on their computers calving information which is then used to see what cows to cull during hard times or when a producer wants to decrease their herd size.

Having checked the southern, hilly part of the pasture we drove by the creek which runs through the area. Warmer temperatures had caused the ice on the creek to melt and the cows had begun going down to the creek for a drink of water rather than taking their water solely from the water tank by the old windmill. Tracy commented,

> A whole bunch of em' were down here yesterday. As soon as they saw me they came back up searching for food. This time of year it's easy to spot them in the willows cause their big black shapes will stand out a little better. Mid-April I'll move them out of here into the calving pastures 'cause there really isn't that much grass for them out here anyways. I rotate them out so that any growth I can get over the summer in here will be available for the winter.

Like most ranchers and like nearly all pastoralists, she practiced a form of rotational grazing by moving her cattle from pasture to pasture throughout the year, especially in the spring, summer

and fall months when grasses are actively growing. The spatial variation in grass species composition and past farming activities which still leave their mark on the land impact where and when the cattle graze. Planted grass, often in formerly farmed fields, has higher nutrient value in spring and early summer, and she'll graze in these areas at this time, waiting to move onto native grass pastures later in the summer and fall since native species of grass maintain nutrient value longer into the year. Interestingly, though not surprisingly, former farmed fields are more vulnerable to weeds and have a strange look to them, which she'd pointed out to me. Narrow stripes containing different plant species with slightly different colorings, even though seeded with the same pasture seed mix, still referenced the pattern of farming practiced years ago. Once plowed and farmed, regrowing native grasslands is all but impossible in our lifetimes.

Non-beneficial plant species and weeds such as cheat grass, toad flax, and larkspur also impact how dwelling occurs at various times. Much as matter out of place becomes dirt (Douglas 1966[2002]), plants out of place that threaten to disrupt a certain socially constructed place typically are categorized as weeds (Robbins 2007 and Falck 2010). Cheatgrass, which earned its name because it has little nutritional value for livestock, was prevalent in Tracy's northwesternmost section, and she told me that it was good to graze this pasture earlier on to help contain the spread and growth of the weed. Toxic toadflax was another weed with which she had to contend. Thankfully, in early growth phases it is palatable to cattle and could thus be grazed down early in the year to control its spread. Tracy also looked to lady bugs, given to her by the Farm Services Agency,[5] to try and limit the spread of this plant species. Of all weeds, however, larkspur is one of the most dangerous toxic plants on western rangelands. Beautiful with delicate

[5] The Farm Services Agency is a county-level organization which is connected to the USDA and works to help fund cost-share projects with producers, coordinate with other counties, and act as a liaison between federal agencies and local ranchers and farmers.

purple blossoms that grow vertically on dainty stems, larkspur is quite palatable to cattle but works very fast to kill them, causing staggering gait, muscular twitching, bloating, respiratory paralysis, and a host of other symptoms before finally overloading the bovine body and causing death.[6] One producer with whom I spoke lost four cows in early June to larkspur after moving some cattle to summer forage on land outside his operation. During another calving trip in mid-May with Tracy, I saw a cow with feet pointed towards the sky near her sister's house and corrals. Never seeing such a sight, I'd asked what had happened and she'd responded that larkspur was most likely the culprit. She went on to tell me that cattle often die quickly after ingesting the plant, leaving them laying in the field of purple flowers which killed them.

During trips to feed, check pastures, and tag the new calves we saw, we took pleasure in sightings of wildlife, or at least most wildlife. Golden eagles sometimes stood guard on fence posts nearer the highway as we entered the long dirt road into her sister's parcel to load up hay and head off to Tracy's herd. Crows usually hung out by the water tanks and down by the creek were the occasional frog, salamander, and minnow could be seen. Pronghorn antelope were common to see and by June you could start to see little fawns running after their larger doubles. For Tracy, the start of spring was confirmed by sightings of ground squirrels, specifically the thirteen-lined ground squirrel, so called for the alternating light and dark lines running from neck to tail, because they hibernated over winter. Predators too, although they are present year-round, are especially worrying during calving season. "Once they know there are calves around they tend to hang out more," Tracy commented. She tries to shoot them whenever she can after one

[6] Larkspur are less toxic to sheep and horses who are far more tolerant to the plant's higher level of alkaloids.

particularly gruesome mauling of a calf by a coyote. Thankfully this morning we saw no slinking coyotes but only little 'calvies' as Tracy often called them.

As we made our way along the ridges I made a comment that it was difficult to see even the cow's big black shapes in the various draws. She responded that it was harder in the pick-up truck and that one never knew how far laboring cows would go, making the fences of the pasture a nice limitation. One of her bottle-fed cows, named Nesee, had a calf and had travelled nearly a mile in the pasture and was hidden down in a draw almost invisible to Tracy. Immediately after she finished her account, amidst our laughs, we saw another cow and calf in a draw and Tracy exclaimed, "See!" We headed down and stopped. "Are you nursing? ... good mama," Tracy said under her breath before adding, "Awe, it's Princess [a former bottle fed calf]!" We fixed a tag and she reached for the calf-catch and then stepped out. I too exited the side-by-side and listened to the soft her soft words directed at Princess: "Are you gonna be a good girl, Princess? Or are you gonna be antsy because now you got a baby? You did good little mama." Hooking the calf's legs and pulling it closer, she and I bent over it to administer the shot and give it an ear tag. The calf's ears were still slimy although the body hair had dried, indicating to Tracy that it had only been born an hour or so ago. Calmly watching, Princess sniffed us both and waited until we released the calf. We hopped back and finished making our rounds until we'd checked the entire pasture. While that day had been great with no calving related deaths to see, her overall season would not turn out well with about 20% of her calf crop not surviving due to predators, weather, poor or inexperienced mama cows, premature births or unfortunate accidents like birth sacs remaining on the face of two calves, suffocating them.[7] Like she'd once told me, "you don't have too much control over things."

[7] It is typical to lose 5-10% of one's calf crop during calving season according to Tracy.

Willy's Place

I first met Willy, an old bachelor with white, curly hair and sparkling blue eyes, on a ¼ section[8] of land he leased from his brother, George. "George's place", as I'd soon learn Willy called the plot, opened out before us as we eventually reached an unbolted, aging green gate and entered in. The entry point was on a hill to the south which overlooked a couple dilapidated mobile homes, a large pole barn attached to a series of pens, mangers and chutes, and some areas of brush and trees to the northeast and northwest. Following the twin dirt paths made by countless vehicles over the years, we eventually reached Willy who was using a pitchfork to feed hay to the calves within the largest enclosure. Dressed in jeans, a black long-sleeved button-up, a dusty blue Cheyenne Lumber Co. baseball hat and a very holey button up flannel jacket, he reminded me instantly of the Mongolian herders I had worked with only months before since they too often donned heavily worn clothing, especially while doing mundane chores such as feeding cattle. Recognizable to livestock through sight and especially smell, these heavily used articles of clothing allow livestock keepers to be accepted as a member of the co-species herd (Fijn 2011).

Over the course of a mid-June day I came out to help and take note of Willy's methods and strategies of harvesting and storing hay. I arrived early, around 7am, and followed him as did his usual morning chores for this time of year, when the air is warming, the plants are green, and the occasional thunder or hailstorm still threatens to roll in at a moment's notice and wreak

[8] Under U.S. land surveying laws and customs, one section is comprised of 640 acres and there are 36 sections in one square mile of land. It is common to hear reference to ½ and ¼ sections which equal 320 acres and 160 acres respectively. There are approximately 2.47 acres in one hectare.

havoc. We checked on the water tanks near the barns to make sure the cattle had access to water when they wanted it and went to let out his flock of white leghorn chickens from the old green coop to the south of his house and make sure they had some food and water as well. Following the end of calving season, he'd divided up his herd so that about fourteen cow-calf pairs were in the pastures at George's while the rest remained in pastures at his place. While he usually went to check on the cattle there, during my visit we stayed on his place, taking an ATV to check on the nine head of cattle along with a newly bought bull in the pasture directly north of the house and then to see the 27 pairs out east. We saw antelope while out in the pasture and we also stopped by Willy's solar water well so that he could show me how it all works.

In good years, where rains and snow have sufficiently saturated the land, summer is a time of flourishing, where plant assemblages come to occupy rancher's and livestock's attention as they grow. As we drove over the hills in the bright sun, he pointed out the different grasses we were seeing: green, crested wheatgrass; tall, intermediate wheatgrass; bushier~~,~~ alfalfa; and other native grasses and prairie flowers such as buffalo grass and the yellow coreopsis flower. He stopped when he saw some tall rye plants in one wheat field and began walking toward the clusters. Pulling them out, he explained that sometimes neighbor's plants would find their way into his fields and it was better to pick them while there were few rather than ignore them until they are everywhere. While some plants were considered weeds year-round, the case of rye bring attention to the idea that "weeds only exist in the doing of them; they have to be continually performed to exist at all" (Doody et al. 2014, 130). In this specific wheat field at the beginning of summer, rye plants were weeds rather than crops but since he might plant them in other years they were not always weeds. I hopped off and helped look for the tall grass clusters. It was more difficult than I imagined it would be to walk through a wheat field. There was no level surface

and huge clumps of dirt kept tripping me. I also heard occasional popping noises, which Willy took to be the wheat plant stems breaking as I walked over just right. While we worked, I asked about planting and plowing and Willy replied that he'd just finished his yearly plowing a week earlier, which helps to control weeds and improve the soil health. He only began cutting hay and baling this past weekend. After doing a little more weeding by hand, we headed to other pastures and got to work raking and baling.

Hay baling is an activity which referenced and created the individuality of places. Exchanging the ATV for a small tractor with an even smaller cab and a star-wheel raking attachment, Willy drove it to the field from near the barns, narrowly avoiding the stacks of hay bales and the fences along the way. Once ready, he lowered the rakes and began to drive forward. Looking back, I watched as ten delicate metal wheels with curved tines began rotating. Set up in a "V" formation, the wheels spun towards the center creating a single row of hay from two smaller rows by picking up and moving the hay from the outside to the inside. This would allow the baler to produce thicker, more square bales of hay. Willy preferred small square bales of hay since he worked alone and had an easier time moving these himself. They also were better suited for his older, barns with lower roofs where larger bales would be difficult to store or maneuver. The ride was bumpy, especially on the arm rest of the tiny chair, and we raked several rows never going above 5 or so miles and hour and even slower in the bumpy spots. He pointed out later which spots we'd missed because it was bumpy and the rakes, in their bouncing around, had missed the hay. We baled hay after that, switching tractors to a slightly larger cabin, where I could sit in my own little seat.

This John Deere tractor was attached to a small square baler and while operating it Willy would constantly look behind himself at the machine to make sure the hay was going in nicely

and nothing was jammed. He'd also get out regularly to check the dryness of the grasses both with his hands and eyes, and with a meter. Dry grass was lighter, less dense, and felt more brittle whereas wetter grass felt heavy, flexible, and was a darker shade of green. The meter, which resembled a simple, old fashioned square remote control with a pointy antenna sticking out of the top measured the moisture content and needed to be under 15% in order for baling to occur. He showed me how dry that was by measuring his own hand's moisture and them mine. We wrapped our palms around the end of the antenna and his palm measured 29% while mine measured 25%. Most of the grasses and bales that day measured around 10 or 11%. It is important to point out that the hay we baled that day had been cut several days earlier and left to dry since baling hay too wet can lead to spoilage, machine issues, and even spontaneous combustion of hay bales as a result of heat and chemical reactions which generate in the middle of compact bales that are not dry enough. Although it may seem simple affair to cut and put together bits of grass, decisions must take complex weather and atmospheric conditions into consideration.

In order to transform fields of varying grass species into bales of hay that can last until they are needed in the winter or sold to others, ranchers such as Willy take account of weather conditions, the type of grass growing and being cut, how it will be used, and the type of bale being made among other things. Such accounting and planning speaks to notions of time as a qualitative rather than quantitative phenomenon. Philosophers Luke Fischer and David Macauley turn to the Greek terms *chronos* and *kairos* to make distinctions between kinds of time. They write, "Whereas *chronos* refers to sequential or chronological time, *kairos* signifies a less determinate times, a period or extended moment in which something unique or special may occur" (2021, 36). I suggest that *kairos* is a more apt way to think about time for ranchers, for

whom relationality is more important than chronologicity. In other words, haying is done not because it is June but because the grasses are green and the weather favorable. The day I came to watch baling was warm, slightly breezy, and sunny, in other words perfect baling weather. Unlike other states with higher humidity levels in general, in dry Wyoming the weather events that might delay baling are recent rainstorms, high levels of morning dew, and days with exceptionally strong winds. Rainstorms mean waiting a few days afterward to bale as well as flipping rows of cut grass to ensure both sides have exposure to the sun and dry out evenly after the rain stops falling. Morning dew is surmounted most days by waiting until the afternoon to bale, or even baling at night. One rancher explained that those who bale at night do so because conditions are damp enough to help the grass stick together, but not so damp as to form dew drops. There are also some differences due to the type of grasses being cut and harvested. For example, in the season I baled with Willy he cut only once but when he'd grown alfalfa for hay before, he'd cut multiple times (up to three times). Although most ranchers I spoke with cut grasses for use as hay, a few cut and chopped various forage grains for use as "silage," which is another way to preserve forage crops for livestock to eat when forage in pastures is limited.

As the name suggests, silage can be stored in silos, tall metal structures in which grains and other crops are stored after harvesting. Among the ranchers I work with, those that did create silage dug shallow pits in the ground or simply piled it on top of the ground and sealed it with strong plastic wrap. To properly ferment, the forage or grain crop cuttings need to be airtight, with the right amount of moisture, and given at least a few weeks to rest before feeding to livestock. One ranch explained that he'd planted some rye on a patch of ground after harvesting what was on it previously, anticipating more rain and wanting to prevent bare soil from blowing away. As he'd planted the rye late, it only grew a fraction of what it might've in a full season

before he harvested it and put the small clippings into a silage pit to ferment and be fed to the cattle later on. Lastly, the size and type of bale also required attention. Working alone and with older equipment, Willy opted to make small square bales. Others with larger pastures and fuller herds to feed utilized larger bales, especially if they had newer and bigger equipment on which to transport and distribute the hay. Large round bales were by far the most popular kinds of bales in the area and needed only be rolled out before hungry cattle in pastures once the netting holding it together was cut off and removed. In barns, these were far less practical than square bales which could be flaked (like cutting slices of bread) with a pitchfork. Although it wouldn't be until later seasons, when the cold set in and cows needed extra shelter, that being able to easily flake hay in small spaces would matter.

Jose's Place

For Jose, the beginning of autumn is a time to check cows for pregnancy, more commonly called "preg checking." On the 1st of September I arrived at 8:30 in the morning to watch and help him pregnancy check the cows in his herd of Hereford cattle. I followed the instructions he'd given me the day before and drove on the dirt road past his house and the tall corn that looked almost ready to harvest. The road turned sharply a couple times before going over the channel he uses to flood irrigate his forage crops of alfalfa, corn, and sorghum, rotated in that order over time, and finally led into a large pasture. A few trucks and a couple trailers were set up around a series of grey metal paneling shaped into a makeshift corral near the pasture entrance. Some of these were arranged to the south of the enclosure, making a kind of draw which narrowed when it reached the main corral. It was quiet and overcast, and I waited alone wondering where everyone was when a truck carrying a round bale of hay came into view to the southwest.

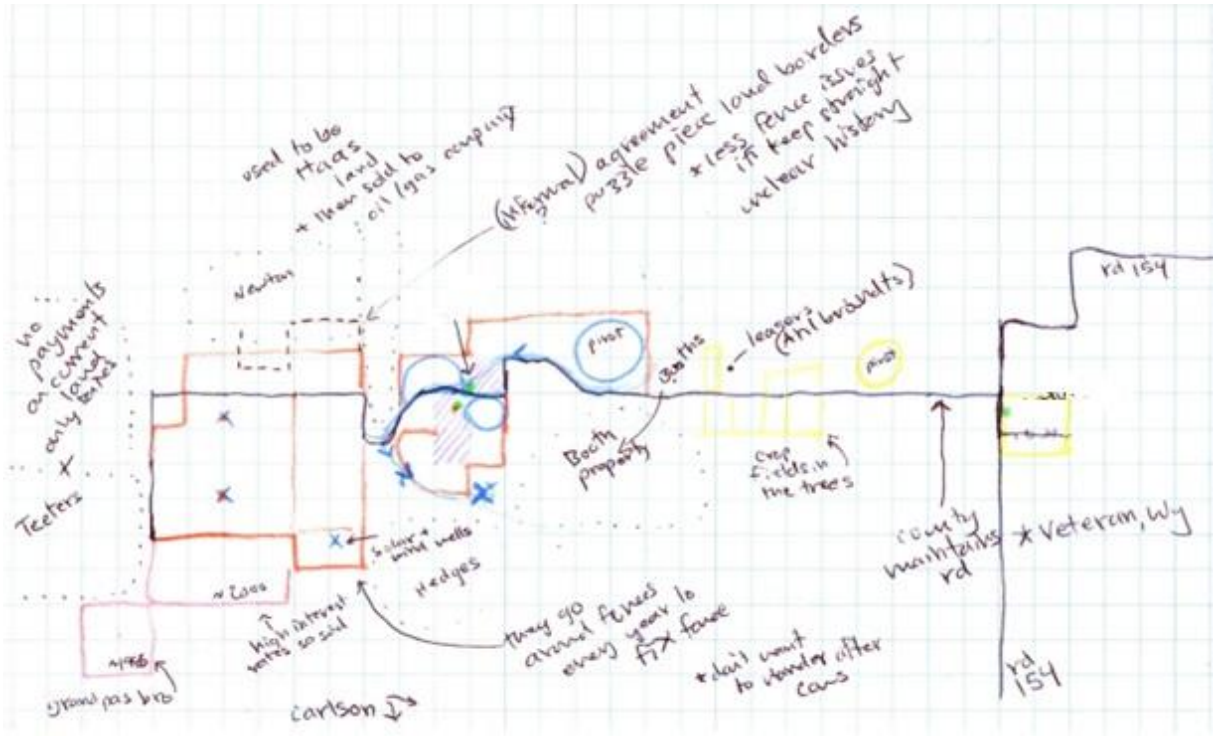


Figure 4. A drawing from fieldwork of Jose's place. Different colors delineate ownership of land, blue circles and 'X's indicate wells, pivot irrigation and the irrigation channel, dots represent neighbors and green dots are households. One square is approx. 40 acres on this map.

In the distance I soon saw two riders on horseback and three individuals on ATVs and side-by-sides trying to push some black Angus cattle towards the enclosure. The group was trying to drive in the herd but seemed to be moving too slow. Soon after I saw them pandemonium broke out. Cows and calves splintered off from the main group causing riders to do the same to try and prevent them from going far. Some were walking, others ran as if their lives depended on it, and others bawled and bellowed like mad. A few had followed the truck carrying the bale of hay all the way to the corral and were now contentedly eating. Not an ideal cattle drive for sure, I thought, as I greeted Jose. He climbed down from the truck and we talked about what we'd do today and who was here helping. He pointed out who was who as they worked in the distance to regroup the cattle and then drive them into the corral.

I suggest that the social morphology of ranchers and livestock is slightly different in the fall than at other times of the year since this season is a particularly active time in which humans and cattle are drawn together. While there are labor events in other seasons that often require help and push people to converge, such as branding in the summer, in the fall there are more events which bring together assemblages of humans, livestock, and plants such as shipping of calves, pregnancy checks, harvesting of crops, moving between summer and winter pastures, and sorting calves from cows to begin weaning. However, unlike the indigenous foragers and hunters, who formed the basis of early studies in social morphology (Mauss 1950[2004]), changes in size and sociality are not stable throughout a season in Wyoming. Instead it is the frequency of gatherings which distinguishes this season from others. In other words, rather than assembling together in-person for the entire season, ranchers typically met more frequently in fall but didn't remain together. What's more, I argue that these times together, where men and occasionally women pool their labor to accomplish a task, lay the foundation for a collective ethos. While everyone has his or her own "place," teamwork begins to foster a sense of connection beyond the bounds of the ranch. With the cattle drive successful, we closed the corral in triumph before beginning our work.

Jose, his elderly father Jay, a young male family friend and I began to work separating calves from cows in the corral. Cows would be run through the hydraulic chute and head catch first where they'd be immobilized by the mechanical bars and checked for pregnancy via a rectal transducer, a curved portable ultrasound tool. We only managed to separate some cows from the calves and began working with these. Jose and Blaine discussed whether they'd need the "hotshots," as electric cattle prods are commonly called. Angus are more anxious to get through the chutes and one has to push them back more than push them forward. Herefords, they agreed,

are more stubborn. Jose turned to me, saying, “They see what’s going on and want no part of it.” True to nature, the Angus we worked that morning would go into the chute with such force, moving in fast and hitting the end head catch so hard that they shook the metal chute and often sent bits of diarrhea flying with their tails, splattering everyone at some point. Following the cows, we sent through the remaining calves and gave them a few different vaccines and a pour-on insecticide to help with the flies and other insects that are a big source of stress. Watching the swarms of flies, which flew up off the backs of the cows every time they moved quickly or bumped around only to settle back down, I remembered Jose showing me on a previous visit one of his “oilers.” I also recalled a conversation about work rhythms, with Jose mentioning, “You always do things because the neighbors do it.” Like the Nuer (Evans-Pritchard 1940), time is cyclical and work is done at a particular time because it is the time to do it. There is no set schedule, but rather a routine that everyone is familiar with. He said that typically you’d begin to think that it’s about harvesting time or weaning time and when you saw others begin you would also do the work then. Your neighbor’s actions didn’t so much determine your own, though, as much as they served as an indicator that a certain time has arrived. The great swarms of flies surrounding the cattle indicated that now and here was the right time to keep oilers filled with insecticide or diesel. Movable from pasture to pasture, these large punching bag-like objects have rollers used by cows and bulls to rub against and rid their hides from vicious horse flies and other biting insects. In previous days, engine oil was used to keep insects away, but many have stopped using these since there are more additives in the oil nowadays. After having to swat at them myself time and time again, I was both glad and surprised when we finished cleaning up and folded away the grey, moveable corral by noon.

When I arrived the next morning, I was offered an ATV to use, after Jose made sure I was knowledgeable and comfortable riding one. Heading down south the dirt roads were fine until we turned to the east and grooves made from heavy trucks deepened, making a lopsided ride inevitable. Unaccustomed to the tilt and going a little too fast I had a little scare when the ATV I was riding shot up the side of a groove too quickly. I regained control after I stopped, my heart racing and feeling flushed with embarrassment. If Jose had seen what happened, he didn't mention it when I caught up with him at the top of a small hill. He'd waited for me and smiled, saying simply that we were probably going too fast. We continued more slowly and arrived to see the grey corral almost finished being set up by Jose's adult son Carlos, a neighbor named Luke who'd come to help the previous day and another man I didn't know. When everything was ready, we all set out on horseback and ATV to corral the Herefords.

No one was talking as we each rode in a long line with fairly even spacing between each to push the small herd of Hereford cows and calves toward the corral. It was quick work and more successful than the previous cattle drive. We kept up the pace of our work as we sorted the cows from the calves and the Herefords were more willing to move away to the other side of the pens compared to the Angus' and were slightly easier to work. However, the ease stopped when they approached the chute. Rather than going quickly and hitting the end gate hard, these white and brown cattle would timidly and slowly walk, often only after being prodded several times with hotshots. Even so, we quickly finished both cows and calves by 10 a.m. We picked up everything and headed over to Luke's pastures to the south, which also just happened to be right next to Ander's place and another herd of Jose's Herefords. Before we had left, Luke and Carlos had talked about possibly doing both Luke's and Jose's herds since there were plenty of hands to help. This could only be done, however, if the grass was green enough to support the cows for a

while longer as preg checking and vaccinating are typically a stressful event and the livestock would need adequate forage to recover in a timely manner. Jose, Jay, and I arrived to the entryway to the pastures before all the trucks transporting the movable corral and horse trailers, and waited there until the trucks began to arrive. Once they did, Jose went to check on the grass in the pasture. He'd later say that there was no green grass at all in the pasture, thus necessitating a move for the herd closer to home so they could be fed silage and hay there.

The cattle drives I saw and participated in underscored how large pastures constrain how work and doctoring that can be done. The failed drive on the first day revealed a few things. First, with few fences, driving cattle into a corral is not a simple affair. Successfully driving cattle depends on some knowledge of herd dynamics and a certain level of speed since cattle are easier to drive into a corral when they move quickly. One young ranch hand described how he pays attention to his and the cattle's body orientations when he moves them from place to place. For him, a cow's face is like car brakes and approaching the face usually stops the cow in her tracks. The ribs are like cruise control, indicating that walking next to a cow, nearer the ribs, keeps her going at a steady speed. Lastly, the butt is like the gas pedal and walking directly behind a cow is the best and often only means of keeping a cow moving. Herds as a multitude of cattle work along the same lines. A second revelation was that successful riders know how to read a situation and act together, without talking, distant since communication over the sounds of cattle and engines as well as over vast spaces is difficult. Typically, there is discussion before any moving of cattle where the landowner or host briefly describes the situation including where livestock are or where everyone should drive them to. Once the herd begins to move, it is essential to keep them moving together. A big enough gap in the line of riders can convince a stubborn cow to stop or to turn in another direction. Since most ranchers trade their labor with

kin or neighbors, most people have some experience in reading both their fellow riders and the herd they are driving.

Jose and his family's relationship to their place was structured by intensive irrigation and farming, open pastures away from but still connected to their home base, and neighborly relations. Most ranchers I spoke with were dryland ranchers and farmers, meaning that they relied largely on rain and snow to water crops and pastures and deep aquifer ground water to water livestock. Some had small creeks or ponds that filled with water when precipitation was good in spring. Old timers like Willy described how many used to be yearlong creeks. But changing land use and climactic patterns, such as decreasing precipitation and more drilling of wells strained water resources, as I'll discuss in the following chapter. The North Platte river, running north downhill from snowcapped Colorado mountains into Wyoming and eventually curving into Nebraska, as well as a lower elevation of around 4,000 feet above sea level, affords ranchers like Jose slightly longer growing seasons and more reliable access to water. Jose and his family rely more on silage and less on pasture forage compared to others with whom I spoke. Jose mentioned, during lunch that day, that they would fill their silage pit with corn six weeks later when they harvest it. This winter they planned to feed the cattle a diet of about 20% hay, 70% corn silage and the rest a mixture of protein pellets and mineral supplements. Such a grain-heavy diet has implications for the young calves. At lunch Jay described how calves are tagged and given vaccines soon after they are born and then again six weeks later with a "CND antitoxin." This second vaccine prevents the calves from overeating sickness which stems from the introduction of new foods for which the body and gut are unprepared. This vaccine helps support the gut bacteria and microorganisms that facilitate a varied, corn-heavy diet. With such intensive practices, Jose's place resembled industrial animal agriculture far more than

neighboring ranches with more extensive, pasture-based dynamics. Even though he pastures some animals like ranching neighbors, his heavy use of inputs such as fertilizer, irrigation, and advanced agricultural technology like GPS guided tractors and reliance on more farming of grains and corn to support his herd reveals that intensive, more industrial animal agriculture, and extensive modes of animal husbandry that relies on less technology, labor and financial input and more on naturally available land and water can and do exist side by side. These blend into each other and make it much easier to conflate intensive production, with it's focus on productivity and efficiency, with the more extensive systems that bring more modest profits while enabling sustainable and mutual care for lands, animals and humans.

Conclusion

Although it may be tempting to see cattle or sheep ranchers as only concerned with their cattle and sheep, livestock producers in Wyoming live and work with a wide variety of life. It was in a producer's kitchen table that I heard about the significance of tiny, unseen organisms, the new coronavirus included, and it was at future visits around his kitchen table that Oscar and his wife Karen would tell me about the other forms of life with whom they "lived and let live" and with which they preferred not to dwell. I heard accounts of being followed while plowing by hawks looking to devour any unfortunate rodent turned up with the soil and of the vegetable garden Karen and her daughters would work. Outside the kitchen window to the east a fragrant lilac bush flowered in the early summer and on the opposite side of the house, in the neat rows of pine trees large horned owls built up a nest years ago which they still use. Living snow fences, these trees show how weather too is a force to reckon with. Put in their orderly rows decades ago, they continued to provide refuge for human and non-human animals from both wind and

snow. For the most part, prairies are treeless, so sights of large groups of them neatly planted have become synonymous with human occupation out in the countryside, especially on the eastern side of the state, at the edge of the High Plains. Of course, it is worth noting that my material only illuminates aspects of settler rather than indigenous modes of dwelling on and off the Wind River Reservation. Alongside planting and caring for trees as their predecessors did, ranchers dwell within the landscape through daily interactions which vary from season to season, and day to day.

Throughout this chapter I have illustrated how the specific lands, ranchers and communities of non-humans, be they plant, animal or insect, become together and how although ranchers, livestock, and land go through many of the same motions of work and life around the same time, there is no one example which can adequately capture the complexity of ranching in the area let alone in the entire state or region. Intensive systems of forage farming that rely on inputs like irrigated water and fertilizer exist side by side with more pastoral dynamics that embrace natural processes and are far more sustainable forms of food production, making it easy to conflate all forms of ranching with industrial animal agriculture. Rye planted by some for silage are removed from fields as weeds by others. The arrangement of fences, wells and other infrastructure as well as the composition of plant species afford or deny individual producers the ability to make certain decisions throughout the year. Past occupants and their relations with the land come to be significant even years after they have left. Ranches are sustained through highly skilled labor, but work that is not entirely under human control. Ranchers' plans are often complicated by the whims and actions of their livestock, the surrounding wildlife and also by the wind and weather. As unique assemblages (Tsing 2015) of actors and beings, ranches as "places" are quite different from standardizing and standardized factory farms. Although I have

highlighted specific individuals' strong and varied relationship to their lands, as we'll see in the next chapter, it is not only ranchers who have a profound relationship to the lands in which they live and work. Larger entities such as the state, the federal government and the broader public also have a stake in how lands, wildlife, and other forms of "nature" are experienced and changed.

Chapter 2: Negotiating Access, Natural Resource Governance and Mutual Living

Every spring Allison and Pete take their cow and calf pairs up to some land they own about an hour and a half north of their home. They bought the place cheaply during the financial crisis in 2008 when they were looking to expand and now they consider it "money in the bank." They use this land to pasture cows and calves in the summer and ideally would bring them home in October. The land comprises four sections and totals 2,568 acres and they described themselves as lucky to have springs present where the cattle can drink. Bought from repossessed state lands, their land is watched by a caretaker who lives about four miles away and is compensated by being allowed to run ten head of cattle on the land. As we loaded calves and cows separately into two large semi-trailers, Allison and Pete mentioned some of the issues they've come across there. Fixing fences is a regular chore and they have to constantly remove weeds. Canadian thistle is especially bad by roads and leafy spurge likes valley where snow sits, but they claimed it really comes in different places each year. The biggest problems they've had have come not from within the bounds of the place, but from outside it. One big issue was the result of the man who homesteaded the place, who had an informal, handshake agreement to use a road on state land, which neighbors if not surrounds the land, to access their place. It's no surprise that the informal agreement didn't transfer along with ownership since such agreements rely on established trust and close personal relationships. As a result, Allison and Pete had to go through the courts to reach a settlement with the state that they, but no other member of the

public, could use the road after one official claimed that their driving on the state road was technically trespassing. Another problem they mentioned before we finished loading cattle was a fire unintentionally started by the National Guard, which has a presence nearby. Years back National Guard members had been shooting live rounds which ended up catching vegetation on fire and burning some 1,000 or so acres. Allison and Pete were disappointed on both accounts, saying that "people don't care."

What does it mean to live and work seemingly out in the middle of nowhere, but not on one's own? How is one's access to grassland and water supported or challenged by the actions of more-than-human entities and actors in addition to fellow humans? This chapter explores a comment put forth by one interlocutor that "people move out here, thinking they are getting away and instead [have to] learn that they are not alone and cannot just do as they please." Though hardly newcomers after living in the local area for over forty years, Allison and Pete's situation suggests several related observations. First, there is a mosaic of land ownership across the American west where the state and federal government are major land holders. As largely absentee owners, since neither federal or state governments reside on the land they own, it can be easy to forget or take for granted that even though there may be no house on a plot of land, it still has an owner. Second, although the land they take their cows to their own property, their ability to pasture cows there is contingent on the actions of others. Third, because of this there are times when agreements must be made and cooperation undertaken and also times when conflict is inevitable. While ranchers and rural landowners are often depicted as being very individualistic, holding their individual property rights above all others, there is a strong, communal ethic of stewardship that relies on social relations to make cattle ranching work.

Bringing together the literature on property, scholarship on the public, and anthropologies of land and water use, in this chapter I examine how natural resources are used, by whom, and with what larger impacts in the ranching economy of Wyoming. In doing so, I have chosen to focus on the question of access rather than rights or claims to property. Defined as "the ability to benefit from something," attention to access focuses our gaze on power relations (Ribot and Peluso 2003). I argue that access rather than explicit ownership is key to ranching success in Wyoming and in much of the American West since, though ranchers are staunch defenders of private property rights, the resources they and their livestock rely on do not come exclusively through these rights. Instead, livestock producers must cooperate with others across property lines to successfully ranch. The first section of this chapter describes ownership of rural land in Wyoming and asks what forms of property relations and property owners exist in these spaces. After briefly describing the history of U.S. federal and state land ownership, I argue that the fragmented nature of land ownership in the state has significant implications for how lands are used and by whom. Producers small and large use public lands for a multitude of different reasons which has consequences for non-ranching members of the public, including hunters, mining companies, and a variety of others who also use and value these lands. The second section of the chapter examines water usage and asks how water is understood as a public good. As legal scholar and property theorist Carol Rose writes,

> Despite the power of the classical economic argument for private property, a curious countercurrent has continually washed through our own American law. Our legal doctrine has strongly suggested that some kinds of properties should not be held exclusively in private hands but instead should be open to the public or at least subject to the jus publicum, to use the Roman terminology – the "public right." (1994[2019])

I investigate how water in Wyoming is one such property that is treated as a public domain. Though land receives more attention by environmental advocates, water is also a public resource and for everyone, rural producer or town resident, it is equated with life on the dry high plains (Bessire 2021). Wyoming water law was written to ensure the state managed water for the benefit of the public and consequently all permits for water need not only state approval but can also be delayed or blocked by the public. I argue that accessing this resource is fraught with difficulty. Not only are humans capable of hampering or encouraging access, but more-than-human entities and actors also push back against human desires for water. The final section of the chapter explores notions of stewardship, conservation, and what is at stake for ranchers in forms of care and land management amidst a fragmented landscape of different management and ownership regimes. While most ranchers agree with and participate in conservation activities, not all of these are considered beneficial. As Katherine Verdery has shown, land is only valuable if other conditions for productive use are also available (2003). First and foremost, land that is grazed regularly is most valuable whereas ungrazed and overgrazed land is not. While conservation groups and meetings are important arenas of rural, public spheres, and civic action, certain top-down conservation programs work against natural ecosystem processes and dynamics and against ranching ideals of human and livestock as active participants in those grassland systems. Consequently, this chapter aims to expand the concept of access as a theoretical intervention by decentering humans, arguing that the ability to benefit from land is not contingent solely on webs of power among humans, but also includes multispecies and more-than-human entities and actors. Doing so further critiques destabilizes or challenges notions of exclusive human control and superiority over nature.

Accessing lands public and private

Land management is a topic of great interest and significance for western ranchers since they and their livestock rely heavily on nature in their work. Access to grass and grazing land for their livestock can be difficult to accomplish due to a mosaic of different landowners and management practices created over the course of two centuries. I contend that the history of public and private lands in the U.S. remains relevant today since the patchy, uneven landscapes (Tsing, Mathews, and Bubandt 2019; Tsai 2019) it created brings together different actors who must negotiate access to resources. Over time public lands shifted from being an open access, seemingly inexhaustible resource, available for all, to a precious national treasure in need of protection. Today, public lands are understood as lands that exist for the benefit of the general public. Thus, it is no surprise that it is not only commercial ranchers who utilize public lands. Mining companies lease land to extract oil and natural gas and green energy producers put up wind farms and individual recreationists can hunt, fish, ride horse, go off-roading and mountain biking provided they don't cause undue damage and can legally access the land without trespassing on private lands. While these lands are an important source of grass for producers, many of my interlocutors recognized public lands[9] as a space where they were compelled to take into account the desires and actions of users such as the state, recreationists, and others as well as a federal bureaucracy perceived to be a poor, if not altogether nonexistent, manager of natural resources, including the grasses on which those ranchers with public lands leases rely.

[9] Public lands is a category which encompasses both federal and state held lands. While these lands are always under scrutiny, federal lands seemed particularly disliked by some of my interlocutors whereas state lands were less so. The state's more pro-energy and pro-agriculture policies and shared notion of public lands as working lands likely help endear themselves to ranchers. Meanwhile, under a liberal administration concerned more with climate change and conservation, federal lands during fieldwork were seen as a resource too closely guarded if not hoarded by the government at the expense of ranchers and livestock.

This wasn't surprising given that 48% of Wyoming is federal property, also known as public land, and 5% is held by the state, according to the Wyoming Game and Fish Department and as can be seen in the map below. In general, white denotes private ownership, shades of green denote management by United States Forest Service or United States Fish and Wildlife Service, yellow denotes Bureau of Land Management, shades of blue are state lands, historical sites and park, orange denotes tribal lands, purple denotes National Park Service, and pink denote military reservations and lands.

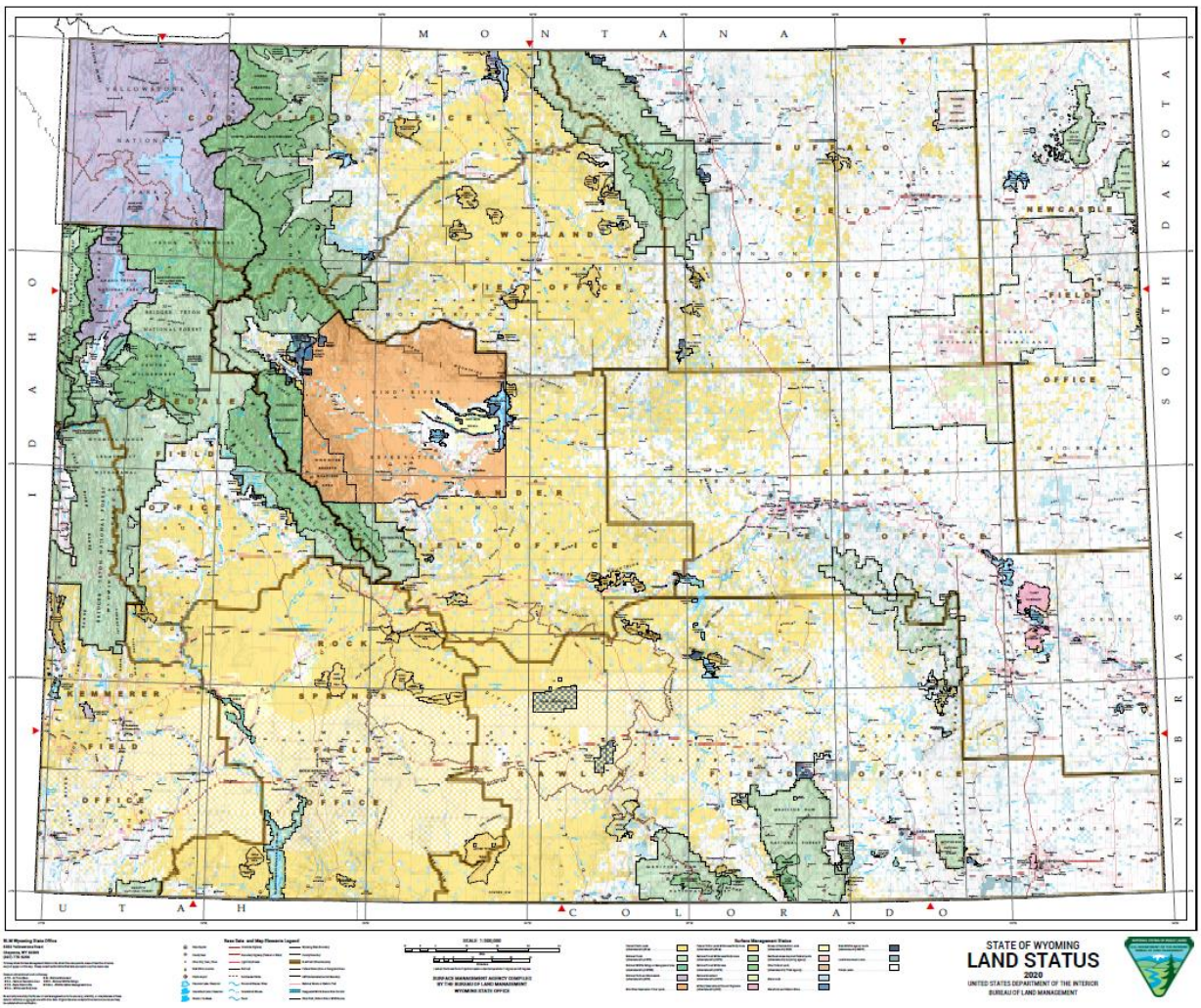


Figure 5. Map of Land Ownership in Wyoming

The Bureau of Land Management and the United States Forest Service own most federal lands and manage a great deal of central and western Wyoming, whereas the eastern side of the state is comprised more of private and state lands. Though most public lands are located in the West, the beginning of public lands, as real parcels of land recognized and controlled by the government of the United States, have their origins East of the Mississippi with the enactment of the Northwest Ordinance in 1785 and 1787. This ordinance established the system of rectangular survey still used today where using latitude and longitude, areas of public land are divided into townships about six miles square. Each township is then numbered from 1-36 with each section containing 640 acres. The public land survey system is a prime example of the modernist projects concerned with legibility described by James Scott (1998). And much like other schemes he lays out, this system of land survey was undertaken with little regard for complex assemblages of topography, geography, society, or wildlife."

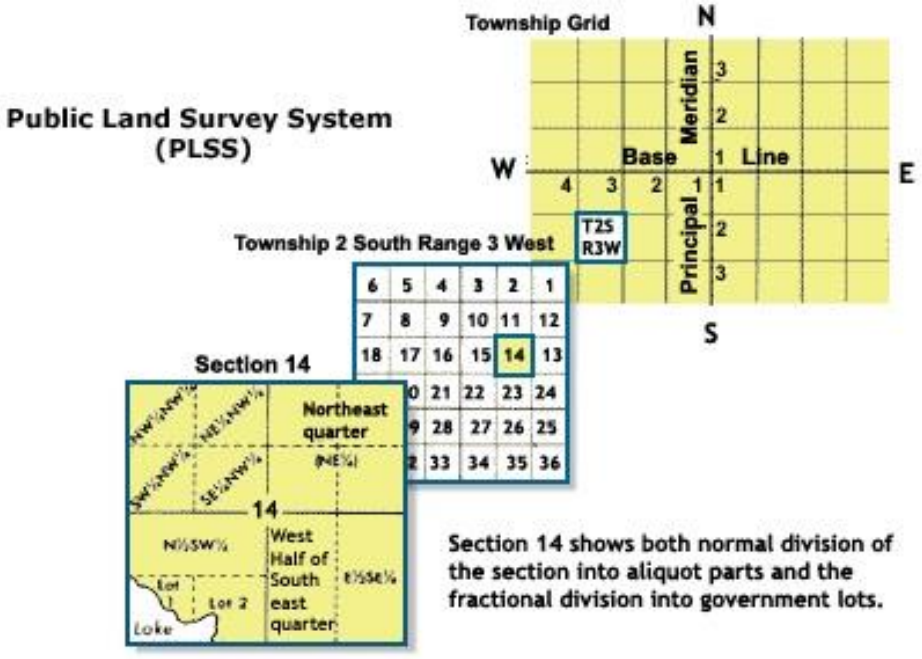


Figure 6. United States Geological Survey diagram of Public Land Survey System

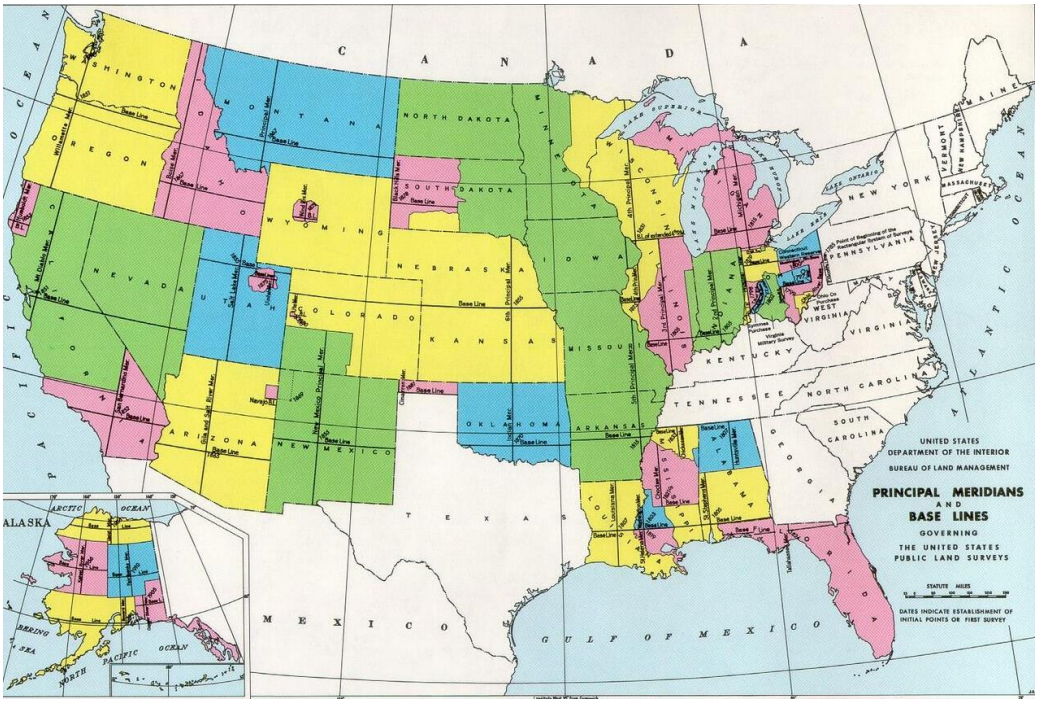


Figure 7. United States Geological Survey map of principal meridians and base lines

States created from the public domain are known as public land states, and are indicated in color on the map above, whereas the original colonies and the states created from them, plus Hawaii, are referred to as state land states. In 1802, Ohio was the first public land state to be admitted to the Union and the "government retained title to all ungranted and unsold public lands within the new state" (Bureau of Land Management 1962, 13). That one section of each township was given to the state for support of public education reflected how the ordinance also created important and systematic land reservations. In Wyoming, sections 16 and 36 were reserved for the state to use to support public schools. After the public domain and the government's authority over it was enshrined in article IV of the Constitution, stating "Congress shall have power to dispose of and make all needful rules and regulations respecting territory and property belonging to the United States," a plan for the uniform sale of public land was proposed but didn't come to fruition until the General Land Office was created in 1812 to control, record, and administer all public land transfers through grant, sale, or other means.

During this time, the government had primarily a custodial role over the public domain and it seemed eager to distribute land for the benefit of the country and its citizens albeit with certain restrictions as to who qualified. For instance, squatters were treated with benevolence with the Act of March 25th that "authorized settlers on unreserved public lands to remain as 'tenants at will'" until the property was sold (Bureau of Land Management 1962, 17). By the 1840s, further laws gave preferential rights (in events of conflict arising from the sale of disputed lands) to those who built dwellings and settled on public lands. Such laws were in keeping with older Euro-American understandings of property which saw labor, through the building of recognizable homes and agricultural plots, as the beginning of private property rights (Locke and Macpherson 1980). By 1862 with the Homesteading Act, free land from the public domain was offered to citizens over 21 years of age provided they reside on the land, improve it for a period of time, own less that 160 acres, and pay a filing fee. However, not everyone was included in laws like these, which aimed to attract settlers to remote part of the nation. For example, in 1854 the New Mexico Territory Donation Act gave up to 160 acres to male residents who had moved into the territory prior to January 1853. Along with the standard requirements needed to earn the free land, such as actual settlement and cultivation for four years, one also needed to be white (Bureau of Land Management 1962, 26). Free land was therefore very difficult to obtain if not largely unavailable for non-whites and non-citizens. While married woman and widows, could receive grants in other states at the time, such as in Oregon (Chused 1985), and many filed claims in Wyoming a few decades later, the exact details as to who could or couldn't access acreage based on this law is unknown without archival and historical research.

Gradually, as productive tracts of land became a scarce commodity, new laws began to reflect the emerging view that public lands should be conserved and protected rather than

distributed freely. Reclamation projects aimed at transforming swamplands into fertile crop fields and irrigate arid desert parcels became fewer while there was an explosion of lands designated as national parks, monuments, and wildlife refuges due to culturally instigated ecological calamities including the Dust Bowl (Worster 1992). Wyoming, along with many western and Rocky Mountain states, was abuzz with conservation activities by the end of the 19th century. For instance, the first national park created in 1872, the first national monument established in 1906, and the first national forest designated in 1891 were all located in Wyoming. The idea of the public domain as a place where profitable resources could be extracted came to be accompanied by the idea that the public domain was a place to be enjoyed and valued by all Americans. In 1926 the General Recreation Act incentivized proposals by state and county governments to use tracts of public lands for outdoor recreation purposes and authorized the sale of public lands for such purposes (Bureau of Land Management 1962, 49). The environmental crisis of the 1930s, which included large scale drought and soil erosion, propelled the creation of conservation groups and agencies that aimed to prevent future crises by implementing better agricultural practices.

For ranchers and farming settlers, who had come under suspicion for overgrazing the Great Plains, over working the soil and contributing to poor rangeland health, this meant the establishment of the Taylor Grazing Act in 1934. The act made sure that although lands could not be transferred to private ownership, exchanges could be conducted which would trade parcels of private or state lands with federal lands as long as they were of approximately the same economic value. Moreover, lands were to remain open for public outdoor recreation including hunting, fishing, and camping, as well as staking mining claims. The doctrine of multiple use, which is at the heart of contemporary public lands management, can be seen here and would

eventually become firmly established in law and national identity by the passage of the Multiple Use Sustained Yield Act of 1960, which specified five multiple, overlapping uses for public lands: outdoor recreation, livestock grazing, watershed management, timber production, and fish and wildlife purposes.

Although there is much more land held in private hands in southeast Wyoming, it is common for ranchers to lease land for grazing in addition to or in place of grazing on privately owned land. With no unclaimed land available for settlement, people looking to create new ranches will often lease land from established operations while they save money and wait to buy land of their own. One young couple indicated that they lease additional land in order to raise more animals than they otherwise would be able to on their smaller operation. Since they are surrounded by larger neighbors on all sides, they were doubtful they could buy property that would allow them to expand their operations as a contiguous ranch. Jason, whose ranch I described in the previous chapter, also leases land with a business partner. It is a section that borders their deeded, privately held land, and is separated on one side from other neighbors by a county dirt road. They use the extra land to expand their carrying capacity by paying a fee per animal unit pastured to the state and adhering to certain regulations over a ten-year leasing period. These regulations are largely uncomplicated.[10] Lessees cannot "lease state lands for grazing and agricultural purposes without having actual and necessary use of the land for the production of agricultural commodities," meaning livestock need to be actively grazing on the land during the lease or crops need to be actively cultivated. Ranchers also can't extend

[10] Office of State Lands and Investments. State Board of Land Commissioners. 2024. *Rules and Regulations of the Board of Land Commissioners: Chapter 4 Grazing and Agricultural Leasing*. 060.0002.4.11062024. Wyoming.
https://drive.google.com/file/d/1J9YR2sEtBfrwA_Psc75YIwJdazv9X-z-/view

subleases or other contracts concerning the leased land without approval. Should permission be granted they must share half of the rental fees with the state. Lessees also need approval before any improvements on the land that exceeds $4,000 or restricts public access can be made. If the approval is granted, these improvements, in the form of fences, wells and tanks for water, corrals, shelters, and other "range enhancements" can be taken once the lease period ends or can be sold to the next lessee for a price agreed upon by both parties.

While applying for and renewing leases are typically mundane aspects of ranching paperwork, the time of lease renewal can be a vulnerable time full of social tension and conflict because other people may be competing for access to the same land. Seated in a small living room, I listened as one rancher, Jim, described an instance in which renewing his lease led to a neighbor causing trouble for him. He explained that as a state land lease comes to an end and needs to be renewed, neighbors have the opportunity to bid on the state lease to try and obtain it for themselves. However, he said, for the most part, neighbors know who leases what nearby state land parcels and they respect this land as a part of their neighbor's operation. Though everyone knows the land is public and not privately owned, neighbors acknowledge the renewing rancher has special use rights and do not bid against them because "you depend on (these leases)," he said. As described by Karen Merrill, public lands in the U.S. are thoroughly enmeshed in "the structures and meaning of private property" (2002, 4). Put another way, leased public lands are typically understood as "owned" by those who control the leases. Discrepancy between the law and social norms becomes apparent in circumstances like Jims', where one neighbor decides they want to bid against another neighbor for rights to state land. His neighbor, another interlocutor, bid $1 more per acre and when Jim submitted a higher bid himself, the deal was done. Leasing rules dictate that a competing potential leasee can only bid once and if the

previous tenant still wants it, they can keep it although they must pay much more for it now. Jim said this bid by a former friend and neighbor cost him $15,000-20,000 dollars. He somberly mentioned then that he's only talked to this neighbor twice since then. Public lands bring together, or separate in this case, not only ranching neighbors, but also members of the non-ranching public.

Since public, state lands can be accessed by any member of the public provided they abide by certain provisions, chiefly among them not to damage lands, some saw these parcels as encounter zones where producers could expose urbanites and non-ranchers to animal agriculture in ways that would lead to greater appreciation on the part of these groups. As a retired state veterinarian, Dave leases the state section located just across the road from his house and pays for the right for his small band of sheep to graze the grass. Hardly a commercial producer, he once described that a large goal of his operation was to educate people so that "you can keep sheep and subsequently keep green space." Friend and fellow shepherd Jason, went further saying he thought Dave kept sheep only to be able to responsibly keep sheepdogs, who have been bred to work the animals. Given that this parcel of land and his home are located on the outskirts of town, Dave has ample opportunity to showcase animal agriculture to town residents and loves taking any opportunity he can to interact with and teach others about animals, especially livestock. While driving to the sale barn to sell a group of sheep, Dave said to me that the biggest concern and challenge for producers and those in the agriculture industry is urban misunderstandings about animals. He insisted that you needed to "educate people [about livestock and about ranching] so that you can coexist." Jason also saw public lands as a place for consumers and producers to come together, but he was keenly aware of the potential pitfalls of increased visibility than Dave. While this place could produce more understanding for ranchers

and their livestock, it also had the potential for the opposite. Particularly for sheep producers, who use guard dogs for protection against predators, misunderstandings are common. While eating lunch after working sheep, a group of producers, friends and family discussed a local case of a guard dog being picked up and taken to an animal shelter. Faced with a fine, the owners tried to prove that the dog was a guard dog rather than a stray or a neglected pet and ultimately convinced a judge of this. Connecting producers and non-producers can be both fruitful and contentious, and public lands are a major arena for these interactions. However, an even more dynamic arena for both constructive and contentious interrelations is water governance. Like public lands, water is a communal resource to which access is mediated not only through the state, but through other humans and non-human beings including livestock. If accessing land requires collaboration and careful negotiation of social relations, accessing water is doubly so.

Sharing increasingly scarce water

Even more so than land, water is considered a public resource to be stewarded for the benefit of local communities and future generations. It is also a dwindling and increasingly precarious substance (Bessire 2021). As such, anxieties over water abounded throughout my research. In pastures, at meetings in hotel rooms, and around kitchen tables with mugs of coffee nearby, interlocutors described the troubling state of access to water. In order to benefit from this precious resource, ranchers must negotiate access via the state, builders and maintainers of water infrastructures, their livestock and more-than-human forces such as the weather. Although there are a multitude of water sources people, plants, and animals draw from on the high plains such as surface waters (lakes, streams, etc.), ground water (aquifers), and human-created irrigation systems, dams and reservoirs, I focus on ground water sources almost exclusively since the

majority of my interlocutors relied most on this form of water on their ranches. As I have written elsewhere (Sanchez 2024), the materiality of water impacts forms of collective action and governance, comparing visible interdependency in irrigation districts with invisible connections underground. Focusing on just one source of water allows for a deep analysis of how its users think about, act on, and make meaning from the water they draw out of the earth.

Before that water can be drawn from the ground, however, it must first fall from the sky. Karen and Oscar were among the oldest ranchers with whom I worked and as such they had much to say regarding how they recognized and experienced growing water scarcity. However, it was water from above rather than water from below that was usually on their mind throughout the year and over time. As dryland ranchers, who did not irrigate their hay crops, but relied on rain and snow, they were especially cognizant of a lack of moisture over the preceding decades. Precipitation always finds a home in streams, creeks, and rivers and it is here where an abundance or lack of rain and snow often is noticed. There are many small streams nearby, but Lodge Pole Creek was of special significance since it flowed through the land of their children and neighbors. The 278 miles long creek emanated from mountains near Laramie, Wyoming and flowed east towards Nebraska before dipping down south before entering the South Platte River and eventually the mighty Mississippi. The stream, as its name suggests, is a thin and rather diminutive body of water. Karen and Oscar told me it goes in and out of the ground are various points and its behavior depends on winter and spring precipitation. “In the ‘60s, there were more times when the crik[11] would swell with run off and more times when it would flood,” Oscar said.

[11] Generational and social differences become apparent in how different people pronounce place names. Hearing that I said “creek” while he said “crik”, Owen commented that old timers often referred to it as "pole crik" while younger folks and those not living directly in the area call it by its proper name "lodge pole creek".

He explained that this was due to there being less snow in the mountains to the west of us adding, “years ago there would be more snow cover and now there is hardly any.” The couple noted that there were fewer small, garden-variety thunderstorms than there used to be and that things are altogether drier now. Linking the lack of precipitation in the spring and summer to lack of snowpack in the mountains, Karen said quietly, “moisture brings moisture.”

The ease of describing specific environmental and meteorological changes over time while avoiding the language of “climate change” is a common form of ideological denial (Peterson, Stuart, and Gunderson 2019). Numerous producers said to me that things are always changing from season to season and year to year, and several described climate change as something that is bad, caused by human activities, and radically different than normal conditions, wasn’t real. For instance, one young rancher acknowledged that his dad would talk about and recognize changes in weather over time but shuts down when the politically fraught term of climate change is brought up in conversation. Another producer cited government funding as the main driver for climate change research rather than real problems driven by climate change itself. He went further to assert that there *should* be change. As I’ll show later in this chapter, I suggest that his comment does not come out of a vacuum but instead stems from a place where, ecologically, stagnation is thought of as a threat to the well-being of larger communities, be they communities of plants, animals, or humans. Instead, they believe that action and change is not only beneficial but necessary. As ranchers know quite well, water often comes as much from intentional animal action as from more-than-human meteorological ones.

Accessing water is a difficult feat with significant social, political, and economic implications. On the semi-arid high plains, in contrast to land, water is not a given fact of life that is everywhere all the time. Water comes and goes with many ranchers recognizing not only

the weather as a reason for its presence or lack thereof but fellow inhabitants, human and non-human alike, as generators or inhibitors of water. Lodge Pole Creek runs through Tracy's winter pasture, freezing in the winter and not thawing until well into spring depending on how severe the winter was. During trips I took with her to help feed and check on the cows in the cold, snowy months, as their big black, brown and motley bodies were easily seen standing among the leafless willow branches sticking up from the creek bed. But even after it's thawed and there has been sufficient rain or snow fall, sometimes the creek withdraws, shrinking into itself, because of beaver dams upstream. "If I wanted to be nasty, I could complain and force him to do something about it," Tracy remarked as we were finishing our rounds one day. Although beaver dams had been regularly cleared from the creek by the former landowner, the new owners did not continue the practice of cleaning them out. Complicating her situation was the fact that it was her sister and her sister's husband[12] who now lived to the east of her and were not clearing out the beaver dams, preventing some of the water that would normally go downstream to her and her other brother-in-law's land as it otherwise would. Tracy's experiences with the creek is a microcosm of a larger kind of social dynamic emerging from waterways which Elise Trott Jaramillo terms a "fluid public." Speaking of communally governed irrigation systems, or *acequias*, that predate the state in New Mexico, Jaramillo defines a fluid public as "an emergent social and political space shaped by the materiality of waterways and the multispecies assemblages surrounding them" (2017, 6). Such social and political spaces, she argues, are unstable, exceed other forms of identity, are difficult to govern support a wide range of political tactics and alliances. The Ogalala or High Plains aquifer constitutes a different kind of fluid public than irrigation systems

[12] Though they were married at the time of my fieldwork, they have since divorced.

or even those pastoral and ranching systems that predominantly rely on surface waters like lakes, streams, and rivers.

Though her cattle drink from the creek when it runs and when they are near it, Tracy relies more on water from the underground Ogalala aquifer pumped from deep in the ground via traditional windmills or more commonly nowadays solar powered motors. Underground water is more efficient to use since, as she indicated, "you can build where the cows are rather than having to take your cows to where the water is." As I described in chapter 1, her place is divided up into numerous pastures through which she moves her medium sized herd throughout the year, depending on forage quality, season, and other factors. However, not all of her pastures had deep water wells at the time of my fieldwork. Her southern pastures were in the process of having water infrastructure put in place so she wouldn't have to haul water from her house on the edge of town more than thirty minutes each way to her cattle when they were in these pastures. Unfortunately, the process was a constant source of frustration for her. In order to dig a new well for livestock, she first needed to apply for a permit. In Wyoming, water is owned not by landowners but by the state and it is the state engineer's office that handles water permits and helps adjudicate disputes surrounding water, sometimes in coordination with other local governing bodies. Those first settlers to file and have their water use approved and documented by the state hold senior use rights to water. Junior rights holders are those who came later in time and whose right to use water comes after senior rights holders. In years with limited water, there is a good chance that there may be little if any water left for junior rights holders. "First in line, first in right," as Oscar would say.

This is called the doctrine of prior appropriation and there are a few key things to note about this as it is known in Wyoming. Most important to recognize is that, as Anne MacKinnon

writes, prior appropriation here was and remains "subject to severe state control…The public, represented by the state, had key rights in water. The state could decide who got a private right to water and define exactly what that private right to water consisted of, in volume, timing, and use." (2021, 29-30). Other important elements include a connection between land and water and a focus on actual and beneficial use of water. Regarding the former, in the last few decades of the 19th century the developer of Wyoming's water laws and governance system, Elwood Mead, sought to empower those who worked the land and curtail possible water monopolies, especially by canal companies and corporate irrigators, that were developing in other states under more or less unrestricted prior appropriation systems. Water rights cannot be separated from the land on which it originates and on which it is used. Landowners alone have a right to access and beneficially use water on or under their properties. Regarding the latter element, the state recognizes a hierarchy of beneficial and preferred uses of water in the following order:

1. Drinking water for humans and livestock
2. Water for municipalities/towns
3. Water for steam engines and general railway use; water for cooking, laundering, bathing, and refrigerating (including the manufacturing of ice); water for steam and hot-water heating plants, steam power plants
4. Water for industrial purposes[13]

Although this hierarchy is important, senior use rights, even if non-preferred, will trump preferred, but junior rights. As I mentioned before, senior rights holder who have used water longer enjoy the right to water before junior rights holder who came later in time. For example,

[13] Jacobs, Fasset and Brosz 1995 "Wyoming Water Law: A Summary" http://library.wrds.uwyo.edu/wrp/90-17/90-17.html

irrigation is a non-preferred use but if an irrigator has a senior right to water compared to a junior right of a town, water must go to the irrigator then the town. After an approved permit, construction began for a new livestock water well and along with it underground pipes and above ground circular troughs. This is where Tracy endured the largest hassles in the installment of the necessary infrastructure. For months, the construction work seemed to happen at a snail's pace. She mentioned to me that often workers would come out and she'd see them at work only to come back a few hours later to find them gone already and that days would lapse with no sign of work at all. She understood the slowness of their labor as having to do with the boon in housing developments in and around the nearby town. With plenty of other work, her project was low on their list of priorities. By January a trench, long, deep and full of snow, had been dug by the construction company. Tracy was uncertain that there would be much more work for the foreseeable future given the snow. As we drove on, her frustration grew slightly when she spotted a mistake. The workers had placed a pipe which helps with the overflow only five or so feet from the man-made watering hole. It needed to be at least twenty feet away, she said as she snapped photos on her phone to send to the company and tell them in no uncertain terms that they needed to fix this. As we drove away, she pointed out the line of posts she'd put in to indicate roughly where they needed to lay the pipeline. They'd dug roughly three quarters of a mile and still had some way to go. Once they were done, she would remove the posts, otherwise "the cows will mess them up." It was not only construction workers who she had to contend with in order to access water.

Tracy's own herd of cattle, the very reason she needed to access water, would often make it more difficult to do so. We spent several hours one late October afternoon securing tall wooden beams over and around the water tanks made from old, large tires. Doing so helped

block cattle from climbing in and destroying sensitive infrastructure. However, it was a never-ending battle. Her cows proved to be both pretty picky and smart about what kind of water they wanted to drink. According to Tracy, "they only want the freshest water and will push down the floats on top of the water tanks, which send water to the tank when the levels are too low, or straight up damage them in order to make sure the water keeps running." This can lead to a messy and muddy area which is not easy for her to work in. It also means that Tracy must constantly monitor and fix water infrastructure. The ability to access and benefit from water is thus not only predicated on social relations and expressions of power between humans, but also upon the behaviors and desires of non-human animals. The desires of her cattle shape the ways they engage with water and the objects which they end up damaging. Wildlife too, as in the case of beavers and their dams described earlier, shape waterways and limit the degree of human control over access to natural resources. In acknowledging the more-than-human infrastructures which are instrumental in accessing water, I take inspiration from Maan Barua, who calls for attention to more-than-human infrastructures (2021). As we drove away from the newly constructed wooden beams jutting out of the water tank, Tracy commented as much to herself as to me it seemed, "water is not gonna last forever." Even around town, far away from the mischievous cattle, sufficient water supplies are a concern.

For ranchers, additional pressure on declining aquifer levels from housing developments, new small landholders and even fellow agricultural producers is concerning. Experiences of slower water flows amidst a boom in housing construction on the outskirts of the city was seen by many as an indication that newcomers to the countryside were partially responsible for growing water scarcity. At a meeting of ranching women, people collectively criticized owners of "ranchettes." These are small acre homesteads built on former grasslands by a developer,

whose green lawns stuck out on the usually muted yellow landscape. One woman, who also worked as a realtor said she felt torn in selling land - as a realtor she often had to think about what was best for the seller and that was to sell to the highest bidder, who usually were developers. She also said there were estimates that the local area was short 4,000 houses to provide adequate shelter for the workers moving in. Although there has always been an influx of new residents from out of state due to economic opportunities in the energy sector, the pandemic drove a surge in new residents, according to a report from the Economic Analysis Division of the Wyoming Department of Administration and Information. Chief Economist Dr. Wenlin Liu indicated, "a number of professionals with higher income and telework capabilities chose to relocate to less populated and lower cost areas during the pandemic."[14] Nowhere was this influx of people more noticeable than on the outskirts of town where people could own more acreage than more urban areas while still being very close to town. Some women at the meeting wondered why builders were making lots so small and thus increasing the number of water users drawing on the aquifer.[15] The realtor replied that the county had decided to make the minimal lot size for a home in specific, rural residential areas smaller – a ranchette could be built on a lot as small as 5.25 acres following a groundwater study in 2014.

While it is easy to become mired in the specific details of county zoning laws, migration statistics and real estate development plans, the main point I want to emphasize here is that most of my interlocutors linked personal experiences of water scarcity with these demographic changes and legal dynamics. As the conversation continued, everyone agreed that water has

[14] Liu, Wenlin. *Most Wyoming Counties Gained Residents in 2023.* Wyoming: Economic Analysis Division, 2024.
[15] Out of town ranchettes and rural homes typically get water through private wells while residents within the city are able to tap into municipal water which comes from Granite Reservoir to the west of the city.

become less available, albeit through different experiences. For instance, some reported having to drill deeper for water while Tracy said it now took three times longer to fill up her water tanks. Just a couple years previously it took 20 minutes to fill the 275-gallon tank which she used every day in the summer to water her cattle and calves while her new watering system was being constructed. That year it took over an hour to fill the tank. Writing of urban infrastructures and the social life of water in Mumbai, Nikhil Anand speaks of how "as residents encounter water in different times and places, they know water in multiple and incommensurate ways…Water is never just H_2O" but rather a substance which "carries meanings and symbols far in excess of its material substance" (2017, 220). Weeks after this meeting, water again became a topic of conversation. While bumping around in her truck, checking cows and calves in the pasture, she told of a neighbor of hers who had to really watch how much water they used at home. "They would shower at the gym and do other things to avoid using water at home," she said, and "in the summer it was not uncommon for the well to run dry." They eventually had to dig a deeper well the past summer. Interestingly, water scarcity was not only recognized as stemming from the urban newcomers but also from fellow ranchers and rural neighbors.

During my fieldwork, anxieties swirled around the case of an application by a ranch to drill new wells which revealed the extent to which water is understood and adjudicated through relationships. I first heard of the incident from Karen who explained the situation at the time while we sat at her kitchen table, with cups of coffee in hand. This ranch, which I'd find out later was well-established with over a century of continuous operation in the area by the same family, had applied in 2019 to drill eight high-capacity wells. This is an astronomical number considering most of my interlocutors had no more than one or two if they had any on their ranches. Although the application indicated the wells would be for the purposes of irrigation,

"many neighbors suspect that [the applicants] would not use the water to irrigate, but instead to sell to the oil and gas companies," Karen indicated. When I asked about how people handle water related conflict such as the situation she described, her husband mentioned that people are not afraid to litigate and complain to the state engineer's office or go to their local water district's office. Karen, however, gave a more nuanced answer, offering that it depended on the relationships between people. For example, newcomers receive more push-back than established households and operations. People with negative reputations, who are not well liked or respected, might also face greater resistance. She went on to say that while the applicants of the 2019 application were not newcomers, their language in the application requesting wells which would be used "*at this time* for irrigation," (emphasis added), was suspect. Another rancher and fellow church goer also expressed concern over the application.

At her dining room table, Alison asserted, "everyone knows that the outfit wants to use that water to sell to oil and gas companies so they can use it to frack." These comments are significant in that the amount of water applied for, which would draw up to 1.5 billion gallons of water per year, seemed to be less an issue, at least for these ranchers, than the fact that this water would be sold for profit to companies rather than used to actually irrigate crops or water livestock. In arid landscapes where water is already scarce, using more water than necessary can be seen as a zero-sum-game, where one ranch's advancement often means potential disaster for other ranches. Such comments suggest that water used for profit at the expense of others is considered immoral if not outright dangerous to understandings of water as a public good, which must be stewarded for the benefit of all. "Everyone is worried," Alison's husband Peter quickly replied to my question about what they and those they know think about the aquifer. Such words echoed one conversation I had with a fellow water user and producer to the south of them. This

man and his grandson both expressed concern over the pressure being exerted on the water sources nearby. “People who applied for wells will dry up creeks and there is a lot of drilling going on and that has been proposed,” the elder producer said, referencing the application for eight wells. He described asking his lawyer, “Who do I sue if my well goes dry?” and the answer given was no one; neither the state nor the individual. As Lucas Bessire, writing about the looming water shortage in neighboring Kansas, argues, “aquifers insist on a kind of overarching interdependence…Their expansive natures push those who reside on depleted lands to acknowledge a common, species-level fate and turn its imperatives against the forces that seek to pit us against one another” (2019, 180-181). This insistence is operationalized in Wyoming water laws and policies which hold dear the idea that water is and must remain a public resource. During our conversation of wells and aquifers, Peter described that to get a new well, especially an irrigation well, you must apply, pay a fee of $75, and then make public your plans, such as by taking out a small advertisement in a newspaper. For the case of the proposed eight wells, it was through these advertisements that some neighboring ranchers found out about the application. Meetings may then be held, potentially followed by courts and appeals should the public be dissatisfied in some way with the proposed plans, as has been the case of this irrigation well dispute.

As reported by local journalists, twelve neighbors joined together to push back against the proposed plan, arguing that the wells would imperil the surface waters on which their families and herds depend. As complex hydrological and geological systems, surface and ground waters are not isolated, but intricately connected. Horse Creek in particular, ranchers argued, would be at greater risk of running dry. While the state engineer has yet to rule on the case, the proposal was not recommended to be approved by the Laramie County Control Area Advisory

Board[16] in September of 2021 and resulted in a new law aimed to protect senior water users which was authored written by Ed, an interlocutor and rancher-legislator living in the area. House Bill 136 stipulates that applicants for new wells must now bear the burden of proving there is sufficient water for their proposals. Such new legislation was welcomed by others like Oscar. In the face of an uncertain future, he had stated it was his hope that water would remain a public resource. As we've seen, water as well as land are forms of public natural resources which bring together and simultaneously divide Wyoming rural inhabitants. Far from exclusive private property owners who work and act only on their own behalf, there is a subtle yet powerful ethos of collectivism among ranchers who see collaboration and acting with one's neighbor in mind as essential to living and working in the arid Wyoming grasslands. Conserving these resources, then, is just as important as using them responsibly. However, doing so is perhaps even more problematic when national programs end up causing more disruption to local ecosystems than intended. As the next section describes, ranchers and their neighbors are very much interested in stewarding range lands, just not in the ways done elsewhere.

[16] A Control Area is "any underground water district or sub-district that has been so designated by the board of control" (W.S. 41-3-912). A Control Area serves the function of a special groundwater management district. Special permitting procedures apply in Control Areas. Special water administration and management practices may also be implemented in Control Areas. An area may be designated as a Control Area when any of the following conditions occur:

1. The use of underground water is approaching a use equal to the current recharge rate;
2. Groundwater levels are declining or have declined excessively;
3. Conflicts between users are occurring or are foreseeable;
4. The waste of water is occurring or may occur; or
5. Other conditions exist or may arise that require regulation for the public interest.

All new appropriations which are not for Domestic, Stock Watering, or Miscellaneous Uses less than 25 gallons per minute (gpm) and all petitions for a change of existing groundwater use within a Control Area are subject to public notice, public comment, and a recommendation from an elected Advisory Board to the State Engineer as to whether the application or petition should be approved or granted. If protested, the application or petition may proceed to a contested case hearing.

Stewarding natural resources

Many producers I spoke with considered ranching to be livelihood and vocation that has great potential to benefit local environments by maintaining open, green space, protecting biodiversity, and contributing to the health of grassland ecosystems, which is particularly significant in eastern Wyoming. A few interlocutors were involved on county level conservation district boards and others served as volunteer firefighters or were retired government workers who during their careers had worked to advance environmentally friendly practices among ranchers. Conservation meetings made clear some environmental concerns and revealed the interconnectedness between local and federal government agencies, new landowners, rural producers, and other stakeholders such as conservation-focused NGOs. Stewardship, understood as active care and labor for, in, and with landscapes, is a keyway to ensure access to grasslands, water and other precious natural resources for future generations. Humans, along with their livestock, are thus essential and irreplaceable tools for conserving rangelands. This runs counter to established conservation programs such as the Conservation Reserve Program, which pays ranchers to not farm enrolled land. As a form of fortress conservation, CRP does more damage than not by resulting in large areas of uncleared biomass that fuel wildfires and ignoring the importance of disturbance to grassland ecosystems. Defined as "a physical force, agent, or process, either abiotic or biotic, causing a perturbation or stress, to an ecological component or system, relative to a specified reference state and/or system," disturbances are positive and lead to healthy grassland ecosystems.

On a late January morning, I attended a Laramie County Conservation Working Group meeting for four hours. In a metal walled, plain cement floor building eight or so miles east of

town, a number of white folding tables was arranged in a "U" shape with white folding chairs and boxes of doughnuts, coffee, water and some rain gauges, pens and other promotional equipment set out for attendees. Two organizations were helping facilitate the meeting – a local branch of the Natural Resources Conservation Service (NRCS) and the Laramie County Conservation District (LCCD). The former is a branch of the USDA which works across the nation with landowners, agricultural producers, and local conservation districts to protect and conserve privately owned lands while the latter focuses exclusively on the natural resource conservation goals and support of landowners at the county level.

Breaking into small groups, I joined an assortment of people in front of a large white sheet of paper labeled with a resource category, such as water, soil, air, and energy. In ways reminiscent of participatory planning processes and collective design in other contexts (see Kirsch 2022), we were instructed by the facilitators from the NRCS to make trips to each sheet to describe our concerns as they pertain to that specific resource. Then we were given a sheet detailing common resource concerns to stimulate ideas of what to write. Since these were also already used by NRCS in their work, these were also legible concerns by this arm of the United States Department of Agriculture. Two conservation-centered NGO workers, an official from the Department of Water Quality, a producer/Laramie County Conservation Board member and I put pen to paper. People seemed familiar with each other as we introduced ourselves and wrote down our concerns. Once we finished at each sheet we went around and said aloud all the written responses, pausing to clarify or explain certain ones and then there was a 15-minute break while the NRCS workers condensed the lists into categories on which we would later vote.

When the meeting was reconvened, voting on the smaller, more condensed topics began. We were each given five votes and told to put a tally mark next to topics which we thought were

the most important to us. By far the most selected topics, and thus most concerning for those present, were weeds and aquifer depletion. The next top selected topics included: small landholder education (especially regarding proper stocking rates and soil health), livestock, poor rangeland health, and soil erosion. Energy and Air (as larger resource categories) received absolutely no votes. I suggest that this and other meetings like it constitute processes of collective governance through which stakeholders attempt to ensure future access to healthy lands and waters. It became apparent that there was a general consensus that attempts to conserve natural resources were not solely individual affairs, but rather that conservation success relied on collective action. This meeting constitutes a kind of rural, public sphere (Habermas 1989) and others have argued that such sites are similar to other instances where citizens come together to deliberate on matters of public interest (Parkins and Mitchell 2005). We were discussing possible solutions to some of the identified problems. For livestock, which tended to be an issue stocking rate and distribution-wise, discussants offered more closely monitoring/protecting water sources, fixing fences, making recommendations to landholders, and monitoring and incentivizing landowners to operate differently. For small acreage education, the NRCS director said that technical assistance is already being given to those who've asked for it. However, participants argued that "these landowners have no idea what their stewardship responsibilities are" and another added that often they "don't realize that they have problems." "Many expressed support for a larger campaign which would be coordinated between the various county level organizations. For weeds, there are cost-share programs available now for producers. And for soil and rangeland health planting of perennial and native species were discussed as well as reducing tillage. Lastly, for the aquifer, possible solutions included helping to monitor and give recommendations as well as building fake beaver dams on small streams and creeks to help

better capture water throughout the water shed. In ending the meeting, the NRCS director admitted that it's "hard to maximize profits and do conservation" work. Not only is more actual conservation work needed, but education and outreach are also big concerns. More farm tours or field days were suggested as possible solutions for this. Before ending the meeting, the director explained how funds for NRCS are given out on a divisional basis rather than county basis, with Laramie County put together with Goshen and Platte Counties. He hopes that in the future they might begin giving funds on a county level so that Laramie County doesn't have to compromise its goals with those of other counties. Although a fascinating window into local conservation activities, most of my interlocutors didn't attend these meetings regularly. Instead, many experienced conservation and understood conservation through a program of the USDA.

Conservation Reserve Program, more commonly referred to as CRP, is a major locus of conservation activity across the U.S. However, while a lot of land in SE Wyoming is enrolled in CRP, I was surprised to hear negative opinions of it by ranchers who pride themselves on being the original conservationists and environmental stewards. What is the problem with CRP? According to the USDA, "the long-term goal of the program is to re-establish valuable land cover to help improve water quality, prevent soil erosion, and reduce loss of wildlife habitat."[17] "To do this, farmers and ranchers who farm forage crops sign ten to fifteen year contracts to enroll into the program and remove environmentally sensitive land from production after planting a cover crop which will, hopefully in that time, result in positive environmental outcomes. One seasoned rancher who was eighty-seven years old at the time I first spoke with him, told me the current CRP set up is very similar to if not outright the same as the "soil bank"

[17] "Conservation Reserve Program." Accessed April 18th 2025. https://www.nrcs.usda.gov/programs-initiatives/crp-conservation-reserve-program

program which came out of the dust bowl era. The "soil bank" was enacted by Congress in 1956 and remained active until the 1970s when agricultural production ramped up, decreasing the number of enrolled acres. It gave money to farmers and ranchers who voluntarily retired eroding or otherwise unhealthy soil. The modern CRP came out of the 1985 Farm Bill and is designed to address conservation challenges. Agricultural economist Jonathan Coppess (2017, 1) notes that while both modern and past forms of this soil and land conservation program were concerned with environmental health, previous iterations of the CRP had a large focus on conservation as a mechanism to bolster economic health of farms. He writes,

> Early iterations [of CRP] were largely subordinate to price support goals…used to pay farmers to temporarily hold land out of production in hopes of controlling supplies, increasing prices and conserving soil resources…In 1956, Congress declared that 'the production of excessive supplies of agricultural commodities depresses prices and income of farm families; constitutes improper land use and brings about soil erosion, depletion of soil fertility, and too rapid release of water from lands where it falls.'

Although conservation for its own sake has been the focus of modern CRP policy, the program is still affected by economic concerns. For example, a trend identified by scholars is that enrollment in CRP generally follows downturns in crop prices and enrollment declines when prices are high (Claassen, Cattaneo and Johansson 2008). CRP as a strategy for economic as opposed to strictly environmental well-being is well understood by ranchers. This means that ranchers, as is the case with water, could put financial advancement above the community needs.

As I sat shotgun in his pick-up truck, Jose lamented "government farmers," saying that CRP pays better than wheat or cattle. Driving to work his own bovine critters, he described how his older neighbor used to grow wheat but now has enrolled most of his land in CRP. Jose and

his family had been renting a section and a half of land from the elder neighbor for about fifteen years at the time of my fieldwork. There they pastured forty cow and calf pairs and a bull in one area and another forty or so cattle in another area. They lease land because they do not have enough deeded land of their own to support the number of cattle they have. I suggest that Jose's critique of CRP participants mirrors the disdain shown by interlocutors concerned about the proposal for eight wells. Though enrolling land benefits individual landowners through stable rental payments, it comes at a collective cost. Only in this case rather than using too much of an increasingly scarce resource, making it more difficult to access by others, individual action creates an unwanted abundance that similarly threatens future access. This unwanted abundance is dead, ungrazed biomass: a tinder box waiting for the right spark to go up in flames.

Although fire has played an important and long-standing role in North American ecologies (Pyne 2017), it is prevented from carrying out its work as a disturbance force. As we drove by his older neighbor's place, Jose mentioned, "CRP land can be a real fire hazard due to the accumulation of years' worth of vegetation growth." He spoke then as a volunteer firefighter as well as rancher. During visits I'd occasionally hear chatter coming from a walkie talkie and one interview was undertaken in a small firehouse nearby, his second workplace. Volunteer firefighting units are common in rural and small communities which lack the tax base or other resources to support paid firefighters. Jose mentioned full and dry patches of grassland can go up very quickly when lighting strikes and burn hotter and longer than fires on grazed land. He and his fellow firefighters sometimes will have to wait rather than try and put it out if it gets too hot and big. Subsequently, it is not uncommon for fires which start on CRP land to quickly grow and spread to neighboring farm and ranch land. He commented that people will ask him, "Why didn't you put out the fire when it was on [my neighbors] land rather than waiting until it got to

mine?!" As seen earlier in the conservation working group meeting, successful stewarding and conserving of natural resources for future generations requires collective as opposed to individual action. Such action though is difficult in a landscape of fragmented and varying management goals and dynamics.

In this complex arena, inaction on the part of one party can and does often negatively impact the abilities of neighbors to live and work well. On an earlier meeting with Jose, we'd driven by a number of prairie dog holes near his corn fields. This other landowner, he stated that this neighbor didn't "seem to care about taking care of the varmints." Frustration laced his words as he conceded that "you can't control your neighbors," even if what they do impacts your operation. Prairie dog colonies are notoriously difficult to manage, and they spread and multiply easily with no regard for property lines. Though the animals themselves are quite harmless, their tunnels and large burrows often cause livestock, especially cattle, to break their legs when they accidentally walk into a whole and slip. Between neighbors, as both Tracy's case of the beaver dams and Jose's case of prairie dog towns show, there is constant negotiation and tension. I suggest that the perpetual strain between neighbors is inevitable in such a fragmented landscape where each producer has their own goals, concerns and limits regarding what they can do to address issues whether it is time, money, labor, or other resource deficits. The tension that is not inevitable and displays a disconnect with local communities and local ecologies seemed to be CRP itself.

Early versions of CRP greatly hindered the natural disturbance regimes on which grassland ecosystems, such as those in the corner of southeast Wyoming where I undertook fieldwork, thrive. Jesse, a retired scientist and NRCS worker living in Swain indicated that as a form of fortress conservation, CRP "has been a nightmare for the local area and rangelands." He

lived on a bit of land just to the east of Willy and one day Willy took me over and introduced us. Curious what a non-commercial producer had to say about the program, I asked Jesse to tell me his thoughts one day. "CRP might work in other kinds of ecosystems, like those on the coasts or at lower elevations, but here on the high plains completely leaving soil alone is not really helpful," he said. He went on to say that on fragile, drier soils and lands like the great plains, plants really need and benefit from grazing animals. In addition to fertilizing the soil, ruminants trample the seeds into the dirt and help stimulate growth through eating plant biomass. Other ecologists and rangeland scientists have described herbivore grazing alongside drought and fire as important forms of disturbance necessary for thriving grasslands. In an eloquent opening to their paper on the obstacles and promises of grassland biodiversity conservation, Augustine et al. argue that "grasslands live in mortal fear of anthropogenic activities that eliminate the disturbance regimes essential to sustaining grassland ecosystems. The loss of these disturbances, such as fire and grazers, ultimately leads to landscape-scale homogenization and loss of biodiversity." (2021, 281) In this light, both fire and livestock are important tools for sustainably managing grassland ecosystems. Under traditional CRP policy though, both are not allowed. While a special version of CRP just for rangelands – aptly called Conservation Reserve Program Grasslands[18] or just "CRP Grasslands" – was set up in 2014, it was and remains unclear what impact it's had on local ranchers and on stewardship beliefs and practices. Although it seems new program conforms more to ranchers' understandings of care for lands, waters and animals as an active process in which humans are key players and that encourages rather than hinders

[18] According to Farm Service Agency fact sheets, ranchers who participate in CRP Grasslands are able to still work lands by grazing livestock, harvesting seed or hay, conduct fire rehabilitation, and construct firebreaks and fences within certain parameters. For example, work may be restricted by the nesting season of any endangered or protected bird species present on the lands enrolled.

natural disturbance cycles in grassland ecosystems, more research is needed to determine the benefits and challenges such a program brings to the region. Attending to conservation programs and ideas of stewardship draws out temporal aspects of access since for ranchers the ability to benefit from resources depends not only on these being present in the here and now, but also in the future.

Conclusion

Off the ranch, ranchers engage with a wide range of other social persons, from fellow producers to non-ranchers, through their use and stewardship of natural resources, specifically public lands and water. They do so largely because they live and work in a mosaic of varying property lines. This mosaic landscape is the result of over two centuries of changing land policy and public desire. When public lands were created, they were envisioned to benefit not only nascent states but also advance settlement. Land was freely given to homesteaders but over time they became thought of as precious and scarce commodities, to be protected. Currently, landowners find themselves living with federal, state, tribal, municipal, and other landowners whose actions and management regimes can and do impact others. It is a false idea that one can move to a rural parcel of land in Wyoming and expect that they can do whatever they want. Access, then, to the resources necessary to live and work with livestock is intimately connected to this history. It is also a more-than-human dynamic.

This chapter investigated the anxieties over water that saturated my research. Impacted by the increasing lack of precipitation, mischievous animal action, and other humans, interlocutors described the ways in which water was experienced as a scarce and difficult-to-access resource. Though dislike of climate change language tainted how ranchers would express

themselves, they fully acknowledge that wells were drying up. Contributing to this were actions taken by their neighbors, be they non-producers or fellow ranchers. While water was regarded as a public resource, most seemed to agree that certain uses were morally better than others. Personal profiting from water at the expense of others was considered wrong. Unfortunately, there is only so much a worried public can do when the state, as manager of waters in Wyoming, is the ultimate authority and has a specific set of guidelines it uses in allocating water. Though the aquifer brings together people and more-than-human entities in a complex fluid public, conservation activities constitute another avenue in which ranchers, state officials, and other stakeholders participate in collective action. Ranching then is not only sustained through individual labor, but also by collective collaboration and negotiation.

Ranchers consider conservation of resources to be essential for not only their lives, but for future generations and several interlocutors were participants in organizations dedicated to protecting grasslands. Such active engagement with and interest in environmental stewardship complicates depictions of ranchers as environmental villains. However, some nationally recognized programs hurt more than they help through a top-down application and set of policies which disregard local ecosystem dynamics. In the case of the Conservation Reserve Program, leaving land alone runs counter to the cycles of disturbance that regenerate and sustain plant, animal and human communities on Western rangelands. While more recent renditions of CRP show potential to work with rather than against these dynamics, more research is needed.

Chapter 3: Agrarian kin-work, gender and reproductive strategies

Seated around a wooden table polished with age and faced with a black and white photo hung on a wall of some Corriedale sheep taken in the years before cattle had taken over the ranch, I felt surrounded by someone else's family history. Heirloom furniture, handmade goods and pictures taken of and by homesteading ancestors are commonplace in the ranching homes of rural Wyoming. The feeling was amplified as the owners of the home, a father-daughter pair of beef producers, sat down to speak with me. During the interview, Mike, the father, said bad family situations and poor succession planning have "wrecked more ranches than bad weather and bad markets combined." In his 60s with hooded, light blue eyes that belied a sharp intellect and energetic personality, Mike asserted that you "have to cultivate the next generation of agriculturalists." His words came not from wanting to preserve a specific family legacy but from a desire to continue creating a new one. For although it appeared I was surrounded by his history, the ranch had once belonged to another family and it was only after decades of work and maneuvering that he was able to buy it from them. Having struggled to build a herd without family resources, Mike did not take for granted the value of kin.

In this chapter I examine the ways in which ranchers generate familial relations in both their herds and in their personal lives by asking: what does kinship do for ranchers and who works to maintain kin relations? With a generous and broad understanding of reproduction that includes socially and physically generative processes in both humans and livestock, I argue that

cultivating familial relations is an essential focus of ranch work. Much like other pastoral peoples, kin networks are relied upon when undertaking labor that requires pooling together labor and capital and it is through family that the risk inherent in agricultural pursuits is reduced. In America the family farm is valorized in public imagination as well as political and financial policies and it is an accepted truth among ranchers that for the most part one is either born or marries into the profession. Kinship then is not only a major organizing factor of work and identity, but also frequently an exclusionary force.

While they labor to make and make use of kin ties, ranch work also focuses on maintaining and growing cattle and sheep lineages as well and it is important to understand that the immediate aim of my interlocutors was not to produce beef, leather, wool or mutton. Rather, descent was not only a major factor shaping life and work, but a goal focused on maintaining livestock as well as human families overtime and space. As a locus of action and meaning along a chain which culminates in products recognizable as meat and textiles (and often products unrecognizable as having animal origins such as cosmetics, resins, etc.), ranchers do contribute to the production of commodities. However, the goals of daily and seasonal work revolve around producing new generations of crops, of livestock and of humans and making sure these survive predation, wildfires, drought, and the myriad of other threats as opposed to making textiles or meat. Though there are ranches which have adopted a more integrated approach and do sell their own meat commercially, for those I worked with who operated cow-calf and seedstock ranches, livestock are fed, watered, vaccinated, and doctored as opposed to fattened, butchered and sold directly to consumers. More often than not these ranchers are joined in their work of growing bovine lineages by their kin – families sustaining families in a truly multispecies enterprise.

In discussing how ranchers and livestock reproduce, I touch upon reproductive failures – times when growth stalls, instances where ranches are broken up in divorce, and occasions when cows refuse to raise a calf. When does reproduction falter and what strategies are used to prevent or remedy failures? While kin-work, as a form of affective labor that engenders kinship relations through the performance of intentional acts (Miller 2018), is undertaken to a large extent by new and beginning ranchers, even within multigenerational operations work is needed to maintain cohesion and order within the family. I argue that mothers, sisters, and daughters are largely responsible for performing the labor necessary to keep larger, extended families connected. It is through women's work on and off the ranch that family farms are strengthened. However, maternal instincts should not be taken for granted. In examining cases of cattle who refuse to be mothers, I explore the lengths to which ranchers go to engender seemingly natural relations of tenderness, care, and support between mother and offspring.

Although some in particular grow attached to their herds in ways reminiscent of family ties, no rancher I ever spoke with acknowledged any livestock as their family. True, they are often "kinned" as mothers and recognized as individuals with unique personalities as is the case in other communities practicing animal husbandry (Kroløkke et al 2024). But there are limits to a shared, human-animal kinship and for Wyoming ranchers, livestock are undeniably commodities. Yet when their animals die or leave the ranch to continue their journey along the supply chain that ends at the slaughterhouse, a process that evokes strong emotions for numerous reasons. One family I spoke with described with love and longing how an exceptionally productive cow raised numerous calves during her long life and became a "herd marker." These rare animals distinguish themselves from the rest of the herd through their actions, gaining both recognition and respect. For this family the cow lived some 18 years and raised consistently good

calves nearly every year, earning her a special burial site and the continued remembrance of her labor years after her death. However, these individual animals are exceptions. For most of their herds, the ranchers with whom I spoke were intimate enough with their livestock to know when and how illness, injury, drought and other negative factors were impacting their health and well-being but not so close as to develop more substantial connections as described in the works of Victoria Peemot (2024), Evans-Pritchard ([1969]1940), Piers Vitebsky (2005) and other scholars of pastoralism. In other words, the relations described here are what I call relations at arms-length, a kind of human-animal relation which relies on kinship structures while recognizing difference and limits of shared human-animal kinship. For my interlocutors, humans and livestock are inexplicably linked. However there are limits especially in relation to gender.

In examining the work needed to sustain human and non-human kinship, I seek to both destabilize the naturalness of reproduction and call attention to the ways in which human and non-human kinship can be connected without collapsing into each other. I take kin-work to be historically contingent and influenced by particular genealogies past and present. Maintaining connections to deceased relatives strengthens claims to resources while current family dynamics influence thoughts and actions of ranchers in their work caring for livestock. Kin-work is thus interpretative and sensuous – in the messy, smelly work of breeding livestock and attending to births, ranchers contemplate kinship in both humans and livestock. Through attention to an agrarian form of kin-work, I draw together works from feminist political economy that point out the importance of social reproduction, pastoralist scholarship that demonstrates the dialectical relationship between humans and non-humans, and the extensive literature of kinship.

The significance of family land

"I just want a chance," Kody said in exasperation. Punctuated by the bellows of cows amid fresh smells of urine and excrement, our conversation proved a frustrating one. As a friend of my interlocutor, the young man had unexpectedly happened into my research one day while I was visiting to document and help with a session of artificial insemination. A military veteran with a young family, Kody was hoping to build his own ranching operation from nothing, having not grown up with an agricultural background. When I questioned why he would want to go into a career so precarious, he spoke of how he longed for the lifestyle ranching affords. For him this meant "more leisure and family time" and "more exposure to life, death, birth and just a more primal, experienced life." He also said he admired the values of hard work and persistence which ranch work cultivates. As he, another young man, and I worked to inseminate cow after cow, trying to avoid being injured by heavy, ornery bodies with sharp hooves, and ending up covered in shit and dirt, he demonstrated what he'd eventually put into words – namely that "you have to be prepared to seize opportunities when they come" and endure whatever conditions come along with them. Such dedication and passion about agriculture in a young man should be a cause for joy given that American producers are getting old. According to the USDA, the average age of farm producers in 2022 was 58. However, rather than finding open doors in this aging industry, Kody's experience has been marred by exclusion and marks a stark contrast to ranchers with firmly established agricultural roots who do not have to contend with a "kinship glass ceiling" (Yanagisko 2002) that limits their abilities. For many of these established ranchers, settler ancestors amassed land to the benefit of descendants.

Oscar, an easygoing beef producer who I never saw out of overalls, described how his land-savvy father had moved from Kansas after WWII and found an abundance of cheap land in Wyoming. He bought parcels around Slater and Wheatland, to the north of Cheyenne, where

several members of the extended family are still operating ranches. At one point Oscar's father had even bought some land in Colorado for $7/acre which increased in price and was sold for $12/acre. The family land holdings ended up being somewhere in the area of 50,000 acres, between him and his dad, by the time Oscar was an adult and a landowner himself. Continuing the legacy of his father, he and his wife at one point bought land to the west of their home that they have since divided among their three daughters who also ranch. Given the high price of land today, most if not all ranchers would agree that it is paramount to keep it for future generations.

In maintaining family land, keeping detailed records and engaging in partnerships with siblings are important forms of kin-work which help ensure land is accessible through deeds or leases.[19] While completing paperwork is not usually an image that comes to mind when one thinks of ranch and farm work, it has been an important element of working land and animals for decades. For instance, I was told by John, a state legislator and 4th generation rancher, that his grandfather had to rebuy land that his own father (John's great-grandfather) had already homesteaded and been granted due to paperwork not being in order. His operation is connected to that of his daughter and her family and they are all partners in a Limited Liability Company (LLC). Although LLCs were more common amongst my interlocutors, Mike's family operation "was a Limited Partnership (LP), where the siblings and parents each hold a stake in the ranch. Such arrangements are in keeping with modern Euro-American cognatic descent and bilateral kinship systems. He made it clear that the various business structures (LPs, LLCs, etc.) were largely different in structure and fine details. The point of each, however, was to help with succession, estate planning, and lowering the amount of taxes paid when the ranch changed

[19] During fieldwork, I was unaware of any transfers of land from parents to children and thus have no direct examples of inheritances of land.

generational hands. As such, the adoption of business structures formalize the family farm and make farmers and ranchers more into businessmen and women (Bell, Hullinger and Brislen 2015 and Merrill 2002). According to Mike, these setups protect the family and ranch by making burdens equal. It took him and his family 12 years to develop their succession plan and this plan helped immensely when the ranch changed hands – he said they would've had to pay more than a million dollars to the Internal Revenue Service, but with their plan they were able to reduce what they owed. Another rancher, who with her husband runs a law agency that serves local, private land owners, shared her story regarding the transmission and transformation of her family property over the generations.

Connie, who maintains a herd of Angus cattle while working as a lawyer, demonstrated how ranching is not merely a bucolic lifestyle, but a complex and robust form of family business, where "strategies and the timing of capital accumulation, reinvestment, firm expansion, diversification, and management organization are shaped by ideas, sentiments, and commitments of family and gender" (Yanagisako 2019: 3). Sitting in her air-conditioned office in town, she showed me a diagram she uses to explain some of the downfalls of conservation easements, especially as they pertain to estate planning and inheritance. The diagram illustrated her family tree (not complete for the sake of simplicity, she explained) and the way in which her family's property in the ranch has been handed down over time and the various stories of division and reconciliation. She explained that a female relative's work and her father's memory had served as foundations for this diagram, which she had made one day to aid her legal work. Her great-great grandparents settled, Pinewood, a small town many hours' drive west of where she currently lives in Laramie County. At that time there was plenty of land to obtain and give to each of their children who wanted it - she described two great-great uncles who had fought and

disagreed over the town itself and led to one brother going over to a nearby hill to establish his own town - Graniteville, which is a suburb of Pinewood today. Her great-grandfather's place went to her grandfather since the other male child died in a car crash. Her own father and brother split the ownership into a 60/40 way until Connie and her sister Joan bought their uncle's share and then bought out their sister Margret who lives in St. Louis and doesn't have an interest in the ranch. The creation and keeping of this diagram and other records of land, genealogy and livestock lineages "do not describe a prior existing situation or past circumstances, but instead construct social groups and legitimate a particular version of reality for particular purposes" (Chelcea 2016). As such they are products of and motivation for sustained descent-work over generations. A staunch advocate for succession planning, she stated that ranch divorces, where the family place is divided up amongst family members, is a situation where no one wins. For my close interlocutor Tracy, family land is so important that she found herself unexpectedly buying some of one sister's land just to keep it from being bought by strangers.

Two years after I had finished extended fieldwork, I made a brief trip back home for follow up research during which I learned of Tracy's sister's ongoing divorce. Riding shotgun in her truck as we made rounds to check for new calves, it seemed like only yesterday when I would routinely visit and help work cattle with Tracy. The occasional coos and cries of my seven month old daughter in her car seat and a few more grey hairs on Tracy's head however served to remind me of the time that had elapsed since I had left the field to write up my findings. In between calf tagging, she told of how it had become necessary for her sister, Monica, to sell some of her land to pay for the divorce. To keep the land in the family, Tricia is buying one section and leasing another three-quarter section and both she and her other sister's husband are also checking Monica and her soon-to-be ex's cattle for new calves to try and support her in

whatever ways they can. Fortunately for her sister, Tracy has some financial leeway since she is nearing the end of a cost-share program with the Farm Services Agency, who worked with her to install new water lines and tanks to water her cattle and improve her pastures. This has been ongoing for a few years and will require three additional years of follow-ups with the agency. Though she was not planning on buying land, she said she'll be able to expand on her sister's land as well as her dad's place, since he has been culling his herd recently and is down 100 head from when I was there two years prior. Tracy's actions support Micaela Di Leonardo's claims that analyzing kin-work "reveals the close relations between altruism and self-interest in women's actions" and makes clear that "altruism and self-interest are cultural constructions that are not necessarily mutually exclusive" (1987, 452). For Tracy, buying her sister's land was not only an altruistic act done for the sake of future generations, but also makes possible future expansion for her own herd. Such smooth transfers of land seem limited to established families, however.

Land for new and beginning producers

For those without direct agricultural ties or ancestral land, the biggest hurdles to starting a livestock operation are access to pasture and water, labor, and capital and it is through friends and business partners, formal and informal, that these are attained. One hundred years ago obtaining land was far easier and more equitable[20]– per the Homesteading Act of 1862 one need only go to out west, set up a household, pay some nominal fees, and improve the land in some way while living on it for five years to obtain title. Government policies in general were aimed to

[20] By equitable I mean socio-economic equality. Poor as well as rich were able to be landowners though landownership was a process laden with gendered and racial discrimination (Horst and Marion 2019).

get as much land as possible into the hands of citizens and to a lesser extent business and railroad companies. Over time however, these policies were reversed due in part to the dust bowl of the 1930s, where poor land management and prolonged drought led to massive soil erosion and large dust storms in several Great Plains states, and arguments that farmers and ranchers were not being good stewards of the land. Vast tracts became government land, technically held as public land, but managed and maintained by federal agencies. At the same time, as I have discussed elsewhere, water rights were being fixed around principles of prior appropriation and public good, meaning that those who were first to use and register their water use with the state were granted senior rights to water. All this combines to encourage and reward longevity at the expense of beginning producers. Moreover, numerous states, Wyoming included, have programs which celebrate so called "century" farms and ranches where operations which have been run continuously by the same family for over a hundred years. Things are indeed hardly encouraging for new and beginning producers, especially in semi-arid Wyoming.

With a carrying capacity of about 40 acres per animal unit[21] in good conditions, thousands of acres of land are needed in order to support a modest herd of livestock in eastern Wyoming. By contrast, the carrying capacity of a mixed woodland, continuously used pasture in the Michigan Upper Peninsula, which is the least desirable pasture to have in the state of Michigan, is about 5 acres per animal unit according to Michigan State University Extension services. Therefore, gaining access to land is the most crucial step to building an operation from nothing. Some turn to leasing land, precarious as this can be, while others try to buy land. Sheep and cattle rancher Jason, working without access to family property to begin from, remarked that

[21] "An animal unit (AU) is a 1,000 pounds of animal commonly assumed to be a beef cow and her growing calf" (Michigan State Extension service). I was told one AU was also equivalent to four sheep.

what was hard for him was how he couldn't get a foot in the door in such a closed society – people help and give opportunities to those that they are related to or know personally. Interestingly, his grandfather had been a farmer with land in the area though Jason had effectively been shut out from inheriting it following his death. Jason's father had moved away and pursued a research career before a grown Jason returned to the family operation to help with the aim of taking over eventually.

Accounts differ as to what happened when he came back and why the family place was mostly sold, save a handful of acres that an aunt lives on, however what is certain is that he found himself in the same position as Kody – largely landless. Lacking the kind of "practical kinship" (Levine 2021) ranching siblings often benefit from, Jason turned to a carefully developed network of people to access land. During my fieldwork one friend, a retired state veterinarian, allowed Jason to pasture a group of cows on his land, and his business partners, a retired ranching couple whose kids and grandchildren were not interested in ranching, owned a large operation, giving Jason the ability to keep a decent sized herd of sheep and cattle. Although Jason and his wife Rachel were on great terms with their aging business partners and neighbors, Cindy and Ben Bishop, when I carried out my extended fieldwork a great deal of tension has arisen since the families have begun the work of transferring ownership of the ranch from the older couple to the younger family. Though there are programs in place which connect landowners with landless producers in the hopes of keeping agricultural land producing, Jason and Rachel's situation exemplifies how difficult it is to transfer land between unrelated families. I argue that the valorization of family farms and ranches obscures the experiences of new and beginning producers while also undermining their very efforts to farm and ranch. Much effort is put into helping maintain "century" ranches or in helping producers start from absolutely

nothing, but very little is available for those caught in the middle of these two extremes. The following is an example of how formerly kin-like relations can sour in the face of changes which end one family's operation and mark the beginning of a new family legacy for another.

During my fieldwork, Jason, Rachel and the elderly Bishop couple were close – the men worked together as business partners and the women socialized in church and bonded over shared experiences of motherhood and garden work. All of Jason and Rachel's kids too were close with the Bishops, routinely eliciting smiles, compliments, and attention when I was present to see them interact together. After two years, however, things had become strained and they had just recently signed a new contract to transfer the ranch. The original agreement and plan of action between the Bishops and Jason and Rachel involved flexible payments based on a portion of the cow herd every year. Essentially, they'd buy shares of the Bishop's operation slowly until the older couple died or until they paid off the ranch. This changed after the Bishop's attended a conference about intergenerational transfers[22] of ranchland and were advised by various people, including lawyers, to not go ahead with the original agreement. So, they had to start from scratch, even eventually getting their own lawyer. The new deal means Jason and Rachel have to buy a southern parcel and take over a northern, state-land parcel this year and buy the rest in one big purchase sometime after four years. At the end of 2028, they can trigger a buy-out at any time, buying the rest of the land not already purchased. Typically, agreements like theirs will last ninety days or six months but theirs is a five-year agreement.

Throughout the whole ordeal tensions were high. Rachel indicated that she felt these people, their friends, were suddenly not acting like friends. Trust in the Bishops fell considerably, though Jason understood why. The older couple was dealing with their own family

[22] "This is not the same as family-to-family transfers", Rachel asserted.

turmoil. Apparently Ben and Cindy's daughters were very upset about their parents selling to Jason and Rachel. This put a strain on Cindy, who according to Jason perhaps feared that her daughter's would disown her and her husband. At one point, Jason and Rachel even offered the one half section where all the houses were to placate their daughters. They too are "caught between a rock and a hard place," Jason said. Negotiations were tough and Rachel indicated that they essentially had to incentivize the Bishops at one point, stating the fact that the older couple would get no money unless they signed the paperwork to finalize the new agreement. Jason thought the biggest hurdle for Ben was not only to sell his land but to sell to Jason and not his own daughters. The stakes are high for them now and they have only their sheep to amass enough money to finish the sale. They stressed they're not getting a price break on this current agreement; formerly, the defunct agreement had allotted them a little price break of a certain percentage off the total value of the land. Now they are paying the appraised value in full. To make things harder on them, they do not qualify for new and beginning producer loans from the FSA or USDA since Jason has had too many years where his income has come primarily from agriculture. The most troubling thing for the young family, though, was that since they agreed to pay the appraised value, the value will not only increase over time, but also in response to any improvements made. In Jason's words, "every time we fix something, we make it more expensive for ourselves…if we can float for the four years and then do [major] developments, we're in better shape." He even was open to a future partnership with someone else if need be in order to finish buying the whole place, though he said Ben would not like that idea at all. It was hard enough to sell to Jason, not to mention a complete stranger.

I argue that both Ben's and Tracy's strong aversion to selling to strangers suggests a mutual constitution of kinship, land, and identity among ranchers in the western US –

connections which are particularly strong among pastoralists throughout the world as well. Cooperative herding groups, defined as social units consisting of independent households consanguineally related (Khazanov 1994), are extremely common among pastoralists and their significance in territorial governance and group identity has been studied extensively (Ahearn 2016, Barth 1961, Crate 2006, Drew 2020, Evans-Pritchard 1969 [1940], Hudson-Dyson 1972, Ilahiane 1999, Marx 1977, Murphy 2014, Næss, Fisktjønmo and Bårdsen 2021, Tapper 1979). Although capital intensification, private ownership of land, and a greater integration into capitalist markets distinguish ranching from traditional pastoralist systems, both ranching and pastoral families develop substantial ties to the places in which they live and work through daily interactions with the landscapes, weather and organic life present therein. I suggest that for my interlocutors family and land are mutually constituted, with landed property keeping extended and immediate families together. As private property, however, land is alienable and when the ranch or farmland is sold, familial connections can break down. In doing so there is a severing of not only the basis for family coherence and obligation but also the means of production, cutting off future generations who may have wanted to pursue agricultural work. For established ranching and pastoralist families, these connections are safety nets during difficult times while for outsiders these are barriers which make building a herd and securing a place of one's own difficult.

Throughout our conversations and even after, as we played a board game, sheep kept escaping from the pasture. According to Jason, Ben "relentlessly avoided effort" when it came to maintaining fence lines and the shabby wooden posts and rusty and loose barbed wire have trained livestock to simply go through them. From the house we'd see the sheep creep closer, gnawing at grass as they walked alongside the road which led out to the nearby highway. Jason

and his 7- and 8-year-old daughters went out to push them back to the pasture. Again and again, though, they would escape, doing so at least four or five times while I was there one day. New fences are a high priority until other things come up, they said, and Jason was currently working to mend the fence on the west side of the place. It's a cruel irony, however, that in mending those fences to protect valuable sheep, the family is leaving themselves vulnerable in the future to a higher appraised value for the ranch. The very source of income and hope for a future place of their own is also the biggest threat to their plans. While land is a key element of sustaining herds, knowledge, labor, and capital are also essential for any ranch or farm that aims to be profitable.

Making use of artificial insemination

Attention to the management of biological reproduction in livestock through the practice of artificial insemination (hereafter AI) reveals how knowledge, labor and capital come to matter for different producers and in what ways. For established operations, AI provides a high degree of control and selection for certain genetics. This is important for seed stockers, who often promote and sell well-known lineages, as well as for those with registered herds that must extensively document each animal. For beginning ranchers, AI gives producers access to quality bull semen without actually having to buy a bull and thus is somewhat more cost-effective while still allowing for some degree of control over herd genetics. For both, AI is also a time to reflect on reproduction and descent of their own family over time. Still popular, traditional methods of breeding livestock are to put bulls and rams out with cows and ewes to procreate themselves, leaving little work for human hands aside from picking which livestock to breed together. AI, on the other hand, is an assisted reproductive technology to which ranchers turn for a wide range of reasons. For Joan, whose parents and children maintain a unique lineage of cattle, AI was a

method used to follow a very specific and somewhat controversial plan centered on inbreeding mothers and daughters with fathers and sons which was intended on creating a genetically closed herd. Assisted reproduction allowed Joan to keep detailed records as to who was bred to whom to assure a certain level of inbreeding. My sense was that AI also worked to make the very idea of inbreeding more palatable and less taboo by removing the physical act of reproduction.

Joan's father started the Brae Arden Hereford lineage purely out of curiosity, as a kind of experiment after serving in WWI and moving out from his home in Pennsylvania. During our first meeting, she'd shown me a map of the place, which had indicated through different colored lines and boundaries when and where land had been added in the past to create the ranch as it was today. Although he only made it through the 8th grade, Joan described her father as an incredibly intelligent autodidact, who read about any and everything from geology to genetics. She said he took as his inspiration observations of wild animals "where there is no breeding selection based on the genetic relationships of animals in a particular herd." The herd, though small in size due to a disproportionate number of male calves birthed in the last several years, is healthy and thriving after being closed for nearly a century. Joan described how these Herefords, despite not being money makers, are kept and used to breed the families commercial, Angus cowherd occasionally. Although she didn't participate in the AI session, she contributes to the reproductive work of growing herds by recording bovine genealogical information such as births, sires and dams[23] on her computer. She asserted time and time again how important it was to not sell the cattle of the herd on which her dad had labored and when I asked why, she said simply, but firmly "it just was." The Brae Arden Hereford line had become more than a genetic

[23] Sires are male cattle while dams are female cattle, both of which contribute genetic material in the making of a calf be it through natural or assisted reproduction.

experiment or simply a unique group of cattle. This lineage became synonymous with notions of heritage (Kroløkke 2022) and interspecies relatedness (Govindrajan 2018). Descent-work brought this herd and this family together in such a way as to make the dissolution of one the end of the other in a way. Moreover, it was not required work – maintaining this specific breeding program and records could've been abandoned long ago and the ranch would've continued on – and thus emphasizes how kinship is more than just blood or marriage, but instead relies on commitment and choice (Weston 1991). It is through and alongside cattle, in addition to land, that kinship ties and familial history are enacted and made visible.

Walking together into one of the large barns set up for a session of AI, Joan described how the process of AI actually had already begun with observations of cattle riding each other. Homosexual mounting of cows by other cows indicates that the standing, receptive cow is in heat ready to breed. The family uses a large rectangular patch on the rump of cows to know when they are riding each other. One brother described it as a scratch off lottery ticket - when cows rode each other they rubbed on the sticker and exposed the bright orange color underneath the silver paint. Thus, although occasional checks were made to observe cattle for any riding behavior, the stickers indicated in the absence of 24 hour watches which cows were in heat. At that point, either in the morning around 6 or in the evening around 6 a prostoglanden, a naturally occurring hormone, is injected to synchronize the heat in a certain group of cows ready for AI. Once this hormone is given, there is a twelve hour or so window to either inseminate naturally or artificially. Inside the barn, I watched as my interlocutor, her three sons, and a great grandson began setting up the supplies we'd need to inseminate the groups of cows given hormones the previous evening. Colton, who was in charge of herd management and artificial insemination, described that he was largely self-taught and had years of practice with his dad. His style of

"horned breeding" meant that rather than depositing the semen in the cervix, he deposited a little farther in, at the beginning of each horn of the uterine. He attributes this to his high rate of success (~80%) and occasional twin calves. With everything in place, we began to bring cows into the chute where their heads would be caught and held between two small door. A cane of semen, which is itself composed of 2 "goblets" of 5 straws of semen, totaling 10 straws per "cane," was removed from a tank of liquid nitrogen. Outside of the one month in late spring when artificial insemination was carried out, the nitrogen tanks are the only equipment that require year-round maintenance and needed to be refilled with nitrogen from a local contractor three to four times a year. While we only inseminated four cattle that day, during the previous year the ranch inseminated 147 cattle in total.

For this ranching family and many other established operations, artificial insemination is a time to renew familial bonds and enculturate youth while working towards an idealized herd, whatever that means for each family and their operation. Although Joan recognized one could AI alone, she said it was easier and faster with help. This was particularly significant with the little boy running to and fro, trying to learn and help but more often than not hindering the work taking place by spooking the cattle or riling up the dog that accompanied one of the brothers wherever he went. Colton would place a frozen straw in warm water for about 45 seconds to thaw – long enough to make it warm but not long enough to kill the sperm within – while one brother took a can of spray paint to mark the cows' backsides, indicating they had been inseminated. Carefully cutting the end of the thawed straw and placing in into a thin metal tube covered with a protective sheet called a "gun," Colton handed the implement over to his other brother in order to put on a thin, transparent plastic arm glove. He then lubed his hand, cleaned the vulva with a paper towel, and inserted the paper towel a little bit into the vaginal opening to

help keep fecal matter away from the tip of the plunger. Taking back the gun containing the semen straw, he was ready to inseminate the cow. He inserted his hand into the rectum and usually had to contend with some movement, muscles tightening and loosening, trying to push his hand out. He rode out these waves until the cow was calmer before inserting the plunger slowly. While ranchers described AI as a form of care and standard industry practice, I suggest it's also a "regime of violent care" (Van Dooren 2014), since it is distinguishable, as historian Gabriel Rosenberg argues, from bestiality or rape only juridically (2017). Working while he talked, Colton described the process of having to navigate the scar tissue within the vagina to reach the cervix. He said he had to thread the point of the plunger through various holes, none of which line up perfectly. He uses his other hand in the rectum to help guide the point of the plunger through each hole. Heifers, which have not yet calved, have no scar tissue and as a result it can be easier to pass the gun through the vagina to the cervix. In less than a minute he'd moved the plunger where it needed to be, despite sometimes being pulled forward or sent backward by the movements of the cow. While non-established ranchers also utilized AI, they did so for different reasons and with different tools.

In another barn, with Kody and the other aspiring rancher, Jack, AI was used in order to keep costs down in the pursuit of building a good cow herd. The quality of materials used reflected limited financial means and a strict adherence to customary AI techniques, indicating a reliance on formal education instead of knowledge accumulated with and from family. As the three of us prepared to AI, I couldn't help but notice the simple tools set up - rather than the specific semen warming instrument I'd seen Joan's family use, a camp stove was utilized to boil water before being poured into a small camping thermos which was outfitted with a thermometer. Dawn dish soap was the lubricant of choice though the plungers and protective

sleeves were similar if not identical to those used by Colton. They had a tank of liquid nitrogen that had been delivered along with several canes of semen from a seed stocking company in Colorado. The wooden chute, covered in a faded and chipped green paint, shook at times when the cattle began funneling through. The men had gone through an AI course with Jason, whose cattle were to be inseminated, and as we set up I asked them about their process. They said a success rate of 65% is considered good and the cost of semen depends on whether the donor bulls are still living or dead and on the various qualities of each bull. Like Joan's family, they administer hormones through "seeders" – large intrauterine devices full of progesterone – to help synchronize cycles before insemination. For these beginning ranchers, AI was financially useful since "you can get semen from a $12,000 bull without actually buying the bull." This is especially valuable if a rancher does not have enough bulls to service all their cows. Faced with very high start-up costs, these beginning producers stressed the need for cost-efficiency and maximizing profit by any means possible. When we began, I noticed that Jack was not as confident or quick as Colton. He occasionally "cleaned out" the cows by pulling out the fecal matter to feel around better. Making quick, somewhat forceful movements, he'd remove his cupped hand and the poop with it and then immediately stick it back in and repeat the gesture a few times. I recall as we worked one of the men talking about joking with his pregnant wife, essentially comparing the upcoming birth of their child with calving. Discussion of the joke, which was not received well by his wife nor myself at the time, exemplifies how descent-work both connects and divides ranchers and livestock, who notice and derive meaning from "long-held connections between women's bodies and bovine ones" (Howes-Mischel and Tracy 2023: 219) despite objections to the comparison. Though women and cows share aspects of birth and reproduction it is considered quite rude to compare them as if they were the same; I suggest that

for my interlocutors equating women with cattle is dehumanizing. Human and bovine reproduction is similar enough to make comparisons but different enough to fall into the category of dark humor like sexist or racist jokes. Continuing our work and conversation, I watched Jack apply the dish soap often, but never change his arm glove for a new one in between cows like Colton did. With a look of concentration, he told me that he was aiming for the cervix rather than the tubes and would not deposit the semen in or to near the tubes for fear of ectopic pregnancy. We had some problems starting out including on the second cow, when Kody clipped the wrong end of the semen straw and we had to reset everything. Though AI was identified as a financially viable strategy to build herds with limited means, this was hardly an easy or simple process. Thankfully, there are less onerous and unpleasant ways for ranchers to build relations.

The significance of female labor

While kin-work is carried out by everyone to various degrees, women perform much of the unpaid labor to sustain not only families, but entire communities. In the countryside, women cook, clean, and carry out managerial work. They also maintain a vast network of relations outside their immediate families through their work in gardens and engagement with social groups. These same groups are also responsible for public outreach and education, working to connect the larger public to agriculture and engender a sense of respect and appreciation for ranching, particularly cattle raising. The importance of female labor extends to cows who are recognized as coworkers though not always completely willing to take on the roles humans allot to them. During calving season especially, “bad mamas” challenge images of loving and warm mother-offspring bonds and well as bring to light the ways in which ranchers sometimes must work to strengthen or create maternal bonds.

Originally born and raised in California, Rachel is a woman who always has her hands full. With five kids under the age of six at the time of my fieldwork, this soft-spoken, petite woman with dark blonde hair usually braided into a plait was always surrounded by a group of bubbly children and babes making just as much noise as a gaggle of geese. Like many older ranching wives but unlike most of her younger peers, she was a homemaker who worked to feed, clean, and otherwise provide for her family and the ranching operation with her home as her workplace. In lieu of formal training, her work was largely self-directed and her knowledge came from experience as well as her social network, which included her older neighbor, Cindy. Rachel and her husband had hoped and planned on Cindy sharing her knowledge of how to manage ranching financial accounts, having worked as a bookkeeper when she was younger. Though their business partnership works with accountants now, Cindy still does some of the heavy lifting when it comes to paperwork and taxes. Having established the business as an LLC, they are required to show where every penny goes and their accounts have to balance. Outside of the house where dishes are washed, meal prepared, and accounts balanced, garden tending is another major locus of women's labor.

Like for many other rural home makers, raising a garden and putting up[24] the produce it yields is an important though time consuming workplace task. Given that I am an avid gardener, Rachel and I discussed at length what varieties of vegetables were planted, the ways our different families put up what the garden gave and various failures and successes. During one visit she offered me some small yellow cherry tomatoes, describing how she'd had more success with this particular variety than other kinds of cherry tomatoes. Far from a hobby done half-heartedly,

[24] 'To put up' is English slang, more often used in rural settings, meaning to preserve food by drying, freezing or by sealing it in airtight glass jars.

gardens for ranching women require much forethought. She and her husband look through seed catalogs for new varieties, order and begin growing seedlings long before planting in early summer. This means beginning garden work in January when snow is often still on the ground. For another ranching woman, Allison, gardening was similarly a task both intensive and multifaceted.

One day while awaiting the arrival of a truck to load up cow-calf pairs, she took me to see her vegetables. Allison had begun ranching with her husband after careers as schoolteachers and remembered how her late neighbors had helped her in her garden when they first moved out of town decades ago. At that time, she could ask her knowledgeable friend, Mrs. Kirby, for advice. With their passing she no longer had anyone to talk to about things and so has had to look elsewhere for information, such as a Facebook group called "High tunnels for beginners." High tunnels are essentially large greenhouses – made of metal bars, thick and clear plastic sheeting, they resemble transparent tubes cut in half lengthwise in which produce can thrive despite the dry and often extreme temperature fluctuations of the high plains. In early June her tomatoes and peppers were maturing well in the protective embrace of the high tunnel. Outside dots of colorful flowers interspersed the green foliage of other, cool season vegetables. She described raising bees years ago for a side job and she still maintains a hive to help pollinate the garden. In addition to providing her family with food, gardening was a way in which Allison bonded with a neighbor. Garden produce is also traded and given as gifts. One ranching couple who lived around two and a half hours from the nearest Wal-Mart described trading cuts of meat from their herd for vegetables grown by neighbors. On several occasions ranchers would offer me kale, asparagus, and other greens, and I would reciprocate with summer squash and tomatoes grown with my labor in my mother's garden. Flows of food peaked during summer months when

garden beds overflowed with delectable vegetables and fruits. For rural folks, gardens and the women's labor needed to maintain them not only provide food for the family but also yield tradeable goods through which social connections are built and strengthened. This being said, some were ill at ease with the idea of "women's work."

"It depends," Karen asserted for the umpteenth time. During an interview, I had explicitly asked her and her husband if gardening could be described as women's work. What followed was a refusal to portray gardening as explicitly feminine labor. Karen was adamant that she and her sisters did everything the boys would do, including "clean the hog and chicken houses and run a tractor." Women did everything anyone else would, including driving the combine and grain trucks. "My youngest granddaughter knows how to AI," she stated. She went on to describe how she'd also do the bookwork, which included preparing for taxes, paying bills, balancing accounts, and managing a payroll when they hired workers to help. She had taken some business classes but was largely self-taught. She also did the cooking for the noon meal and often supper when they had hired hands. Interestingly she did not bring up childcare or any aspect of raising a family as work or describe it as women's work. I had expected at least some reference to the work involved in raising a family.

Taking me by surprise, she insisted several times that it largely depends on different families who does what and sometimes roles will be swapped. When I explicitly asked who looked after children and the family at large, she replied it depends on the generation as well as the family. Older generations of men didn't and still "don't change diapers," she said. Gendered generational changes in kin-work and domestic chores due in part to evolving gender norms has been noted in other Western contexts where younger women are less willing to labor as older women have (Eklund 2023). Going further she added that "some families have men who don't

cook or do laundry." Oscar, to give an example said, his dad could cook but didn't, only cooking for himself if he was alone. Of course, there are always exceptions and it depends on circumstances - "you do what you have to," she said. Her husband conceded that "you hear women garden," though he was quick to say that gardening was also work occasionally done by older retired men who largely stay at home. He continued, saying that while growing a garden used to be a necessity, nowadays it's done because people enjoy doing it. They pointed out that improved flavor was one big reason to garden, "There is no way a store-bought tomato tastes like the one from the garden, warm from the sun," said Karen. Of course, they said gardening again depends on the family -some grow to hate gardening if their folks did it and some continue on gardening once they leave their childhood home. Karen mentioned that gardens and gardening is good when you have kids, to show them the importance of chores as well as healthy food. But she has grown tired of the short growing season and having to go out and put blankets on plants to protect against frost. Rachel too, in a similar follow-up interview, described having less energy for gardening with her household growing from eight members when I concluded the major fieldwork to ten at the time of my last visit. "By the time high summer and harvest comes around, I have little energy to put it all up," she lamented. I suggest that in refusing to label gardening as women's work as well as refusing to always grow gardens, these ranching women contribute to a larger tradition of rural, western feminism which bristles at any attempts to pigeon-hole or otherwise restrict women. Such refusal is "social and affiliative" (McGranahan 2016) and is a strategy that underscores the agency of women.

During the school year, some women participate in social groups whose collective labor entails attending to the broader rural community while educating youth and the public about ranching. In the area I carried out fieldwork there were a handful of active ranching and farming

organizations. Karen, a ranching home maker in her 60s, is involved with a couple such groups, including one called the Jolly Dry Farmers that was started in March of 1909 by four ladies who homesteaded in the place known as Calico Hill (now a subdivision). The group was and still is a source of social support where members might assist in instances of escaped livestock or simply check in on one another and during COVID they hadn't met to protect the elder members, the oldest of whom is 93. Although aging membership is an issue for many agricultural social groups, the Laramie County Cattlewomen, of which Karen is also apart, is fairly youthful and active in its work towards connecting an increasingly disconnected public to agriculture and maintaining social relations for a dispersed community.

In writing about women's contribution to agriculture, scholars have worked to make visible the "invisible farmers" that woman have been described as (Riley 2009 and Sachs 1983). Little of this work, however, has focused on community level agricultural organizations (Shortall 1994; 2001). In discussing one county-level women's agricultural group, I aim to highlight the nature and significance of such institutions in rural areas of Wyoming. For the Cattlewomen, work centers around socialization, outreach and education which are demonstrated in monthly meetings and the "Ag Expo," an annual event for fourth grade students throughout the county to come and learn about various aspects of agriculture. Cattlewomen meetings take place throughout the school year, leaving summer months free for other work around the ranch, and the first meeting I attended is a good example of a typical meeting aside from the fact that the group hadn't met in person for the previous two years due to the pandemic.

In a conference room at a hotel in town, five ranching women gathered around a U-shaped table where a beef meal would be served along with tea, coffee, water and a slice of lemon meringue pie. Agendas were distributed and before the meeting kicked off everyone stood

to recite, with hands over hearts as Americans do throughout grade school, the pledge of alliance. Cindy, who led the meeting as the group president, next said a short prayer while everyone remained silent, heads bowed. Seated next to her middle-aged daughters who also served as officers, I listened and contributed to brief introductions. Then Cindy went through various mail received at her home that she felt relevant to the group including: a message from the Wyoming Beef Council looking for producers to join their leadership, a message from Wyoming Ag in the Classroom, a call for applications to a county leadership position (which was followed by comments about the lack of time the women had), a call for donations of items for a silent auction for a different women's agriculture group meeting in Casper, and a reminder of a farm show happening in a nearby small town soon. Next, she asked if there were any cards needing to be sent out such as condolences for community members who've just died. Old business followed and centered on the last Wyoming Stock Growers meeting, which happens twice a year and brings together producers from all over the state. The women agreed on how nice it was to have everyone in the same spot without having to add an extra item to the calendar. They suggested having a meeting of their own in the future at one of these larger stock grower's events to discuss their business without having to do much planning on their own. One woman suggested doing a wine and beef dinner where members could socialize together while learning which wines pair best with various beef dishes. New business was discussed next.

Some new business centered on the group itself, such as where to have future meetings and when officer elections will happen, and other topics included future plans. I was particularly interested in talk of the next Ag Expo and the desire to rework a beef byproducts booth and make another booth dedicated solely to the importance of beef for nutrition. Through their annual "Ag Expo," the Cattlewomen hope to instill an appreciation and awareness of agricultural work and

rural life. Attended by nearly 720 Laramie County fourth graders in 2023, the event, as I have describe in chapter 5, is one of their largest undertakings with two days worth of exhibitions ranging from beekeeping to beef byproducts to live animal and tractor demonstrations. Similarly, they discussed having a beef byproduct booth at the Farm and Ranch show happening in town in several weeks. Through their Facebook page and their events, the group is particularly passionate about educating what beef is and why it is so good. In doing so, they work to cultivate a desire for beef. Driving on the two-lane highways, I often saw upon crossing over into another county, metal signs encouraging beef consumption such as "Wyoming is cattle country – Eat beef", "Beef – It's what's for dinner" and simply "Eat Beef."

The meeting ended shortly thereafter and before leaving, I visited with my close interlocutor Tracy, who'd sat next to me throughout the meeting, about my impressions. I pointed out that the group seemed to prioritize socialization and community as well as outreach and education. Tracy added that the Cattlewomen are also connected with people who are experts of another kind such as state legislators who come and tell them if things are happening in the legislature which will impact their operations. In working to sustain their families and communities, ranching women undertake a large amount of unpaid labor. The future of social groups such as the Cattlewomen is uncertain given that few young women take part in them. Cindy says it is because most women also have jobs – "who wants to go to another meeting after a long day of work?" She said that younger people are just not interested in joining organizations, even though she and others have tried to recruit them.

Materializing and managing cow-calf bonds

The refusal of additional labor is not limited to humanity – non-human animals, particularly cows, at times also reject roles and work given to them (Dave 2019). Though females are often portrayed as natural caregivers with deeply ingrained maternal instincts, it is fairly common for cows to reject their calves or steal the calves of other cows. In the scientific literature this is called "mismothering," and there are specific strategies ranchers have to create or strengthen absent bonds. As we headed out to her pastures to check for and tag new calves, I asked Tracy about the cows she had called "bad mamas." It was early June and she was in the thick of her calving season with the first calves having dropped about a month earlier. Cows that fell under the label of "bad mama" were for various reasons poor at keeping and raising their calves. She mentioned that of the dozen bad mamas she's had this calving season most came out of a group of 40 or so heifers she'd bought the previous fall. With no clear idea why this was, she offered only that "something [was] wrong with their brains" before indicating that these cows would be culled this fall and turned into meat. Well-known by ranchers, "in beef production systems, successfully raising and nourishing a calf from birth to weaning is dependent on the success of a cow's mothering ability" (Nevard et al. 2022). This stands in contrast to more vertically integrated dairy, chicken and pork production in the US, where a greater level of human labor is required to care for newborn calves, piglets, and chicks (for pork see Blanchette 2019, for dairy cattle see Thompson 2022, and for chicken see Beldo 2017). "Ideally, a cow should give birth, bond with and raise their calf (calves in cases of twins) with limited assistance. While both animals and humans display aspects of alloparenting (Mota-Rojas et al 2021, Bentley and Mace 2022), where offspring are raised, nursed, and otherwise cared for over certain periods of time by other that are not biologically related, bulls do not assist in the raising of calves while

human fathers and male relatives do to various degrees. Daisy[25], a small, fairly tame cow, is one such ideal cow. Tracy and I both saw her throughout the spring and summer give birth to a bull calf and give all that she had to raise it, growing thin herself through her nursing. Tracy, in admiration of Daisy and wanting to help support her physically, would feed corn (a high energy feed source) just to her when she was out driving during rounds to identify and tag new calves. Unfortunately, not all cows are like Daisy. I heard from Tracey of one instance, just a day or so before my visit, where she and her eldest daughter came across a somewhat dead-looking calf whose mama kept trying to push her down into the ground. "This might not be so strange if this calf had been her first," Tracy mentioned, pointing out that cows who have delivered their first calf (first-calf heifers as they are commonly called) have less experience and are more apt to mismother than older cows who've raised multiple calves. This cow, though, was not a first-time mother, having successfully raised a calf just fine the year before Tracy had bought her. Not wanting the calf to die, she and her daughter had moved the calf to an enclosed shelter adjoining the paddocks where she gathers her herd at various times of the year to sort, doctor and/or ship off to buyers.

In order to engender maternal feelings in cows and assist calves in identifying their mother, whoever that may be, ranchers turn to both their own skills and knowledge as well as supplements. Ranchers put in a lot of effort in the event that they have to persuade cow-calf pairs to accept each other. Like many ranchers, Willy keeps his herd close to the house and barns during his calving season in early spring. Doing so allows him to make frequent checks around

[25] On this ranch, only bottle fed calves are given names. If the calf is a female it remains on the ranch with the main herd once it is weaned and keeps her name. These cows are far more tame than others having been accustomed to humans and often fond of pets from people and playful behavior.

the clock and corral any cow-calf pairs that need extra attention. I arrived one day in early March to help him better establish nursing in one newborn calf. He stated and I could see how the cow's udders were very large, indicating the calf either could not or would not nurse by himself. Before we did anything we had to corral the cow and put her in a head-catch where she was unable to walk away. I urged her into and down the alleyway Willy has built in his barn. At the end stood a manual head catch which he locked into place himself once the cow had stuck her head through the opening. Next, we brought the calf in close and Willy took his fingers and placed them near the calf's mouth. A hungry calf will suck on fingers, which is what this calf did to his index, middle and sometimes ring finger. Once the calf was sucking Willy tried to lead or push the calf closer to the cow's udders and ultimately a teat. His hands would alternate between squeezing a teat to release milk onto his hands and even onto the calf's face to lead the calf to the cow's teat. "Now he's thinking that tastes good!" Willy exclaimed, once the calf finally got hold of a teat. We both agreed the calf obviously wanted milk since it would suck vigorously when it latched on and only stopped when it fell down or when it lost hold of the teat and failed to grab onto it again. Much of my work was aimed at helping hold up the calf's head so as to keep it latched on and sucking. Willy had the far messier job – although warm milk and saliva are far more pleasant bodily fluids to have on your hands than those which emanate at the other end of the cow, they are very sticky and slimy, making it harder to get a good hold on things. Natasha Fijn shares numerous examples of how scent and sound mediate human-livestock relations in Mongolia (2011) and in a similar way kin-work for ranchers is a sensuous enterprise from the tactile sensation of moist flesh inside a cow's uterus to the smell of a newborn calf and the sound of it suckling. In between wiping his hands on his jeans and the calf, Willy said that once the bull calf sucked more milk out, the teats would get smaller and would be easier for the calf to latch onto.

Large, engorged teats are simply too big for most calves to nurse. When our efforts were successful, the calf would wind its tongue around the teat and make loud, guzzling noises. Hearing this, Willy would say things like "isn't that a wonderful sound?" and "it makes a person feel good to hear that." Unmarried with no children, the older bachelor often remarked on things his parents would and wouldn't do – in this case, his dad would do this very thing when calves didn't seem interested in nursing. Typically for Willy, this process is done before any attempts at bottle feeding and in worse case scenarios using a feeding tube. Problems nursing affect the cow as well as the calf since the udders swell up and if left untreated, mastitis[26] can set in and the cow's future milk production, and her subsequent ability to feed a calf, could be seriously compromised.

Tracy, whose herd is too large and too far away from her home to facilitate nursing and bonding at just the right time as Willy does, relies on a white powdered supplement sprinkled on the calf's back, and bottle feeding to raise orphaned calves. Cognizant of the power of scent in cow-calf bonding, Tracy told me as we were making rounds checking and tagging new calves one spring morning, "I might use the after birth to foster a calf, but most the time it's just easier [using a powdered supplement] cause there is something in it that tastes good so [the cows] lick it off. Once they lick a calf, usually they've bonded with it enough that they'll take it [as their

[26] Mastitis is an infection of the udder and is considered a bigger issue in the dairy industry as opposed to the beef industry. However, the disease does impact beef cattle herds as well as sheep flocks. One vet tech who was pregnancy checking a flock of sheep once told me, "once in a while you'll come across sheep where their utters will fall off in your hands because they had mastitis the year before and it's become a gangrenous mass". For cattle, who have four teats and four separate udder quarters, in many cases only one quarter develops mastitis while the other three sections remain healthy. So the cow can usually still raise a calf with slightly reduced milk production. That being said, most ranchers I spoke with kept an eye on the udder quality of their herds and were quick to see and want to get rid of a cow with "a bad bag", as producers call substandard udders.

own]. If they lick it and let it nurse then you're usually pretty good." Normally, soon after a cow gives birth it turns around and begins smelling and licking their calf while also letting the calf nurse and it is this behavior that ranchers seek to foster in calf-less cows and orphaned calves. "The sooner grafting can begin the better," Tracy stated. When she attempts to foster a calf on a cow, she puts the two in close, prolonged contact for at least five to seven days in a series of pens in a corral adjacent to her pastures. Just as timing is crucial to initiate fostering, the length of the contact is also important. In the past Tracy has had problems when she lets both cow and calf out to pasture before grafting is really completed in the pens - in these cases the cow rejected the calf. It's interesting to note some cross-cultural similarities among pastoralists – Mongolian herders will sometimes take the hide of dead calves and put it over the back of an orphaned calf to attempt fostering. Willy described doing this as well although the powered supplement removes the need to butcher the dead calf, saving time and energy. However, sometimes these techniques still fail to induce maternal bonds.[27] Although different in form, supplements, afterbirth and milk are each used to create and strengthen kin relations in livestock. Stronger bonds in herds often mean more profit for ranchers with calves more likely to survive their first year until they leave for feedlots or yearling operations to fatten on grass. And more profit helps ranchers to achieve some modicum of financial stability and security for their families.

Conclusion

Through careful consideration of how ranchers labor to sustain human and animal families, a specific form of work arises. Agrarian kin-work undertaken on grasslands in the

[27] I focus here on cow-calf bonds since it is impossible, according to one sheep producer, to foster lambs on other ewes.

American West connects as well as divides human and non-human, with notions of family linked to ideas of security and success. In maintaining kin connections, established ranchers rely on record keeping, shared labor, and partnerships with parents and siblings. For these operations, strong, healthy herds and land ownership are not only reflections of a robust family, but also connections to ancestors and a source of wealth for future generations. However, for newcomers without such access to land and relations, kinship is exclusive and limits what is possible. In accessing land, capital, labor. and knowledge unavailable through family, new ranchers rely on kin-like friendships and formal education, and they don't take for granted the instrumental nature of kin relations in ranching. Agrarian kin-work is to an extent gendered, with women working to maintain larger communities as well as their own families. Attending to the multispecies nature of agrarian kin-work allows us to see how this labor is interpretative as well as sensuous. Ranchers reflect on their own families as they breed cows and assist them in birthing and raising strong calves and their care disrupts notions of ranching as a form of human-animal relation which is predicated on domination and violence. For my interlocutors, animal welfare is also family welfare. Moreover, lacking an ability to talk with their livestock as they would other humans, they rely on multiple senses – hearing, touch, smell and taste – to not only foster bonds and aid work but to measure success. Reproduction is not entirely natural, being instead continuously shaped by both human and non-human animal desires. Nor are families always sustained. Examples of struggling to make kin show that reproduction is not always secure or definite. Instead, continuous labor is required to sustain human and livestock families. Tending to agrarian kin-work underscores the ubiquity and necessity of this kind of work and offers a new way of thinking though human and non-human animal mutuality.

Chapter 4: Political economy and the value of animal difference

I was surprised the first time I heard of Angus cattle being referred to as "the black kingdom." At the time I was attempting to woo a potential research interlocutor over some coffee in a Denny's booth and although ultimately my attempts at persuasion would fail to elicit participation in the new dissertation project I was setting up, this term would stick with me for the remainder of my research. Although the term was not widespread among my interlocutors, its use at this meeting referenced the ubiquitous presence and higher value of Angus cattle compared to other breeds and species of livestock. Unlike in Mongolia, where all households, irrespective of specific tribal[28] affiliation, herd a variety of livestock, including camels, cattle, goats, horses, and sheep, where the typical cattle herd produces both meat and dairy and also where hybridity (Bulag 1998) is a positive quality in herds, in Wyoming my interlocutors' ranches were by and large filled with more Angus beef cattle than any other species or breed of livestock. And while fluffy sheep and the black and white dairy cow, also known as Holstein or Holstein-Fresian, are instantly recognizable barnyard animals that come to mind thanks to children's books and popular media, it is the Angus beef breed that is most numerous cattle

[28] In Mongolia there exist many groups within the large 'Mongol' identity. First united by Chinggis Khan, these groups have since continued to regard themselves as part of a larger social group while often maintaining specific ethnic traditions, such as unique forms of dress, which come out during festive occasions. While Khalkh Mongols comprise the majority of Mongolian citizens today (~84%), there are over twenty other ethnic groups which include Buriat, Dörvöd, Bayad, Darkhad, Dariganga, Zakhchin, and Uriankhai to name a few.

breed in the United States, including Wyoming. How did American ranches come to be this way and with what consequences for multispecies living in Wyoming?

In this chapter I examine the political economy of rural ranchers in the Western US, asking: what is the nature of ranching economies? How and when do livestock become commodities and what is the significance of breeds? And who benefits from this labor? In asking these questions, I draw on a large body of scholarly literature in history, economic sociology, and multispecies ethnography and argue that while ranchers are perceived to be ardent capitalists in a thoroughly market-based society, local economies are embedded in specifically Western social relations and histories that revolve around cattle, money and power. As a result, while livestock diversity is celebrated in theory and in certain ritualized spaces, including county and state fairs, certain animals are more privileged than other kinds of livestock. Researchers within these areas have highlighted how differences among animals, and the foods derived from them, have been mobilized to justify and make real the various perceived differences between human communities and individuals from class distinction (Bourdieu 1984 and Ritvo 1987), to religious and ethnic boundaries (Feeley-Harnik 1994, Douglas 1966[2002], and Durkheim 1912[1965]). Various multispecies collectives have then been enacted upon to (re)produce power and wealth while generating alienation and oppression. Animals are not just good to think with (Lévi-Strauss 1962[2016]), good to eat (Harris 1988), or desirable companions (Haraway 2008), they are also powerful resources. During the colonial era in the United States, cattle were a both a means of and justification for the dispossession of indigenous land and resources (Specht 2019 and Ficek 2019) and during times of war, such as in WWII Europe, former friends and neighbors were otherized by discourses which drew on understandings of "pests," "vermin," and other unwanted creatures (Sax 2000). I assert that livestock continue to be powerful allies for certain forms of

social and economic change. The dynamics encapsulated in these examples demonstrate how specific multispecies relations arise not only between humans and other more-than-human entities, but how these dynamics are enacted within social structures existing at the time of their emergence and flourishing. In examining the ways in which livestock are simultaneously commodities and social agents, I rely on Karl Polanyi's concept of embeddedness which he used to describe how "man's economy, as a rule, is submerged in his social relationships. He does not act so as to safeguard his individual interest in the possession of material goods; he acts so as to safeguard his social standing, his social claims, his social assets" (1944, 46). I argue that for my interlocutors markets and economic activity are embedded in the American West and shaped by social relations with and through livestock. In other words, how livestock are commoditized and how they enter or do not enter into exchanges is shaped by Cowboy culture and the specific history of Wyoming and the broader region. Moreover, the ways in which value is co-created by humans and livestock is rooted partially in the various affordances of living and breathing animals.

Seeing and performing relations at the fair

Within scholarly literature, American county fairs have been understood as a form of social celebration and cultural text (Marsden 2010). These are spaces in which the state is present through FFA or 4-H[29] participants, molded into the ideal heteronormative citizen (Rosenberg 2016). Though these annual gatherings are similar to scientific or commercial agricultural

[29] Although Future Farmers of America (FFA) and 4-H, which stands for head, heart, hands, and health, are distinct national youth programs, both have historically engaged rural youth with the intention to promote advances in agriculture (as well as health and civic engagement) through education.

exhibitions and shows at which improved, agricultural monsters have been displayed such as giant pumpkins (Pawley 2020), county fairs are predominantly spaces of and for the working and middle class (Paulsen and Staggs 2005) rather than experts or elites. Fairs and livestock exhibitions are also key sites of difference making and spaces in which beings "learn to notice" each other (Haraway 2008, Tsing 2015). Here both humans and non-human animals are enculturated into a multispecies community of work and labor. Although the kinds of animals being shown at contemporary fairs are becoming increasingly disconnected from the lived realities of animal agriculture in the U.S. through exaggerated features, clean bodies and inflated prices, aspects of ranching culture and beliefs are performed and celebrated in these spaces.

It was hot and breezy at the fair that day and while the weight of the sun's rays were alleviated now and then by the occasional passing cloud, I knew I was probably going to end up sunburned. I had driven over an hour to visit with Jose and see his grandson show a steer from the family's herd. With his son and father, he operates a ranch that could be described as part commercial cow-calf operation where profit is made through birthing and raising feeder calves, and also part breeding or seed stocking operation where income is generated primarily through the raising of bulls and dams which are then sold at auction or private treaty to buyers. They raise registered Angus and Polled[30] Hereford herds and I stood with Jose as his grandson walked onto the grassy show ring with one of their Herefords. As his 4-H project, the young adolescent had spent months preparing this steer. Adequately sheltering, feeding and watering as well as halter-breaking[31] over the course of many months were as essential to this preparation as the day-

[30] Polled means lacking horns, either naturally or because they have been removed. In the U.S. Herefords have been intentionally bred so that they are born without horns and these Herefords are called Polled Herefords.
[31] Halters are rope or chain tied around the head and jaw of an animal used to lead or hold livestock.

of grooming accompanied by copious amounts of sprays and brushes. Behind us, opposite the show ring, were stalls at which bovine competitors were washed and dried, brushed with combs, styled with electric trimmers, and doused with various color-enhancing and styling hair sprays. Those cattle not being primped laid lazily on straw, tied up to the metal bars of their stall via their halter, often chewing hay or drinking the water provided to them. There was constant work done to prepare livestock, spectators, and participants came and went as they pleased. But the crowd assembled that late summer day was not looking towards these stalls but rather to the show ring, focusing on this grassy square and on the livestock and their young handlers congregated there.

Within these show rings, youth begin to notice animals as co-workers and learn to communicate with them through embodied touch. The first thing I wrote about in my fieldnotes on showing livestock at fairs is the standardized ways in which the participants and their livestock engage with each other in the ring. Two days before I joined Jose to watch his son, I had stood in a smaller crowd to watch the showing of sheep. Shorn from the top until the bottom, with just a little wool left below the tendons on their legs, all varieties of different sheep were paraded around by children as young as 7 or 8 to high school aged teens. These youths, dressed in blue Jens with tucked in button-up shirts, braided hair, and the occasional navy blue FFA jacket, worked to hold their sheep by the head - one hand under the jaw and the other on the back of the neck - and lead them around. A few used halters, but most took off them off before entering the arena and put them back on once they had left. Judges, mostly men, and audience members watched contestants and livestock as they circled the ring before forming a line and adopted a specific bodily stance.

The ideal pose for the sheep was the head up and nestled in the crook of the handler's arm, near the chest; the back legs at an acute angle to the ground, exposing them to view more easily, and a very straight back. To facilitate this, handlers largely adopted not only a standard pose themselves but also used a shared repertoire of movements, a species-specific bodily technique (Mauss 1934). Handlers put their left or right leg in front of the sheep, making use of the thigh as a natural barrier. The other leg was placed slightly behind their own body, often at an angle, and was dropped slightly at the knee. Hands gripped the neck and head and handlers would alternate sides when judges passed by to allow them an unimpeded view from wherever they were positioned in the show ring. To lengthen the body and position the back legs at an acute angle, handlers gently pick up the sheep's head and along with it the front legs and pull towards them. With a tap of their fingers on the back, the sheep would straighten their backs, and after pats on their sides, and the occasional pull of their rumps, sheep would move alongside their human counterparts. It is crucial here to point out that this bodily engagement with sheep is species specific – ways of showing sheep were not also used to show cattle, pigs, or other livestock. Although the process for showing cattle was similar, including parading the animals around before they were lined up to be judged, cattle were handled in ways that corresponded to their large, bovine bodies. It was important for cattle to have straight backs, head up, front feet side by side and back left foot slightly back with the right foot slightly forward. Handlers stood off to the front with a rope connected to the cow's halter in one hand and a show stick in the other. These show sticks, which had a straight pointed tip and a small, curved hook at one end which thickened from the top down to the handle. When cows would strain to go somewhere or were being generally uncooperative, handlers would use their sticks to give their animal partner a smack on the nose or neck. Seeing this reminded me of Tim Ingold and his inversion of the

images of hunters as violent and pastoralists as gentle, arguing that "the instruments of herding, quite unlike those of hunting, are of control rather than revelation: they include the whip, spur, harness and hobble, all of them designed either to restrict or to induce movement through the infliction of physical force, and sometimes acute pain" (1994). However, these items are more than tools of domination. The pointed tip and hooked part of the stick was used to re-position feet and legs by poking the tip between the hooves and underneath the foot as well as to stroke and scratch the underbelly, which Jose later explained helps keep the cows relaxed. In this instance, the same tool can be used as an infrastructure of trust and human-animal socialization (Anderson et al. 2017). Handlers often carried a large comb in their back pockets for last minute touch ups. While these actions were carried out, attention was constantly on the judge and handlers and the audience all watched everything they did, listened attentively to what they said, and respected decisions even when they disagreed with them.

"They got 'em wrong," Jay muttered to me as he got up from his seat on the metal bench and rushed off to the food stands to buy a burger. Jose's 87 year old father, the patriarch of the ranch, had been the only one in the family to remain watching the show ring after the Market Steer show had concluded, to see the Hereford division of the Breed show, in which different breeds of heifer cattle were shown. His comment referred to the heifer selected as Grand Champion and Reserve Grand Champion Hereford heifer – clearly if he'd been judging, he would have picked different winners. Still unsure of exactly what the judge was looking for or how he was ranking heifers, I continued to watch the rest of the show. After he selected two Herefords as the top two overall heifers in the show, one spectator in the crowd nearby said, "this guy likes Herefords," highlighting the simple, but very important fact that livestock judges simply give their opinion. Although courses are available in livestock judging and people can

even compete on livestock judging teams in college, there is no one way or single ranking system used by judges. They are experts of a sort, ranging from researchers, professors, agriculture teachers to fellow, but non-local ranchers and they always justify why they chose one animal over another.

In the show ring, be that a patch of grass under the open sky, bare soil in the shade of an enclosed barn, or concrete padding covered with straw in a large complex, important processes of enculturation and performance occur in which beings begin to transform, albeit only momentarily, into commodities, producers, and consumers. Rather than learning to notice each other only as companions and interdependent beings, communities gather in these spaces to learn and experience the wide variety of animal diversity present in agriculture through attention to bodies of living beings and partake in a celebration of ranching work and life in which the judges enjoy a privileged position. By giving their opinions and selecting their favorites publicly, livestock judges perform as buyers while also showing handlers and audience members how livestock are potential commodities[32] by focusing on the muscle, fat and bones and reproductive potential under the skin. For example, in one market shows, a judge described a sheep she liked "as well-muscled," "long," "extended" (meaning increasing in thickness from front to rear), "expressive" (meaning lots of muscle definition) over rack and loin, and with lots of red meat. Throughout her judging, her hands and eyes glided over the sheep and she made sure to not only thank contestants, but also to state that she was just offering her opinion. I suggest that her words take audience's gazes inwards to see as she does, like any potential buyer, to the potential value contained in a particular sheep. Stripped of their unique dispositions and histories, a lamb begins

[32] It's worth remembering Arjun Appadurai's idea that "a commodity is *any thing intended for exchange*" (1986, 9). For ranchers and pastoralists livestock are among many forms of important, potential commodities.

to be made into meat through language and discourse. Young handlers are being taught in these moments that in order to succeed it is crucial to be with their livestock less as companions and more as commodities. Indeed, I witnessed only rarely moments of intimacy such as when a high school boy put his forehead close to his sheep's, seemingly relishing the feel of soft wool on bare skin, or when a girl kissed the top of her charge's head.

Once the judge had performed this commoditization of animal life, albeit very fleetingly, the judge symbolically becomes a consumer by selecting the animal she herself liked the best. When presented with similar products, a consumer can choose which one they'd like to see produced, consumed, or invested in. No judge feels compelled or is required to select certain kinds of livestock and one judge told a different crowd how opinions differ not only from person to person, but from circumstance to circumstance, admitting that even he might change his opinion of the same animal from one day to another. In my examination of the labor undertaken by judges, I would be misleading you if I only focused on market and breed shows, where attention is centered more on livestock. However, attention is also turned during showmanship shows from the livestock to their human handlers.

In showmanship events, judges comment on the skills and knowledge of the young competitors and in doing so illustrate how success at livestock exhibitions depends on cohesion between handlers and livestock, much as being profitable and making a living as a rancher relies on the cooperative work of both humans and non-humans. While the exact same parade and positioning of bodies occurs as in market and breeding shows, in evaluating the showmanship of handlers, judges spend a small amount of time talking to handlers one-on-one about their livestock and offer their advice right in the show ring as to what can be improved. Their comments also highlight how effective a handler is at not only positioning themselves and their

livestock in the best way, but also, and perhaps more significantly, in persuading and enticing the judge through the right kind of gaze. Inside a sheep barn after one young, slim male judge had finished scrutinizing a class of showmen, he spoke to the audience and group of handlers collectively, saying he was interested in competitors with "ring awareness," who made eye contact and were "intense with a look that said 'I want to win.'" Another judge highlighted the importance of "making sure animals cooperate" while acknowledging that "some days the livestock will cooperate and on others they just won't." Although present in market and breed shows, showmanship competitions highlight just how important it is for show livestock and their handlers to be in tune with each other. Success does not come solely from livestock or human handlers, but rather from the hybrid human-animal partnership.

Achievement depends on multispecies cooperation and successfully working with one's livestock leads to material and social rewards. The morning warmth was steadily turning into an alarming heat, prompting the announcer to encourage the judge assessing a class of sheep "to get working 'em." Soon thereafter handlers were sorted from the worst to the best and the top 10 winners awarded cash prizes which grew steadily in amount from $20 for tenth place, $40 for seventh, and $80 for third place. The Reserve Grand Champion was given $90 while Grand Champion won $100 and a banner. Awarding is done publicly and exact amounts of awards are also announced. Acknowledging successful partnerships in this way teaches participants to take pride in one's work, an important cultural value that underscores the idea that while ranching and farming are often dirty, exhausting, and misunderstood professions, they are not inferior or unimportant. Moreover, such public and ritualized prizes of money, banners, buckles and other objects can be interpreted as forms of redistribution and reciprocity since donors, typically local businesses and adult ranchers, who have sponsored awards are also announced. According to

Polanyi, these forms of exchange are prominent in embedded, non-market economies, where reputation is at stake more than material benefit. In other words, I suggest maintaining positive social relations and reputations are more important for donors than making their money back through increased business or free advertising by contributing to livestock show prizes. While such awards reaffirm for youth that their work with animals can lead to material rewards, handlers are better able to see and experience how labor is connected to money later on by selling their livestock entries at auction, albeit at inflated prices. While these auctions are types of market exchanges, they are highly irregular since buyers typically pay more for animals than they would at regular sale barns in order to support local youth who are saving money for college, to build their own herds, or other reasons. Such actions support critics of Polanyi who argue that market exchange and the market is not asocial, but rather just as embedded in social relations as non-market economic spaces (Lie 1991). Auctions take place on the last days of the fair, after all livestock shows have been carried out and closely mimic auctions at "sale barns" where livestock are taken from pastures to be driven through chutes leading to the center ring in which they are auctioned off to the highest bidder.

At livestock shows animal diversity is on full display and the material reality of various bodies is made salient through the different implements human handlers use and the poses taken to show livestock. Commodification is performed by judges who visually consume winners much as the eventual buyer of the livestock actually will. However, this summertime celebration and ritualization of human-animal relations is different than everyday work. While sitting in the stands, under that heavy sun, I kept wondering, what exactly is the connection between livestock shows and the animal agriculture industry overall? As I explore in the next section, it is not only inexperienced youth who stand to gain from showing and promoting their stock but adults too.

Promoting and making cattle breeds that sell

When I introduced myself to Greg, an older, rotund man with a little herd of largely Hereford cattle, I had no sooner finished giving my research sales pitch than he began speaking about the differences between Angus and Hereford cattle. Though it is a fact that a small percentage of cattle breeds constitute the majority of the genetics that make up the U.S. beef herd, of which these two breeds are among the top three, beef cattle are more varied than just Angus or Hereford, and there is no one kind of cow. By examining a uniquely local history of Hereford raising, I aim to highlight that while livestock breeding on the whole is an act of socio-technical imagining (Middelveld and Macnaghten 2021) embedded in specific, local social relations, breed-based brand certification programs like the Angus Beef Brand work to disembed livestock and obscure intimate, long-time social relations.

When I arrived, Greg was at work manually tattooing a calf's right ear using a tattoo punch with interchangeable spiked tips, slathered with tattoo ink via an old toothbrush and arranged as specific combinations of numbers and letters. Working slowly and stopping often to turn directly to me and talk or listen, his calm and methodical demeanor couldn't hide his passion for breeding and Hereford cattle. Over the course of several conversations, he would describe how much he loved showing Herefords and running his own operation. As a boy his father had worked on the locally famous Wyoming Hereford Ranch outside of Cheyenne and once he and his wife Carla had their own children, showing animals became a family affair. After they retired from careers outside of agriculture, ranching and working to improve the status and genetics of Hereford cattle became their way of life. And, like many other seed stock and breeding operations, showing animals was explicitly framed as a practical way to promote bulls

and the genetics which come out of a specific program. Bringing Hereford cattle to these venues exposes the individual animals as well as the breed to public view, where they can be advertised, Carla once told me. For them, potential buyers included other showers of livestock and seed stocking operations as well as commercial outfits farther along a meat production chain. Fairs and exhibitions were crucial opportunities for them because they rarely advertise in magazines and other agriculture outlets, which tend to be more expensive. Moreover, their small size also rules out putting on their own production sale as larger seed stocking operations can. In what follows, I describe one such event from late spring 2021.

It was a lovely day as I travelled down a long dirt road to an all-female and summer bull private production sale put on by Jose, who I would meet for the first time right after the sale. I had interviewed his father Jay weeks before in his small house in the nearby small town and when I arrived to the address he'd given me a little before 1 p.m., I realized instantly that I should've arrived earlier. I saw many buildings and a large pole barn behind numerous pens into which cows and their calves had been put. Things were quiet and apart from the many cars and the balloons placed near entrance, there was little to identify that a sale was going on and what was even worse, I couldn't even tell where the sale was going to happen! I nervously exited my car with my notebook and phone, and noticing a young family, decided to follow them. As they made their way, looking at the cattle and their sale booklet, so did I, writing down how each pen had a sign that indicated which cows were present. I watched the family (while trying not to seem too strange) talk with someone they obviously knew before entering into a large building to the north of the pens. I waited, unsure, and eventually followed them inside although I had trouble opening the door as I was unfamiliar with the unconventional, farm doorknob that was on it. When I did finally enter the dining hall, I looked around to try and find Jay among the people

eating burgers at the white plastic tables, and not seeing him, had to ask a woman in a kitchen area for help. She led me to where he was sitting with his wife Jackie and his daughter Jen with whom I made small talk before the sale began at promptly at 1 p.m. People made their way from the tables along the walls to the stands in the center of the large room which were focused on a small auctioneer's booth and a couple of large-screen televisions that had been placed in the center of the room, to show videos of each cow and bull as they were auctioned off.

To begin, the auctioneer[33] mentioned the buyer-friendly nature and history of the program. They were selling only because there was a lack of grass and the tough environmental conditions due to drought. The auctioneer said that these were "hardworking cows [who are] expected to raise a good calf." After him, Carlos, Jose's son and Jay's grandson, welcomed everyone and advocated for his family's herds saying, "these cows know how to work and get it done." He would remain in the auctioneer's booth, handling bids over the phone which a few times became contentious when the price, bidder, and winning bid were confused. As the auction went along, the space filled with the auctioneer's lightning speed utterances and the hand gestures and yelps of three men who stood in the center, watching the crowd to see the slight movements which signaled interest – a small nod here or a wave of a finger there. My mother had reminded me before I left for the sale to be careful not to scratch my nose or swat at a fly, which led me to suffer at one point while trying to avoid accidentally putting in a bid when I wanted to relieve an itchy ear. Following the lead auctioneer, they had a system of hand signals that helped indicate the price. One to five were the standard American way of counting

[33] The auctioneer and a few other workers were from DVAuctions. Founded in 1999, this company is the oldest and most popular livestock internet marketing service which provides real-time internet broadcasting of sales and special events. Although it is free to the public, producers wishing to utilize their services must pay for them.

beginning with an index finger and adding fingers towards the pinky before including the thumb for five. Six was demonstrated by a closed fist with thumb up, seven by a fist with bent, upright index finger; eight by crossing the index and middle fingers, and nine by a fist with the thumb pointed down.

Soon a flow developed where we'd begin with a new cow, calf, or bull, and a video would begin to loop of the animal walking in its pen. One of the family members, such as Carlos, would describe the specific critter a little and the auctioneer would start off, sometimes talking up the cow to reassure the bidders and get them to spend money, saying "there is money to be made today" and "boys, help yourselves." This last remark was particularly illuminating as it made me look around and see that indeed there were far more men or couples than there were single women. And even among the couples, the men were mostly the ones bidding. We bounced around from individuals to groups of livestock, cow-calf pairs, fall breeding cows, bred heifers, open, non-bred heifers, and then bulls, each of which was numbered and had been placed into a sale booklet. As we went from number to distant number everyone turned the pages of their booklet and made notes on their bidding papers, often writing down the final bid price of each animal. Bids came in from all over the state and from as far away as Wisconsin and Kansas. Once attendees bid they left, and by the time we finally got to the open heifers and the bulls, most had departed to go home. On a later visit, Jose admitted to me that the sale itself ended up costing a lot and there was a lack of real financial gain, but he was adamant that this kind of sale was worth it to forge relationships with buyers directly who might return year after year. He, like other breeding interlocutors of pure-bred Herefords and Angus cattle, relied heavily on social relations to buy and sell live animals and often put great effort whether it was at livestock shows or private production sales to develop and/or maintain positive relations with buyers. Having

annual, well-advertised sales which are inviting spaces are vital to help maintain these seller-buyer relationships. The shared meal at the beginning of the auction and the families personal involvement in the auction helped connect them to potential and previous buyers more so than conventional auctions at sale barns would have. Such privately-organized production sales are common in Wyoming and throughout the American West.

Within the pages of local, state, and regional livestock publications such as *The Fence Post*, *The Wyoming Livestock Roundup*, and *The Western Livestock Journal* colored advertisements and leaflets for production sales are frequent. Almost always, these advertisements draw from a similar aesthetic of human-animal labor that is presented at fairs. For example, bulls are positioned in a way identical to show cattle and they are described with terms that emphasize their laboring abilities. Moreover, operations frequently emphasize the working ability of bulls and dams in specific environments. One operation writes, "Bulls raised & developed in a realistic range environment. Ready to go to work for you," and another proclaims they sell "bulls born and raised where corn don't grow!" Operations in the Rocky Mountains often emphasize PAP testing[34] and the summering of bulls in mountainous areas, indicating that they can live and thrive at high elevations. There are also explicit references to the care and labor put into and done alongside these livestock by human families. Long time ranchers describe sales as the 50th or 43rd annual and occasionally include photos of family members as well as a personal description of their ranch. Such advertisements often include locally meaningful symbols, language, and index values such as love for family and hard-work. Interestingly, there

[34] Pulmonary Arterial Pressure (PAP) tests are used to assess a cow's ability to work and live in high altitude environments. Cows not properly conditioned are at higher risk to develop High Altitude Disease (HAD) or Briskett Disease, which is a condition where the heart struggles to pump blood through the lungs at higher altitudes.

are many references made to “hybrid vigor,” or heterosis, defined as the phenomenon that a hybrid offspring enjoys improved growth rate, stress tolerance, fertility, and other traits compared to their purebred parents. At the same time, breed specific traits such as the docile and maternal nature of Gelbvieh and Hereford cows are described and promoted by seed stocking operations that specialize in those breeds. Thus, while there are concerted efforts to maintain breeds and highlight the varying dispositions and qualities of them, mixing them together is not only something producers frequently do but also a process that is encouraged through advertising. This is not a story in which one breed is pitted against another with human individuals and communities being dragged into similar conflict. There is something more going on here. It’s understandable that maintaining distinct breeds is beneficial not only to breeders who can promote specific kinds of cattle that display distinct traits, but also for others who can boost their herds genetically. However, why are *black Angus* cattle as opposed to any other cattle breed so numerous and ubiquitous today, particularly when many interlocutors describe Herefords as having a larger presence only two generations ago? This is an especially crucial question considering that breeding operations and the livestock showing sections of the larger agriculture industry place great importance on diversity of kind – fairs are open to all kinds of bovines from typical Angus and Herefords to Longhorns, Scottish Highlands, and even yaks! Essentially, a paradox began to emerge in my conversations about livestock shows and breeding operations in which ranchers described a disconnect between livestock in pastures and corrals and livestock in show rings.

Weeks after his family’s production sale and minutes after his son had left the grassy show ring with his prize-winning Hereford steer, Carlos unfurled the purple banner that had been won for the gathered family and anthropologist to see up close. He would later tell me, upon my

congratulations, that it was awarded to them because their steer was the only pure bred Hereford steer in the show. As they made their way to take pictures in front of a large Goshen County Fair sign, I asked how the fair had changed since they were younger. Carlos's sisters replied that it really hadn't, but their father Jose said otherwise: "nowadays there are more steers bought from other operations within the county, particularly from breeding operations specifying in show stock, as opposed to steers and heifers taken from your own herd." He went on to argue that the market steers seen in the ring are becoming less practical. For example, large birth-weight bulls are not aimed for in the production side of the cattle industry since larger bulls often means larger, harder to birth calves. Greg also pointed out that the cattle winning shows these days are not working "real world" cattle, explaining that one trait that has gained traction is to have cows which are, as he described it, "clean throated" - meaning a more delicate, slimmer throat and jaw. These cattle do not work without supplements in the real world, he claimed, as without the robust, strong neck and mandible of the working cow they cannot forage adequately for themselves. One of Jose's sisters described wanting to add Charolais stock to her show cattle as they have nicer hair and more of it. Her own herd of working cattle simply did not have a lot of hair due to loss from stress, rubbing on posts to scratch itchy spots, and from fly bites. There is wide consensus that, as one livestock show judge put it, show cattle "need to be bred to be show cattle." The declining representative nature of livestock showing had Jose asserting that "it'd be nice if all producers could compete" and led another breeder of Herefords to argue that showing is "becoming a rich man's game." I suggest that this tension between commercial and show livestock is related to underlying anxieties related to wealth and work, anxieties which reveal a tension between ethics of the American West and capitalism. While capitalistic dynamics and ideas reinforce the idea that anything can be sold for a price if there is a willing buyer, it's a

long-held belief in Wyoming and the surrounding region that not everything can or should be bought and sold and that, as I described in chapter 2, profit should not come at the expense of your neighbors.

There is a long history and pervasive notion that wealth and financial success comes from manual work, and throughout my research and conversations, images of settler ancestors who toiled to survive came up often. One rancher's Swedish great-grandfather, filed[35] on his homestead in 1887. Originally a shoemaker, he'd left the old country after hearing of free land in America and after the death of his first wife who had borne him 10 children. He would work to support this family and a second family in the state while homesteading and working at a local sawmill. He had to carry water some 3 miles, up a large hill, from a spring until he was able to have a well dug at home. The first attempt to hand dig a well was unsuccessful after they hit solid rock and it was only with a mechanical drilling device that the second attempt was successful. In lamenting the showing of livestock unconnected in one way or another to working herds, producers are grappling with the continued decline of agricultural production as a sustainable way of life due to factors. These included the gradual loss of agricultural land to development, the intensive, high input nature of animal and food production in the U.S., and historical events such as the push after WWII to "get big or get out" by discouraging small-scale farms and the farm crises of the 1980s when rising interest rates and a grain embargo pushed many rural producers into bankruptcy. In critiquing the pampered and impractical nature of show livestock, ranchers I spoke with may also be addressing the idea that wealth and work are not

[35] Filing on a homestead was a process of land enclosure which meant living on unclaimed land for a period of time, making improvements to this land and then submitting paperwork to local administrative bodies to have this land become legally private property.

always connected in an embodied way. Today this image of success through material efforts remains, especially in explanations of Angus superiority.

That day I arrived to Greg's household and walked to his pens where he was tattooing calves, his jump into explaining Hereford and Angus differences started with this utterance: "We (being Hereford breeders and producers in general) did nothing about the breed's biological challenges and limitations early on and let Angus push past them. Now we are in the minority and do not enjoy Angus's good public reputation and brand recognition." In these few sentences, Greg describes how Angus has come to largely supplant Herefords on the range in our corner of Wyoming and across beef producing states through human neglect or error in the area of genetics. Specifically, he is referring to genetic disasters of the previous century in which Hereford seed stocking operations tried to remove horns from the naturally horned breed through genetics and in doing so inadvertently increased the presence of dwarfism and inbreeding among Hereford populations. Angus, a naturally hornless breed of cattle, was then able to gain a foothold and seemingly based on good genetics and the work of human breeders, became the king of all cattle breeds in the U.S. While this naturalization of Angus' superiority highlights the importance of human-non-human relations and partnerships, it fails to address the ways in which massive amounts of advertising, wealth and resources had a hand in the ubiquitous presence of black-hided cattle in pastures and corrals today. There was a dark joke once told to me by a rancher which sums the importance of wealth: "How do you make a small fortune in ranching? By starting with a big one."

In the early days of animal agriculture in Wyoming, about a century and a half ago, wealth from the East and from across the Atlantic was instrumental in transforming a landscape full of native life into a place dominated by English Shorthorns and Herefords. Livestock and

ranching were explicitly connected to colonialist and imperialistic desires and processes and these dynamics were not at all an accident or simple byproduct of settler migration, as was asserted in popular accounts like those of Struther Burts (1938). His history of Wyoming and of its ranching traditions outlines a common origin myth. He describes how migrants on famous emigrant trails would exchange footsore and worn-out cattle and other livestock for other supplies along the way, transforming station keepers and merchants at stopping places such as Ft. Laramie stockmen over time. He writes that "for the sake of convenience [these merchants] began to fence in the patches of wild hay and river bottom grasses adjacent to their stores and stations" and describes how the grasses, strengthened through hardship, "were discovered to be unbelievably nutritious." He also tells of a story about a Texas cattleman who lost his herd near Chugwater in a November blizzard and continued to Cheyenne, expecting bankruptcy, only to find his herd far fatter than when he'd lost them the following spring (1938, 208). Now while such events might have occurred, these stories leave out a large figure in early Wyoming ranching: the cattle baron – those men, for it was usually, exclusively white men, who operated on massive scales by raising tens or even hundreds of thousands of animals on huge tracts of land and who were often financed by investors abroad.

Alexander Swan, a Pennsylvanian born Scot, was one such cattle baron who is credited with not only introducing the Hereford breed into Wyoming and the greater Western region when he imported 146 head of purebred Herefords from England, but also establishing the Wyoming Hereford Ranch in the early 1880s, which is one of the oldest continuing Hereford operations in the U.S. Having arrived a decade earlier to the Wyoming territory with investment capital from Scotland, he had already created a sizable operation consisting of a million acres of land and over one hundred thousand head of cattle (Woods 2006). Looking to improve his large,

but slow maturing and gaunt cattle herd, Swan was persuaded to experiment with Hereford cattle, which had already been introduced to the US as early as 1817 and maintained as distinct breeding herds in the east by 1840 (Macdonald and Sinclair 1909). Local personal histories maintained at the Laramie County library and oral histories told to me by ranchers, describe how Herefords became popular due to their ability to survive in extreme cold and for their early maturation. The cattle boom of the 1880s would end in the region with a series of disastrous winter storms which killed hundreds of thousands of livestock, though Hereford cattle fared much better than other kinds, and bankrupted many ranchers, including Mr. Swan. Many of the ranchers I met told me how their grandparents had raised Herefords, much as my own grandparents did in North Dakota, and explained that Herefords continue to be raised by some for their early maturity, docile nature, and thick hair. For example, one producer whose family operates in mountainous terrain at 8,000 feet above sea level commented that Herefords were kept since they can better survive the harsh winters and are easy to feed and handle with their calmer temperaments.

But they also described a gradual shift in their lifetimes from Herefords to Angus, a breed only introduced to the US after 1874 on the Kansas prairie by George Grant. I highlight how this shift away from Herefords and towards Angus was primarily due to excellent advertising, though I recognize that other factors also helped sway consumers and producers to adopt Angus cattle. Changes in consumer tastes following WWII pushed consumers away from larger, fattier Hereford beef, a byproduct of genetics focused on early maturity. Moreover, the enclosure of the open range and suppression of predators no longer made horns useful. Naturally hornless cattle are a plus since as one rancher said, “no one likes to dehorn cattle,” a bloody and quite traumatic enterprise for both humans and livestock but needed to ensure no one is gored. In 1978, nearly

20 years before the Hereford Association would create its Certified Hereford Beef brand, a group of Angus producers started the Certified Angus Beef brand, which is officially a nonprofit organization owned by the American Angus Association and its producer-members. This was the first value-added program recognized by the USDA, meaning ranchers and producers of cattle who participate can earn more money by producing beef that meets certain criteria after being graded by USDA workers then is sold for a premium to consumers. The Certified Angus Beef brand justifies higher costs by stating that Angus beef is better quality and better tasting beef and specifically point to good quality marbling as a specific trait of Angus cattle. Marbling is the term used to describe the strategic placement of fat within pieces of meat as opposed to large clumps of fat around the muscle tissue and a steak with good marbling is typically more tender after cooking, as the fat within the fibers keeps the meat moist and adds a bit of flavor.

When I asked producers if there was indeed a difference in taste, as commercials and adverts claimed, most responded in the negative. One rancher's son sarcastically joked that ketchup was created so that you could eat Hereford beef while his brother, a more serious man, explained that there was no real difference due to a push, genetically, in the last 15 years for better marbling in general. He continued, saying the marketing, rather than the beef itself, is what mattered. The Certified Angus Beef brand has helped made black-hided cattle worth more than non-blacks and interestingly the brothers commented that black-hided does not necessarily mean Angus – rules for being certified Angus beef included: 1) 51% of the cow had to be black and 2) it had to grade choice.[36] In other words, embodied differences between breeds have been co-opted and made to take on added value to set some products and producers in opposition to others. Breeds in these

[36] During slaughter at USDA inspected facilities, meat is graded by USDA inspectors into Prime, Choice and Select. These grades are distinguished by the amount of marbling or intramuscular fat found in cut of meat with Prime having the most marbling and select having the least.

kinds of advertising and added-value programs matter more in how they can be used to create wealth through the cultivation of desire in consumers as opposed to any kind of real, material or genetic difference in muscle and meat. Moreover, programs such as Certified Angus Beef disembedd cattle from local networks of social relations. While, according to Polanyi, it was state sanctioned long distance trade rather than local market actions which led to the emergence of market societies in Europe, and the subsequent dominance of modern corporations. As a large animal vet once told me, "there is no scientific basis for breeds" and "all the cows we have in ranching are designated bovis." Notions of quality and prestige have been successfully attached to Angus beef, even though it is very similar if not indistinguishable from other kinds of beef through copious amounts of human labor and capital. The impacts have been substantial in pushing producers to raise black-hided cattle, mostly Angus but also Limosin and Simmental, and has even propelled the creation of new breeding associations like that for new, Black Hereford cattle. But while the continued dominance of Angus cattle seems certain for the near future, one rancher, whose family have been raising Angus for generations, acknowledged the volatility of the market, saying "this whole thing could turn around" and that "there is a place for different breeds [of cattle]." As I describe in the following section, however, such sentiments have not been extended to other forms of life in the region.

Surviving in the bovine shadow

A few days before Thanksgiving, I went out early in the morning a 45 minute's drive east of town to help Jason gather, sort, and sex sheep bound for the sale barn and market. We had met months previously after being introduced to each other by his cattle ranching cousin who was involved in my research from the beginning. As a very intelligent, talkative, and outgoing

individual, I loved chatting with and listening to him. On that dry, windy day, after a slow start and some unexpected wrangling of rogue cattle, we drove in the sheep to the corrals from the pastures in which they'd been grazing, covering a lot of ground in a couple of hours. It was both fun and frustrating to try and keep the flock going rather than stopping, eating, and spreading out with me on one ATV and Jason with Elsie, his eldest daughter, on the other, zigzagging back and forth behind the flock as we made shushing noises to encourage them to move forward. When we got them to the passage just before the alleyway leading to the corrals, where two hills helped provide a kind of natural tunnel, we got off the ATVs and walked behind, using Millie, an Australian sheepdog, when we needed to keep the sheep together. I stopped working only once to run and pee behind an old truck, parked and rusting by a few trees, and I was only too happy when we finally pushed all the sheep into the alleyway connected to the corrals and shut the gates to have a quick lunch. The dry, windy conditions picked up dust and dirt, sending it flying in my face for the entire trailing event. It would continue to be dusty all day and I would wipe dark earth from my eyes, mouth and face until I finally left at dusk, leaving my sleeves and inside shirt collar brown.

After a quick, hot lunch we went back outside to begin running the sheep through the long alleyway which led to chutes and pens into which we'd kick various kinds of sheep after sorting them by type and sex and finally into those that were to be sold. We talked while we worked about a number of things, especially the problematic future of the sheep industry. "Sheep is the forgotten man," Jason said at one point, in a somber voice. As we finished our work his pessimism broke and with a tone of hope in his voice, he asserted, perhaps more to himself than to me, that the industry won't go away. Instead it will change. As I drove home in the approaching darkness I wondered why he'd spoken of sheep as a "forgotten man" and found

myself wanting to know just how are sheep forgotten, by whom and why and what this means for the humans, like Jason, who live and work with sheep on the range.

As I've noted in the show rings at county fairs and as I will note below about auctions in sale barns, cattle are not sheep and sheep are not cattle and thus each require distinct forms of care and work. For sheep this includes shearing and the use of sheep dogs to guard or herd sheep depending on the kind of dog as herding dogs are not the same as guard dogs. However, there is no reason that these things should have any bearing over the kinds of humans that raise sheep. Indeed, around the world neither religion, ethnicity, topography, nor any other factor defines sheep herders from other livestock producers. As I walked into the sale barn with Jason on the day they were selling some of his sheep about a month after we'd gathered all the sheep and worked to sort them, I was expecting to see the same kinds of people as I had seen at the sale barn when I went with other ranchers during cattle sale days. Indeed, I thought the only thing that was going to be different was the livestock coming into and leaving from the show ring. As Jason, two of his daughters, a church friend and I drove down the interstate toward the sale barn just across the state line, I recalled my first trip there with Willie, an old, bachelor rancher about a year earlier.

Taken back to winter 2021 in my mind, I remember how immediately after entering the building the pungent smell of livestock hit my nose and the sounds of mooing and the auctioneer speaking could be overheard despite a thick wall of cement brick. As we went into the main auction room I noted that masks were worn by only a few individuals and social distancing was not really practiced. While some stores and places still mandated masks and some people, particularly the elderly, wore them religiously when in public, a sizable portion of the public didn't mask if they could help it, comfortable to take their chances with getting ill in a sparsely

populated region and state. Willie led the way up a small flight of stairs to an arena-like room where 5-7 rows of red painted wooden bleachers faced on 3 sides a circular, doughnut-shaped area where cattle moved about. The auctioneer and several other workers sat above the doughnut in a small room, with two metal doors on either side. To begin the sale of a group of cattle, the door to the right (looking from the audience) of the auctioneer's box would be opened by a worker who made shushing noises and prodded the cattle into entering with a narrow white rod. He, along with another worker who stood behind or to the side of a symmetrical, V-shaped metal protective wall, counted the cattle before closing the door. I noticed that most of the audience were male, white, and dressed in western attire, such as camouflage patterned clothing, Carhart vests, boots, and cowboy or baseball hats.

Later, with Jason, I would still hear the same auction sounds and smell the same odors of livestock in the cramped sale room, but the people involved would be very different. The first things I wrote down in my notes was the fuller, more diverse audience, with younger, more female, and more brown bodies present than I could recall at the cattle sales. There were especially more Latinos than I'd ever seen at the sale barn. The ring itself was also set up differently and the man usually in the center was joined with another young, dark-skinned man. In the auctioneer's space, too, was a young Latino alongside a member of the family that operated the sale barn. Sheep-oriented infrastructure was on display such as a white, highly flexible gate on wheels in the center of the ring which would be used to separate two flocks. There were also two goats kept in the ring which were used as bait to draw in reluctant groups of sheep. Most interestingly, at times, particularly when there were many sheep to sell from one flock or seller, the highest bidder would get to select which sheep and how many they wanted before the bidding process would resume until all the sheep sold. Similar processes of describing

the sheep as well as thanking sellers and buyers were in full force. When Jason's sheep and bucks came up for auction the auctioneer talked him up and his buyer friend, Abdul, to whom he often sold his sheep, also helped increase the price by bidding a few times. After the auctioneer finished and the animals were sold, Jason turned around and thanked him, eventually getting up and going to the back to chat for a little bit.

The different dynamics and bodies at the sale ring on sheep selling days are related to the specific historical conditions and processes in the western U.S., many of which were very violent. Despite popular images of the West as "cow country," sheep have been raised in this part of the U.S., at the foot of the Rocky Mountains and the edge of the Great Plains, for generations, just as cattle have been. A report from Wyoming general Surveyor Silas Reed noted "there seems to be no doubt that the vast quality of mutton can be grown here, pound for pound, as cheap as beef; and, if so, then sheep-raising must be profitable if cattle-raising is" (Reed 1871 [1945]). In the 1870s cattle and sheep husbandry were not incompatible with each other and stock producers were not yet engaged in violent sheep raids and attacks. In fact, the early Laramie County Stock Growers Association was created by and for both sheep and cattle growers until about 1879, when the two types of producers parted ways and the organization became exclusively run for and by cattle ranchers. Throughout the 1880s and 1890s sheep numbers in Wyoming increased gradually, despite the disastrous winter of 1886-87, a financial panic in 1893, and the abolishment of wool tariffs, which opened the door to intense competition with Australian wool growers (Western 2014). As demonstrated by the fact that a whole chapter was devoted to sheep raising in the West in James Brisbin's famous 1880s book *Beef Bonanza, or How to Get Rich on the Plains*, sheep were very profitable, especially after wool markets were bolstered by the

Dingley Act of 1897, which reinstated and doubled tariffs. As sheep numbers increased though, so too did acts of violence against them and their human counterparts.

Determined that sheep overgrazed the range and were a threat to cattle growing, cattlemen and their associates engaged in all out warfare in the early decades of the 20th century and up until the Taylor Grazing Act of 1934, which established grazing districts and ended the era of free, open range use of public lands. In Wyoming, the Big Horn Basin in particular which continues to be a heavily sheep-growing area today was beset with horrific attacks. According to Samuel Western (2014),

> One of the most violent acts happened in 1905 on Shell Creek in Big Horn County. A group of masked riders rode into Louis Gantz's camp and shot, dynamited or clubbed to death 4,000 sheep, shot horses and burned the herder's sheepdogs alive. Five years later, in April 1909 on Spring Creek, south of Tensleep, Wyo., armed men approached a sheep camp and killed three men, roasting two in the sheep wagon and shooting the third—and killed the dogs.

Even in southeastern Wyoming, where sheep producing is minimal compared to other areas in the state, there were instances of violence including the death of 14 year old Willie Nickell on July 18, 1901 by infamous stock detective and hired killer Tom Horn because his father had introduced sheep into the area. As documented by historian Andrew Gulliford, "grieving mother and widow Mary Nickell believed that "everything that happened was because of their sheep," after her husband received a threatening anonymous letter "to get out of the country with the sheep of suffer the consequences" (2021, 62).

Perceptions of the dangers of sheep existed side by side with perceptions of them as fragile and weak. For example, a 1908 report to Professor Towar of the University of Wyoming Agricultural Experiment Station contended that sheep possess less vitality than cattle or horses.[37] In disparaging and vilifying sheep, however, few (e.g., Gulliford 2021) have addressed how in killing sheep, cattlemen and others were also dealing blows to the Greek, Basque, and Hispanic herders who lived, worked, and even sometimes died alongside their flocks. Jason once remarked to me how even today being Basque will add weight and status within Wyoming sheep herding communities. In the northern regions, a sizable Basque community continues to flourish, as demonstrated in Buffalo, Wyoming by a main street bronze statue of sheep and a sheep dog with the proclamation:

> The heritage of the Basque people runs deep in the history of Johnson County [Wyoming]. Coming from a mountainous, agrarian culture in the area of the Pyrenees Mountains between France and Spain, they took to the open range of Wyoming, bringing colorful traditions and a knowledge of raising sheep. They depended on their dogs, often Border Collies as companions and helper to protect and herd the sheep. The Basque farmers remain influential throughout this community to the present day.

Alongside Basques and Hispanic herders whose families may have produced sheep in the region for decades, a growing number of Peruvians are now on the range thanks in part to "U.S. Guest Worker Programs," which are less hospitable and more coercive than their designation as guest programs may imply (Krögel 2010). Moreover, issues of class and socioeconomic status also colored these dynamics since most "early sheepmen tended to be 'hand built,' coming from

[37] Report, J.D. Towar, May 12, 1909, box 11, LPCB J.D. Towar, 1901-1909, Coll. 548001, Agriculture Experiment Station Records, American Heritage Center, University of Wyoming.

modest economic circumstances" (Western 2014) in contrast to the likes of wealth cattlemen, like Alexander Swan, who often had access to incredible wealth and resources before entering the animal agriculture industry. In asserting that the violence perpetuated against sheep and shepherds in the not-too-distant past was less about the actual sheep and more about the individuals and communities that raised and made their living with them, I draw on Harriet Ritvo's work on the history of animal showing in England, where upper class elites bred and showed certain animal species and breeds, the more exotic and harder to breed the better, as a way to distinguish themselves from the lower classes (1987). Although Ritvo's analysis focuses on social distinction while I am talking about economic exclusivity, both cases show humans using animals as a medium through which to express and actualize distance from other humans. In order to maintain the range as a space of possibility and advancement for wealthy, predominantly white elites who raised cattle, the same space had to be made inhospitable for sheep flocks and shepherds. And even today, social and economic barriers remain that make sheep raising inconvenient compared to cattle.

For sheep ranchers, particularly those like Jason who live in areas were few raise sheep, cattle-centric fencing laws, brand inspection practices and difficulty in obtaining bank loans are just a few of the specific hurdles which must be surpassed in order to keep on working. Although the range wars over open grasslands gradually ended with the introduction and proliferation of barbed wire fences, cattle producers benefit greatly from Wyoming's "fence out" laws. Like many other Western states with histories of sheep trailing, cattle drives, and other forms of itinerant pastoralism and a relatively low human population density when compared to livestock, Wyoming law follows an "open range" doctrine. Whereas most states require livestock owners to fence them in, on property they own or lease, open range states reverse this duty by allowing

livestock to roam in certain parts of the state and requiring other landowners to build fences to keep livestock out, hence the expression "fence out." But not every livestock is given this special privilege. In Wyoming, cattle are the only domestic livestock species whose roaming is protected by law; if you own horses or sheep or any other livestock you are required to fence them in. While on a ranch tour in summer 2021 with several other producers and ranch enthusiasts, one person commented that the law was this way because "cattle are king." Not only then are owners of sheep obligated to build and maintain fences they might not otherwise need but they are also not afforded the same legal protections given to cattle producers. For example, one rancher explained to me in an interview once that if a cow escapes and gets hit on the highway, the producer is protected from being sued. In this instance the fault falls on the Wyoming Department of Transportation for failing to fence out the cattle from their land.

Brand inspection is another example in which we can see the state sanction a situation of bovine privilege and status wherein sheep producers gain little. The very title of "brand inspector" highlights the ideal livestock – animals that are branded. On the website of the Wyoming Livestock Board, the state entity which manages brand inspection, an image of a cow looking directly at the reader from behind a barbed wire fence is accompanied by the imperative to "Brand your livestock & Claim your herd." Clearly, sheep do not fit this ideal since due to their thick wool, they are not branded but rather ear notched or spray painted, and a group of sheep is called a flock rather than a herd. As a state with brand inspection laws, any livestock crossing state lines, travelling more than 75 miles within the state, or given to another through sale or gift must be inspected by a brand inspector, often a fellow male rancher and neighbors, who gathers fees and issues documents that certify ownership and are akin to certificates of title. As we were sorting sheep on that dusty, windy day, a local brand inspector came, according to

law and custom, to issue a certificate certifying that the sheep in Jason's possession were indeed his before being sent to the sale barn. At 3:30 p.m., the brand inspector arrived in his pick-up truck and began to examine the sheep. As he did so, Jason told him the only paint brand that he might see is a faded one in purple which came from some sheep Jason had bought earlier in the summer. In reply, the inspector had asked how long paint brands last and was told that shepherds have to reapply paint brands regularly to all the sheep in order for them to stay on. There was a brief mention about ear notching by some producers before the inspector said everything was fine and Jason went off to the house to get his checkbook. The whole process took only a few minutes, and I was struck by the more relaxed inspection compared to ones I'd seen of cattle, which took longer and usually involved more rigorous scrutiny. After paying the required fees to the inspector, we began to discuss the variability of brand laws in the surrounding state and Jason pointed out that what had just occurred was a moot point since Colorado's brand laws do not include sheep, and that's where the sheep were bound. In sharing this example, I suggest that although sheep ranchers are required to go through the same processes of state governance and bureaucratic red tape as other livestock owners, they are not being adequately and equally served by these laws. In upholding laws tailored to the ideal of cattle ranching, local and state governments are missing opportunities to not only serve and protect sheep producers, but also to support marginalized populations that make their living from and alongside sheep.

Lastly, and perhaps most perplexing, are the financial barriers that sheep producers must overcome. Once a real money maker in the state, sheep production today faces challenges despite the great potential there is in wool and lamb production. Over a century ago, in the first decade of the 20th century Wyoming was the top wool producing state in the union and this product even topped beef economically for a few years. Samuel Western (2014) describes that in 1908

Wyoming, "over six million sheep [were] valued at $32 million" while "the value of cattle…was estimated at $26.2 million, according to a 1913 supplement to the 1910 U.S. Census." Business would continue to be stable and good until the years after WWII when the industry would decline drastically due to a host of factors including but not limited to the creation of synthetic materials like rayon and polyester that could be used as a substitute for wool, drought, and decreasing access to grazing land. In 2025, although Wyoming ranked fourth in the nation for total sheep raised, after Texas, California and Colorado, the total number was about 300,000.[38] During a pregnancy check and ultrasound session in late March, Jason mentioned that if not for the cattle, the bank said they wouldn't be able to finance his operation. As we worked to finish examining the remaining ewes and then begin to clean up Jason asserted, "what turns the cash on the place (i.e. what brings in money) is definitely sheep. Even after I paid all this principle down and everything, the banker still said if there were no cows they wouldn't be able to do the loan…they just do not take sheep seriously - well they do, but his bank can't use them for collateral. Not like you can the cows." Intrigued I asked if the bank gave a reason why, prompting him to reply, laughing, "I think they have heard so many horror stories of sheep lined up dead in the fence rows after a blizzard that they are so sure a sheep producer is just one storm away from total disaster." What is so fascinating and frustrating about all of this is the idea that although profit is there, producers are being in a sense barred from building wealth by being denied bank loans since cattle rather than sheep are deemed to be more appropriate forms of collateral.

Such practices, I offer, could possibly constitute structural forms of discrimination which are connected to larger dynamics of what Cedric Robinson calls "racial capitalism," a theoretical

[38] United States Department of Agriculture National Agricultural Statistics Service.

framework that seeks to understand how the production of capital is inextricably intertwined with violence. Writing about how racial difference in the Transatlantic period stemmed from strategies to secure or prevent access to capital in the Medieval period, Robinson argues that "capital and racism did not break from the old order but rather evolved from it to produce a modern world system of 'racial capitalism' dependent on slavery, violence, imperialism, and genocide" (1983, p. xiii). While Jason and a few other sheep ranchers I spoke with in my primary field site were ethnically white, the lamb and wool industry in which they work in the region has and continues to be composed of more ethnic and racial minorities than the cattle industry. Moreover, it is ethnic markets and communities, especially Middle Eastern, African, Caribbean, and Hispanic, that are the largest consumers of mutton and lamb in the United States (Hahn 2025, and Williams et al. 2011). Thus, I suggest that the barriers sheep producers like Jason face are connected to capitalist processes and structures, although more research is needed to further substantiate this claim.

In an early entry dated March 2021, I wrote, "I am still unsure of whether I should include sheep herders in my study - there would be quite a bit of work on my end to recognize and learn the sheep breeds, behaviors and dynamics. Also there are the sheep dogs. But if I am looking to get a representative sample of the kinds of stock growers, why NOT include this case [referring to Jason's operation]?" Although I, like the other attendants at the fair, prized the wide variety of livestock with whom we live and work, I was willing to question my involvement with sheep growers simply because I was unfamiliar with them. If I had ignored sheep and sheep ranchers to focus on cattle husbandry this ethnography would not only further marginalize this sector and all the communities involved but also would've failed to capture the complexity of making a living alongside and with livestock in the western U.S. today.

Conclusion

Ranching economies are thoroughly embedded in the culture and history of the American West. Values of hard work, care of livestock and community, and forms of reciprocity and redistribution are apparent are many sites of economic activity, including county fairs and private production auctions. At fairs, youth are enculturated in ritualistic performances of agrarian diversity and abundance. Here, they learn to notice and become accustomed to livestock as commodities to be eventually bought and sold in addition to companions. Moreover, these youth learn that successful human-animal relations yield economic rewards, social recognition, and status within local agrarian communities. At private production sales, reputation and positive social relations are a major focus on par with selling livestock. To strengthen and maintain relations with new as well as repeat buyers, sellers like Jose host luncheons, personally participate in the auctions, and advertise in ways which draw from Western ideals and culture. At the same time, ranching economies that are partially embedded in local social relations are also enfolded into larger, more disembedded national and global market economies.

While some economic decisions and behaviors are directed towards building or maintaining social relationships and reputations, ranchers are simultaneously involved in the commodification of livestock and their removal from local spheres of exchange into national and international flows of meat through participation in breed-specific value-added programs. Although advertisements of live bulls, dams, and breeding stock in general showcase local values, environmental conditions and use colloquial language, national certification programs like the Certified Angus Beef brand aim to create a standardized commodity – that of high quality beef. Moreover, when it comes to value creation, livestock themselves are just as much

creators as humans. Different breeds come to be more valuable than others not only due to human labor in the form of marketing and advertising, but through the various affordances certain kinds of bovine bodies and temperaments have been established through generations of selective breeding including small stature, maternal qualities, milk production, or hide coloring. Local ranching economies then are not only embedded culturally, but historically.

Understanding the history of colonization, settlement, and breeding associations is just as important as knowing about Cowboy culture. Herefords were popular for decades before being supplanted by Angus cattle. Since many cattle investors were of English and Scottish descent Herefords, which originate from Herefordshire, England, were natural choices to import to the grasslands of Wyoming. However, failed attempts to genetically dehorn the naturally horned breed resulted in numerous issues, leaving space open for other beef breeds to gain footholds. While the qualities of Angus beef are located in the breed and cattle themselves, I argue that it is more appropriate to locate the success of Certified Angus Beef not in bovine bodies, but in human labor. At the level of species, history too still impacts and shapes ranching practices and the value of certain animals. What's more, attending to histories of sheep and cattle raising illuminates how cattle-centric culture and histories of violence continue to haunt the sheep industry. Raised heavily by self-made, ethnic minorities, sheep were targeted by wealthy, primarily white cattle barons as dangerous competitors to be eradicated as rangelands began to be enclosed at the turn of the 20th century. Although sheep and their herders are not violently targeted today, cattle-centric laws and policies perpetuate their marginalization. However, as this and the next chapter shows, rather than seek alternative markets ranchers remain committed to sustaining themselves and their livestock within rather than outside capitalist markets.

Chapter 5: Devotional Praxis, (In)divisible Bodies, and Economies of Meat

As the clear kitchen door shut behind us, the smell of turkey, herbs, and vegetables engulfed me as we moved to fill bowls of soup and sit at a dining room table to eat, talk, and warm up. On that late winter day with winds so biting and cold a gust could bring instant tears to your eyes, I was visiting with Judy at her home. She owned several black Dexter cattle, a dual milk and meat breed, whom I had just met and to which she fed cake, a highly concentrated and dense feed supplement full of protein, vitamins, and minerals. Although originally from Pennsylvania, she had moved to Wyoming many years ago to make a life with her husband, who had passed away only a year before and who had ranching family roots in the area. Tucking in to hot, meaty meals following any kind of ranch work had by then become a predicable aspect of visits to my interlocutors. At the same time, it had become routine to hear ranchers' concerns about a myriad of topics related to food and meat: how to keep animals fed, public misinformation about ranching and farming, the rise of alternative meat products, and how the ongoing pandemic was impacting meat supply chains. "We [as a society] have gotten too far from the source," she asserted as we sat on her couch, after having finished our meal and cleaned up. She lamented the lack of knowledge people have today about food production before going on to stress ranchers and farmers roles as the original conservationists and stewards of the land - a role and duty "not only sanctioned but mandated by God."

In what ways do belief and religious practices shape ranching? What can we learn from thinking about meat production as a moral endeavor? This chapter brings together food studies, writings on religion and morality, and the anthropological literature on exchange to explore secular and divine assemblages of meat, people, and livestock. My argument in this chapter is two-fold. First, I contend that religious beliefs and networks play important roles in the lives of ranchers and in their understandings of social obligation within and beyond their "places." Before, during, and after church services and events rural ranchers share information, mutually aid each other and partake in a larger community of support and friendship. Moreover, rural religious institutions also provide moral foundations and beliefs that see humans as intrinsically part of the natural world. Judeo-Christian teachings also put forth the idea that humans should be stewards of the natural world. Religious ranchers see their work caring for lands and livestock as central to fulfilling this ideal. Outside of church, an ethics of devotion, which espouses care for land, livestock, and fellow humans through the provisioning of food, is expressed at the annual Agriculture Expo. Here ranching women and Future Farmers of America volunteers teach county youth to see cattle and ranchers as good, environmentally friendly actors rather than threats to grassland ecosystems and contributors to climate change. Rather than advocating for the separation of humans from nature, ranchers see themselves as essential to healthy ecosystems. Devotional relations continue after death with ranchers committed to caring for livestock and humans through the making of meat. In other words, meat is not the end of a relationship to a cow or sheep but rather its fulfillment, as well as the beginning of a relationship consumers.

The second part of my argument is that provisioning meat is a crucial component of their understanding of their ranching work and was severely impacted by COVID disruptions but not necessarily for the worse. While death and slaughter has long been the subject of critiques of

animal agriculture, in terms of scale, methods, and impacts on human and environmental health, for ranchers killing is a natural process and in certain circumstances constitutes forms of caring for individual animals and larger herds. However, not all of my interlocutors killed and/or butchered their own animals, signaling a high degree of heterogeneity of attitudes about killing and eating one's own livestock. Although there was a wide degree of difference among producers in this respect, ranchers in Wyoming I worked with valued wholeness and perceived themselves and their work in making food for others as socially important. Neither they, their lands, nor their animals, even after death, could be removed from the integrated cycle of which they saw themselves an important part. I suggest that for my interlocutors, mistakes at processing facilities and alternative or "fake" meats, as they were described, threaten moral ideologies by challenging their status as provisioners of meat and caretakers of livestock and land. All the meat from a cow should go back to it's owner once processed, just as meat should only come from once living and breathing animal bodies. Though ranchers felt compelled to accept decisions by consumers to eat these products, they largely saw alternative protein sources as unnatural.

While the COVID pandemic brought further disruptions to life and work through slaughterhouse closures and disrupted supply chains, it also offered an unprecedented opportunity for some to start or increase direct-to-consumer sales of beef. Capitalizing on food freedom laws passed in 2015 and on increased support for small and medium sized processors, producers now find themselves faced with unprecedented opportunity in local food markets. I contend that through these avenues, ranchers and the rural communities of which they are often apart have better chances to make a good life for themselves while continuing to care for lands, livestock, and others. Moreover, local food markets have the potential to remedy the misrecognition my interlocutors and other agricultural producers face.

Faith and church among ranchers

For the ranchers who attended one countryside church, community potlucks and services were times to come together and exchange information, share stories, and engage in a wider, diverse community which finds common ground in the Christian faith, specifically the Protestant, Baptist church. Since fellow parishioners are largely also cattle and sheep ranchers, attendance at services and events allow many of my interlocutors to solicit advice, share experiences, bond over their shared love of livestock, and make arrangements to aid each other. Moreover, Christian theology provided an ethics of devotion which gave not only purpose to many of my interlocutor's lives, but also compelled them to care for livestock, lands, and fellow humans.

Late in February, a potluck and miniature golf event was put on at the rural church attended by Tracy, Jason and other interlocutors. Following the service, Tracy and I went down carpeted stairs to the basement. Helping her to move and set up the food from the fridge and stove top which lined one wall to a large island countertop more in the middle of the room, we worked and were soon joined as more women came in loaded with casserole dishes, plates, and bowls containing an assortment of foods. There was macaroni salad, meat loaf, baked pasta, veggies, salami, Jell-O, pie, and cake along with water, coffee, and lemonade. The room was buzzing with small talk occasionally punctuated with laughter as we finished and a line formed to get food. Plates filled and were transported by men, women, and youths to the handful of long white plastic tables arranged on the opposite side of the room. In between swapping tales of international travel with the pastor, I overheard a conversation between Tracy and Jason. Cousins of a sort, their families were distantly related and since they both ranched and attended the same

church, I often saw them speaking with each other. Their interaction is a prime example of the kind of information-sharing that participation in church networks and activities can yield.

Speaking of the nearest sale barn about an hour's drive north of the church, Jason described to Tracy an unfair practice that went on more there than at the other nearby sale barn in northern Colorado, where Tracy's father was a longtime seller. The practice involved someone calling on the auctioneer to remove one or two animals from a group, arguing they don't belong perhaps due to small differences in size or coloring, in order to bid on these misfit livestock themselves later in the day for a lower price. Jason argued that such practices could be avoided by being present at the sale barn when they sold your livestock or by developing a strong business relationship with the sale barn. This could be accomplished, for example, by selling a large number of cattle every year for several years. He went on to say that, "they don't fight for their sellers like [the Colorado sale barn] does." Tracy interjected at this point and mentioned that through her business with the online auction company "Producers" she noticed the same kind of buzz that would be heard through the sale barn when certain high profile producers would sell. Jason said that the representatives themselves can mean the difference between one price and another, and that some buyers will pay more if they know and trust the one who is helping to sell a group of livestock.[39] He then suggested that Tracy should speak with whatever representatives are present when she's at the sale barn up north. The overall conversation supports analyses by social scientists who have argued that religious networks aid in the

[39] Independent and commercial livestock sales representatives are important middlemen who connect buyers and sellers and help assess the quality and value of livestock. Being able to rely on a good representative can make a big difference. Jason told of how once someone fed some calves salt and then a bunch of water before shipping them and they ended up dying by the time they arrived to the buyer. This kind of mistake would reflect poorly on a representative since they are supposed to ensure bought cattle and other livestock make it to the buyer in good condition.

diffusion of knowledge (Murphy, Nourani, and Lee 2022, Choi 2010, Shumba 2015). Though many of the people I spoke with saw church and their fellow parishioners as important sources of information and knowledge about markets, animal husbandry practices, and numerous other topics, this lunch time event also highlighted how the church provided a space for community development and socialization.

At church services and events, ranching interlocutors talked about their four-legged charges in ways that showcased the affective and agentive characteristics of livestock. Group discussion pivoted to livestock shenanigans after Jason and Tracy's conversation, with one woman describing the antics of her bull, Magellan. This bull would try and get in with the cows by waiting at the fence corner of her home, she said. One day after church she and her family drove home and were pleasantly surprised to find that the bull was not waiting beside the fence as usual. But they very quickly became concerned thinking, "where is he *now*?" and sure enough he'd managed to get in with the cows, potentially impregnating them against the desires of his human caretakers, who had to separate him. However, she won't have to worry about having him around the cows anymore until she wants him around, she commented, since he'll be staying with other bulls at another parishioner's home. She worried aloud that he'll be bullied since he is smaller, but everyone agreed that he couldn't be left alone - cattle and bulls need socialization too. Jason, taking his cue from the mention of Magellan getting in with the cows, jumped into a story about how a buck once got in with the ewes for only a 24hr period before being found and removed. While he toyed with the idea of administering a drug to induce abortion, another producer persuaded him to just keep track of the day and come the due date he was inundated with around 50 lambs. Everyone laughed, made big eyes and joked about how easy it was for him to service enough ewes in 24 hours to cause that many pregnancies! I wasn't surprised that

there was a lack of inhibition about talking about the sexual relations of livestock at church, a topic which is unlikely to be the focus of attention at non-agrarian churches, given how many ranchers attended. This conversation showed how my interlocutors found great pleasure in talking about mischievous livestock. More importantly, though, this event underscored how this rural church built and sustained networks which increased producers' knowledge, facilitated cooperation and aid, and strengthened social relations. Church, however, is more than a physical location. It is also an important site of ethical and religious instruction.

During fieldwork, numerous ranchers expressed a divine impetus for and significance to ranching and caring for livestock. Much as Judy described ranching as not only a role and obligation sanctioned by God, but mandated by him as well, Greg asserted that, "God put us here to do [this kind of work]." A breeder of Hereford cattle and a passionate showman of the breed, he went on to say that "people on ranches are closer to God ... we experience first hand our creator's work, we're in it, we live it - being out in mother nature. It's not a slower lifestyle." It's interesting to note here the inclusion of 'mother nature' – a force, being, or divine creating presence that is typically not part of Christian theology. When I asked Greg about the purpose of livestock and ranching, he replied that livestock's purpose was to feed the world and the purpose of ranchers was to care for that livestock and "make it more efficient." During a separate interview with another interlocutor, Mike, who raises cattle and holds a top leadership position on a national cattlemen's organization, stated that "God gave dominion over animals to man to steward and not to abuse…This requires compassion and our purpose is to take care of the land and livestock." Mike was clear that while "animals have rights, [they are] not the same as [those for] people" and that "we have a duty to protect livestock." Such ideas and comments evidence a

certain ethic of devotion which I argue underlies how producers consider their role in society and that of their livestock.

Although they might live in marginal, out-of-the-way places, my interlocutors saw themselves as a central contributors to society and even the larger world. This is an idea that finds purchase in the works of numerous social scientists and historians who have examined the American countryside as a key site influenced by and influencing global exchanges of foods (Blanchette 2019, Hoelle 2015), knowledge (Sayre 2017), and people (Miraftab 2016, Lahti 2019). The ranchers with whom I worked saw themselves as not only participants in a larger world and society whose purpose is to help feed other humans by caring for livestock. This ethic of devotion stems from Judeo-Christian theology and from the biblical story of creation as written in the Book of Genesis. On the sixth day of creation, God made all the animals of the world and then created humans, afterwards saying, "Have many children, so that your descendants will live all over the earth and bring it under your control. I am putting you in charge of the fish, the birds, and all the wild animals. I have provided all kinds of grain and all kinds of fruit for you to eat; but for all the wild animals and for all birds I have provided grass and leafy plants for food." (Gen. 1: 28-30 Good News Translation) Although "monotheistic religions have often been understood as complicit in the human exceptionalism that is thought to have created the conditions for the Anthropocene" (Conty 2023, 41, see also Lynn White Jr. 1967), Christian thought today tends to emphasize human stewardship rather than their domination of animate life. For instance, the late Pope Francis' encyclical, *Laudato si'*, asserts that the scripture of Genesis should not be reinterpreted as a directive to control, but rather "to protect, care for, preserve, conserve, watch over. This implies a relationship of reciprocal responsibility between human beings and nature" (2015,77). Since, for ranchers, the purpose of cows was to turn grass

into meat and to provide food for humans, their stewardship necessarily extends to both animals and lands constituted by a wide variety of plant life as well as fellow humans. This stewardship is a form of multispecies care since taking care of lands is crucial for caring for livestock and also humans as these herbivores rely on grasses and other plant foods which humans cannot digest.

Devotion to the "Good Cow" at the Youth Agricultural Expo

Although often religiously informed, their devotion to livestock and lands was often expressed in more secular ways through advocacy and education. Every September members of the county CattleWomen group facilitate an ag expo for local 4th graders, where ranching women work to persuade urban youth of the goodness of animal agriculture. Preparations begin months in advance with an email invitation to teachers in the spring sent by a member of CattleWoman who previously worked as an educator before returning home to ranch. Specific dates for the two-day expo are finalized through coordination with other individuals and organizations related to ranching to avoid scheduling conflicts and booths change depending on the availability of presenters. The CattleWomen are joined by FFA volunteers, who work as guides and role models for the younger kids, leading them from booth to booth.

After a few high schoolers are matched up with a class, the groups enter inside a large hall on the outskirts of town about the size of a football field. Plastic tables are set up to the west on the smooth concrete floor near large doors for classes to place lunch boxes. Walking eastward groups pass by automated bleachers to the north, which are folded away and punctuated every so often by large doorways leading to a concessions area and bathrooms. The south side consists of white walls of corrugated metal and brick. Ceiling fans whirl above the well-lit room and at the

far end of where classes entered are two sets of doors. Walking through the first doorway, groups enter a room with dirt floors and small pens of lambs, goats, calves and a Hereford pig across from a horse trailer near two well-groomed horses and their saddles. The second doorway leads outside to huge tractors, shiny and brand new. Though there are a few classes still on their way when the students begin their rounds, soon the large space is filled with sounds and activity. Booths, manned by organizations such as the Laramie County Conservation District, Colorado State University, and High West Energy, other livestock producers, and CattleWomen are spread throughout the room and at each location children and teachers learn about a topic related to agricultural and natural resources.

In 2024 the following topics were showcased at different booths by CattleWomen and other expert volunteers: cattle brands and branding practices, wheat farming, wool spinning, beef by-products, ATV and grain silo safety, wildlife identification, conservation and biodiversity of plant species, and ear-notching systems for swine. There were also live demonstrations of electricity safety and working cattle dogs as well as hands on activities involving live animals and tractors with rows of small metal discs used to till fields.[40] By bringing together wildlife and livestock, native tree seeds and wheat seeds and discussing safety broadly, whether it's about maneuvering an ATV loaded with an elk carcass or using a harness while working in grain silos, the ag expo is a space of ruralization (Krause 2013) and naturalization, where the country comes to the city and agriculture is connected to the wider domain of nature. Focusing on one booth in particular, the work to remake bovine images from environmental villain to ecological steward involves adopting environmentalist framings which naturalize domestic animals.

[40] Discing, as it is called by agriculturalists, is for a wide variety of jobs such as preparing a seed bed for new crops, chopping up and putting crop residue back into the soil, creating a fire break, and breaking up compacted soil.

As other anthropologists have shown, the fields of agriculture and natural resource management are closely intertwined in North America, and I argue that ranchers are increasingly turning towards rather than away from environmentalist framings to persuade others, in this case urban youth, of the goodness of ranching. Agricultural metaphors permeate wildlife management discourse much to the chagrin of indigenous communities (Nadasdy 2011) and government agencies often view nature, especially national forests, as something that needs to be quantified, controlled, and stewarded (Kosek 2006). Scholars of multispecies relations are especially cognizant of the how wild species can become domesticated, "not through isolation or physical enclosure but through incorporation into 'domestic' imaginaries of nation-states" (Ween and Swanson 2019). Just as wildlife is brought into domestic spheres, agriculture too can be enfolded into larger environmental discourses and modernist projects, such as the repurposing of agricultural lands for conservation (Adams 2003, Cattelino 2019).

In daily work and life on ranches, producers encounter elk, deer, golden eagles, coyotes, and a host of other wildlife sharing space with their herds in benign as well as troubling ways. My notes are full of annoying prairie dogs, digging their underground towns in pastures; circling crows and eagles signifying the presence of sheep or cattle carcasses miles away; and small fawns popping up out of the grass in early summer to join youthful calves and lambs. In general, producers are wary of such close proximity to wildlife from anxiety about zoonoses and predation to concerns of litigation by environmental activists when an endangered species is found within a ranch's borders. Often ranchers practice an ethics of indifference (Dave 2023) towards wildlife, predators notwithstanding. Indifference, dismissal, and in some cases outright refusal also characterize many producers' attitudes towards climate change. Though producers themselves may be indifferent to discourses of environmental degradation and change on

planetary levels, they are very much in tune with how such discourses can be and are taken up by the public.

During the Ag Expo at the "Good Cow"[41] booth, two FFA volunteers worked to persuade students of the virtues of cattle in an age where livestock are often portrayed as dastardly climate fiends. Standing before a poster board showing green pastures and a diagram of the biogenic carbon cycle, one of the two girls greeted the class in a gentle voice. Given that students go to a beef by-product booth before they come to her and her partner, she asked what things we get from cows before saying, "Cows don't just help us, they also help the environment ... Have any of you heard that cow farts aren't good for the environment?" To this several students raised their hands and she continued:

> Well, these people are misinformed. They're wrong. Cow farts are actually very different. People have a big misunderstanding of how that works. We are here to talk about how cow farts and cow poop actually help the environment and how they help produce the things that we need to grow healthy and strong…We get all kinds of things from cows. But cattle also give back to the environment.

By grazing down grass, cattle help prevent wildfires, the presenters stated. Given that wildfires were raging at the time and would burn more than 810,000 acres[42] throughout the state, roughly 1,265 square miles of land, by the end of 2024 this argument was particularly timely and significant. The ladies continued to emphasize how cow poop fertilizes the soil and assure

[41] This name was not made public but rather printed on small schedules used to help FFA volunteers identify booths and stay on schedule.
[42] Figure based on news story: https://wyofile.com/wyomings-massive-2024-wildfire-season-second-only-to-infamous-88/#:~:text=The%20House%20Draw%2C%20Flat%20Rock,can%20quickly%20spread%20after%20ignition.

listeners that ranchers make sure there is enough grass for cattle to eat in the first place when they move cattle to different pastures. Speaking of methane emissions, one presenter said, "Now this is where a lot of people get confused. And why some people think cows are bad for the environment." She stated methane produced by cows is different than the kind of methane produced by cars and airplanes. Cow farts enters the atmosphere and stay for a couple years before being broken down into carbon dioxide which is then taken up by plants during photosynthesis. Further connecting cattle to natural processes, she went on to say, "cows, like buffalo, have been here before we've been born and they help put carbon dioxide into the air for the plants to then take in and grow…Cows are good for the environment. They help the grass grow. They help prevent wildfires. They help you and I grow healthy and strong." Wyoming ranchers would agree with Australian herders that "cattle enact stewardship; they are not only good for country, they make country good" (Gill 2013).

In arguing that cattle contribute to environmental preservation, two things were being accomplished here. First, the FFA presenters were fairly successful in persuading the children to see cows as virtuous stewards rather than environmental villains. "No, cows are good," responded several children in one group when asked what they'd say if they heard someone exclaim cows were bad for the environment. Although encouraging to see, one CattleWoman indicated that she was wary of just how much of an impact this event makes - especially given that the kids are only here for three to four hours once a year. She agreed with the premise that the kids are here to learn, and that, "you know, the information they get will be passed on to their families when they go home." A fellow CattleWoman echoed this while also touching on the second, though unstated, accomplishment of the ag expo: to not only make interdependency visible, but to actualize it through embodied interaction. Working a beef by-product booth, she

was critical of people who denigrate cattle and beef, saying, "they use all these products sitting on this table, and don't realize it [comes from cows]. For us, it's [about increasing] awareness…And it may or may not stick with [the kids] right now, but maybe at some point…they wouldn't have it if it wasn't for us."

By making visible how cattle benefit the environment and what they contribute through their bodies to society, the ranchers are also making a claim to wider recognition and appreciation for their labor. Their ethical claims mirror those of miners in Wyoming who "imagined themselves and their labor as directly linked to the people who consume their coal, even if those relationships stretched hundreds of miles away and were mediated by vast sociotechnical networks" (Smith 2019). I suggest that persuasion which takes the form of advocacy and educational campaigns align well with an ethics of devotion. Unlike boycotts, protests, or other forms of political and social movements that emphasize action against a common enemy, persuasion underscores a less confrontational approach to navigating social conflict and difference. It is a way to still serve others while recognizing that tensions exist which compromise the ability of ranchers to carry out their moral obligations to livestock, lands, and other human communities. Paradoxically, successful advocacy is not intended to save livestock from systems of agricultural production but rather continue to make slaughter and meat production possible.

Becoming Meat

Meat is a fluid category of food and one that has numerous meanings, histories, and traditions around the world. Emile Yates-Doerr argues "what counts as the object of meat, what counts as the practice of eating, and even what counts as a practice of accounting is not stable

from day to day or site to site" (2015). For producers, though, meat is a material substance that ideally comes from living and breathing beings. In what follows I describe three instances in which live animals were transformed into meat. While producers may feel compelled to kill their animals for a number of reasons which may not be included here, two cases of slaughter evidenced different rationales for making meat: killing as natural and an integral component of a good life and killing as a form of care. The first case details a communal butchering of meat chickens hosted by small holders[43] in the countryside and the second describes the butchering of a calf on a cow-calf operation. Although they both show how meat is a substance which can build and reaffirm relationships, in the second case meat is produced unwillingly whereas in the first it was the end goal. When we examine animals made into meat but sent to slaughter elsewhere, another rationale becomes apparent. In these instances, killing becomes a form of correction where bad, unruly, or otherwise troublesome cattle are sent away to "become hamburger." Since most of my interlocutors, as I have discussed in chapter 3, identified as "cow-calf" operations, the production of meat was not the main goal but rather a way to prevent waste and/or threats to the larger herd and ranch through disease, illness, injury, property destruction, aggression, or violence.

I accepted an invitation to go out at the end of June to the home of churchgoers John and Kelly to help them butcher chickens. Over the course of several hours divided between two days, a group of friends, family, and neighbors of John and Kelly and I killed, dressed, and packaged about 60 chickens for both personal consumption and for sale to local markets, as allowed under Wyoming food freedom laws. Jason, too, came out to help the second day. I arrived at 7:30 a.m.

[43] Though they are more commonly called "hobby" farms in the U.S., I prefer small holder, an category of agriculturalist developed by Robert M. Netting, to describe owners of small acreage farms and ranches who raise livestock or grow crops using household labor and minimal inputs.

and made small talk with familiar faces before we collectively headed down to gather the chickens. The chickens lived their short lives outdoors in a "chicken tractor," a moveable coop and cage of sorts which supplied them with water and food while allowing them to have fresh air, sunlight, and forage without the fear of predation. These "tractors" are moved frequently to spread chicken manure over the land as well as keep natural foods sources from being exhausted.

As we walked from the house and garden, where egg laying chickens were kept, down a small hill to the larger pasture, John explained the present situation. Their chickens were Cornish Crosses and were only 9 weeks old despite being as big as mature hens, having been hatched in late April at a Hatchery in Ohio and shipped to Wyoming as chicks. All female, this breed of chicken has been bred specifically for meat, meaning that they expend their energy to growing quickly and put on muscle, often at the expense of other parts of their bodies. John told us how they had lost some chickens to heart attacks. Others had grown so big that they could no longer move around and, worse yet, a few had their legs break beneath them under the weight of the oversized muscle. Such disclosures suggest that local food systems, understood as alternative to industrial animal agriculture, nonetheless share connections to those systems that are material as well as immaterial. Not only were these chickens purchased from a large hatchery far away, but the chickens themselves were industrial laborers of a sort. Through generations of artificial selection, this breed of chicken and the individual chickens which constitute it, have been made to labor more than they would without a genealogical history of intensification. In offering the term "metabolic labor" to describe the work livestock do themselves in producing animal flesh, Les Beldo argues that, "if metabolism, sexual reproduction, and photosynthesis are allowed to be conceived solely as biomechanical processes, then the interspecies relations of production at the center of those industries will remain hidden ... metabolism is a process yoked by capital that

creates surplus value" (2017). In other words, decades if not centuries of selective breeding by humans have helped created new generations of livestock whose bodies bear the mark of relations with people. Seeing livestock as natural animals, whose bodies simply carry out natural processes, ignores the ways in which these processes and dynamics have been molded over countless generations and places.

Laboring ended for chickens and began for humans at the first of the many stations John and Kelly had set-up for butchering and processing the live birds into meat. First, chickens were collected from their small enclosures in the pasture and transported via crate and ATV to the killing area the farthest away from the house. Here, the men in the group would use metal cones affixed to a sturdy surface to hold the birds vertically upside down. They'd then make a cut on both sides of the neck to drain the blood while holding the birds which would tremble and kick, sometimes violently. Although John described the process as pain-free and even somewhat euphoric, with the rush of blood to their heads causing loss of consciousness for a chicken, I was less than convinced as I watched blood gush from the neck and come dripping out the mouth, making small bubbles as the chicken struggled to breathe. This process, John stated, also kept the meat tender and prevented bruising. I was offered the chance to hold one of the chickens and after feeling the struggle of the avian body, said simply, "this isn't an enjoyable activity." He replied by saying that "something was wrong with a person if they did enjoy killing chickens." When John spoke of holding the chickens as they died, his tone was one of gratitude. "You feel the life leaving and that's ok." He found comfort in knowing that they would become food; "their life was not wasted."

After being left to bleed out for several minutes, the now dead birds would go to the next station to be scalded and defeathered. Kept boiling by a propane powered burner, the chickens

were dunked in scalding water for 30 seconds or so to help loosen feathers. Then they were placed in a machine resembling a washing machine drum with rounded, rubber spikes that would tumble them around and remove nearly all the feathers in only 20 seconds. Next the chickens would come over to the butchering area. Here, closer to the house, women including myself would use pruning shears, knives, and our hands to produce recognizable whole chickens like one would find at the store. We'd remove the head with pruning shears and the feet with knives before disemboweling, washing, and finally placing it in an ice bath to chill. While heads, intestines, stomachs, lungs, and kidneys were thrown aside, livers, feet, hearts and gizzards were kept and given to those interested in taking them to cook and eat as they liked. Once all the chickens were butchered, they were packaged in accordance with Wyoming law which mandated that the chickens be sold whole. So whole carcasses were placed in heat shrink bags and tied with zip ties while being dunked in scalding water, chilled again and finally placed in freezers. It ended up taking about 2.5 hours for us to butcher and process 15 or so chickens. Throughout this event, participants laughed, chatted and otherwise enjoyed social life amidst death. Rather than being something antithetical, I contend that for my interlocutors death is an essential aspect of life since there can be no meat without killing animals.

Still, for cow-calf producers specifically, killing the livestock they care for can be especially difficult since their work revolves around maintaining life. On one occasion, I stumbled upon a small bovine carcass strung up in an open barn door at Willy's place in the cold of winter with a homemade baked dessert in my hands. I hadn't called ahead to let Willy know I'd be stopping by, having just finished an interview with a different producer in the area. He later told me that his nephew and his nephew's daughter had come a few hours earlier to help kill and butcher the calf, who I had seen alive only a few days earlier, suffering from what Willy

thought was a hernia. By the time I arrived, the trio had already killed it by striking it on the head, taken off the hide, strung it up by the back legs with chains and the fork lift, removed the organs (separating the heart, liver, and tongue) into a large bucket, drained the blood into another large bucket, and were just about to take a break and have some lunch. Much like my visit, this home slaughter was largely unexpected even for Willy until only a week or so beforehand. This heifer calf, which I had seen alive five days before, had developed a hernia that progressed to the point that medical intervention was no longer possible. This act underscores how "caring and killing are co-constitutive in some human-animal relations" (Fikry 2023). Though unlike routine household slaughtering, which contributes to a good life for small agriculturalists here and elsewhere, in these cases care explicitly means an end of suffering. Willy told me later that if he had caught it sooner, the vet could've fixed it. When we went back out from the kitchen and lunch, the calf was roughly butchered and weighed. Using an electric jigsaw, Willie quartered the calf while his nephew lifted it onto an old, wooden scale. I wrote down in my notebook the various weights as we worked. There was 412lbs of meat and bones, 194lbs of offal and 145lbs of hide and head making a total of 751lbs, minus blood which we did not think to weigh. After slowly putting the scale away, the men headed far out into the pasture with the blood and unwanted offal to be dumped and left to the coyotes to eat. Willie had told his nephew earlier this was necessary since the smell of the blood would make his other cows go crazy.

Meanwhile we women warmed ourselves inside. When they returned, Willie and his nephew came inside and briefly discussed how much the nephew would pay for the calf. Though Willie was charged with naming a price his nephew could in turn give to another individual who would take some of the meat, he said didn't want a lot and didn't give a specific price at the time. Like many commercial cow-calf operators who find themselves with fresh meat, he hoped to

break even and avoid a total loss of value along with life. Being able to sell meat from his formerly injured calf allowed Willy to do two things: avoid a total loss of life which if left alone would end up as waste, and continue giving care both through the ending of suffering and by providing food to others. Willy recalled another instance, as he looked at the calf's strung up corpse in front of us, in which a different calf suffered a prolapse. Fairly common, a prolapse is where the pink tissue of the rectum or uterus protrudes from the body and if left untreated could become infected and lead to death. This calf, he said, had been stitched up by the vet, but did not heal and "ended up in someone's freezer."

Unforeseen health issues and accidents like Willy's are not the only reason cow and calf ranchers will decide to make meat of livestock. For Tracy, turning cows into meat was a way of dealing with troublesome cattle and ensuring the overall well-being of herself and the rest of her herd. "Every [so] often you'll have [a cow] that's just not destined to be a mom. And they just don't take care of [their calves] and don't want them." She'd said this as we drove around spring pastures, vaccinating, tagging, and documenting new calves during her spring calving season. This was a crucial time of year to not only meet new calves, documenting which were males or females, which were borne of former, named bottle-babies and would constitute future property of her daughters and which might need extra care, but to also critique mothering abilities. For example, Tracy described a cow she had that the first year had killed her calf by smushing it and then acted similarly the next year, which prompted Tracy to get rid of her. Killing harmful animals is common throughout America, whether those animals are livestock, wildlife and even pets.[44] As we bounced up and down over the pock-marked grassland, she remarked, "you'll get

[44] Professor Mariam Motamedi Fraser's book *Dog Politics: Species Stories and the Animal Sciences* in particular describes the ways in which dogs are killed for failing to conform to expectations of pet owners.

these kinds of cows sometimes, but you have no idea who it's going to be." Such cows she decides to either "process them for hamburger" or give them another year to see if they can raise a calf. Though rather than killing them herself, she sends them to a slaughter-house and will sell the meat informally, being unable to eat her own livestock. While other interlocutors were more than fine eating their former charges, Tracy's admission to me of her inability to eat those she cared for reveals heterogeneity in attitudes towards killing and consuming one's livestock, a variation which scholars of pastoralists are keenly aware (Andia 2005, Eczet 2021, Peemot 2017).

Edibility and Partibility

An ethics of devotion that emphasizes holistic care and the provision of multiple different subjects, be they animal, human or landscape, necessarily makes room for and accepts as natural and normal variations in what kinds of foods are edible or inedible. After all, as the biblical creation story mentions, God gave to his creations different foods to eat. The food of cows, sheep, and other domestic animals is not entirely the same as what humans eat. Moreover, no one human body is the same with some unable to comfortably digest dairy or others sensitive to various foods. While cattle ranchers focused a great deal of energy on advocating for others to eat beef, interlocutors acknowledged the importance of moderation and the diversity of human bodies. Church potlucks and shared meals after workdays were not always beef-centered. One ranching couple said during an interview that they didn't constantly consume beef and that "no one should eat beef everyday." Another grandfather and grandson described how they ate wild game, pork, and chicken in addition to beef. While it's a fair assumption to make that ranchers would consume what they raise, much like other pastoral societies elsewhere, when I asked why

most purchased beef from the stores or from fellow ranchers rather than eating their own, many indicated that doing so really didn't save them any money. As cow-calf or seed stocking operations, many of these ranchers lacked the knowledge, skills, networks and infrastructure that facilitates successfully killing, butchering and storing a whole cow. Moreover, regardless of the producer, most interlocutors recognized that diets are not the same and for health reasons alternatives are necessary. Some such alternatives are vegetable-based and lab-grown meat products.

Although ranchers recognized the potential need for alternative sources of protein, my interlocutors saw alternative or "fake" meats,[45] as they are colloquially called, as inherently bad. Though they *could* be eaten, most indicated that they *should not* be. Interestingly, in almost every discussion I had about "fake" meats, producers still recognized how such products could be good for others. One producer gave a small smirk and said she thought they were "silly" but quickly stated she understood why some people might need or want to eat these products because of their health. She went on to say that these products were "chemical foolishness" and pointed out that the beef she raises is better because "we know what goes into [the beef]" - water, grass and the occasional form of supplemental feed and medicine. She asked, "Is fake meat any more environmentally friendly and healthier than what we raise?" For Tracy, who grew up on soy milk, an inability to digest conventional dairy products on her part helped form her lenient opinion that others like her sometimes need alternative forms of food. What she took issue with, as we drove across her pastures, was the belief and argument that alternatives are "better than the actual thing," whether milk or meat. She sternly asserted, "don't claim you're better; say you're

[45] While there was and remains criticism of lab-grown meats, during fieldwork vegetable-based meats were the primary focus of concern and comment by cattle growers.

an alternative." Her words spoke to the claims usually made by companies like Beyond Beef and Impossible Meats of not just alternative, but better products. Beyond Beef, which was went public in 2019, emphasizes better health on its website compared to traditional beef while Impossible Meats, which partnered with Burger King to produce an "Impossible Whopper" in the same year, argues that its product produces a smaller environmental footprint than conventional beef. Although both companies highlighted the naturalness of vegetables, and therefore of their products, the producers I worked with in Wyoming were highly skeptical.

Unnatural combinations of chemicals seemed a particular fixation for ranchers. Willy asked me once, "What are they putting in [the products]" to make them look and taste like beef? Another cattle producer said it was a "terrible and deceptive process" to make meat in a lab. "Nothing there is good for humans … how can chemicals be compared to an all-natural product?" Fake meat is more of a marketing ploy than anything, he argued, before pointing out the irony that fake meat comes from real crops and fertilizer that are then changed with chemicals. He really wanted to know how it was made. Karen, over a lunch time interview, also questioned the kinds of ingredients and chemicals being used and asserted that she "couldn't stand … the lack of integrity and outright dishonesty on the part of the companies who were trying to pass off their product as meat." Her husband Oscar, who sat across from me, said he thought "fake" meats were "just a fad", which might be popular now but will never truly replace actual meat. When I asked whether he might try to convince others to eat actual meat, I was surprised when he simply shrugged and said, "to each his own." His statement seemed to affect

his wife, who softened slightly and offered that if someone was allergic to meat[46] or had to be careful with their red meat consumption, she could see herself being less harsh of a critic.

Antagonism to lab-grown and plant-based meats suggests deeper ideological understandings that privilege wholeness and interconnection. Thinking through "fake" meats with ranchers illuminates two tensions within the devotional ethics underling their worldviews and also reveals two competing ideologies about nature. First, although ranchers are compelled to care for others along with livestock and lands, they must do so within a society where persons are conceived as agentive individuals, who are not only capable of caring for themselves but compelled to do so. Oscar's comment "to each his own" makes this clear. Though my interlocutors do not recognize "fake" meats as a product that is good for society, producers acknowledge that for some individuals these products can be beneficial. Second, there is tension between what is good for themselves, as producers, and what is good for others, as consumers. Ranchers consider non-ranchers to be both receivers of care through provisions of meat and also, I suggest, key facilitators of the care of livestock and lands by supporting ranching livelihoods financially, i.e., as consumers of their product. While an ethics of devotion pulls together humans, livestock and lands, external actors including corporations and the government impact these lived relationships. In offering consumers alternative products that mimic the properties of meat, consumers have the option to abandon beef, lamb and other forms of animal flesh while still enjoying similar sensory experiences. For producers, there is no other consumer for their products but humans. Beyond highlighting tensions within moral imaginaries, the negative perceptions of "fake" meats stems from the idea that meat should not be separated from natural

[46] Although not common, three forms of meat allergies have been identified by medical researchers as well as the role of tick bites in instigating such allergies in adults (Wilson and Platts-Mills 2019).

processes. In other words, meat as muscle fibers and tissue of animals should be grown and raised rather than created outside of the animal body in a laboratory. As argued by one scholar, "by presenting itself as a solution to pressing issues like climate change, with the promise of synthetically producing 'meat' to mitigate the destructive impact of industrial animal agriculture, the production of edible tissues outside of animals or without animals is embedded within visions of liberation from nature" (Abergel 2024). In contrast, ranchers seek to further our entanglement with nature, as divinely mandated by God. Thus, the production of alternative meats constitutes an unacceptable ideological project while also jeopardizing the financial and social stability of ranching lifeways. Wholeness, rather than separation, is good and "holiness is exemplified as completeness" (Douglas 1966[2002], 67).

Examining a case of mixed-up meat from butcher shows that such attitudes are extended to bodies. During a follow up visit in 2024, Tracy described a disturbing situation which had prompted her to seek out a new butcher for the cows she occasionally culled. We left early to her pastures with a med bag and my infant daughter in the back seat to drive around, looking for new calves to tag and vaccinate. As soon as we left her driveway, she described how she had begun going to a new butcher nearby since the end of my fieldwork two years prior. There had been a change of ownership at the small meat processor in northern Colorado she formerly patronized that resulted in a loss of trust, prompting her to seek out her present butcherer. She described that the old owners had retired and, without having a descendent interested in taking over, sold out to another Colorado processing company. She tried on four occasions to continue working with the new owners, but gave up after repeated conflicts. During her first visit to pick up the processed meat, she realized the offal were missing, despite her saying she had wanted to keep the liver, heart, and so on. When she notified the workers, they responded saying they could get her

insides, but she declined, thinking "they would rob other people to fulfil her order." At the second and third visits she was short an entire box of meat. After taking cows to be slaughtered and made into meat, she knew very well how much meat should come from various cattle at different ages and in varying conditions. Finally at the fourth visit, when she went to pick up the meat from a single cow, she was shocked to find enough liver for two cows. Frustration coating her words, she declared, "I want my own animal back!" I suggest that Tracy's situation and her decision to stop taking cows to this processor underscores the idea that completeness is good and that, from a producer's perspective, meat is not ever just meat. Rather than an interchangeable object or food stuff, meat is the product of specific relations, secular as well as divine.

COVID disruptions and opportunities

"COVID has divided the body of God," said the pastor one day in church. His proclamation had come during a large sermon extolling the significance of remembrance and unity. As I sat next to Karen, he asked the congregation how they wanted to be remembered, with most saying they hoped to be remembered in positive lights. Once a month the church remembers Christ through communion, he reminded everyone. This communion involves church leaders or deacons passing around a simple silver tray, giving it to someone seated at one end of the row who then takes a piece of bread before handing it to the next person in the row until it reaches the end. Here another deacon takes the tray and repeats the process with the next row. The bread is small, square, soft, tan and tastes plain. Once everyone has a piece, the deacons and the pastor line up in front and a few words are said before everyone eats at once. The same ritual is repeated but with small plastic glasses of grape juice. Food and meal sharing are important and universal ways in which social bonds are built and sustained. As argued by Sarah Fajan (1988)

"food...does not merely symbolize or represent in the static sense but rather moves, penetrates, and transforms." For early Jews and Christians, food was a key medium through which communities of believers "conceived and conducted social relations among human beings and between human beings and God" (Feeley-Harnik 1994, 72). Sitting in a pew as the pastor talked about sharing food and it's religious significance, it still seems to be the case for modern Christians. He spoke of communion as joining together the physical body of Christ (as the Church and all members contained therein are called). "By drinking his blood and eating his flesh, we're saying that we belong to God…there is unity in God," he asserted. Of course, such comments divide as well as join together since the people he referred to are Christian or potentially Christian. Still, the pastor's words about unity felt especially timely in the midst of the COVID pandemic.

Ranchers described a myriad of disruptions to work and life during COVID but underscored that it had relatively little impact on their day-to-day lives, outside of meat supply chains and food systems which only came to matter when selling or slaughtering livestock (i.e. only a handful of times a year). By and large, research with Wyoming ranchers seemed almost untouched by the pandemic. There were disruptions to schools which were felt by ranchers with children but I only saw a few masks at the sale barn. Some of my interlocutors came down with the illness or knew others who'd taken ill and recovered. Some vaccinated while some refrained, citing allergy concerns, and most were not too keen on masks, though they would follow restrictions if in place. In town there were signs about mask requirements and vaccination clinics, when vaccines became available, and at beef conferences I saw signs reminding people to stay "two cow lengths" away from others when possible. Karen described how a couple women's ranching groups had decided to forgo in-person meetings for the time being to protect members,

especially those who were of advanced age but by and large what I saw seemed to confirm what my interlocutors were telling me. COVID had little impact on the daily lives of most producers with whom I spoke. When I asked Greg how his and his wife's lives were impacted by COVID he shrugged and said day-to-day life hadn't changed much before smiling and saying that it was and still is "easier for country people to socially distance." Others too admitted little change had occurred in her daily chores and routines that was related to the pandemic. I only had one ranching couple discuss significant changes that came alongside the pandemic. They said regular food shortages, supply chain issues, and increasing prices were reoccurring problems, including the fact that livestock medicines were harder to obtain. What nearly everyone agreed on, however, was that meat supply chains were turned upside down.

In the realm of slaughtering and selling the meat they helped produce, ranchers noticed and were rocked with huge disruptions. First, the closures of large meat processing plants due to the spread of COVID among workers, like a Tyson plant in April of 2020, led to more pressure being put on smaller facilities. Livestock only keep growing so there was a sense of urgency to slaughter them before they matured too much. According to Tracy, most of the meat consumed today is from young steers. Packers prefer cattle younger than three years old to make into meat, she explained, and if older than that the cow would become boneless meat, although she stated that "no one wants only hamburger" cows. It's important to remember that keeping a cow longer also means a rancher or feedlot needs to continue feeding, watering, and doctoring that animal, leading to increased production costs. For smaller facilities, there is an incentive to accept these larger contracts since running at capacity increases efficiency and profitability. However, what that meant for many of my interlocutors was difficulty making appointments for a few head of cattle to be slaughtered.

Cancellations and long waiting times frustrated several producers and made the lack of small and medium sized processors in the region apparent. Valerie and her husband, who were primarily seed stockers, told me that usually they would call the processor they work with a few weeks in advance and they'd be taken care of. When the bigger packers shut due to illness, competition became intense at smaller packing houses. Larger feedlots and operations which would normally send their products to Tyson or JBS or other big packers were inundating smaller packers that traditionally served smaller operations. Valerie said packers had begun asking to schedule appointments for a year in advance. "Bridges were definitely burned," she stated, after they had appointments cancelled or not accepted in suspicious ways. Tracy described during a January visit hearing about two year-long waitlists, saying with astonishment and wide eyes, "how's anyone supposed to know what they'll need to process that far ahead!" She indicated that there "were perks to doing business for a long time with a local processor," like she did, such as having slots reserved just for loyal customers and enjoying more accommodation. "Trust is necessary on both sides," though and dealing with newer or small processing places can "come back to bite one on the butt." For example, one of her brothers-in-law had booked ten slots for 2022 a while ago at a facility where he'd had done no prior business and had bought eight fat cows just for the appointments. However, when he called to confirm he was told that they had no record of him reserving slots! "So now they can't process these cattle and he is struggling to find another place to take them," she remarked. She and many other producers described a real need for more processors and a real desire for local foods, which was a trend before COVID but had become even more significant with the collapse of supply chains. Recognizing such a need too, the USDA announced in July 2021 that it would be investing $500 million to expand meat processing capacity and there are numerous new independent processors entering the

meatpacking industry to the benefit of producers. Speaking of Wyo Ranch Foods, a small processor and butcher shop in Torrington, Wyoming, one producer simply said it's "good to have around."

Paradoxically, the myriad of disruptions to social and economic affairs brought about by the COVID pandemic put some ranchers into more direct relationships with consumers. For instance, Jason mentioned that although COVID related cruise ship vacancies and shutdowns really hurt lamb sales, the ethnic market's demand for lamb was phenomenal and he had recently sold quite a few lambs to a Sudanese buyer. Restaurant closures and food shortages in grocery stores led to consumers turning more to local food markets and nearby farmers and ranchers. Oscar and Karen noticed that smaller cows and smaller cuts of meat were in demand right now by both consumers and producers. Smaller cows eat less and therefore cost less to run than larger cows. Moreover, due in part to COVID more meat is going directly to consumers rather than to restaurants, which typically serve large cuts of meat. When cooking at home, however, consumers seem to want smaller steaks. "This preference is further fueling Angus," Oscar described. As a small breed that already had a foothold thanks to great marketing, it seemed to be gaining even more traction. He went on, saying, "larger breeds like Limosin, Charolais, and Simmental are at a disadvantage here and now." While consumers were turning more towards alternative markets for food, some producers found themselves increasing, intentionally and accidentally, direct-to-consumer sales.

There are far more farm stands in southeast Wyoming now than I can remember when I was growing up in the 1990s and 2000s. While farmers markets, informal sales, and other direct-to-consumer dynamics were happening long before the COVID pandemic, a few producers who sold meat directly to locals noted how sales increased before and after fieldwork. Tracy regularly

sold small numbers of cattle to people by word of mouth. Additionally, she'd also use beef to barter with others, including her neighbors. When I asked who bought her meat, which she sold on the hoof in wholes, halves, and quarters to sidestep regulations[47], she said her customers tended to be more health conscious or had allergies and liked that she didn't use any growth hormones. Others already have experience with home grown meat and preferred this to store bought meat. When I met up with her again in 2024, she's been processing more cattle than before COVID.[48] I asked why she was processing more and she replied saying, "people have been wanting it." Not wanting to betray the trust of consumers to whom she's sold beef, she has at times had to buy cattle to fulfill orders. For example, one steer earmarked for processing just up and died suddenly in January, two months before the processing appointment, and had to be replaced. In another case, a freemartin[49] heifer a week before processing dropped a calf! Not wanting to break apart a cow-calf pair, she had to buy another heifer. Interestingly, she emphasized that these sales are not where her money is made. Her large calf crop is still the major money maker and she simply aims to break even with these beef sales. For her, a major benefit of selling meat locally is that she can maintain her unique, motely colored herd since she

[47] Although Wyoming has had the nations broadest food freedom law since 2015, allowing individuals to sell homemade and processed foods such as jellys, soups, baked goods and even some meats like chickens and rabbit, sales of red meat is still heavily regulated. Producers who wish to sell individual cuts of meat must send livestock to a USDA-approved processor. However, by selling whole, half and quarters of a live cow to a consumer before it is processed, producers are able to circumvent these regulations.

[48] She slaughtered ten two years ago, nine one year ago and was already at seven head when I saw her in May.

[49] Twin cattle that are both heifers or both bulls tend to grow normally, but a bull-heifer twin set for some reason usually leaves the heifer sterile. This sterile heifer is called a "Freemartin" heifer.

doesn't "have to worry about hide color" like when taking cows to the sale barn. "People are buying beef, not hides,"[50] she asserted.

John and Sarah, two beginning ranchers, accidentally began direct-to-consumer sales during COVID when they found themselves with three cattle they were going to hold back from selling 1 steer, an injured heifer, and a small heifer, since they'd bring lower prices. Figuring they'd have a chance to try their own product, they tried and managed to secure appointments with a small processor run by a Mennonite man nearby. He called saying he had three open slots sooner than anticipated and they said yes, glad they could even get the cattle in! However afterwards, they found themselves with far more meat than they expected and tried to get rid of it as soon as possible via Facebook. They had a lot of demand and those who bought meat the first year wanted to buy again the next year. While they said they were naive in terms of the price, they still managed to break even and have become more interested in direct marketing to consumers, particularly in Colorado where lean beef is in demand. They found a calculator via an online extension service out of an Oklahoma university and were learning how to market their grass-fed, hormone free cattle on social media.

Conclusion

For my interlocuters, ranching work is not only sustained through community, it's also rendered morally good through religious belief. Authorized by God, Christian ranchers understand their work as an ethical act of devotion, whereby animals, lands and fellow humans are cared for through the provisioning of meat. Church networks allow ranchers to collaborate

[50] As mentioned in chapter four, hide colors matter in conventional supply chains since there are value added programs which rely to an extent on phenotypical expression. For instance, among other things, to qualify for the Angus Brand program, the hide has to be at least 51% black.

and share resources and knowledge to be successful as well as offer a space to socialize and build relations with others who carry out similar work. Even outside of religious spaces, an ethics of devotion shapes the ways in which ranchers advocate for the goodness of animal agriculture. At the Ag Expo, urban youth are persuaded to see cattle and the ranchers who care for them as ecological stewards rather than environmental wrongdoers. Using language similar to environmental activists, ranching stewardship is portrayed as not only widespread but necessary.

The same devotional ethics which shape education and ranchers' sense of purpose also influences attitudes towards meat. Killing and butchering animals is seen as natural and right by those who chose to make their own meat while for commercial ranchers killing cows and sheep are considered acts of care – for individuals, herds, and humans. The reasons and attitudes towards killing and eating one's own livestock further illustrates the heterogeneity of ranchers, with some comfortable with eating the animals the raised and others not. What many ranchers could not condone were arguments that placed alternative, vegetable-based or lab-grown meat products as not only equal to but better than naturally grown meat from animal tissues. "Fake" meat disrupts the holistic worldview ranchers maintain in separating meat from animal life and death. Wholeness is good as opposed to partialness, which is less than ideal. Moreover, these alternative meat products also threaten to disrupt ranchers' perceived stewardship role as carers of lands and livestock and as provisioners of food for other people. COVID further disrupted the lives of ranchers, who like non-producers had to contend with supply chain disruptions and changes to everyday life. However, these disruptions also set the foundation for beneficial change. Although interest in local foods was present before the pandemic, interest in locally produced beef surged as meat shortages and packing plant closures left consumers and producers scrambling. Some took advantage of the disruption to start or ramp up direct-to-consumer sales

and have benefited from government investment into expanding independent packer capacity, allowing ranchers who have long been disadvantaged by consolidation in the packing industry more opportunity to continue devoting their time and energy into livestock, lands, and others.

Conclusion

This dissertation has examined how ranchers in Wyoming sustain themselves, their lands, livestock, and a ranching way of life in the face of popular misconceptions. Pushing back on depictions of ranching as an enterprise which is harmful to both animals and environments, my interlocutors enacted care that involved full immersion into the lives of other beings. Cattle and sheep ranchers attended to not only their livestock but to larger communities of plants and forces of weather. Their skillful labor is seasonally dependent, developed slowly over time through embodied interactions with lands and livestock, and is made fuller by intergenerational knowledge and networks of friends and kin.

While they rely heavily on and are large supporters of private property regimes, ranchers partake in more collective action and communal thinking than they are given credit for. Since producers rely heavily on public lands and resources they are compelled to cooperate with others to access them. What's more, they perceive themselves to be important contributors to society. Responsibly grazing lands is not a cause of environmental degradation, they argue, but instead an important ecosystem service which keeps grasslands healthy. Additionally, through raising and slaughtering animals, ranchers see themselves as enacting an ethics of devotion in which they care for lands and animals while also provisioning fellow humans with meat. As the chapters each revealed, for my interlocutors there is no alternative life than one surrounded with and dedicated to fellow animals, human and more-than-human, especially in a capitalist system where they largely produce livestock as commodities to be sold to consumers.

In addition to individual and collective labor, ranchers rely heavily on free market systems to sustain their ways of life and they acknowledge successful work through capitalist means. At fairs and at auctions, mutual human-animal work is realized through the earning of money. Far from being natural or innate, value is co-created by humans and livestock over the course of generations. While producers acknowledge inequality in current meat supply chains, they continue to look towards rather than away from conventional market engagement and enjoy more direct-to-consumer sales since the COVID pandemic. Not everyone equally benefits from current dynamics, however.

In examining how the strategies on which ranchers rely are connected to identity, race, kinship and power, this dissertation has illuminated the fact that ranching is not only a site of diversity, but inequality. Those who benefit the most are established, cattle rearing families who built up their ownership of land over time. With the value of land now being less about its agricultural productivity and more about its real estate potential, young and beginning producers without family land are in a more precarious position. Unable to afford even marginal land, they must seek out alternative means to access lands through leasing, friendships, or formal partnerships. In a place where cattle ranching is prolific and has long been tied to wealthy white interests, sheep raisers too must contend with marginalization. Although the violent, overt discrimination and intimidation practiced in the past is no longer present, covert barriers make sheep production more difficult.

Beyond the borders of Wyoming, this dissertation showcases the value of a multispecies approach to examinations of social disjuncture and misrecognition. Multispecies ethnography (Kirksey and Helmreich 2010) is well known for its emphasis on interconnection by constantly working to destabilize notions of human superiority and control, while also pointing

to the ways in which we live with more than other humans. Analyses of misrecognition, by contrast, tend to begin and end with dualistic categories of local/non-local, white/ethnic minority, etc., and a focus on boundary-making that seems only to further entrench these categories. By focusing less attention on those responsible for acts of misrecognition and those who are misrecognized, and more on the other entities that both connect and divide, this dissertation shows how a multispecies approach better encapsulates the complexities of social life while avoiding frameworks which rely on dualistic understandings of us versus them. Animals, in this case livestock, simultaneously bring together, through food which comes from their bodies, and tear apart, through their contentious impacts on human and environmental health, various segments of American society, and so long as misconceptions remain that mask alternative understandings of mutual benefits, this will continue to be the case.

There is a far greater danger from the persistence of distanced misrecognition than there is of proximity when it comes to social knowledge of animal husbandry. Much as political polarization has caused rifts between friends and in families, the growing knowledge gap between ranchers and non-ranchers, and the increasing misrecognition felt by producers threatens to make social life more precarious. What I mean by this can be summed up by an experience working cattle with Tracy, her father and a few others one day. We were shipping cattle and were trying to load up groups of calves bound for other destinations. One man was responsible for yelling out the number of calves to bring in that would fill up a certain area in the large livestock trailer. Tracy, one of her co-workers, and I moved behind the calves through alleys as others shut and open gates ahead and behind us. As we approached the trailer sometimes the calves would rush on in. Sometimes, though, they wouldn't and they'd hesitate in front of the door. The best the three of us could do could do was press up against the calves to

maintain pressure until eventually we could push them in. To not do so risked the calves turning back, causing further stress and wasting time. At first, I was hesitant about getting so close to the small, but still robust animals since their kicks were fast and strong. Tracy had tried to explain the need to get up close to avoid injury, but it was only after getting kicked near my groin that I finally steadied my nerve and pressed up close. She said, "it takes some guts to do what your brain says not to do, but you need to get in there [to avoid injury]." I suggest that the danger of being close enough to be kicked but not close enough to prevent the action in the first place, can be used to examine the final contribution this work seeks to make.

In making ranching realities visible and ranchers themselves more recognizable, this dissertation has the potential to bring into relation people who are growing further apart, people who are socially close in some ways yet growing more distant in others. With coastal elites and urban academics in mind, I have tried to portray ranchers and other rural interlocutors not simply as climate change deniers or backwards conservatives, but as rational, caring, and intelligent individuals who desire to be recognized as important and worth caring about.

During my final interview with Jose, in a small volunteer fire fighting station I asked what he wished others, specifically non-ranchers, would realize. He went over a variety of topics such as ranchers aiming to "produce more with less," the difficulties in receiving a fair price for livestock, the dishonesty of alternative meats, and the depredation from recently reintroduced wolves in Colorado. What held my attention was his desire to be thought of and considered in people's decisions, just as they think about those who will buy their bulls and ultimately consume the beef that they have helped create. "We don't see the end product, but what we do effects someone down the line, be they consumers or cow-calf producers," he stated. When he asserted a wish for people to "have the right attitude … when you see a cow out grazing, know

what she means to the rancher," I instantly recalled a visit during which he'd taken me out to see some of his Hereford cattle and pointed out his favorite bull. While tenderly smiling and regarding the small critter, he'd mentioned to me that he had spent the night this calf was born in the barn with him, worried he might not make it to see the morning. Going into a detailed tirade of liberal policies and the Biden administration as well as a number of non-political issues his frustration became palpable. "I don't understand half the population … you used to be able to laugh it off, but now you can't; it's so very divisive." Like so many other Americans, his frustrations index misrecognitions that not only go both ways, with him not understanding others and these others not understanding him, reinforcing each other's misunderstandings. Taking a cue from Donna Haraway (2016) to "stay with the trouble," this dissertation emphasizes the need for (re)connection and renewed closeness in order to forge new futures beside each other, if not together.

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