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Farmers and Climate Change

Agricultural Adaptation in an Age of Rural Polarization

MARGIANA PETERSEN-ROCKNEY

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For Anne and all the other farmers who tend the land with love

Contents

Preface

In the United States, beliefs about climate change—its causes, how to respond to it, even its very existence—have become politically polarized. Skepticism of climate change science is especially prevalent in rural America. Rural workers, including farmers, are grappling with severe droughts, devastating wildfires, and unprecedented weather extremes that threaten their livelihoods. Farmers have little choice but to adapt to the impacts of climate change, but seeming to act on it, or even discussing it, can risk social ostracism and exclusion from precious material and social resources.

My interest in farmers and the politics of climate change emerged from my experience growing up homeschooled on my family's farm in southeastern Massachusetts. From an early age, making hay, pruning fruit trees, butchering chickens, and assisting in goat births fostered my dedication to rural livelihoods and desire to understand how they are changing. I also witnessed firsthand the parallel rise of climate change and political polarization. In our farming community, my mother cautioned me not to share our belief in climate change with our farming friends. We were dependent on them, and they on us, and climate change was becoming a cultural and political wedge issue that we could not discuss. At the same time, we all had to adapt. Summers grew hotter and springs wetter, once-rare storms became regular events, the farm pond we skated on when I was a child stopped freezing over.

During and after college, I managed my own farm on my family's land, growing vegetables for a weekly community-supported agriculture farm share and raising pastured hogs and chickens for local restaurants. Within my farming community, I saw how many of my peers were struggling to persist, and at the same time creating ecological and community resilience. I wanted to learn how farmers in other places were navigating climate change.

In 2016, I sold my tractor and left the farmland I love to study climate change and rural inequality at the University of California, Berkeley.

In the summer after my first year of graduate school, I worked with cooperative extension staff through a collaborative program between UC Berkeley and the Karuk Tribe in Northern California. An intense drought, which had started in 2011, meant that predominantly white farmers and ranchers needed more water from rivers and underground aquifers to irrigate their fields. Endangered salmon, crucial to the cultural livelihoods of Karuk, Yurok, and other Indigenous communities in the Klamath River Basin, were in peril. That initial research on how farmers' responses to drought could impact Indigenous-led water conservation efforts brought me to Siskiyou County in Northern California.

For the next eight years, I returned repeatedly to Siskiyou County, conducting ethnographic fieldwork and more than 150 interviews with farmers, ranchers, and other members of the community. This book, the product of that fieldwork, uses Siskiyou County as a case study to examine how climate change affects the land, politics, and livelihoods of farmers in rural America.

Farmers in Siskiyou, like people living in other rural US communities, are responding to climate change while carefully managing their social standing amid intense political polarization. Examining the diversity and complexity of farmers' experiences—including how gender, racial, ethnic, and generational divides influence farming practices—I demonstrate that effective climate action requires moving beyond technocratic solutions to engage with social pressures and power relations that shape what climate adaptation actually looks like on the ground. I argue that climate adaptation is fundamentally political and that effective climate action must engage with farmers' experiences and cultural values, not merely communicate climate science or address its physical impacts. I counter hackneyed narratives of farmers as either reactionaries or romanticized yeomen by revealing their diverse, complex, and contradictory identities, values, and visions for the future. Understanding how farmers perceive and respond to environmental change is a prerequisite for transformation, something scholars routinely call for, but which rarely materializes.

In chapter 1, I reframe climate adaptation as a political project. Government food and farm policy has favored larger-scale agribusinesses, family farmers have struggled, and rural communities have experienced economic

and institutional loss, creating the perfect conditions for climate change to be made into a political flashpoint in rural America.

In chapter 2, I put people and place at the center of the story by introducing multigenerational farm families who are adapting to multilayered crises in starkly different ways. Through everyday practices, these families struggle to persist in a political economy in which wealthy agribusinesses exploit family farm imaginaries while materially undermining their way of life.

In chapter 3, I trace the historical roots of contemporary resistance to climate action by examining how farmers' relationships with the government shifted from friend to foe in the Klamath River Basin. Moments of politicization, particularly drought-induced water restrictions, have embittered white, multigenerational farmers toward the very governments that granted their ancestors land and water.

In chapter 4, I examine how farmers experience and respond to climate impacts in their daily lives, revealing a complex relationship between experience, belief, and action. The reality is that the climate is already changing, and farmers have no choice but to respond. How they adapt shapes future possibilities and is informed by their own values and identities, as well as institutional resources and community norms.

In chapter 5, I introduce the concept of social risk to explain how certain ideas and practices gain traction among farmers and agricultural advisers. Alongside physical climate impacts, farmers strategically manage the threat of community exclusion and potential loss of crucial institutional and neighborly support networks when discussing or implementing climate-responsive practices.

In chapter 6, I show how those on the margins of traditional farming networks—especially women farmers, beginning farmers, and farmers of color—are leading adaptation efforts that diverge from accepted local norms. Already excluded from many institutional and social group benefits, the women farmers profiled in this chapter are asserting belonging and forging new rural identities as they implement ecologically diversified farming practices and livelihood strategies that blur narrow conceptions of rural-urban divides.

In chapter 7, I offer specific suggestions for change within and beyond the food system. Climate change and the unlikely alliances that emerge in response open new opportunities for transformation.

By contextualizing agricultural adaptation within complex cultural and political dynamics, I hope this book proves useful not only for social

scientists and students across multiple disciplines but also for farmers, agricultural advisers, policymakers, and anyone working to build climate resilience. With authoritarian politics on the rise and trust in democratic institutions and science in decline, understanding these dynamics is crucial to our political, ecological, and social futures. Our ability to adapt to and mitigate the worst climate scenarios depends on meaningful collaboration with farmers and other natural resource managers, including understanding how their experiences shape climate change politics in rural America.

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I am immensely grateful to the people who participated in this research and welcomed me into their homes and onto their farms and shared their time, perspective, and expertise with me. Thank you.

My colleagues and students inspired and challenged me throughout this project. The Karuk–UC Berkeley Collaborative and the University of California's Cooperative Extension program helped me identify research needs in the Klamath River Basin and introduced me to Siskiyou County. My mentors at Berkeley—especially Kathryn De Master, Nancy Peluso, Lynn Huntsinger, and Christy Getz—encouraged and guided me through much of this research. My colleagues in the RAD, Land, and Range labs at UC Berkeley provided feedback as my research process and early writing took shape. My writing buddies over the years—especially Mindy Price, Natasha Shannon, Meg Mills-Novoa, Paige Stanley, and Patrick Baur—helped me create time to write and generously talked through unformed ideas. The Berkeley Food Institute and Berkeley Cannabis Research Center helped me share my research with wider audiences. Michael Polson has been a wonderful collaborator for many years, and some of the data related to cannabis cultivation draw from our joint fieldwork. Naomi Oreskes at Harvard provided important advice on writing and publishing. In drafting this book, I especially thank Matthew Mullins for edits on early draft chapters, Nathaniel Tarshish for help creating the graphs in fig. 17, and Biak Lian Thang for assistance in formatting references. Three generous reviewers shared thoughtful feedback. The editors at Yale University Press—especially Jean Thomson Black—gave me both the leeway and support I needed to coalesce my research into this book.

I grew up farming on the land of the Wampanoag people in what is now southeastern Massachusetts. Access to my family's farmland has been an

incredible privilege that has benefited me personally and professionally. The benefits I gleaned from that land are part of a long and ongoing legacy of unjust policy decisions that shape highly unequal resource distribution. While farming, I worked in several nonprofit organizations with recent immigrant farmers who faced enormous barriers in accessing resources such as land, and they also fostered resilience in their farm fields and communities. The farmers I have known and worked with have taught me that as climate change reorganizes our lives, its disruptions open opportunities to transform ecological and social relationships, sometimes for the better.

My friends and family have provided a network of love and support that I am deeply grateful for. My mother, Anne, has been a farmer my whole life and continues to inspire me. Her commitment to meaningful reciprocity and care has created a fascinating, complicated, and profoundly beneficial web of multispecies relationships. My three siblings, Eleanor, Linden, and Robin, shared my experience of growing up on Rosasharn Farm. Linden's return to our family farm has given me the flexibility to pursue other dreams. Thank you, Anne and Linden, for loving our land and persisting. My father, Randy, helped me learn to love writing. Being homeschooled until college meant that I learned to write thanks to his edits and watching his regular writing practice, as well as my mom's love of being read aloud to and encouragement to write every day. My grandmother Ronnie told me that education was the one thing that could never be taken away. My grandfathers, both Bobs, showed me that learning never ceases and curiosity opens the world and the heart. I am grateful to all my friends who love and support me, who laugh and cry with me, and who hold me in community. Thank you to my partner, Sam, who helps when I'm stuck, knows to ask if I'm looking for validation or problem solving, and cares for me even when I'm a mean ghost at home. You love me through my worst and help me be my best.

Farmers and Climate Change

CHAPTER 1

Water Is the Blood of Land

"It's one of the big bogeymen in the room," Diana said about climate change after describing "cataclysmic" and "catastrophic" drought, flooding, heat waves, wildfire smoke, and extreme winds that had afflicted her farm. "There's a lot of discussion about it. There's a lot of anxiety about it." Like many rural Americans, Diana and her husband, David, discussed climate change only in veiled terms and in private. Over the several visits I made to their hundred-acre livestock farm, they never uttered the terms *climate change* or *global warming*. But they were certainly adapting to its impacts.

I first met Diana and David in 2018, the bright sun beating down from a cloudless sky as we huddled on upturned five-gallon buckets in the sparse shade of a pine tree in their yard in Siskiyou County in far Northern California. A dozen pigs wallowed in mud from the water troughs they had spilled a few yards away. Hens clucked to announce the eggs they had laid from a movable chicken hutch in the field beyond the pigs. Diana and David's two small children played on the scorched-brown lawn near us, dropping pebbles into water buckets and squealing with delight at each splash.

"It's been so hot. It's hot again," David said, beads of sweat forming on his brow. Globally, the ten years from 2014 to 2024 were the hottest ten years ever recorded.[1] California, like many food-producing regions of the world, has become increasingly dry, experiencing the worst drought on record starting in 2011, with no end in sight.[2] Access to water—the lifeblood of agricultural landscapes—is the defining challenge of climate change in the region. Climate change is making dry places drier and wet places wetter. In coastal areas, sea levels are rising. Storms everywhere are becoming more intense, and weather variability is getting more extreme and unpredictable.

Farmers have managed challenging weather and water access since people began raising livestock and growing crops thousands of years ago. Every

farmer I met shared stories of the weather changing over time and described how they had responded. But coping with climate extremes is increasingly difficult. Already beyond the range of past human experience, the impacts of climate change will worsen.[3]

Despite unprecedented imperatives to adapt, the process of climate adaptation—adjustment to actual or expected impacts of climate change—is not linear or predetermined.[4] Adaptation is a normative process of envisioning how the future should be, which unfolds within entrenched systems of unequal power and resource distribution.[5] Time spent in rural America with farmers like Diana and David reveals that people are adapting in ways that reflect a multitude of visions for the future that converge and conflict with past experiences. Some farmers dig deeper wells and install efficient irrigation technology, asserting their claims to water, often by accessing public funding programs to help pay for infrastructure. Others pursue diversified ecological practices that reduce water dependence, perhaps because they already struggle to access water or worry that future policy decisions will deny them access entirely.

"The depth of our agricultural failure is so pervasive. That is almost untenable to communicate because it is so ugly—but we eat, we're feeding the world," Diana reflected. David shared his impression that desperation drives adaptation: "Everyone is trying to figure out how to do more with less water." But how adaptation occurs in the present shapes future adaptation possibilities and who will shoulder its burdens or reap its benefits.

Diana was raised on a nearby conventional cattle ranch. In the face of an agricultural system stacked against them, the family farmers Diana grew up with often had few options but to double down on the practices they had long relied on, such as digging more irrigation wells and adopting more chemically intensive practices. This approach not only limits future adaptation options, as groundwater depletes and biodiversity declines, but threatens the livelihoods of farmers and the prosperity of their rural communities.[6] Reflecting on conventional approaches to farming, Diana explained, "You're penciling out your budget and going, 'Well, we paid a hundred and fifteen thousand on fertilizer last year, we paid seventy-five thousand on electrical pumping costs.' " Pointing at David and then at herself, she added, "And you're working [off the farm] full time and I'm working part time and we're losing money. You're borrowing money to pay for something that isn't really working. There's pending financial ruin."

When Diana and David started their farm a decade before I met them, they already knew they would farm differently than Diana's parents. With falling farm incomes and rising land prices, they had few financial resources to invest in inputs and infrastructure, leaving little choice but to work collaboratively with their farm's ecosystem. "We're farming water," Diana told me, explaining that their goal was "to store as much water in the soil as we can, to get us as far into the summer as possible." They worked tirelessly to "build up organic matter" in their soil to act as a sponge, soaking up early spring rain and snowmelt. Through land management practices that foster biodiversity—including rapid rotations of pigs, chickens, and sheep across the landscape, reduced tillage, and the strategic use of organic mulches—they reduced their dependence on irrigation.[7] Other benefits followed: their livestock were healthier and had fewer parasites, electricity bills for water pumping fell, and their vegetable garden attracted beneficial insects that helped keep pests in check. Where they moved their livestock, the grass "greened up, grew inches taller," Diana said. A carefully cultivated diversity of grasses, legumes, and other plants in their pastures provided resilience; during a particularly dry period, after an early spring flood, or when a new disease killed some of those species, other plants grew. "It's amazing to see the pasture bounce back," David reflected.

Other farmers took notice. "Failure can cause change, and observing unavoidable success [also] leads to change," David noted. "There's that slow, creeping, begrudging change." No one I met in Northern California was untouched by climate change, and everyone had to adapt. But in rural communities, where "everyone depends on each other to take care of each other," David described a tension between "new farming practices and community acceptance." Farmers and the people who worked with them consistently shared their experiences of navigating this divide in how they implemented and talked about adaptation practices.

As the sun moved and we repositioned our seats to stay in the shade of the pine tree, David explained rural resistance to climate change—ideology, science, and responses—as "so, so deep and so intertwined in who we are as a community and a culture." Diana added, "There's an awful lot of denial out there still. Part of it is that we don't like the messenger."

In 2024, *The New York Times* published a series of essays titled "What to Eat on a Burning Planet." The message was clear, and not unique to the *Times:* the essays blamed agriculture, often specifically naming farmers as

perpetrators, for greenhouse gas emissions, deforestation, water scarcity, public health crises such as obesity and undernourishment, rising consumer prices, and more.[8] The series ended by calling for more "Big Ag"—more of the kind of corporate-industrial farming that contributes to these problems and threatens to put farmers who actually work with the land, like Diana and David, out of business.[9] Agrarian studies scholar Adam Calo described the *Times* series as a "patronizing apologia for productivism" that "tries to make industrialized extractivism green," pointing out that the "reasons why people get fed (or not) and why forests get cut down are driven by politics and power, not yields."[10]

David described his impression that the media, environmental groups, and the government—all based in urban areas—were "demonizing farmers like they're using all the water," while people in cities such as Los Angeles are "turning on their faucets for whatever use whenever they want, to have a nice lawn." Blaming the people who work to grow our food for environmental harms foments political backlash, fuels narrowly binary rural-urban cultural divides, makes environmentalism (and, by proxy, climate change) a taboo topic, and creates a vacuum that right-wing politicians exploit through antigovernment rhetoric to expand corporate control of rural land and natural resources.

When I asked farmers about their experiences of climate impacts, the conversation often turned to politics, especially water politics. "The state continues to encroach and encroach and encroach," David told me. "The government knows that water is the blood of land. If they control water, they have the ultimate say over what you can and can't do."[11] The sense that people in far-off metropolitan areas make decisions that affect rural livelihoods, while simultaneously blaming the hands that feed them for climate-driven scarcity, fuels division and resentment. Unsurprisingly, a familiar us-versus-them political rhetoric takes hold that pits rural and urban populations against one another, rather than cultivating common ground among people who face similar struggles to feed their families and maintain their livelihoods.

When farmers describe a sense of being blamed for climate problems like water scarcity, they express deeper anxieties about rural persistence. In a rapidly changing rural landscape, climate change adds further challenges to passing the farm to the next generation, which family farmers in Siskiyou County, such as Diana and David, consistently described as their primary

goal. This orientation toward livelihood reproduction, by maintaining their farm for future generations, highlights the gravity of climate change that threatens rural webs of life. As farmers evaluate and respond to the physical effects of climate change, they must also navigate social relationships, identity-based values, agricultural practices, and the politics surrounding climate change that can threaten their sense of belonging in rural communities. Climate change proves controversial, and adaptation political, in rural communities where the ability of future generations to build meaningful lives and a sense of belonging is a core measure of collective well-being.

A paradox emerges: farmers are extremely vulnerable to the impacts of climate change, and they are constantly adapting their farming practices in response to changing ecological conditions, but they simultaneously resist the very idea of climate change, rarely discussing it openly, and when they do, often refuting established scientific consensus. This tension raises broader questions about how people experience and respond to environmental change. And climate change reveals the significance of battles over rural identities: not simply to gain access to material resources but also who can shape competing visions of sustainable futures. Listening carefully to farmers' experiences shows that rural places are already more diverse and dynamic than is often assumed by those who live and work far from where the materials to meet basic human needs are produced.

In the United States, farmers and others whose livelihoods most intimately rely on the land are often more skeptical of climate change science than the general public.[12] Yet they stand on the front lines of climate change realities, and if they are going to persist, farmers have little choice but to adapt. To understand how farmers navigate this puzzle and why they accept certain adaptations and contest others, this book asks: How is climate change reconfiguring social and political relationships in rural America? How does the history of resource use policy and conflict mediate farmers' experiences of climate change today? Under what conditions do farmers accept that climate change is occurring—even if only privately—and what roles do intermediaries, such as agricultural advisers, play in farmers' understanding of and responses to climate change? What risks do farmers perceive in association with climate change, and how do those risks influence their responses to impacts such as drought? How do farmers' diverse identities and social positions shape their adaptation strategies within their communities and households?

Climate adaptation is a dynamic and fundamentally political and social process. Farmers are not passive recipients of change but active agents who understand climate change primarily through their own experiences and political and cultural lenses, rather than prevailing scientific ones. This understanding has material consequences, revealing why certain climate adaptations gain acceptance while others face resistance.

I first visited Siskiyou County in Northern California in November 2016, just after Donald Trump was elected president for the first time. Trump, who won Siskiyou County handily in 2016 (and again in 2020 and 2024), tapped into the rural and working-class discontent that farmers often detailed while we harvested potatoes or baled alfalfa together.[13]

Trump's appeal to farmers was touted by allies like Robert F. Kennedy Jr., who asserted in 2025 in his Senate confirmation hearing for Health and Human Services secretary that "farm country is Trump country. Farmers across the country supported him in this election. He specifically instructed me that he wants farmers involved in every policy."[14] Siskiyou reflects political trends across the rural United States; over 90 percent of rural counties voted for Trump in the last three presidential elections.[15]

Rural populations, buffeted by economic decline, embraced Trump's brand of right-wing populism in response to the failure of institutions to meet the needs of their struggling communities—an "economics of regional resentment."[16] Right-wing rhetoric affirmed grievances and promised restoration to an idealized past through a patriotic celebration of hard work and self-sufficiency that validated resentment and promised change.[17]

Farmers have legitimate reasons to resent what many view as a government that no longer values rural life. Over the past century, rural inhabitants have experienced the consequences of US farm policy that consistently privileges corporate profit margins over the needs of people, communities, and the environment.[18] Through public investments in irrigation infrastructure, research that industrializes production, and laws that enable the private ownership of intellectual property that extends to seed germplasm, the US government has helped conventional agriculture overcome nature-based barriers to profit.[19] Federal policies have pushed farms to expand by removing price supports and production limits and encouraged farmers to specialize in a handful of commodities through such subsidy programs as crop

insurance for crops like corn and soybeans.[20] Agribusiness's consolidation of land ownership, homogenized production, and corporate concentration of markets have increased input costs and reduced market prices for farmers, driving waves of class differentiation and livelihood dispossession.[21] The resulting concentration of power in the food system has enabled US agriculture to produce large quantities of food, but with deleterious effects for all but the most prosperous agribusinesses.

Between 1935 and 2024, while populations soared, the number of farm households in the United States fell by three-quarters and the average farm size more than doubled even as the amount of land farmed remained relatively constant.[22] Farm production's share of the food dollar plummeted from fifty-three cents in 1946 to about nine cents by 2023.[23] Farming incomes have declined precipitously—in 2017, for example, US farmers reported a median net income of *negative* $1,035, meaning that the majority of farmers actually lost money from farming.[24] Unsurprisingly, more than 90 percent of farm household income now comes from nonfarm sources.[25] Nearly half of farmland in the United States is rented, and farmland is increasingly owned by nonoperator landlords—investors who collect rent from farmers regardless of whether those farmers harvest a crop or earn an income.[26]

Several factors have driven the rise of farmland prices and farmer tenancy. Financial institutions turned to investing in farmland as a real asset, especially after the global financial crisis of 2008.[27] With baby boomers retiring and the rise of Covid-19 remote work allowances, wealthy amenity buyers looking for a slice of rural life (and the substantial tax breaks of owning farmland) brought development pressure that raised land values in desirable rural areas.[28] In the five years between 2017 and 2022, average farmland values in California rose by more than 28 percent, and in Siskiyou County values rose by more than 35 percent.[29] Although Siskiyou had not yet experienced the scale of farmland financialization or urban amenity buyer in-migration compared to many other rural places, the land market seemed to proactively respond to these trends, exacerbated by a few prominent local land acquisitions by large-scale farmers from California's Central Valley and conservation organizations, such as the Nature Conservancy.[30] Pricing farmers out of land undermines not only financial security but also place-based relationships and identities.[31]

State and federal governments have done little to rein in corporate monopolies and oligopolies that strip farmers of control over inputs or the

increasingly consolidated markets into which they have little choice but to sell their products. Deregulation of the food industry, which accelerated in the 1970s as part of broader neoliberal economic policies, has allowed major agricultural and food corporations to skirt environmental protections, exploit low-wage food and farmworkers, curry favor with elected officials, and engage in aggressive acquisition strategies.[32] Tactical acquisitions and mergers have, for example, consolidated the majority of global seed and agrochemical sales to just four companies, eroding biodiversity and draining farmers' pocketbooks.[33] These trends have also limited the adaptation options for farmers by reducing market and biological diversity that could provide flexibility in the face of crisis.[34] As one farmer told me, "Everybody feels like they're a bug getting stepped on."

Growing corporate power and profits, not just in the agricultural sector, have enabled wealth extraction from rural communities, with little local reinvestment and resulting economic erosion. Rising costs for basic needs such as housing and health care have grown faster than incomes.[35] Working-class wage stagnation has been especially challenging for the many farm households that rely on off-farm income.[36] The result of rising inequality has been a hollowing out of rural communities.[37] Public libraries and schools have closed, and locally owned hardware stores, retailers, grocers, health clinics, and banks have been replaced by Home Depots, Dollar Generals, Walmarts, Walgreens, and Wells Fargos, which funnel profits to distant executives and shareholders rather than circulating wealth within rural economies.[38] The fabric of rural life, already frayed by the history of corporate consolidation and resource extraction for the sake of cheap food and fuel, threatens to unravel under the pressure of climate change.

Against this backdrop of corporate extraction and economic decline, farmers like David and Diana recognize and respond to climate signals that align with meteorological data, but they rarely ascribe these changes to anthropogenic climate change. For farmers working in regions that have always had extreme weather, understanding whether a drought stems from climate change matters less than surviving its immediate effects. Rather than experiencing climate impacts as sudden ruptures, family farmers often view climate-related problems as the latest chapter in ongoing processes of dispossession that threaten the reproduction of their way of life.[39] Family farms, meaning those operated and managed by family members, face multiple overlapping pressures stemming from capitalist development—from low market

prices and high input costs to persistent drought—in which climate change becomes one challenge among many, and often not the most pressing.[40]

The discourse surrounding climate change has been useful to those who benefit from economic inequality—wealthy firms and their shareholders, and politicians eager to capitalize on division—who have carefully crafted climate change into a wedge issue.[41] Top greenhouse gas–emitting industries, which profit from burning fossil fuels, raising livestock at industrial scales, and creating energy-intensive products such as cement and chemical fertilizer, have sown doubt in climate science to forestall action that might reduce their profits.[42] Fossil fuel companies fund economic research that opposes climate action, and agribusiness giants such as Cargill and Tyson fund research that downplays industrial livestock agriculture's contributions to climate change.[43] Climate skeptics have migrated to digital platforms and social media environments where editorial standards are absent, creating algorithmically reinforced echo chambers that amplify climate denialist messaging and shield audiences from scientific consensus, while also redirecting legitimate anger about economic precarity away from corporate interests.[44]

The exploitation of genuine rural grievances for narrowly held economic and political gain has fostered rural resistance to climate adaptation and mitigation, and mobilized the denial of climate change science as a potent source of cultural and political identity.[45] In 2020, the Pew Research Center issued a report showing that partisan disagreement on climate change in the United States was the "most yawning among the 18 issues covered by the survey."[46] Belief in its anthropogenic origins functions as a "litmus test of partisan identity" and a marker of political belonging rather than scientific fact.[47] Fewer than half of Americans who identify as conservative or Republican report belief that climate change is caused by human activities or poses a threat, and many people "hold climate change beliefs that contradict scientific consensus."[48]

Political scientists Jens Marquardt and Markus Lederer argue that right-wing populists around the world have contested the notion of climate change as a global challenge, instead constructing it as a conflict between "the people" and "elites."[49] Right-wing media outlets fan the flames of climate skepticism, effectively associating climate action with urban liberals, out of touch with rural experiences of loss and threatening to rural values, identities, and ways of life.[50] Populists mobilize against what they perceive as abstract, technical climate policies—such as carbon pricing or gas taxes—which they frame as

the political machinations of elites against ordinary people.[51] Meanwhile, well-meaning efforts focused on climate science literacy and environmental education have failed to shift climate attitudes or actions.[52]

While political partisanship remains the strongest predictor of climate change attitudes and beliefs, climate change polarization is especially stark in rural US communities, even though rural farming, forestry, and fishing sectors are acutely exposed to its effects.[53] Rural areas have long been used to temporarily solve the contradictions of capitalism—places from which to extract resources and dump waste.[54] For rural communities that have experienced environmental, economic, and institutional decline (or the placement of toxic dumps or nuclear experiments near them), government-led action on climate change threatens to amplify what sociologist Loka Ashwood described as "profit's rendering of majorities into minorities"—as wealth and power concentrate elsewhere, marginalizing those who were once central to national identity.[55] Many family farmers in Siskiyou County are descendants of white homesteaders who until recently were celebrated as nation-state-building heroes. The loss of that social standing and prosperity has left deep wounds—wounds that climate change now salts with new forms of blame, regulatory burdens, and competing claims on resources.

Climate change is propelling new waves of profit seeking that mobilize the transfer of wealth away from rural communities.[56] Insurance companies, for example, can no longer profit by insuring homes in wildfire-prone areas, leaving rural residents without homeowners insurance coverage.[57] While large, often multinational firms can retreat from climate vulnerabilities, they simultaneously pioneer new ways to take advantage of climate change. For example, financial institutions increasingly treat farmland and water as investment assets, enabling speculation on climate risk.[58] Mitigation efforts to develop carbon market, offset, and trading programs transform greenhouse gas reductions into tradable commodities, opening new avenues for capital accumulation.[59] Investments in clean and renewable energy offer a rapidly expanding frontier for wealth generation as private, often multinational, firms invest billions of dollars in technologies and projects that assure more predictable revenue streams than the farming activities they often displace.[60] These patterns of climate-induced capital flight and accumulation accentuate the ongoing transformation of both the physical and social landscape of rural life that leaves those most imperiled by climate impacts with limited benefits and even fewer resources to adapt.

Using antigovernment rhetoric, far-right politicians affirm experiences of loss, amplify the impression that rural residents are scapegoated by urbanites for environmental problems, and promise to roll back burdensome regulations and return to an imagined independent and self-sufficient past.[61] Donald Trump, among the most popular politicians with rural voters in decades, has repeatedly called climate change a "hoax" and framed climate change as an elite, urban, environmental concern that stands in the way of economic prosperity.[62] On the first day of his second term in office in 2025, Trump signed a barrage of executive orders expanding fossil fuel production and dismantling renewable energy programs.[63] What makes certain climate change responses politically acceptable while others face fierce resistance has less to do with their technical merits than with how they align with economically powerful interests. Even "drill, baby, drill"—Trump's antienvironmentalist rallying cry—is itself an adaptation to climate anxieties, albeit a maladaptive one.[64] Far-right and authoritarian politicians skillfully frame the state's proper role as policer and protector against, as one of David and Diana's farming neighbors described them, "metropolitan environmental do-gooders."[65] The resulting politics pits rural communities against urban environmentalists, minoritized groups, and government bureaucrats, deflecting attention from the structural forces driving both climate change and inequality.

How climate change and its responses are "reshaping agrarian lives, livelihoods, landscapes, and politics, and with what consequences" is what scholars call an *agrarian question*, a question core to this book.[66] Since the late nineteenth century, social scientists who study rural places have questioned how farmers are affected by large-scale political and economic developments and how the ways they navigate those changes then affect the development trajectories of those broader systems.[67] During a period of rapid industrialization, as different nation-states pursued various political economic systems—socialism, communism, and especially capitalism—this original agrarian question showed that transformation in rural communities, though uneven, changed (and was changed by) the rest of society. Early agrarian question debates asked not only what was happening in these transformations but what *should* happen, especially to farmers and other rural people.[68] The agrarian question was then, and remains, "political at its heart."[69]

Climate change is again placing agricultural communities at the center of local and global debates about its impacts, causes, and potential responses. Agriculture is especially affected by climate change in that droughts and severe storms can destroy harvests, infrastructure, and earnings.[70] The ecologically simplified and industrialized agricultural system developed in the United States and exported around the globe contributes about a third of global greenhouse gas emissions.[71] Agriculture also consumes 70 percent of the world's freshwater and 40 percent of land.[72] How these scarce resources are managed, and who controls them, will shape humanity's ability to adapt and to mitigate the worst potential climate scenarios.

We all rely on food, fiber, and fuel produced on farms. Working landscapes such as farms and forests maintain open spaces that sequester carbon, filter water, and provide a home for biological diversity on which all life depends.[73] Farming still underpins rural community connections and economic vitality in many places, and rural experiences, values, and identities shape, and are shaped by, broader political formations. Political ecologists Kasia Paprocki and James McCarthy note that the many forms of "resistance to both climate change and strategies for addressing it [have] come to be defining political struggles of our times."[74] From how problems are framed to which solutions are considered legitimate, adaptation is not just technical or ecological but inherently political.

Political ecology scholarship challenges narrow technocratic approaches to climate adaptation by examining how power relations and politics operate within households, communities, institutions, and landscapes. This power-centered approach stands in contrast to mainstream climate discourse. In policy debates, media coverage, and mainstream climate adaptation frameworks, climate change is often framed as an environmental crisis that demands individual sacrifice and sweeping technocratic solutions—expert-driven technological fixes that bypass democratic participation and avoid confronting underlying power inequalities.[75] Three flaws of this framing help explain political resistance to climate change.

First, conceptualizing certain risks, such as those emanating from climate change, as environmental issues places nature *outside* of human society.[76] But the causes and impacts of anthropogenic climate change are the result of political-economic histories of resource extraction from rural landscapes for the accumulation of wealth elsewhere. Take drought and wildfire in the Western United States: these are not *natural* disasters but

rather the products of changing weather patterns driven by global fossil fuel extraction and consumption, along with decades of regional policy decisions about water rights, forest management, and land use. Long-standing patterns of unequal control over resources then exacerbate uneven exposures to climate hazards and capacities for adaptation, especially for Indigenous and minoritized communities around the globe.[77] Siskiyou County is home to the headwaters of the Sacramento River, yet much of that water is appropriated for large-scale irrigators in the Central Valley.[78] Agribusiness firms' ability to "bias the parameters of decision-making to their benefit" reinforces historic inequalities.[79] As with many smaller-scale farmers facing intensifying drought in Siskiyou, Diana and David not only cannot use that water but must compete against their more powerful market competitors who can.

Second, climate change discourse often suggests that responsibility for climate adaptation and mitigation lies primarily with individual consumer choices rather than collective action or structural change.[80] Carbon footprint models, for example, highlight the significant emissions associated with eating conventionally raised beef, suggesting to consumers that their power to help solve climate change rests in purchasing and eating less beef.[81] When a farmer's identity is linked to the production of beef, for example, this messaging can seem like an attack against their bottom line. Moreover, farmers are also consumers, including of many inputs needed to farm. The call to reduce consumption or accept further regulations adds yet another burden on already precarious rural livelihoods. The framing of climate solutions as requiring austerity and restraint ignores the reality that many rural communities have already endured decades of economic contraction and loss of control over the resources their livelihoods depend on. Climate actions that fail to address unequal conditions of production, or to materially support viable alternatives while demanding further sacrifices from struggling communities, invite opposition.[82] Resistance to climate change can be understood as a rejection of solutions that concentrate the costs of action on those with the least capacity to bear them while leaving intact the economic systems that create both climate vulnerability and rural precarity.

Third, framing climate change as a crisis leads to adaptation and mitigation interventions that prioritize global metrics over local livelihoods. Large-scale programs and projects that invest in adaptation infrastructure, shift energy production to renewable sources, and sequester carbon are urgently needed and will require private-sector, government, and multinational cooperation.

But too often the financial beneficiaries of these efforts, conceived in national capitals but implemented in rural communities, reproduce patterns of resource extraction and accumulation under the auspice of planetary necessity.[83] Large-scale renewable energy installations, carbon offset schemes, critical mineral mining, and adaptation projects require land and often suggest implicitly or explicitly that removing farmers from their land is necessary to implement climate solutions.[84] As these development projects reconfigure rural landscapes and displace farmers around the world, resistance efforts take many forms—some that challenge and some that reinforce long-standing power relations.[85]

Moving beyond purely technocratic climate solutions requires a closer look at how power operates across scales.[86] Social science scholarship has focused on the causes and consequences of the power relations that emerge from extreme corporate consolidation and resulting concentration in the food system, including how the few largest firms exercise power in shaping markets and governance for their benefit.[87] Yet power relations at smaller, local scales are also crucial for understanding the politics of climate change in rural America.[88] Small, everyday actions create a cultural context within which certain ideas and practices take hold. As I spent time with farmers like Diana and David, I began to see how, when overt displays of climate action remain taboo, everyday decisions reveal more than what can be understood from examining corporate and state power or what can be captured in a survey of people's stated beliefs about climate change.

The idea that everyday practices are where politics are enacted and revealed builds on the work of twentieth-century theorists who examined subtle dimensions of power beyond overt violence and force.[89] Among them, Gilles Deleuze, a French philosopher, and Félix Guattari, a French psychoanalyst, coined the term *micropolitics,* a concept that emphasizes the political dimensions of dynamic, relational processes that emerge from interpersonal interactions and granular practices within local contexts.[90] Micropolitics include the small-scale ways that people "use power and other resources to obtain one's preferred outcomes in a situation in which there is uncertainty or dissent."[91] Climate change is one such situation.

Micropolitics become especially apparent when individuals rely on others in competitive situations while maintaining facades of collective interest.[92] In Siskiyou County, farmers negotiate adaptation through their daily choices—from crop selection to water management—balancing social and material interdependency with market competition. What counts as

successful adaptation to climate change becomes contested, as actions that might reduce climate vulnerability for some people could threaten others. Buying more land to rotate cattle may help some farmers improve their pasture's resilience but can drive up land values for everyone else. Digging more and deeper wells helps farmers irrigate through drought but depletes groundwater for neighbors and stream flow recharge, endangering salmon fisheries important to Indigenous communities.

Farmers' capacity to implement specific adaptation practices depends not only on their access to material resources such as water and land but also skills, information, rights, and social relationships.[93] When farmers face climate impacts such as drought, they must manage political and cultural expectations that impact their social standing.[94] Navigating the micropolitics of adaptation is thus an emotional and embodied experience.[95] Political theorist Stephanie Erev notes that "stubborn, perhaps unconscious attachments to a world susceptible to mastery by (certain) human beings defang more recent, cognitive beliefs in the dangers of a rapidly warming planet."[96] Certain adaptations become especially charged because they intersect with emotional experiences of identity loss, such as when farmers express anxiety about their children's agricultural futures.[97]

Choosing to develop certain markets and not others, shaping the landscape with certain practices and avoiding others, and shifting household roles are all management decisions imbued with cultural and political meaning. This is especially true in the context of climate change because it has become laden with such powerful symbolic meaning, introducing *social risks* in addition to the physical risks of water scarcity or the legal risks of new climate-oriented regulation.

Material conditions and cultural meanings are continuously evolving through strategic interactions in everyday life. This cultural production is evident as farmers respond to climate change, carefully performing complex and sometimes contradictory identities.[98] There is no script, and farmers are simultaneously the performers, audience, and part of the rapidly changing stage. Cultural factors often present significant resistance to climate action. Indeed, the Intergovernmental Panel on Climate Change (IPCC) notes that factors "linked to societal values, world views, and cultural norms and behaviors" fundamentally constrain adaptation and "influence perceptions of risk, what adaptation options are considered useful and by whom."[99] Values, place-based identities, and power relations shape not only how climate change is perceived

but also how people imagine and enact possible responses.[100] Climate futures then materialize as communities rife with internal divisions, inequalities, and powerful social norms navigate changing weather patterns.

In Siskiyou County, paying attention to micropolitics helped me understand the apparent paradox of farmers adapting to climate impacts while simultaneously resisting climate change as a concept. Everyday actions can lead to transformation, as farmers negotiate institutional constraints and failures, create alternative adaptation strategies, and challenge seemingly inevitable environmental changes.

WHY SISKIYOU COUNTY

Understanding how climate change reshapes lives and landscapes requires spending time with people in place. Political ecology scholarship has, appropriately, focused on the world's most climate-vulnerable communities in the Global South.[101] Yet calls to restructure "the relations of production that generate climate change" must also consider how US farmers perceive and negotiate its impacts.[102] Not only do US farmers tend nearly a tenth of the world's agricultural land—land that is crucial for future rural viability, food production, and potential carbon sequestration—but many of these farmers have been enrolled in the divisive, narrowly binary rural-urban politics that fuels authoritarian movements.[103] In this book, I expand political ecology scholarship by examining adaptation among rural farmers in a wealthy nation where climate change, though contested, is rapidly reshaping rural life.

In many respects, California is the epicenter of US agriculture. Although critical agrarian scholarship often portrays California agriculture as purely industrial, this overlooks the persistence and political significance of family-operated farms.[104] Globally, families who work and manage their farms still grow most food that humans eat.[105] And although large-scale agribusiness dominates the Central Valley, family farms still persevere in California. They not only produce food but maintain considerable political and cultural clout, even as they struggle to persist.

This book is an extended case study of family farmers and the people who work with them in Siskiyou County in far Northern California (fig. 1).[106] In social science research, a case can be justified by either its similarity to or its distinctiveness from other cases.[107] Siskiyou County is both typical and unique. Like many rural places, the region is rapidly experiencing ecological,

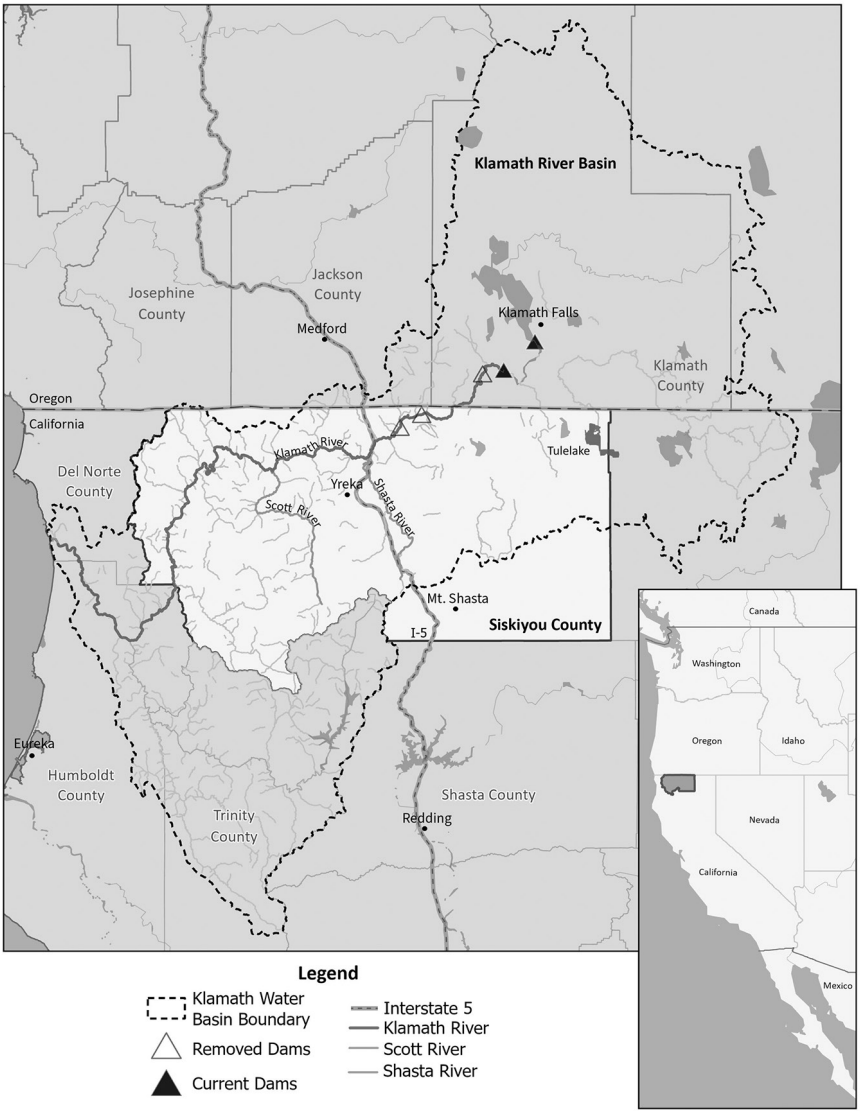

Fig. 1. Map of the region. Siskiyou County contains much of the mid-Klamath River Basin, with the lower basin extending southwest to the Pacific Ocean and the upper basin ranging to the northeast into Oregon.

social, and political change. Yet those dynamics are extreme in this region. For example, wildfires and droughts in California portend the intensity of impacts that climate models suggest many places will experience in the future.[108] Although climate change has become a political flashpoint across the United States, Siskiyou County is a site of especially raw and divisive politics around climate change, conflict that feeds off historical resentment over institutional abandonment, wealth and resource extraction, and environmental decline.

Siskiyou County is one of the largest, most rural, whitest, and poorest counties in California, with a population density of just 7.2 people per square mile and where the largest city is home to fewer than 8,000 residents.[109] Official metrics record 85 percent of residents as white and a poverty rate of 14.3 percent (compared to 11.6 percent nationally).[110] The unemployment rate in Siskiyou County is about twice that of California and the United States, and agriculture is among the five top employment sectors in the county.[111] While the economic centrality of agriculture has declined over the past century, farming remains a culturally important livelihood.

There are three primary agricultural areas in the county—the Scott River Valley, Shasta River Valley, and the Butte and Tule Lake plateau—each separated by mountain passes. The western third of the county is mostly mountainous forest land, much of it federally owned, and the eastern side of the county is an extension of the dry, high-elevation Great Basin ecosystem of the Western United States. The county's demographic makeup and geography reflect broader patterns seen across the rural West, a region where antigovernment sentiment and climate change polarization are especially strong.[112]

Understanding people's experiences and perceptions of climate change—how they make sense of it—in a context in which few people openly acknowledge the topic requires an ethnographic approach.[113] Only by spending time talking to people—often in their homes over cups of tea or while doing farm chores together—was I able to learn about their views and lived realities. I felt acutely aware that the disclosure of my personal background—particularly my experience farming, being homeschooled, and growing up in a rural community—enabled me to speak with people who often expressed a mistrust of outsiders, especially from academic institutions and politically liberal urban enclaves like the San Francisco Bay Area, where I was living during much of this research. Although I was often initially met with skepticism, few people declined to talk to me, and most became more comfortable

and candid about their experiences and beliefs as we talked, almost always thanking *me* for interviewing them—a testament, perhaps, to the human craving to be heard, understood, and respected.[114]

From 2017 to 2024—a period of rapid political and ecological change across the globe—I made several trips to Siskiyou County each year (except for 2020 and 2021 during the height of the Covid-19 pandemic).[115] I usually stayed for several weeks at a time, sometimes renting a room or a camper from a local farming family. I became accustomed to the discomfort of cold-calling people, and I followed threads of social networks in recruiting people to talk to, by asking each person who else they thought I should speak with next.[116] All but a few people allowed me to audio record our conversations, which I later transcribed and coded.[117] I wrote copious field notes at the end of each day to record the details that would not appear in the text of interview transcripts, such as our surroundings, people's demeanor, shifts in tone, and my own reflections.

To understand how farmers experience and respond to the impacts of climate change, I conducted in-depth, semistructured interviews. I often interviewed people once formally, and later, over the years, I visited again to understand how their experiences of climate change evolved over time. I conducted eighty-four formal interviews with farmers, often with the primary farm operator or a couple who managed the farm together.[118] In the unpredictability of fieldwork, sometimes, an entire family—five or even ten people—would be present. At the end of these interviews, I asked the farmer to fill out a survey about their farm structure and management to document details such as acreage and crop type, as well as the field practices they used and when and why they had adopted those practices.[119]

I also interviewed people who lived in the region or worked with farmers in various capacities.[120] To understand the landscape of public institutions that support farmers, I interviewed thirty-one US Department of Agriculture (USDA) and cooperative extension staff, about half based in Northern California and half who worked across the State of California. I interviewed twenty people who worked in local not-for-profit organizations and businesses in the region to gain a better understanding of the broader environmental and economic context. I also interviewed fifteen county government staff and officials, including county board supervisors, code enforcers, and agricultural commissioners, to understand how the local government works with farmers on issues of land and water use.

Beyond formal interviews and informal follow-up conversations, I spent time with people in their daily routines. I helped harvest potatoes and feed chickens, rode along in tractors and pickups, went to local meetings and community events, shared meals and, on more than one occasion, tears, as people shared their stories.[121] Engagement with people and place through participant observation enabled me to experience micropolitics in action, the small and everyday ways that people navigate uncertainty in relation to others.

In addition to these unstructured moments of participant observation, I also conducted livelihood analyses with six farming families to gain a deeper understanding of who within the household owns what, does what, gets what, and what they do with it over time.[122] I interviewed and spent time with multiple members of these extended families over several years to understand otherwise hidden dynamics such as changing gender and generational roles within the household.

I chose to conduct an extensive and extended ethnographic case study in one county as a window into the cultural politics of climate adaptation in rural America. To contextualize and extend my empirical findings, I draw on a range of primary and secondary sources. These include quantitative material, such as USDA census and county agriculture statistics and downscaled climate model predictions, as well as archival materials such as government meeting minutes, newspaper articles, and industry and government reports.

As I spent time in the region, more and more interesting dynamics emerged or were made apparent to me. During fieldwork for this book, I met Hmong farmers who grow crops that include cannabis and who face catastrophic wildfires and droughts made worse by local water policy restrictions that are disparately enforced against the Hmong community. Since 2022, much of my work in Siskiyou has been with Hmong farmers, some of whom appear in this book but whose stories deserve their own telling in a future project. As I have continued to return to Siskiyou for research with Hmong farmers, I have maintained connections and relationships within the wider agricultural community that inform this book.

In the pages that follow, I include many quotations in peoples' own words. This is an intentional choice that underlies a core argument of this book: effective climate action must engage with the experiences and cultural values of rural people rather than focus solely on climate science or its physical impacts. Yet climate change remains a sensitive topic, and people shared their perspectives candidly. I therefore use pseudonyms and have changed

some personal details associated with specific people, such as what kind of livestock they raised or how many children they had, while maintaining a representative distribution of individual characteristics across the book.

Nearly all of the people I interviewed for this book—like nearly 94 percent of farmers in the county who fill out census surveys—identified as white.[123] Although I do not repeat white participants' racial or ethnic identity with each quotation, my intention is not to normalize or naturalize whiteness or to erase rural racial or ethnic diversity.[124] Casting rural places as white spaces is both factually incorrect and serves to other, racialize, and flatten "the Black, Brown, Asian, and Indigenous people who created these places, as well as continue to inhabit these spaces."[125] There is a long history in the United States of seemingly neutral agricultural programs helping to construct and maintain racial hierarchies in rural spaces through both explicit exclusion and more subtle forms of white benevolence, such as marking racial differences only when discussing nonwhite populations and treating European cultures as unmarked and normative.[126] These agricultural programs have contributed to current inequalities, including the staggering statistic that 98 percent of farmland in the United States is owned by white people.[127] Simultaneously, rural workers, including people who farm and who are white, "have experienced downward mobility, finding themselves squeezed out of their livelihoods."[128] Engaging with rural white farmers is important to understanding attachments to what sociologist Kate Cairns terms an imagined "white rural idyll," entangled with values, norms, and practices that, as they shift in a changing climate, create new ruralities.[129]

Although I brought my own set of life experiences and academic framings to the field, I tried to keep my research strategy nimble and adaptable. This approach traded flexibility and dedication to prioritizing participants' own framings of their experiences for neat categorization within a single theoretical framework. Like the everyday practices I studied, this book is filled with the varied experiences, understandings, and perspectives of the people I met. My many arguments contribute to a larger point that, at its core, is simple: rural places are more complex and dynamic than they are often given credit for—and climate adaptation is deeply political.

When I last visited David and Diana in the summer of 2024, they reflected on their experience adapting to a changing world in ways that pushed against

local norms—community expectations about what beliefs and actions are acceptable. They described counseling other farmers who wanted to adopt diversified agroecological practices to keep these changes discreet. "You don't want to be torpedoed by the naysayers," Diana said. Climate change, she explained, "creates a social pressure." Adapting by implementing farming practices that sequester carbon and build ecological resilience can be socially risky. "There's still within this community, as with many rural communities, you know, a very strong antigovernment crowd. Anything to do with working with an environmental organization is tantamount to sleeping with the devil." But Diana and David have persisted, carefully navigating the political terrain of adaptation. "For us and for our family, we hope to have an honest living doing this really hard work that is so meaningful. We want our life to be about making other people's lives better and we really see this form of agriculture being so beneficial for every single person along the supply chain," David said. With a mix of resignation and pride, Diana added, "Sometimes it's really hard to match meeting our physical needs with the noble pursuit of what we want to do."

Having grown up on a farm and then having operated my own farm for seven years before attending graduate school, I felt Diana's words resonate with my own experience. Grappling with unusually wet summers, periods with no rain at all, and severe, unexpected storms drove me to study how farmers are adapting to climate change in other rural communities, but I quickly came to appreciate that other crises are often more proximate and pressing. Climate change is "everywhere and nowhere"—creating a disconnect between global climate narratives and local experiences around the world.[130] Both the temporal and spatial immensity of climate change and its cascading effects are complex and difficult to tackle. But this is not because farmers fail to understand or care that the climate is changing.

Farmers in Siskiyou County are already navigating intense climate impacts, such as persistent drought and intense wildfires. Their stories show how adaptation involves not just changes in farming practice but the navigation of social relationships, institutional structures, and local political realities. As rural formations shift and their complexities and contradictions become more visible, so too will processes of micropolitical formation, contestation, and resistance grow more apparent. Effective climate action must engage with farmers' everyday experiences and the complex dynamics that shape how they respond to environmental change.

My fieldwork in Siskiyou County led me to appreciate several insights about climate adaptation that extend beyond this case. First, responses to climate impacts reflect sophisticated negotiations of survival in transforming rural landscapes. In daily life, adaptation is less about technical responses to climate change impacts and more about negotiating local cultural and political understanding. Far from making simple economically rational decisions, as is often assumed in adaptation literature, farmers balance competing social identities, values, and goals when changing how and what they farm. Second, while the science showing that humans contribute significantly to climate change is settled, climate discourse remains dynamic and politicized, especially in rural communities where resistance to climate change reflects broader cultural and economic anxieties. Yet irrespective of their beliefs about its causes, people must contend with climate change's material reality, and they are already adapting. To increase the pace and scale of climate action, we must move beyond the evangelistic notion that people must be "convinced" to "believe" before they take climate action. Indeed, farmers throughout Siskiyou are already taking a variety of actions to adapt to climate change. Third, potentially transformative adaptation strategies often emerge from the margins of conventional farming groups, where those who have been excluded from dominant political and economic structures may adopt more ecologically resilient adaptation strategies.

The stakes are high. The complex social and political pressures that farmers face shape humanity's adaptive action now, with consequences that will reverberate into the future and across the globe. How farming communities adapt—or resist adaptation—will have profound implications for food security and sovereignty, environmental sustainability, and political possibilities. The physical, political, and social risks of climate change create new avenues for reproducing existing inequities. Yet climate change also opens new opportunities for positive social and ecological transformation. By engaging with, rather than alienating, the diversity of people in rural communities, urban and rural communities can together develop more effective and equitable approaches to climate action that address both immediate environmental challenges and their underlying structural drivers. The first step is listening to what they have to say.

CHAPTER 2

On Shaky Ground

In June 2018, I met two young farmers in Siskiyou County who were similar in many ways. Both had family connections to the region, were young white men who had recently served in the military, and were farming on their own. Yet they were adapting to changing ecological and political conditions very differently. And each experienced distinct forms of gatekeeping within the multigenerational farming communities they were part of.

A young alfalfa farmer in the Shasta Valley, in the center of Siskiyou County, Colin had just turned twenty-six. He moved to the area at age fourteen when his mother married a local farmer. At eighteen years old, he joined the military, and at twenty-four, he started his own farm. Colin spoke frankly about feeling like an outsider and carefully acting in ways that would signal adherence to local practices.

When he got married and began his own farming operation a couple years earlier, Colin refused financial help from his stepfather. He told me that he wanted everyone to see his farm as self-made. He sought advice from well-respected farmers in the community, and he made sure to follow their advice and to do so visibly.

Colin talked about spraying herbicide to kill weeds in his fields and on his field margins, buying farm equipment from local dealers, and taking extra time to clean and wax his tractors until they shined. By engaging in these practices, he not only showed respect and deference to politically powerful farmers in the area but also demonstrated that he shared their values of hard work, productivity, and efficiency. Carefully adhering to local norms, Colin said, helped him get highly competitive land leases.[1]

Colin's efforts to perform political belonging proved invaluable when personal crisis struck his family. The year before we met, his mother became ill, and he and his stepfather spent three months during the summer growing

season with her at a hospital in Reno, Nevada, a nearly four-hour drive from the farm. Other farmers pitched in to help farm his land that season. On their own time, they sprayed, tended, and harvested his alfalfa.

I met Dan, another young farmer, in Tulelake, in the northeast corner of the county. He took over the family cattle operation from his grandfather in 2016 after five years in the marines. His grandfather was, as Dan described him, "burnt out" from the twin crises of low beef prices and drought, and his father was nearing retirement after an off-farm career. One of the first things Dan did was transition the ranch from conventional to organic practices. "We were losing a lot of money conventionally every month," he explained, "and we'd go belly up here pretty quick if we stayed that route." Dan told me how his grandfather, like many farmers in the area, had mocked organic farmers. When his grandfather heard about other farmers converting to organic, Dan told me he would say, " 'What an idiot! Why would anybody ever do that?' "

As we rode in his pickup through his fields to move electric fencing, Dan described his thinking about that conversion. "Now, I'm doing it! [And] I'm not somebody that goes and eats all organic or anything, but you need to improvise and adapt," he explained. "Conventional [farms] are going out left and right. It was kind of a go organic or go out." Low cattle prices motivated Dan to pursue organic certification, and the drought catalyzed his implementation of agroecological practices. He now grows all his own cattle feed with fewer inputs.

Dan planted his pastures with biodiverse, legume-rich forage mixes, began intensively rotating his cows onto fresh pasture each day, planted two hundred acres into double-cropped corn and wheat for winter feed, and started adding manure from the barn back onto the fields. These practices transformed his farm. Dan told me how he now irrigates less, and his forage mix is higher in protein. His cows have fewer health issues and produce better meat with a higher market price.

But, Dan told me, he was surprised by the backlash within the farming community. "I find out my nickname is 'a pretty boy from San Diego,' even though I was just stationed down there [in the marines]." Since then, he described not feeling welcomed among the farmers of his grandfather's social group—those who maintain political power in Siskiyou County. Many are friends with the board of supervisors, they sit on the planning commission, and they advise the staff at the local cooperative extension and United States Department of Agriculture (USDA) offices.

Dan tried to remain inconspicuous within conventional farmers' social networks, consisting of primarily multigenerational farm families who traced their ancestry in the region to early white settlers, primarily raised beef cattle or grew hay, and were considered traditional. "I just kind of stay out of it. I got enough right here," he said. "I got four hundred girls to worry about [and] the 860 acres keep me plenty busy, besides getting involved in politics." But his practices are inherently political. With a grin, he explained, "I did things like minimum no-till drilling, and they said, 'Well, that's never going to work.' Well now people around here are starting to do no-till drilling because they've seen it work here. I started putting sorghum–Sudan [grass] in and people said, 'Oh, that's never going to work up here.' And now people are starting to put sorghum–Sudan [grass] in. So yeah, it's kind of nice to rub it back at them and prove them wrong."

Colin's and Dan's stories are rare—because there are not many farmers in the United States, because many people who want to farm do not have access to family land, and because farm succession is notoriously difficult. Generational change presents a moment of extreme farm vulnerability. Often, the previous generation must sell land to fund retirement or health care in old age. Multiple heirs, including some who want cash, may force the farm to be sold or divided. Legal title to land can be opaque, especially when heirs inherit land without estate planning and a legal will, conditions that have contributed significantly to Black farmers' land loss in the United States.[2]

Additional stressors including low commodity prices, extreme weather, and costly regulation compliance can easily tip a farm out of the family in moments of generational transition. With steadily rising land values across the United States, increasing development pressure in many places, and such trends as farmland financialization—in which financial firms treat farmland as an investment asset—there are plenty of ready buyers. Farmland is then both consolidating *and* fragmenting, seemingly opposite trends that in tandem mean loss for actual farmers. And land is wealth. Those who own farmland can borrow against its value, which appreciates steadily over time.[3] Generations of primarily white and male farmland owners have benefited tremendously from land ownership, but even many of those farmers and their descendants suffer from the trends of farmland consolidation, corporate concentration, and crop and livestock homogenization that have characterized US agriculture for more than a century.

In the 1920s about a third of the US population worked on farms.[4] A century later, just over 1 percent of the population works directly in agricul-

ture, and the majority of those workers have migrated to the United States from Central America and Mexico.[5] Yet *family* farmers remain politically important, wielding culturally powerful and morally based identity claims as hardworking, wholesome, and independent family units. They remain ideologically salient because "what happens in the agricultural countryside plays an important role in what can happen in industry, cities, and politics," a long-standing insight newly reenergized as farmers stand at the forefront of both climate change impacts and responses.[6]

Competing myths about family farmers shape US agricultural policy debates and obscure the realities of large-scale, industrial agriculture and its consequences for both labor and the environment.[7] On one hand, family farmers are presented as inefficient, marginal, or even backward, and therefore in need of modernization or replacement through techno-utopian investment and intensification. In the name of sparing land from farm production and feeding the world, the myth of the "immiserated peasant" is gaining traction in the context of climate change as capital- and resource-intensive solutions, such as industrialized precision agriculture, call for more of the same strategies that have perpetuated the problems they aim to solve.[8]

On the other hand, yeoman farmer mythology portrays family farmers as virtuous stewards of the land, who through hard work and self-sufficiency, "provide the basis for a richer community life and a greater sum of those values for which America stands."[9] Capturing imaginaries of yeoman independence (while quietly relying on government support and off-farm work, often done by women, to keep farming), this myth historically justified settler expansion and white farmer entitlements to land and water that continue to shape resource access disparities.[10] Together, these myths translate to family farm rhetoric that consistently benefits large agribusiness firms—justifying the enrollment or removal of smaller-scale farmers from their land and livelihood.

Although family farmers inhabit a large cultural and political stage nationally, within their local communities, these same farmers are often on shaky ground, struggling to survive. They rely on privileged access to resources and institutions and also act as gatekeepers, determining who else can benefit. How family farmers persist, and what is at stake if they fail, helps explain why climate change as an idea, not just a material reality, is so threatening. Through repeated conversations over several years with multiple members of farming families, I observed how different families

Fig. 2. The number of cattle a family needs to raise to make a living has increased significantly over the past decades.

dealt with change. Facing compounding crises, farmers recognized that their farms needed to change. Yet the idea of change, with its many risks and unknowns, threatened what many farm families held most dear—the ability to pass their way of life on to the next generation.

THE PERSISTENCE OF THE FAMILY FARM

It was a cool November evening in 2019, on my last trip to Siskiyou County before the Covid-19 pandemic lockdown. Dusk was falling when I drove down a quiet valley road and my phone rang. It was a beef cattle farmer I had been trying to connect with for several years (fig. 2). She sounded surprisingly young. I could hear small children and a television in the background. She invited me for dinner.

This farmer and her husband were in their twenties. They had both grown up in farming families that traced their roots in the county back at least five generations. I sat at their kitchen counter while her husband fried pork chops. The young woman told me about her childhood on a farm in Siskiyou County during an intense drought in 2001 and how close her parents came to selling the farm.

"It never happened," she explained. "But the stress. My God. I think there was heart attacks that came out of that. You know, people just going 'This is it.' And it was discouraging for the next generation to be growing up around

parents that were so stressed out about that kind of thing and thinking, 'Well, I really don't have a future here.' A lot of the kids just left, really. [A] whole bunch of them saw the writing on the wall, or thought they saw it, that there was no future here. So, they just left."

Climate-induced drought, and the associated water restrictions, many farmers feared, would be the final blow to their already precarious livelihoods. Nearly every farmer I talked to feared losing their farm, if not in this generation, then in the next.

In addition to land, farmers need water. Climate change threatens farmers' stable access to water, as droughts and floods become more severe and governments attempt to regulate both ground- and surface water. Together, land, water, and the other materials that farmers need to farm, such as seeds and fertilizer, are their *means of production.* The decline of small and midsize farms over the past century has been accompanied by diminishing farmer control over these means of production. The shift from freely accessing, saving, and making farming inputs to reliance on markets not only threatens farmers' way of life materially and financially but also compromises a core value underlying many rural identities: independence.[11] Family farmers who have already lost self-sufficiency and control over their means of production feared that, with climate change exacerbating the challenges they already faced, they might also lose what many valued most—their means of *social reproduction,* their children's ability and desire to farm.

Over the past century farms in the United States have differentiated sharply. Large farms have grown by leveraging resources, such as land, to borrow and invest. Smaller farms have struggled, and many have disappeared, especially those owned by farmers of color.[12] Yet many smaller farms and the families who operate them still dot the rural United States. Agrarian scholars have long debated why and how family farms persist, as well as their definition. The USDA uses a broad definition, disfavored by social scientists, based on business structure (how a farm is incorporated) to categorize 96 percent of US farms as "family farms." Using this definition, fewer than 10 percent of the largest of these farms produce 63 percent of farm product value, and the nearly two million "small family farms" (grossing under $250,000 annually) produce just 15 percent.[13] Sociologists of agriculture often define family farms in terms of who does what—farms on which the family unit provides most of the labor and makes management decisions, which is the case for most farms in Siskiyou County.[14]

Some scholars argue that family farms sustain economic competitiveness through their greater local knowledge, labor flexibility, and willingness to self-exploit through crises that would force pure profit seekers to invest elsewhere.[15] Others argue that family farms persist because Capital stops before it enters the farm gate, beyond which production is too risky, costs are too high, and the circulation of profit and reinvestment is too slow for investment and accumulation of profits, which gain more and faster in the industries upstream and downstream of farming.[16]

"Upstream" are the firms that manufacture and distribute the inputs needed to farm. Globally, the same four firms control over 60 percent of the seed market and 70 percent of the agrochemical market.[17] Just four firms control more than 75 percent of the US fertilizer market, and four firms account for 40 percent of the farm equipment market.[18] Land is another essential input, and land markets have consolidated, too. Across the United States, farmland values nearly tripled between 2003 and 2017, and farmland financialization threatens to turn more and more farmers into tenants on their own land.[19] About 40 percent of US farmland is now rented, and tenant farmers often have few rights and little land security.[20]

"Downstream" are the markets that farmers sell their products into. As these markets have consolidated to fewer but larger processors, distributors, and food retail chains, farmers have less and less choice about where to sell what they grow and raise. For example, just four companies—Cargill, Tyson, JBS, and National Beef—control over 80 percent of US beef packing.[21] Cow/calf ranchers (who keep a herd of mother beef cows and sell the calves each year) are left to manage the riskiest part of the conventional beef commodity chain—the stage of breeding and raising calves, which requires specialized animal husbandry knowledge and is vulnerable to risks including severe weather, disease, and volatile feed prices.[22] Ranchers then sell their weanlings into the highly concentrated and vertically integrated beef market, which is where the real profits are made.

Corporate consolidation and concentration trends limit farmer choice and autonomy and force farmers to pay, or accept, whatever prices a few firms set.[23] Family farmers are then "sandwiched between oligopoly input and output industries" in a highly concentrated corporate marketplace.[24] As the firms upstream and downstream of farming capture much of the value that farmers create with their labor, farmers become "disguised wageworkers" or "workers with the appearance of being owners."[25]

Wealthy firms can benefit from the labor of family farmers in several other ways, too. Not so long ago, from the late nineteenth century to the 1990s, local farm families supplied a steady source of flexible wage labor to the logging industry in Northern California. Now that the logging industry has declined, especially in rural areas, logging firms directly hire far fewer farmers as laborers. But firms that capture large profits and influence policy continue to benefit from the persistence of smaller-scale family farms.[26]

Perhaps most importantly, family farms "provide a legitimation function that presents the illusion that large capital does not colonize farming," and thus agriculture deserves special financial assistance from the government and exemption from environmental and labor regulations.[27] Family farm rhetoric rooted in yeoman mythology provides convenient cover for large agribusiness firms, the greatest beneficiaries of both government support and deregulation, to avoid environmental and labor protections under the guise of "saving family farms."

Commodity checkoff programs provide an illustrative example. During the second half of the twentieth century, farmers struggled as prices dropped due to a crisis of overproduction. Various states and then the federal government created checkoff programs for commodities such as tobacco, citrus, and pork to encourage consumers to buy more. Now overseen by the USDA, checkoff programs are funded by mandatory fees that individual farmers pay per gallon of milk or head of beef they sell. Those funds are then used to encourage consumption through marketing campaigns such as "Got Milk?" or "Beef. It's what's for dinner," as well as industry research that often downplays the health and environmental impacts of these industries.[28] By prioritizing the interests of major agricultural corporations, writer Austin Frerick argues that "the checkoffs force family farmers to pay a tax to their more powerful competitors. Often, these programs use this money to fight against the same family farmers who fund it."[29]

Agribusiness enjoys widespread public support from taxpayers and their government representatives. Public institutions such as the land grant complex—state colleges of agriculture, agricultural experiment stations, and extension services—were developed thanks to massive public investment (including of land taken from Indigenous communities) under the auspices of assisting family farmers, while their primary beneficiaries have historically been agribusiness corporations.[30] Federal farm spending continues to

receive widespread and bipartisan support. The first Trump administration's $23.6 billion Coronavirus Food Assistance Program in 2020 to aid farmers experiencing financial losses due to the Covid-19 pandemic employed family farm rhetoric to garner political and public support. Yet this legislation was structured such that most funds were swiftly captured by large agribusiness firms.[31] It is hard to conceive of a $1.5 trillion farm bill without the image of family farms benefiting from those funds.[32]

The various arguments that explain family farm persistence within capitalist political economies are not mutually exclusive. Rather than noncapitalist enterprises somehow persisting within a capitalist political economy, family farmers exercise power and agency as they navigate the challenges created by the political-economic system they are part of. They simultaneously participate in and resist Capital's ongoing expansion through accumulation, dispossession, and displacement. People who choose to farm often describe other logics alongside profit maximization, such as a love of working outside, the desire to build something with family, and the dream of being independent and having control over their livelihood. But that control has been systematically stripped away by the corporatization of agriculture, facilitated by more than a century of policy decisions that favor large firms and exacerbate class differentiation among farmers.[33]

Erosion of resource control manifests through discursive *micropolitics*—the everyday ways farmers experience, interpret, and negotiate environmental challenges and position themselves in relation to each other.[34] Land use practices, including how people discussed them and read them in the landscape itself, formed *discourses,* or "webs of meanings, ideas, interactions and practices that are expressed or represented."[35] Farmers engage discursive micropolitics around climate change in how they describe experiences of drought and wildfire, the practices they adopt in response, and the meaning they make of those experiences. Developing certain markets and not others, shaping the landscape with certain practices and not others, and shifting household roles are imbued with cultural and political meaning and social consequences. This discursive micropolitics helped me see how class identity in Siskiyou County operates as a shifting performance rather than in neatly bounded categories. Farmers might emphasize a sense of cash-strapped financial struggles when talking with me while emphasizing hard work and land ownership when addressing fellow farmers and formal education and farming experience when consulting agricultural advisers.

Farmers position themselves through a class politics rooted in land *use,* not just land *ownership.* Belonging derives not just from what one owns but from *how* one farms and discusses farming.

Everyday performances of practices and discourse signal values and allegiances, creating a cultural context where certain ideas, values, and practices are privileged over others. Nearly all farmers glorify "family farming"—feeding a discursive frame that ultimately benefits wealthy firms that make it harder for family farmers to survive. While environmentally oriented practices could help farmers regain control over their means of production—for instance, building soil fertility instead of purchasing industrial fertilizers—many farmers avoid environmental associations, despite their deep ecological knowledge and love of the land. The contradiction between intimately knowing the environment and rejecting environmentalism exemplifies how everyday micropolitical actions and discourses shape acceptable practices and discourse in the region, a contradiction that manifests in an identity politics of land.

LOSING AND GAINING GROUND: MULTIGENERATIONAL FARM FAMILIES IN FLUX

My mother, a farmer herself, likes to repeat an old adage: "No two farms are alike." Each farm is its own unique place, exactly unlike any other by virtue of the unique abiotic form and biotic lives of that place and, most of all, the relationships of the place's interwoven parts. Much is unseen and unknown except to those who have paid a lifetime of attention.[36] Rather than demonstrating general trends, going inside the farming household helps highlight everyday politics of practice as agriculture changes. When we listen to how farmers narrate their experiences of change and adaptation—what is observable to the researcher—discursive micropolitics become visible, shaping the ways that farmers adapt to change.

Sam and Susan: Adaptation Strategy of Further Simplifying Farming

Susan and Sam, farmers in their early forties, both grew up in Siskiyou County. Susan's parents had a cow/calf and hay business that Sam joined as a wage laborer when he dropped out of high school. After they married, Sam became a partner in the family farm business. When I first met Sam and Susan in 2017, they worked full time on the farm with their two sons, aged

eighteen and twenty-one. Their primary goal, which they frequently reiterated, was to ensure that their agricultural operation remained viable for their sons to take over. They believed that conventional commodity production offered them the best chance of achieving that goal.

We sat at their kitchen table on a clear June morning for the first of several long interviews. Sam and Susan's newly built home featured an open floor plan and a large window that framed snow-capped Mount Shasta in the distance. The screen door to the back porch was open behind us, a gentle breeze carrying in the yips and growls of several puppies playing outside. My two-door hatchback Toyota Yaris nestled diminutively in the driveway between two large white pickups, each sporting a "Trump Pence 2016" bumper sticker. Sam seemed eager to talk, sitting comfortably in his chair and leaning toward me when he spoke. Susan was more reserved and occasionally left the conversation to attend to things in the kitchen, a large countertop island between us.

"It didn't take long to figure out we need to find a better way," Sam said. "Families can no longer make a living just doing cows and hay." Talking about their peer group of conventional multigenerational family farmers who grow cattle forage and raise calves in a cow/calf model, Sam explained, "I could guarantee you we're a dying breed because it's dusty dirty work with no guarantee out here, and you may or may not make it." Sam and Susan had seen neighbors and friends leave farming, some by choice and others through bankruptcy.

Sam and Susan emphasized that dealing with crises is a part of any farming operation, and it is often difficult to pinpoint a singular cause. Yet some crises, such as droughts, affected the entire farming community, placing farmers in heightened competition with each other for limited resources. The drought that devastated California in the 2010s prompted Sam and Susan, like many farmers in their community, to reevaluate how they farm. At the same time, the idea of change was stressful, with future uncertainties and unknowns. Farmers often resisted change while looking to other farmers for ideas.

Susan and Sam had seen some newcomers do well by focusing on cultivating large tracts of alfalfa for the export market. "Just three or four of the guys have just gotten the lion's share of the business," Sam said; Susan added, "We look over the fence." They had closely observed the strategies of several large-scale alfalfa-growers who had moved their operations to Siskiyou County and quickly bought more land, invested in technologies to increase yields and efficiencies, and sold large quantities of conventional and

industrial-organic alfalfa in wholesale markets. These strategies required money or access to credit to invest. "They've purchased a lot of land and taken it out of the production system as far as small families here," said Sam. "Basically they are corporate farms." Susan added that these farmers were "gobbling up the smaller places around them." Whereas some farmers grumbled about this strategy, many, like Sam and Susan, saw competition and consolidation as "the American way," as Sam told me, and admired those who succeed via this pathway. To avoid being gobbled up, Sam and Susan, like many multigenerational farmers in the conventional farmers' network, modeled their operation after the most successful farmers they saw—those who were doing the gobbling.

Much of our conversation centered around land, or "ground," as farmers in Siskiyou call it. Susan asked me to pause my recorder periodically, especially when we discussed details of land acquisitions, which were considered private matters. Early in this conversation Sam explained, "We're pretty motivated and we're trying to position ourselves, so regardless of what corporate farming situation comes in here, my sons have a strong enough existence here and large enough base and presence in the valley that they can be here for generations and generations." Susan added, "We're basically running just as aggressive[ly] as we possibly can." Handing me a glass of cold water straight from their well, which taps into lava spring tubes deep below us, Susan explained, "It's hard to find a good piece of ground, [but] you will pick up a little piece here and a little piece there and pretty soon you have a huge piece of the pie."

Water access is the most important characteristic of "good" ground. Historically, surface water rights in various degrees of seniority have been instrumental in increasing farmland value. But surface water access has become precarious, even for those with the most senior water rights, particularly as curtailments from the State Water Resources Control Board became increasingly common. There is so little available water that it routinely stops flowing in the rivers at some point each summer. Groundwater access has grown in importance and value as surface water supplies have become inconsistent. Just the year before, in 2016, Sam and Susan purchased two new parcels. "We're farming an additional thousand acres over what we were last year," Sam told me, and though these new parcels did not include surface water rights, the family successfully drilled several new deep irrigation wells. "We're headed in the right direction," he said.

Unsurprisingly, in a place where asking how many cows someone has or how big their ranch is marks you as a nosy outsider (as one farmer explained to me, "It's like asking what's in your bank account or how much your salary is"), a lot of farmland in the county never publicly comes up for sale. This is especially true during shared crises such as droughts, when farmland is sold quietly to avoid the public embarrassment of failure.

Rising land values and increasingly competitive land leases highlight how agrarian capitalism pits farmers against each other—one farmer's gain arises from their neighbor's loss. In her ethnographic work with grain farmers in Minnesota, anthropologist Kathryn Dudley explores social trauma in farming communities where people understand debt and dispossession as personal and moral failing.[37] Dudley's work captures the cultural power of farmer identities, including one's perception of self, in a farming community. Like the farmers in Dudley's book, those in Siskiyou County are grappling with crises. Farmers in Siskiyou described the physical impacts of climate change and mounting environmental regulations as threatening their way of life and forcing them to take actions that result in social trauma, moral failing, and the loss of core identities—for themselves, or the neighboring farmers who sold.

For Sam and Susan, ambitious farmers need to know the farmers in their community and be ready to seize opportunities to buy them out. "We have to depend on our network of on-the-ground knowledge and neighbor to neighbor, and we have to have an awareness of things prior in order to grab pieces," Sam argued. Guarding information about quiet farm sales enables those with traditional farming network connections to remain competitive with the alfalfa-growing newcomers who, though small in number, have greater access to money and credit. As Sam explained, once newcomer farmers hear about farmland for sale, "They write the big check, there isn't much we can do."

Part of gaining that prior knowledge of what land might soon be for sale involves reading other farmers' land. For example, if a farmer's field margins are weedy or if they begin downsizing their herd or selling farm equipment, it can be a sign that the family may be reaching a selling point. Susan explained, "There's a lot of families right here who you know the grandpa and grandma, or mom and dad, have either just died or are on the verge [and] the next generation has too many kids." These families may sell the farm outright or split the land into parcels too small to support a family farming. In some cases, one or two people in the next generation want to keep farming but cannot afford to buy out the other heirs. As this pattern

emerges, Sam said, "We're trying really hard to get ourselves positioned to pick up some of those pieces of property." They also worked hard to ensure dissolution does not happen to their sons.

In 2016, Susan and Sam undersigned a large loan (about $500,000, they told me) from the USDA Farm Service Agency (FSA) for their eldest son, who was twenty years old at the time, to buy his first eighty acres. Sam's sun-lined face lit up with a broad grin for the first time in our conversation as he described, with pride, how his young son was able to get a loan: "The FSA lady said this is the first time she closed a deal with someone she couldn't have a beer with." Sam and Susan described their land and infrastructure investments as a bet on the future, an investment in their sons' ability to farm. But carrying such a large amount of debt meant they needed to do everything possible to keep their operating expenses low.

"We're nose to the ground all the time watching for a good piece of land," Sam said. "The prices of land and our costs of production are high. . . . You know the margins are really small, there's not a big return." With the "thin margins" they make by selling calves and alfalfa on volatile wholesale markets, Sam told me, "It's production, we worry about production." On the advice of their local cooperative extension adviser, an expert in alfalfa production, Sam and Susan relied on products they must purchase routinely, such as hybridized and patented alfalfa seeds and proprietary nutritional supplements for their cattle.[38] They also came to rely on equipment such as hardware and mobile application software that monitors soil moisture levels and makes deficit irrigation calculations.[39] They had recently bought a new eighteen-thousand-dollar global positioning system (GPS) for one of their tractors so they could work their fields in straight enough rows to be compatible across their farm machinery. The USDA Natural Resources Conservation Service (NRCS) helped fund irrigation efficiency technologies such as new pivots to irrigate alfalfa. But even with public cost-share grants, these investments required large upfront costs, which meant more debt for Susan and Sam initially and higher operating expenses thereafter.[40] Locked into a cycle of increasing commodity production to keep pace with debt payments, Sam and Susan had stepped onto a technology treadmill, requiring greater and greater investment in land, infrastructure, and inputs.[41] Yet these investments were driven not only by economic necessity but also by a culturally rooted desire to grow their farm to be bigger and more productive. As Susan told me, "A farmer always wants to buy their neighbor's place."

Susan and Sam also talked frankly about their position as gatekeepers of the benefits of inclusion in politically powerful farmers' social groups. Speaking about new farmers who recently moved to the area, Susan told me, "I mean we can keep them from getting started. . . . It's almost like the mafia." She continued, "I'm just saying, for [a farmer] that's new to the valley and doesn't know and doesn't have the connection of the community, it would be challenging." She explains, "Without sort of your foot in the door somewhere, you'll get run over."

As Sam and Susan scaled up their alfalfa and hay operation, they also diversified the services their farm offers. In addition to working their own nearly three thousand acres, they custom farmed for other landowners who, instead of investing in expensive machinery, paid Sam and Susan's family to till, plant, and harvest forage crops with their equipment.[42] While custom farming can be a form of contract farming others' land, Susan and Sam are typically paid at the beginning of the season rather than being promised a share of the profits after harvest, meaning that the landowner bears much of the financial risk. Sam said, "That's one of the ways we've been able to own the equipment as well as make payments on property."

Sam and Susan took care to keep up appearances by maintaining clean field margins and displaying new farming equipment to signal that their farm was well cared for and not about to come up for sale. That is one reason they added a trucking company during the drought of 2011–14. Owning their own trucking business gave Sam and Susan greater control over transporting their hay and cattle to market. Purchasing new equipment such as trucks and trailers also signaled that Susan and Sam were doing well financially and able to adapt to change. Sam asserted that they are "not environmentalists" and that they added the trucking company when the California Air Resources Board (CARB) began implementing a suite of increased efficiency standards specifically targeting farm activities and engines. Farmers in the area expressed anger about these regulations and concern that they would be forced to pay for unaffordable equipment upgrades. (Since then, the CARB grandfathered in used farm equipment and provided financial assistance to farmers who wanted to upgrade their machinery.) Although Susan and Sam's investment in expensive infrastructure required incurring debt, these actions helped signal their "antienvironmentalist" position as insiders within the multigenerational farming community.

The family also bought several neighboring parcels between 2009 and 2012 as the local farming community organized against the Nature Conservancy's purchase of a nearby farm for endangered salmon conservation (which several residents described as "extractive" and a "land grab").[43] One of Sam and Susan's ranching neighbors heralded Susan and Sam's purchase of this land when I spoke to him. The neighbor described being glad that Sam and Susan were keeping this farmland out of the Nature Conservancy's ownership, an action this neighbor viewed as political resistance.

Yet Sam and Susan have quietly taken environmental action. Over the past decade they have converted about a third of their land (over a thousand acres) to organic hay and alfalfa production. But they emphasize—at least publicly—that this is purely an economic decision because, as Sam tells me, "the dollars and cents are better" in the organic alfalfa market.

Sam and Susan also described the consequences of employing simplifying practices that reduced the biological diversity on their farm. Reduced crop rotations to focus on alfalfa production and regular herbicide spraying to neaten fields have increased alfalfa weevils, the primary pest of alfalfa. They have found that in some years, because of pressure from weevils and droughts, the expense of inputs including pesticides and electricity to run water pumps outweighs potential revenue on their poorest-quality ground. With input prices rising, the family decided to certify their lower-quality fields as organic and leave them fallow in very dry years. "All those things," Sam said, shaking his head, "just cost is prohibitive." With the organic ground they just hope for a good year; if the snow melts slowly, rains last into the spring, and if the weevils do not infest those fields, they get a higher payout. If it is a bad year, at least they did not spend a lot of money on inputs. They planted the rest of their land—close to two thousand acres—in grass hay or alfalfa to harvest and graze their two hundred cow/calf herd of beef cattle. Some of it is irrigated pasture, but most of it is unirrigated dryland. These varied revenue streams in both conventional and organic markets, forage production and cattle, and most importantly the addition of agricultural services beyond farming their land—including trucking and custom farming—have been especially important in "our ability to survive the difficult times," Sam told me. "That diversity of marketing and trucking has allowed us to make ranch payments during the drought."

In addition to perceived differences in access to capital, another key distinction between the multigenerational farmers such as Susan and Sam and

the commodity-growing newcomers they held up as models is that multigenerational farmers consistently expressed that their ultimate goal was to pass the farm to the next generation. Most of the newcomer alfalfa farmers I spoke to did not share the goal of livelihood reproduction. Without family roots in the region or a desire to keep the farm in the family, newcomer alfalfa farmers told me that they would be fine selling their farms in the future. Some even indicated that their goal was to cash in their land and retire elsewhere. Even as Sam and Susan shifted their production practices toward those of the newcomers, they, along with other multigenerational farmers, expressed some discomfort implementing these ecologically simplifying and economically aggressive strategies.

With intergenerational roots and relationships in the region, farmers who claimed traditional network benefits often asserted that they were not just profit motivated, that they were good environmental stewards, and that they were saddened when their neighbors sold, even if they directly benefited. Sam said that their farm was getting big, "Not because I want to make a ton of money and I'm greedy. It's because I love the land, I love growing the crops, I love producing the cattle, [and] growing my boys." Susan and Sam were adopting the strategies of highly simplified commodity producers and internalizing the logics of capitalist production simultaneously with the ultimate purpose, and persistent logic, of reproducing their agricultural livelihood. "We don't plan on selling it. We plan on being here and moving the next generation into this while we live here and watch them take over the farm," Sam explained. Defining success as the ability to pass their farm on to the next generation, Susan and Sam felt they had to buy more land. In this sense, gain—of land, of enterprises, of capital—is not the ultimate or even primary stated goal. Instead, accumulation of resources was understood as an adaptation strategy, necessary for social reproduction in a changing environment. To keep the family farm, they had little choice but to try to keep up with corporatizing agriculture.

Although the details vary from farm to farm, the threads of Sam and Susan's story wove through many multigenerational farmers' experiences in Siskiyou. Three common adaptation strategies united farmers who asserted their adherence to local values, practices, and politics, especially multigenerational farmers at the core of conventional farming social networks. First, many bought or leased more land to produce more products for sale in wholesale commodity markets, which Sam and Susan did with the goal of

social reproduction—to set up their children for success. Second, farmers invested in capital-intensive inputs and technologies to increase production efficiency, which Sam and Susan did by buying infrastructure such as their new GPS and crop monitoring softwares. And third, farmers diversified their income streams to include farming-adjacent agricultural enterprises, as in Sam and Susan's trucking and custom farming business.

One aspect of Susan and Sam's story that was far from universal is that they were making this strategy—on-farm simplification coupled with farm-adjacent livelihood diversification—work. They had new pickup trucks and a newly built house and were acquiring more land for their sons to farm. This was not the case for many farmers I spoke with, try as they might to guard their precarious access to the benefits of belonging in conventional farming networks. The unnamed neighbors who sold their land in this story are those farmers. The distinctions between those neighbors who sold their farms and those positioned to buy that land were often small. Slight differences in household structure and the debt they carried when a crisis such as water scarcity or succession occurred could easily tip fortunes toward one farmer and away from another.

Tim and Tiffany: Adaptation Strategy of Diversifying Farming

While some multigenerational farmers draw inspiration from export-oriented large-scale alfalfa growers and ecologically simplify their farms in response to crises, other multigenerational farm families are taking a different path. Tim and Tiffany were a young couple who modeled their farm after a different set of newcomers—those diversifying what they raised and grew to sell directly to consumers—to diversify farm enterprises, field management practices, and livelihood strategies.

As I pulled up to their modest, newly built bungalow, I was greeted by four children between the ages of three and six playing tag in a large "U-pick" pumpkin and berry patch surrounded by tall deer fencing in front of their house. Tim came to the door and greeted me with a shake of his head. "Hooligans," he said playfully as he invited me inside. Tim and Tiffany are in their thirties. Tim grew up on this farmland; Tiffany grew up in a midsize town in Washington State. They met in college, and after short nonfarming careers—Tim was a firefighter and Tiffany worked in marketing—they moved back to Tim's family farm a decade ago when his grandfather died suddenly.

"Of course, my brothers and I are like, 'No one wants to sit behind a desk and push chemicals,' " Tim told me, alluding to his father's career spent as an agrichemical salesman. Although Tim's father was himself of retirement age when the farm changed hands, all five of his children wanted to farm, and in their twenties, the siblings inherited their parents' share. After a few challenging years, Tim and his brothers realized that the family farm could not support five people, let alone five young and growing families. Tim and one of his brothers then bought the other three brothers out of the farm.

Then water became scarce, especially with the onset of persistent drought in 2011. The two farming brothers were in debt, and their ditches, once full of flowing water, ran only sporadically with a shallow trickle. The brothers realized they needed to change how they farmed. "The cow herd wasn't profitable the way we were running cows, which is kind of the way most people traditionally run cows. You put them on pastures for like four to five months out of the year, and then you feed them hay," Tim said. Shaking his head, he added, "Cows are fun, you raise them up, and you sell them all at one time, and you get this big check for like two-seventy to three hundred thousand dollars, you're like, 'Oh, we made some money!' But then you start running your numbers and really digging into it, you find out really quick, like, 'Oh, we're like breaking even or losing thirty thousand dollars.' [For] one guy to make an average wage of like sixty thousand dollars a year we would have to bring up our cow herd by like 350 to 400 head and also expand land." Already in debt from buying their nonfarming family members out of the inheritance, they did not want more debt from buying additional land and scaling up the cattle herd. Instead, they began asking themselves tough questions about farming. "Is this just going to be like a volunteer position?" Tim remembered asking himself.

A few newcomers had arrived in the area who were raising organic grass-fed beef on rotational pastures and selling it directly to consumers. "Well, there's an opportunity," recalled Tiffany, who was folding a load of laundry at the table across from me. "[We] see a lot more farms in the direct-to-consumer space now, more than even five years ago." Having grown up around the stress, anxiety, and volatility of beef markets, Tim and his brother decided to sell most of their grandfather's two-hundred-pair cow/calf herd and look for other farming enterprises. And, Tiffany pointed out, "The amount of beef people eat is declining."

When I talked to Tim and Tiffany again a few months later, Tim broached the deeply personal, private, and pervasive issue among many farmers of mental health concerns, which had informed his decision to farm in a new way. An hour or so into our second conversation, Tim paused his kitchen task of cooking pork and cheese quesadillas for the kids' lunch. ("We are spoiled by food. You know, we cook the best meat," Tim told me of the pork they raised.) As the quesadillas sizzled, Tim joined Tiffany and me at the dining table for a few minutes. With his large and well-calloused hands clasped on the table between us, he said, "You also have to realize, you spend all day by yourself, totally isolated. Then also your markets go up and down. You're dealin' with family issues that hold you back from running your operation like you want because maybe your dad's eighty-nine years old and you're sixty, and he doesn't want to hand the farm to you yet. So that's a pretty remote and sad and depressing situation, especially when commodity markets are at a low and you have these mass weather systems coming through." He talked about other farmers in the area, families he grew up with, who were leaving agriculture, "And now [their] kids don't want to come back and those [farms] will roll over."

As Tim turned back to the stove, he began listing off kids he grew up with, few of whom came back to continue their family operations. The reluctance of the previous generation to relinquish control was one reason he noted for why the next generation had given up on farming, as were the emotional and physical challenges of farming, all made worse by declining water availability, severe weather, and low commodity prices. Importantly, Tiffany pointed out, their peers did not *need* to farm. They were sitting on a pretty inheritance when the wealth of their parents' land eventually became cash, and they had better opportunities elsewhere.

Farmers often recognized that they, or their children, could make more money in careers outside farming. Yet the conclusion that keeping the farm in the family might no longer make much sense was rarely spoken aloud. It often felt like the elephant in the room during interviews with multigenerational farmers. The hesitance to discuss the personal difficulties of farming, and the opportunities outside of farming, illustrates the power of discursive micropolitics that structures what experiences can be shared and discussed openly. Avoiding talking about certain topics or in certain ways can be found in many agricultural communities. In the French Pyrenees mountains, for example, researchers found that farmers considered certain

discourses "taboo" and formed a consensus that inhibited open conversation about biodiversity conservation topics as farming declined.[44] Openly discussing alternatives to farming can threaten to cement those realities, just as discussing climate change can make an abstract threat feel more like a proximate crisis. Instead, many farmers resist radical change while constantly adapting their operations with the goal of social reproduction.

Tim, Tiffany, and Tim's brother and wife now have two connected enterprises. Tim's brother grows nearly a thousand acres of alfalfa hay, which is—as Tim pointed out—still dependent on conventional commodity markets, sold to the volatile and financially troubled dairy industry. "It'd be nice at some point to be out of that commodity market in general," Tim said, adding, "In my ideal world I wouldn't be a hay farmer because it really isn't the best for the soil or the environment."

In developing their own farming operation, Tiffany said that they needed to capitalize on the resource they already had: land and some uneaten grass. But the land was rapidly drying out as California entered the most devastating drought on record. "Pigs don't take a lot of water," Tim explained. "The pigs were a backup plan, a failsafe if we got to a problem where we can't pull from the well anymore. You know, to grow grain crops is a lot less water than it would be to grow alfalfa. So that was the original idea with the hogs." What began as a way to use unirrigated ground during the first peak (2011–14) of the drought became Tim and Tiffany's primary enterprise. In addition to a few cows and their U-pick pumpkin and berry patch, they raise six hundred heritage breed pigs each year on rotational pastures.

But after selling most of the cows and starting to raise pastured pigs, Tim told me, other multigenerational farmers seemed to be talking about their family in unflattering ways. He worried they would lose access to some of the benefits that were carefully guarded by conventional farmers in the region. Tim mentioned a growing conflict with neighboring farmers over water in the nearby irrigation ditch. Whereas it had been socially acceptable to use water for hay and cows, once Tim's family began transitioning to pigs and pumpkins, neighbors seemed to assert a greater claim on the ditchwater. Tim was concerned that if the family dissented from accepted local farming practices too much or too quickly, their social standing in the community might be at risk, and they might not be welcomed at meetings of the local chapter of the American Farm Bureau Federation (Farm Bureau) or assisted by agricultural advisers.[45]

Tim and Tiffany's pastured pigs, an enterprise begun in response to environmental change, have themselves become important participants in adapting the farm ecosystem. As Tim described his field management practices—including complex crop rotations and forage crop production—his eyes lit up. "Where the pigs were, [the] growth was like a foot difference, it was huge!" he exclaimed. When alfalfa and hay prices are low, Tim said, he rotates his pigs onto his brother's forage fields so they can graze the hay crop that would otherwise cost more to harvest than it would recoup on the market. Although he has to move them each day so that they do not do what pigs love most—root—Tim deploys this innate hog behavior as a management tool elsewhere.[46] "We had a pig pasture, and it wasn't a usable pasture because it was all star thistle, so we were like, 'Oh, I wonder how the pigs will do in that.' I mean it was bad—you couldn't even walk through it. So, I put huts and the feeders in the worst of the worst spots, and I let the pigs beat it up pretty good," Tim told me as he gestured out the window to the pastures dotted with pig huts. "That was at the end of the drought and so we got good rain. Ever since then that pasture is back to rye grasses and there hasn't been a thistle come back."

Although the ecological benefits of their diversification efforts surpassed their expectations, Tiffany and Tim's primary stated goal of farm diversification was greater agency in the market. They sold about a third of their hogs each year directly to individual consumers, and the rest were sold under loose relationship-based contracts to two artisanal pastured meat companies. These companies bought the pigs at slaughter weight, processed the hogs in their own USDA slaughter facilities, and then sold the meat directly to consumers under their own brand names, in places like the San Francisco Bay Area and Los Angeles. Even though most of their meat is not sold under their own farm's name, Tiffany said they still consider their marketing model "direct to consumer," just with a little help from the larger brands that operated their own processing and distribution infrastructure.

The first few years that Tim and Tiffany raised pastured hogs, they had to drive six to eleven hours each way about once a month to bring the pigs to a USDA-certified slaughter facility (in Carlton, Oregon, or Twin Falls, Idaho, depending on which facility had openings), and about six hours each way twice a week to sell their meat at farmers markets in the San Francisco Bay Area and Portland, Oregon. Tiffany told me they simply could not continue that pace with four young children. But their new contracts

were nonbinding, which sometimes left Tim and Tiffany scrambling to find markets for hogs that needed to be slaughtered if butcher shop and restaurant sales slowed and the brands they sold to did not need as many hogs. Even in *alternative* markets with *alternative* species (compared to the dominant beef cattle of the region), Tim and Tiffany still found themselves subject to some of the same market dynamics as their neighbors.

Tiffany and Tim also expressed concern about competition as large hog producers in the Midwest began marketing their meat as "heritage" and "pastured." Tiffany explained, "I think that knowing your end buyer is kind of that one thing that the farmer can protect, because [it's] relationship based. It's not label based. It's not certified based." She continued: "Direct to consumer is something to protect and to really lean into. It's never a guaranteed market, but you control it more than you [do] anything else, because these are your customers." Unlike her brother-in-law's hay operation, which depended on one commodity market system and only a few buyers, with direct marketing, she explained, there are many potential customers who "know you personally." She added, "If you have three hundred buyers and twenty drop out, it's okay." Eventually, Tim and Tiffany explained, they hoped to sell most of their meat directly to the end consumer. Tiffany described her vision of starting a meat-buying club in which members would pick up boxes of frozen meat a few times each year at festive farm events.[47]

One of the biggest challenges Tiffany and Tim faced was gaining acceptance in the local agricultural community. "I think it was pretty foreign to the area. People were like 'What the hell are they doing bringing pigs in?' Especially to put them on grass," Tim told me. "I'd say the resistance was just change because it was something different." Tim described community opposition they faced when they started the hog enterprise, introduced new field management practices such as rapid pasture rotations, and added the U-pick operations. Tim and Tiffany recounted numerous slights. Among these were hearing negative rumors that they were colluding with environmentalists, who other farmers feared were coming to restrict irrigation water. Tim said that several neighboring farmers refused to engage with them in required permitting processes on their shared irrigation ditches. When Tim and his brother participated in National Cattlemen's Beef Association (Cattlemen's Association), Farm Bureau, or cooperative extension activities, Tim said, with a grin on his face, "It's all cowboys. When I show up it's just like, they always think I'm a hippie, but it's just the mindset

[of] everyone that farms." Speaking of the traditional farming community, Tiffany said, "They know who is doing what."

Deviating from locally accepted farming practices can be difficult, even dangerous. In one conversation, Tiffany told me that she had received an anonymous death threat in their mailbox for trying to "change our community"—a reference, she presumed, to their pork and U-pick enterprises. Interpersonal conflict may be difficult to parse or link directly to specific actions, yet the fact that Tiffany and Tim *perceived* these negative discourses about them to be the result of their divergence from accepted local farming norms demonstrates the power of discursive micropolitics that help some practices become legitimized over others.

Tim and Tiffany strategically managed their farm so that the wider community would recognize their claim to belonging in the landscape, a status that yielded access to the benefits of inclusion in conventional farmers' groups. Tim's family roots in the local farming community meant that people in positions of power, such as members of the Siskiyou County Board of Supervisors, knew his family personally, which could be a real benefit. "So, if somebody called [the county] to be like, 'Oh, my gosh, you know, all these cars are coming into their farm,' they know we have a U-pick and they [county officials] are like, 'Yeah, that's fine.' " Tiffany added, the "supervisors know the rest of our story is that we're haying and that we have cows." Tiffany and Tim emphasized the importance of their extended family's hay operation and the few cows they still raise for family consumption and graze visibly in the pastures along the road. Participation in these particular farming enterprises signaled shared local cultural and political values, reproducing belonging and engendering acceptance from locally powerful farmers.

With multigenerational farming roots in the region, Tim and Tiffany enjoyed a privileged position: they could deviate from accepted local practices. By doing so, they also created opportunities for other farmers to diversify their field management practices. The family noticed a shift since they started raising pigs on rotational pasture and, more importantly, since those pigs started turning a profit: several other operations had begun raising pastured hogs as well.

Tiffany and Tim attributed their relative success not just to intergenerational local connections but also to building connections with extralocal farming networks. As they transitioned from the conventional forage

and cow/calf model of Tim's grandfather, the couple retained access to politically powerful groups—such as the Farm Bureau—while expanding connections to farmer-to-farmer networks outside the region. They worked with regional and national groups including the nonprofit group Ranching for Profit. (Farmers often described a distinction between nonprofit groups they perceived as supporting farmers, such as Ranching for Profit, and those they perceived as aligning with environmental causes, such as the Nature Conservancy, which many farmers described as not trusted, helping explain the limited presence of environmental organizations in the region.) The couple also sought out various public resources, including free consulting offered through the local economic development council, lines of credit through the FSA, and funding for infrastructure such as fencing through the NRCS Environmental Quality Incentives Program. Tim and Tiffany described connections to these farmer networks and public resources as instrumental in their ability to adapt the farm to environmental and market changes—both materially through access to financial and technical assistance and socially by establishing relationships with farmers engaged in similar practices across the country.

Tim and Tiffany's story points to the importance of intergenerational family roots in the region for adapting to changing climatic and market conditions. These family roots eased the cultural pressure of adapting in ways that diverged from dominant local discourses, which include both the practices themselves and how they are discussed. Farmers who stepped outside local norms in how or what they farmed, such as Tim and Tiffany, often employed several strategies. First, they framed these divergent practices in economic terms, at least publicly. While Tim shared his awe of the ecosystem benefits of diversification with me in the privacy of his home, he and Tiffany were careful to tell other farmers how these practices made *financial* sense and gave them more control in a market where many farmers have lost agency. Second, farmers who diverged from local norms often retained some remnant of culturally normative production, as Tim and Tiffany did by keeping some beef cattle in their front pasture. And third, many farmers who were adopting practices or enterprises considered "alternative" sought ways to engage with the local community on the edges or outside of agriculture. For Tim and Tiffany, having a U-pick operation and inviting local schoolchildren to the farm provided an opportunity to be seen as good neighbors who gave back to the community. Other farmers who were adopting alterna-

tive practices volunteered with local charities, sat on school boards, donated food to local community events, and led trash cleanups. Although conventional farmers engaged with these community events, too, those who were adopting alternative practices often emphasized the importance of their civic engagement in interviews and, during my fieldwork, were most often the leaders of these efforts.

CONCLUSION: AS THE RIVERS RUN DRY

Farming has always changed the environment, locally and globally, climatically and politically. Farmers, in turn, constantly navigate and respond to change at various scales. The politics of climate change, negotiated through everyday interactions, resources deployments, and strategic identity performance, end up shaping social and ecological transformation.[48] Farmers and other rural residents express a micropolitics of adaptation through a discourse of practice, communicated in what they do, how they talk about it, and in the land itself.

Within farming households, everyday micropolitical decisions connect the past, present, and future. Multigenerational farming families in Siskiyou consistently shared a love of their land and lifestyle and a hope that their children not only had the option to farm but *wanted* to continue their way of life. To achieve that goal of social reproduction, Susan and Sam and Tim and Tiffany realized they had to change their farms, yet they couched the discourse of change in maintaining the contours of the past for future generations. In the historical context of losing control over their land, inputs, and markets, the threat of losing control over water hits a sensitive nerve.

In Siskiyou County, multigenerational farmers often looked to a small set of newcomer farmers as they adapted. Tim and Tiffany drew inspiration from direct-market farmers as they invested in diversifying practices that built agroecological resilience on their farm and afforded them greater control over market prices and relationships. Sam and Susan, inspired by alfalfa-growing newcomers, invested in additional land and technologies as they diversified their businesses adjacent to farming—such as trucking—while simplifying their farm's ecology.

Water scarcity during the extreme drought period of the 2010s, and high farmland prices in other regions of California, pushed some farmers to move to Siskiyou County, where water, though scarce, was relatively more abun-

dant and less locally restricted and where land values were lower. About a dozen smaller-scale direct-market pastured livestock farmers moved from periurban areas, and a few larger-scale export-oriented alfalfa growers moved their operations from the Central Valley. While ecological diversification enables more nimble responses to future crises, these practices are still considered *alternative* according to locally accepted norms. Although ecological simplification practices retrench reliance on capital-intensive inputs and limit the ability of farming systems to respond to novel crises, these strategies have long been the normative path for US farmers.[49] Even as commodity-growing newcomers drove greater competition for land and water resources, they were often welcomed into traditional farming groups and institutions, whereas direct-market newcomers frequently described exclusion.[50] As different groups advance competing "climate imaginaries," those that take hold tend to align with existing material and cultural interests.[51]

As they changed how they farmed, families in Siskiyou were careful to align discursively with long-asserted rural values and identities. They also strategically managed how their peers read their decisions in the landscape. Tim and Tiffany carefully positioned their adaptations, maintaining visible cattle and hay production in their front fields while adding pastured pigs and U-pick operations. They promoted agriculture by inviting youth to their farm and volunteering for local community efforts to be seen as good neighbors who supported agriculture businesses. Family roots in the region and local political connections enabled them to deviate from local norms and stretch the boundaries of acceptable farming practices while remaining embedded in traditional social networks. They framed ecological diversification in economic terms, emphasizing profit over environmental benefits.

Meanwhile, Sam and Susan projected financial stability through new equipment and investments in farm-adjacent businesses. They positioned themselves as antienvironmentalists in community discourse while quietly transitioning portions of their land to organic production. As neighbors sold their land, Susan and Sam "picked up ground" while asserting they were not greedy or rich, merely hardworking and strategic in helping to position the next generation for success. Neither family was rejecting old ways—they were just complementing them with new ones, couched within long-standing culturally accepted norms: economic efficiency and gain.

Farmers in Siskiyou routinely expressed pride in their knowledge of the land, hard work, and self-sacrifice, to which they attributed their (and

previous generations') persistence. In fact, farmers often described hard work and self-sacrifice not only as what enabled them to persist through crises such as the rivers running dry but as what allowed them to *thrive,* relative to their neighbors (who, it was often implied, did not sacrifice as much or work as hard). In a market society, farmers who have persisted have often done so at the expense of others who have failed.[52] A severe drought may force one farmer to sell their land but allow another to buy it. The micropolitics of adaptation, expressed through farming strategies and their framing, often reflected how farm families were in a competitive power relationship with one another.

Power is not, however, "one individual's domination over others. [It] is never in anybody's hands."[53] Instead, power circulates, exercised through institutions and social practices that categorize people. Normalized in categories, such as family farmers, power does not just control but constructs, producing norms that are reinforced and compel certain practices.[54] Power vested in market institutions and governance arrangements circulates through the normalization of discourse and practice. Family farmers in Northern California, for example, are often compelled to sell their products in limited markets, to frame their adaptation to fit government funding programs, and to talk about climate in ways that reduce the risk of being seen as outsiders. These everyday actions that farmers take to fit in—as family farmers, as rural residents, as good neighbors—can spur divisions between those who benefit and those who lose out.[55]

Narratives that link persistence and success during crises with hard work and sacrifice obscure the underlying realities of who, for example, had inherited title to land and water rights. Sam and Susan and Tiffany and Tim were fortunate. They had friends and family to help in a pinch, reliable income from Susan's and Tiffany's off-farm jobs to cushion the ups and downs of agricultural markets, and land they owned and could borrow against. For white farmers in a context of rural economic decline, performing an idyll rural imaginary can help knit together and sustain the community connections and shared knowledge essential to persistence.[56] But as both the climate and rural communities change, "culturally informed attachments" to a romanticized past can threaten the future.[57]

Neither rejecting nor preserving the past offers a viable path forward. Simplistic mythologies about family farming—as inefficient or virtuous—can be both resisted and leveraged. Multigenerational farmers are both gatekeepers and gatekept. Sam and Susan cherished the land and celebrated

intergenerational persistence while simultaneously buying out other farmers, which they justified as the "American way."[58] Simultaneously, family farmers are rarely the primary beneficiaries of public supports, such as commodity checkoffs, which are implemented in their name.

Family farmers are alternately glorified and vilified, depending on what is convenient for agribusiness. Farmers have become easy targets for the blame of environmental degradation and greenhouse gas emissions that belongs on industrial livestock firms such as Cargill and Tyson Foods, fossil fuel companies including ExxonMobil and Chevron, agrichemical giants such as Bayer and Syngenta, and the political actors who structure the food system to benefit their biggest donors. But as one of Tim and Tiffany's farming neighbors told me, farmers who work the land become scapegoats because "we have an address where you can find me on a map."

Family farmers adapt while carefully negotiating multiple, contradictory imperatives: environmental stewardship versus profit maximization, community solidarity versus individual competition, preserving traditions versus adapting for the future. Successful persistence required a delicate balance, blending old and new practices while managing belonging. Susan and Sam, and Tim and Tiffany, may be representative of farmers in the small valleys of California's northern reaches, but theirs are not the typical firms of American agricultural business.

The history of American agricultural development is incomplete without attention to farmers' relations with the state and how they have changed over time. Many farmers have grown embittered toward the very governments that granted their ancestors water and land through the Homestead Acts, Bureau of Reclamation projects, and state water law. These farmers see today's state and federal governments, not as adapting to new demands and new physical constraints on water due to a changing climate, but as foes who restrict water entitlements. Contemporary political resistance to climate change discourse and action can be traced back through time, as farmers' perception of the state and federal government turned from friend to foe.

CHAPTER 3

From Friend to Foe

"Water is the real gold of the West."
—Siskiyou County Government, Code of the West, 2005

On a crisp November morning in 2019, I met a farmer and several students behind the local high school. It was early, before the school bell rang. We donned tall waders and packed knives, sample bags, and other supplies for the project ahead. For the past two and a half decades, several farmers have been volunteering to survey fish along the Scott River during Chinook salmon spawning season, walking the same sections of river twice a week during the months of October and November (fig. 3). A few farmers, along with a rotating cast of local high school students, have been working with members of the Yurok Tribe to monitor fish populations and collect critical data on their migrations and health. Although the Karuk Tribe has a subsistence fishery, the Yurok Tribe on the California coast has a commercial fishery. Many farmers described production-based value alignment with the Yurok Tribe: "If we can grow cows, we can help grow fish!"

I could see my breath and hear the frosted grass crunch under my feet. We drove to a four-mile stretch of the Scott River that runs through the farmer's ranch, where we would be conducting a fish survey. With tall walking sticks to help us find our footing on the slippery rocks, we began walking downstream, the early morning sun warming our backs. Whenever we spotted salmon, we would take a closer look to see whether the fish was alive or dead—a surprisingly blurry line for spawning salmon whose bodies disintegrate before their hearts stop beating. If the fish was alive, the farmer would record its location and visual appearance. If the fish was dead, one of the high schoolers would scoop up its rotting body with a net. The farmer would then

Fig. 3. A fish monitoring walk during November salmon spawning.

take measurements and record various attributes of the fish, such as its sex and any signs of disease. He would then scrape some slimy scales into a sample bag to send to the Yurok Tribe for analysis, carefully tucking the samples into his vest pocket (fig. 4). Once the dead fish was recorded and sampled, a high schooler would gleefully chop it in half with a machete and drop it back in the river, so it would not be rerecorded on the next fish walk in a few days.

As we waded through water, sometimes chest deep, the farmer explained how he had started doing fish surveys in 1995 to show that fish and agriculture can coexist. With rumors that coho (and later Chinook) might be listed under the Endangered Species Act (ESA), he wanted to document that the fish were spawning in the river that flowed through his ranch. "There are fish in the river, and they are spawning," he said. "Good things are happening and it's happening right where agriculture happens." He also wanted to have legitimacy when talking to environmental groups and agencies and to be able to say, "We farmers are part of conservation and should have a seat at that table, too."

We reached a part of the river with dozens of spawning female Chinook, the conditions just right, their bony tails gleaming like white lace. The farmer

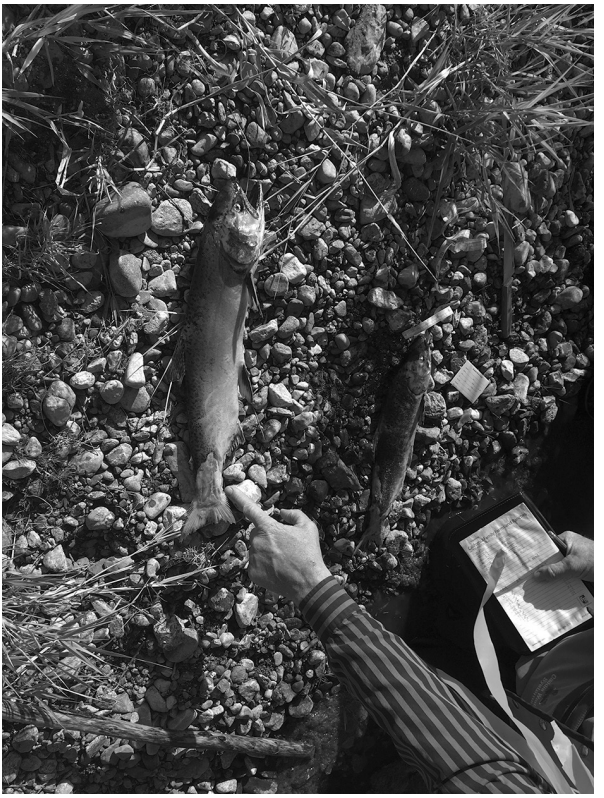

Fig. 4. A farmer collects scales from dead salmon to send to the Yurok Tribe for analysis.

pointed to a hay barn up the bank. About a decade earlier, he explained, a big flood had swept through the valley, and he had used his tractor to move gravel in the river to prevent his barn from washing out. The California Department of Fish and Wildlife, in turn, had threatened him with fines and jail time—charges that were eventually dropped—for disrupting the stream habitat. Now, the farmer said, "This is the hottest spawning bed."

Continuing down the river, the sun warmer and higher in the sky, the farmer described how the conflict in the Klamath River Basin has been portrayed as "farmers versus fish," when it is actually conflict between people. After decades of stalemate, some farmers, Yurok tribal members, and commercial fishers formed what they called the Coalition of the Willing to find

common ground. Some coalition meetings were open, while others were expressly closed to environmental groups and agencies who were seen as adversarial, carrying a history of pitting resources users against each other in the basin. The farmer described how these meetings "feel like there's a hundred elephants around the table and nobody'll touch them because they're too big and too scary." Describing a recent meeting, the farmer said, "It came out that 'We don't necessarily want agriculture to be successful because you stole our land and killed our people.' Good—throw it right on the table. Now let's talk!" He explained how "environmental interests and government agencies are being parasitic on this negative relationship that we have with the tribes, and it turns into an industry—this whole little fight is an industry. [My] goal at the end of the day is to see the users of the resources tell each other the truth, work our stuff out."

Two miles downstream, at about midday, we stopped to eat lunch at the base of a gentle bank topped with sagebrush. As we ate, one of the boys, the son of a local rancher, told me how his dad heard wolves howling recently and said the government had put elk nearby in preparation for a secret release of wolves near ranches to try to drive the ranchers out. Sipping yellow Gatorade, the farmer shook his head at the boy and gently offered an alternative to this conspiratorial theory. He said, "I wish that was the case. But what scares me more is that wolves got here all by themselves."

As we finished eating and set out for the second half of our river stretch, a flock of sandhill cranes flew over us. The farmer paused to show the students how to call to the cranes. The birds called back, delighting us all.

IN-MIGRANTS, WATER, AND THE STATE

Resistance to climate change action and discourse is rooted in cultural and moral commitments developed over time. Rural climate politics today reflect a sense of loss and betrayal that could only emerge from a history of gain and trust. How particular rural identities formed, and certain values gained traction, is, at least in part, a story of changing relationships between farmers and government. Although state intervention secured white farmers' access to land and water, many of these farmers now view state and federal authorities as adversaries. Over the last century, environmental conflicts became "moments of politicization," during which everyday micropolitics were contested, as many farmers' relationship with the state shifted from friend to foe.[1]

Multigenerational white farmers and ranchers, especially the descendants of early settlers to the region of primarily English, Irish, Scottish, Czech, and German diasporas, still claim and exercise significant political and cultural power in Siskiyou County. For more than a century the US and California governments facilitated white farmers' access to land and water. There followed a period of widespread privatization, unsustainable resource management, environmental movements, and economic crises in the second half of twentieth century that laid the groundwork for change. The twenty-first century brought more intense and persistent droughts, and farmers in Siskiyou County began experiencing state-enforced restrictions on what had previously been nearly unfettered resource entitlements, breeding deep resentments, conflict, and hostility.

1840s to 1940s: Homestead Acts and Japanese Internment

The region's first white colonizing settlers were intruders to a landscape of complex political and ecological relationships. The upper Klamath Basin was home to the Modoc and Klamath Tribes and the lower basin to the Yurok, Hoopa, and Karuk Tribes. In the violent enclosure process that created an irrigated landscape for white settler farmers, the federal government worked tirelessly to dispossess Indigenous people from their land, water, and livelihoods. These crucial histories, and their contemporary realities, have been described in detail elsewhere.[2] Given the scope of the colonizing project, I will not attempt to summarize this brutal history or the powerful resistance and resilience efforts that shape contemporary landscapes and politics. Instead, I focus this chapter on those in-migrants to the region.

In the late 1840s, settlers discovered gold in Siskiyou County, bringing California Gold Rush–era prospectors to the area. Gold rushers were the first non-Indigenous people to claim permanent occupation of Indigenous land in the region. Gold rush towns were often erected along the banks of waterways, with mining activities carved into riparian ecosystems and nearby hillsides. Upper Soda Springs, for example, in what is today the town of Dunsmuir at the southern end of Shasta Valley, was a large gold-mining area on a Shastan-speaking Okwanuchu salmon fishing camp, perched above the banks of the Sacramento River, not far from its headwaters near Mount Shasta.[3]

Early in-migrants to Siskiyou County were not all white, and conceptions of whiteness have changed significantly over time.[4] Miners came to

California from around the globe, including those of Chinese descent who faced extreme anti-Asian racism. Patterns of racial bias, particularly against Asian and Asian American in-migrants, persist into the present and in 2022 prompted a class action lawsuit against the county government for patterns of racial bias in policing.[5] That lawsuit cites a local newspaper article about Chinese miners from 1879, which stated that "all countries having been troubled with swarms of Chinamen, have become disgusted with them, and regret the day that any of them were allowed to set foot on their shores. Where only a few arrive, their influence is scarcely felt, but where they come in great numbers, as on this coast, they degrade labor as well as morality and decency, besides breeding disease and hog like uncleanliness."[6] The lawsuit pairs this text from more than a century ago with statements from a board of supervisors meeting held in 2021 in which white residents made remarkably similar comments about Hmong farmers in the region: "It's a cesspool waiting for an outbreak of disease and other health issues. . . . They come, they destroy, they plunder, and they leave their garbage behind for us to clean up. . . . Please use everything necessary to get rid of the cancer that has infected our community."[7] Though the precise contours have changed, more than a century and a half of local, state, and federal government efforts have systematically racialized resource access, especially through evolving water policy.

The newly formed state government of California had little governing capacity in the mid-nineteenth century, and "miners kept a semblance of order among themselves by developing and enforcing customs for the allocation of resources."[8] One of those customs was that the first person to dam or divert water had "senior" claims to it, and those arriving later might have to relinquish their water in times of scarcity to preserve access for those with more senior claims. This system of prior appropriation became state law in California and eighteen other Western states.[9] Inspired by the collectivism of Mormons in Utah, California also adopted the principle of "beneficial use" in its water law, which requires that those with appropriative water rights continually use their water for purposes deemed by the state to be beneficial, such as irrigation, or risk losing their right to that water. Before this legal innovation, and in many other parts of the country, a riparian rights system was in place. This Anglo-American common law, established in the context of East Coast dams and mills, designated equal water access among all nonconsumptive rights holders (generally those who owned land adjacent to waterways). The doctrine of prior appropriation diverged sharply from pre-

vious precedent, creating a hierarchy of water rights holders and a scramble to use, and therefore legally claim, as much water as possible.

Gold mining was also key to the second major legal innovation that characterizes California's water law, which is immunity from federal intervention. The General Mining Law of 1866 and the Desert Land Act of 1877 together confirmed existing uses of public resources and opened new ones for mining claims, specifying that water not yet appropriated "be held free for the appropriation and use of the public for irrigation, mining and manufacturing."[10] Coupled with the later passage of the Reclamation Act in 1902, with its acceptance of the doctrine of prior appropriation, this language was interpreted and reinterpreted by both Congress and the Supreme Court as freedom for states to use whatever water rights system they wanted and a "promise never to assert federal water rights."[11]

Although California could determine its own water rights system, the federal government still owned much of the state's land area in the second half of the nineteenth century, land that was suited to livestock grazing. Ranchers had arrived with miners and trappers in the middle of the nineteenth century. As an extensive land use, ranching facilitated claims to large swaths of land with relatively little labor.[12] In a remote area with limited public infrastructure before the turn of the twentieth century, the fact that cattle could walk themselves to markets was also important. In addition, mining, trapping, ranching, and later timber harvesting (which became economically feasible with the construction of roads and railways) often fit into a shifting web of seasonal work for farming families, remnants of which persisted through much of the twentieth century.

While the newly formed state of California quickly passed its first homesteading legislation in the spring of 1851, granting land to white men who had come to Siskiyou for gold, most of the state's land was still in federal ownership.[13] The federal government was eager to transfer its land and settle the region with Jeffersonian yeoman farmers, which it was able to do beginning in 1862 with the passage of the first federal Homestead Act.[14] Homesteaders formed two distinct waves of in-migrants to different parts of Siskiyou County. The first wave was in the second half of the nineteenth century through the turn of the century. Many early homesteaders in the region were granted land in the Scott and Shasta Valleys where cold-water streams and mountain snowmelt provided accessible water for irrigation. Still referred to as pioneers by many residents, they raised cattle and grew

dryland grain for market, along with diverse crops and livestock for household consumption. These early homestead recipients often squatted on the public land first, then submitted a ten-dollar filing fee, and later received a patent for the land after building a house and living on the land for five years.[15] With minimal irrigation infrastructure, lower basin homesteaders often flood irrigated the valley bottoms to grow hay for winter, herding their cattle to mountain pastures to forage during warmer months.[16]

Although the federal government abdicated responsibility to states to determine their own water rights systems, it provided enormous financial and institutional resources to develop irrigation systems with the explicit goal of settling the West with white homesteaders.[17] Before the turn of the twentieth century, private companies had developed limited irrigation infrastructure.[18] Often speculative and unable to deliver the water they promised, many of these companies went out of business in the difficult years of the 1880s' intense droughts and the economic downturns in both the mining and cattle markets in the 1890s.[19]

Partly in response to this difficult period for white settlers and the private irrigation industry, the federal government assumed responsibility for engineering and constructing large-scale water projects in the desert with Congress's passage of the Reclamation Act in 1902.[20] One of the first and largest reclamation projects was the Klamath Project, which permanently dedicated nearly all of the upper basin's water to agriculture with little regard for other stakeholders. Inspired by Progressive Era utopian visions of a planned private society, ideas of exploiting nature as biblically preordained, and enthusiasm for the seemingly limitless possibilities of professionalized science and engineering, the Klamath Project unfolded quickly and at a massive scale.[21]

Approved and funded in May 1905, the project subsumed the pre-1909 individual landowner water rights and several privately built canal systems that already irrigated approximately thirteen thousand acres.[22] One of the expressly stated goals of the Klamath Project was to reclaim the land beneath the Tule Lakes for homesteading.[23] In the dry period of the 1880s, the Tule Lakes had receded to about sixty thousand acres, and farming activities crept onto the rich soil of the exposed lakebed. The unusually wet period at the beginning of the twentieth century increased the lake size to approximately one hundred thousand acres. Farm children took pedal boats to school, and farmers pressured the federal government to help manage the excess water.[24]

Construction of canals, dams, pumping plants, and drainage systems for the Klamath Project began in 1906, with irrigation water deliveries provided to farmers the following May, just in time for the growing season.[25] Tule Lake, on the Siskiyou side of the Oregon and California border, began to drain with the construction of a series of dams in 1910–12.[26] As the lake receded and irrigation infrastructure was constructed, the land was temporarily leased to local ranchers for grazing.[27] As the Klamath Project drained the lake, the Reclamation Service (later renamed the Bureau of Reclamation) hosted a series of thirteen lottery draws to give away 160-acre or smaller parcels, complete with irrigation works. In 1917, thirty-five names were drawn from 180 applicants to receive a piece of the first 3,000 acres of newly exposed land; nearly all of these homesteaders were already living in Northern California and southern Oregon.[28] In 1922, returning World War I veterans were given homestead lottery priority, and in 1927, a board was established to examine applicants based on finances, experience, and character.[29]

In 1946, only World War II veterans with farming experience and at least two thousand dollars in assets were eligible to enter. Eighty-six "fantastically lucky veterans" were drawn from a pickle jar containing the names of 1,305 qualified lottery entrants out of the 15,000 applicants (figs. 5, 6).[30] The winners moved from across the country to Tulelake to claim the total of 7,500 acres awarded in the lottery in 1946.[31] In 1949, the Bureau of Reclamation hosted its last homestead drawing in the Lower 48 states in Tulelake: 5,000 people applied for 86 parcels. Across the lotteries, about 47,000 acres of exposed lakebed were divided into about 650 homestead units.[32] Farmers in Tulelake, many of them ethnically Czech, primarily grew potatoes, onions, barley and other cereal crops, and most of the nation's horseradish.[33] The produce packing sheds provided seasonal work, especially for women.

As the Tule Lakes drained, newly exposed lakebed was slated for homesteads but still owned by the federal government. This land became the site of the United States' largest internment camp in World War II. A small plaque along the roadway now reads: "Tule Lake was one of ten concentration camps established during World War II to incarcerate 110,000 persons of Japanese ancestry, of whom the majority were American citizens, behind barbed wires and guard towers without charge, trial, or establishment of guilt." From 1942 to 1946 the Tule Lake War Relocation Center imprisoned people of Japanese ancestry. At its height, more than eighteen thousand people were imprisoned in the barracks at Tulelake. Of the ten euphemistically

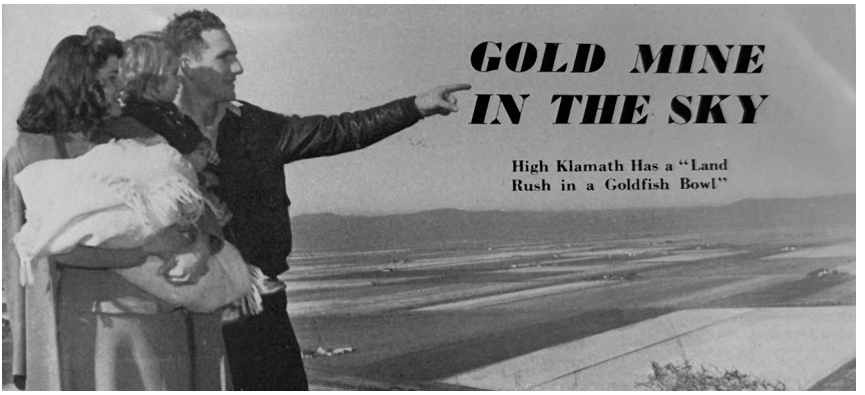

Fig. 5. Homestead winner and World War II veteran Philip Krizo and his wife, Barbara, overlooking Tulelake in 1946.

Fig. 6. A similar overlook of Tulelake in 2019.

named "relocation centers" that the War Relocation Authority constructed, three were on reclamation projects.[34] These sites were chosen because they were already owned by the federal government and were accessible by rail or roads developed for their construction, and they were in remote and desolate areas far from coasts and outside of exclusion zones. Importantly, reclamation projects had irrigation infrastructure, which was necessary for those imprisoned who were "expected to produce vegetables, grain, meat, and other agricultural products" (figs. 7, 8).[35]

Fig. 7. Evacuee farmers filling sacks with newly dug potatoes at the Tule Lake Relocation Center in November 1942.

Fig. 8. Evacuees feeding hogs from a garbage truck at the Tule Lake Relocation Center in November 1942.

Much has been written about reclamation and the federal government's plan to create an irrigated agricultural Eden for white farmers in the American West.[36] Predicated on formal and ongoing dispossession of Indigenous people from their land and water resources, the beneficiaries of these projects were almost exclusively white. Geographer Robert Wilson argues that "the development of irrigated homesteads in the Klamath Basin was a racial project in which the federal government constructed an agrarian landscape for white settlers . . . [and] facilitated the spatial separation of whites and other groups in the process helping construct and reify racial categories."[37]

Explicit land regulations, such as California's Alien Land Law of 1913, prohibited Asian immigrants and later their children from owning and even leasing land in California during the period of homestead giveaways in Tulelake. Requirements such as showing a bank statement with a certain amount of cash and character evaluations of homestead applicants systematically funneled resources to white farmers. Moreover, local white residents adamantly asserted their claim to land and water in explicitly racial terms. Worried that Japanese prisoners might stay in the region to farm after the war, a local group wrote in April 1942 that "the Tule Lake area was settled and developed by Caucasians and it would be obviously unfair to deprive them of rich farm land in favor of the Japanese."[38] The editor of the largest local newspaper at the time demanded that "the local authorities commit themselves NOW to the removal of Japanese from this district when the emergency is over. This country has been developed by white citizens, many of them native-born. These people have a right to demand that the government abstain from a policy which will change the character of the population of this territory."[39]

Indeed, when the internment camp closed in March 1946, former imprisoned internees seemed to disappear, at least from the perspective of the white people who remained and claimed the land and homes of those who had been imprisoned.[40] As the December 1946 homestead winners waited to move onto their new land, many lived in the empty camp. The Bureau of Reclamation then offered homestead winners up to two barracks for a hundred dollars; many homesteaders eagerly accepted this offer and moved onto their new plots. *The Reclamation Era,* a national magazine published by the Bureau of Reclamation (fig. 9), distributed plans for renovating barracks into homestead houses.[41] Many of the farmers I met in Tulelake still live in homes built from barracks.

Besides the barracks-turned-homesteads, there is remarkably little left of the Tule Lake Relocation Center. Only the camp prison remains at its

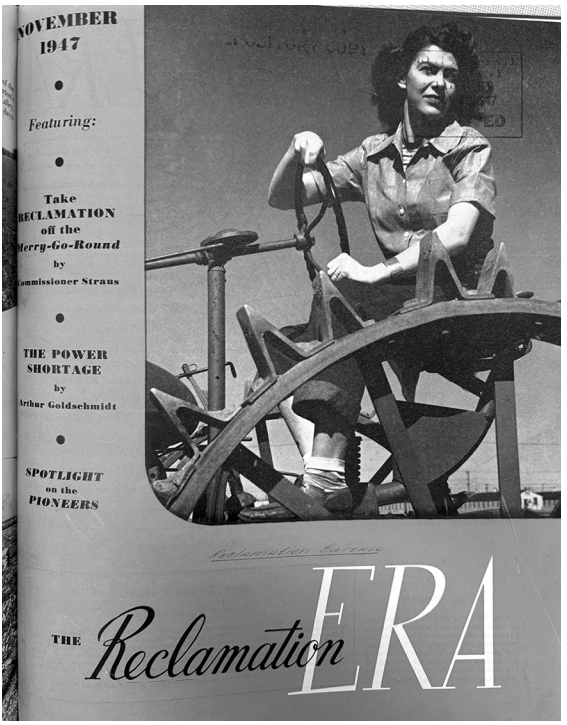

Fig. 9. Internment camp barracks visible in the background behind Eleanor Bolesta, who served in the US Navy's Volunteer Service and was featured on *The Reclamation Era* cover in November 1947.

original location. In a dark irony, the internment camp has been replaced by another set of barracks surrounded by barbed wire. These, too, segregate people deemed outsiders from the primarily white farmers of Tulelake, making clear that the people inside the fence are only temporary in this place, only there as seasonal workers with few rights and no claim to a space reclaimed for white farmers. Today, housing for farmworkers in the United States on temporary H-2A guestworker visas surrounds the old internment camp prison (figs. 10, 11).[42] Racializing ideas find material representation in the landscape of small, shared farmworker homes enclosed by chain-link fences topped with barbed wire. Although few farmers in the Scott and Shasta Valleys rely on migrant labor, some farms in Tulelake and Butte Valley do. These increasingly large and consolidated row-crop farms require more labor than the predominantly cow/calf ranches or the smaller-scale farms to the west.

Tulelake farmers, most of them white men, continue to exercise the political power they hold as family farmers, many of them descendants of military

Fig. 10. A view down one of the streets of the Tule Lake Relocation Center in November 1942.

Fig. 11. Farmworker housing for H2A guest worker visa holders near the former Tule Lake Relocation Center in 2019.

veterans who transformed a once giant and wild marsh into an Eden of agricultural industry. The Klamath Project remains the most idealized Bureau of Reclamation project—many farms are still family owned and operated, aligning with the bureau's original discourse and vision of creating a landscape of white-owned family farms. Yet much of the labor here is done by Latino farmworkers who are often invisible in the landscape.[43]

Across the West, reclamation projects were initiated and supported with Jeffersonian rhetoric championing family farms. These expansive public projects, rife with racialized notions of social-environmental order, garnered broad public appeal in their promise to feed America through the hard work of small family farmers. The Bureau of Reclamation did not enforce farm size limits, however, and large agribusiness firms became the greatest beneficiaries of these publicly funded projects.[44] Yet farms in Siskiyou, including those on the Klamath Project, remained primarily family operated and relatively small, in contrast to many Reclamation Era beneficiaries. Legal scholars Holly Doremus and Dan Tarlock suggest that this relative alignment with the Jeffersonian vision of reclamation helps explain the fervor of support for the Klamath Project and the outsized political power that white farmers in the Klamath Basin have maintained, despite the relatively few people who are still engaged in farming.[45]

An irrigation water shutoff in 2001 laid bare a central contradiction of government resistance—a deep reliance, even trust, in the very government institutions from which many claimed rhetorical independence. In 2001, Eleanor Bolesta, the first woman awarded a homestead in the region, who was by then in her seventies, told reporters, "Even if we get our water back, things will never be as they were. . . . Even the good relationships between neighbors have been harmed past reconciliation. I have been betrayed by those I trusted. I am angry."[46] But that betrayal, made sharper by decades of resource entitlement and privileged access to land and water, did not happen overnight.

1950s to 2000: Resource Entitlements Fray and Farm Crises Build

Farmers in Tulelake are often called project farmers, while those in Siskiyou's other valleys are called off-project farmers, since they do not rely on land and water from the Klamath Project. Although both sets of farmers generally hold senior water rights, their water sources are distinct. The project farmers in Tulelake receive highly subsidized water from the Tulelake Irrigation District, which has been operating since 1952, as well as subsidized power to pump that water. In the 1950s, the California Oregon Power Company (COPCO) proposed to build two dams on the Klamath River in the midbasin. Initially, local farmers were hesitant to support construction of the dams. Siskiyou farmers expressed concern that the proposed dams would benefit urban communities at the expense of rural ones and that they would make

the region's water a target for export to thirsty agribusinesses in California's Central Valley.[47] Construction of the dams moved forward, however, after Congress approved the Klamath River Basin Compact in 1957, which prohibited most diversions of that water outside the basin. The compact also legally entitled project farmers to water allocations each year, as well as cheap power from the hydroelectric dams.

Farmers in the Shasta and Scott Valleys would not directly benefit from COPCO's dams, but they did not actively oppose the dams that were favored by project farmers. The construction of the dams and corresponding ecological decline would, however, come back to bite farmers across Siskiyou's valleys. The dams ended the coho and Chinook salmon migrations to the upper Klamath River Basin. The water behind the dams in the lakes grew stagnant and unhealthy for shortnose and Lost River suckerfish that need cool, well-oxygenated water. The Klamath River also became warmer and less hospitable to juvenile salmon. Water across the Klamath Basin became susceptible to toxic algal blooms that began causing attention-grabbing fish kills.[48]

Another factor that contributed to water quality decline in the basin was increasingly nutrient-rich agricultural runoff as World War II technological innovations were applied to farming. New synthetic fertilizers, pesticides, and herbicides could be spread over vast areas with repurposed machinery from the war effort.[49] As farmers across the United States struggled to adapt to a rapidly globalizing market, agribusiness titans such as Cargill exploited opportunities by aggressively acquiring smaller firms across supply networks and geographies.[50] Farmers were left with fewer market options to buy inputs and sell their products. As large firms concentrated market power, they could buy favor with elected officials through campaign donations and lobbying efforts, and they often ignored or circumvented environmental regulations.[51] During the postwar period, New Deal programs that had helped preserve soils and fragile ecosystems, limit production, and maintain farm-gate prices eroded under the Eisenhower and Nixon administrations.[52]

The federal government helped create new markets for America's agricultural products. Food was processed into various durable goods, fed to livestock, and became a political tool through international aid programs.[53] Agricultural overproduction helped shift global hegemonic power to the United States, and farmers were asked to grow even more by enlarging

their operations and adopting technologies that enhanced their efficiency.[54] Farmers met this call to a spectacular degree, increasing production rapidly.

As production continued to expand, the price of commodities such as grain began to drop.[55] Project farmers, with their reliable irrigation, transitioned to row crops, especially "chippers," potatoes for the potato chip market. But many farmers in the Shasta and Scott Valleys still grew mostly dryland grain (fig. 12). It soon cost these farmers more to ship their grain than they could sell it for. Many farmers struggled to transition their farms to the next generation, and the 1950s and 1960s brought the sale of some of Shasta Valley's largest dryland grain farms.[56]

For the farmers who were able to hold onto their land through grain price volatility (including some who expanded as their neighbors sold), the 1970s brought a boom in irrigation to the Shasta and Scott Valleys.[57] With global food shortages and aggressive US efforts to expand agricultural exports in the early 1970s, the USDA's Farmers Home Administration (FmHA; later renamed the Farm Service Agency) encouraged farmers to invest and expand production.[58] With major droughts in the mid-1970s, many off-project farmers in Siskiyou were eager to "take nature out of agriculture," and the FmHA was there to provide low-interest loans and technical assistance to install private irrigation infrastructure.[59] Though these projects had the appearance of being private (and certainly the primary beneficiaries were), the USDA programs that funded them were a continuation of the massive public expenditures that reclaimed the desert as a white agrarian landscape.

Farmers in the Shasta and Scott Valleys described how their families had taken advantage of the FmHA programs of the 1970s to dig deeper wells, level fields, and install flood irrigation or sprinkler systems, taking on low-interest debt as they transitioned their farms farther away from dryland grains. Farmers in Siskiyou were especially eager to install wells and irrigation systems on the heels of the driest years yet in California's recorded history in 1976–77.[60] One rancher described how his father had been employed by the FmHA in the 1970s and worked with farmers across the county to install as many wells and wheel line irrigation systems as possible. (Since the 2010s, a different USDA agency, the Natural Resources Conservation Service, or NRCS, had been funding many of those same farmers to replace wheel lines with more water-efficient center pivot irrigation systems.)

With more irrigation, farmers could grow more grain. The federal government managed markets through protectionist policies that supported US

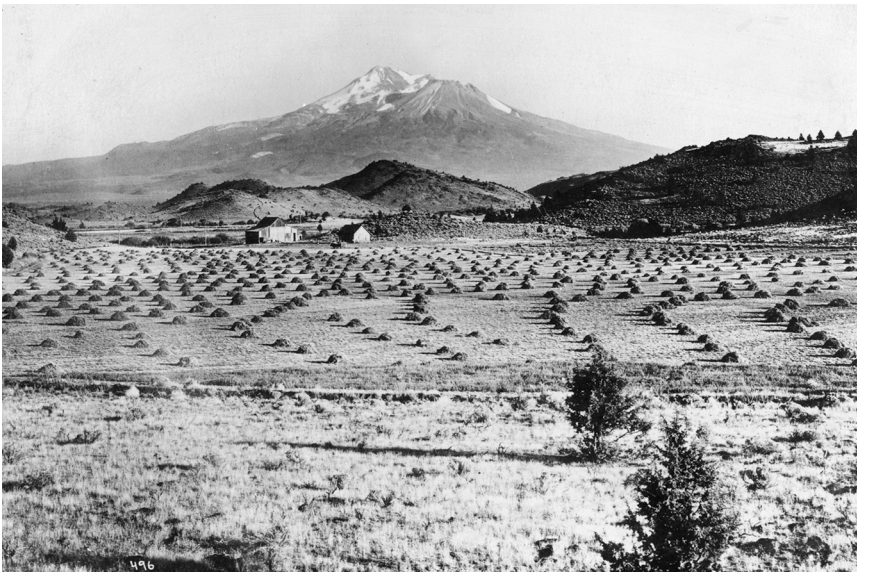

Fig. 12. Dryland grain production in front of Mount Shasta at the turn of the twentieth century with freshly harvested grain mounds ready to be thrashed.

farmers, restricted imports, and facilitated exports to new markets, especially the Soviet Union.[61] But inflation prompted the Federal Reserve to raise interest rates in 1979, which threatened a crisis for farmers who had taken on substantial debt to grow their operations. Then, in January 1980, President Jimmy Carter imposed a grain embargo on the Soviet Union following its invasion of Afghanistan. Without the Soviet Union's market for grain, prices plummeted. With low prices and interest rates climbing to nearly 19 percent, US farmers were in full-tilt crisis.[62] Younger farmers, whom the FmHA had especially targeted for lending, were in an especially difficult position.[63] One Siskiyou farmer described the generation that left agriculture in the eighties as the "lost generation" who would now be nearing retirement and ready to pass the farm on to their children. A seventy-seven-year-old cattle rancher, whose grandfather had migrated to the region from Ireland in the 1870s in search of gold, described his experience as a twenty-eight-year-old farmer who nearly went bankrupt in the 1980s. He had borrowed a hundred thousand dollars to build his ranch business and add irrigated grain crops, but then interest rates jumped. "Even back then, 150 pair [of cow/calves] wasn't

enough to make a living on at 18 percent [interest per year]," he explained. To reduce his loan principal to twenty thousand dollars, he sold all his cows. His wife started selling insurance to help the family cope. Nearly forty years later, her off-farm wage was "still paying off the ranch."

The late 1970s and 1980s was an especially rapid period of "legal and policy changes driven by a radical laissez-faire ideology."[64] Reagan-era market liberalization efforts—characterized by deregulation, reduced corporate taxes, and more limited government spending on social services—hit hard in rural communities, including Siskiyou. The pain of debt and rocketing interest rates was made worse by the gutting of rural institutions. Siskiyou County was not immune to the closures of community banks, schools, and hospitals that swept across the United States in the Reagan era and has continued into the present.[65] Older residents of Tulelake also described the closure of grocery stores, movie theaters, and restaurants that had served as community gathering places, a trend that only intensified as farms grew in size and dropped in number.

An older cattle rancher said, "When I was growing up all of these small ranches could make a living, albeit not a great one, but they could all make a living. That all changed in the 1970s and 1980s to where you had to get bigger, or you had to get out." A crop farmer similarly reflected, "It's all about consolidation. Those fifty-five- and forty-five-acre homesteads—now you better have a thousand acres to start with. . . . Their families have bought their neighbor, and bought their neighbor's neighbor, and those forty-five-acre homesteads are now a thousand-acre farms. And some of them way bigger than that."

Farm consolidation not only changed the character of small towns like Tulelake but also changed the structure of the farms that remained, and what they provided for families and communities. Many older farmers recalled raising multiple breeds and species of livestock and growing a range of crops in their childhoods and early farming careers. In their memories, subsistence gardens and livestock for family consumption were common farm features, and local grocers often carried produce and meat from nearby farms. Through the late 1970s and 1980s, fewer and fewer families farmed for their own subsistence, becoming increasingly reliant on markets to put food on the table. By the time I visited Tulelake in 2019, there was nowhere that sold food grown on the thousands of acres of farmland surrounding the town, the grocery store was long closed, and just three convenience stores

remained that sold food at all, mostly packaged and shelf stable.[66] Farmers I spoke to often described the region as economically "depressed" (figs. 13, 14).

Many farmers also described the 1980s as a time when the federal government began to shift from framing farmers as heroes to blaming them for problems, especially environmental pollution and habitat degradation. For a generation of farmers who had risen to the government's call to plant "from fencerow to fencerow" for the sake of their nation, only to be knocked back by economic policy and trade wars, being demonized for the ecological consequences of their efforts stung. A sense of loss, even being under siege, began to take hold, alongside a resilient pride. "The one thing I know," an older farmer told me, "is eventually, someday, there won't be too many cans of beans on the shelf and then they're going to wonder what the hell happened to all the farmers."

On the heels of the farm crisis in the 1980s, the 1990s saw the near-total collapse of the local timber industry, as well as a sharp decline in the potato market. Sawmills in Shasta and Scott Valley and potato packing sheds in Tulelake disappeared nearly overnight. These farm-adjacent industries had been a stopgap for farm families, enabling them to detour from on-farm work to generate incomes seasonally and during hard times.[67]

Though locally devastating to the Tulelake economy, farmers attributed the collapse of the potato market not to changing economic policy but instead to consumer choice to eat fewer carbohydrate-rich foods. Perhaps part of why the collapse of the potato market was met with little resistance or hostility is that those who lost their jobs sorting potatoes in local packing sheds were primarily women. Their husbands, identifying as the farmers in the family, could transition to growing other crops such as mint, horseradish, and onions, which did not require the labor-intensive sorting and packing that had employed local women. But the collapse of the timber industry, which employed mostly men, built a resentment that continues to echo resoundingly. Farmers and ranchers almost universally attributed the collapse of the timber industry and the closing of the local sawmills to a single policy decision: the listing of the northern spotted owl under the Endangered Species Act in 1990.[68]

Certainly the northern spotted owl ESA listing was important, but it was not the only factor that busted the region's timber boom of the twentieth century.[69] By the 1990s, the price of timber had already declined and policymakers realized that the state did not need to be the farmer of forests;

Fig. 13. After the collapse of the potato market in Tulelake, packing sheds closed but their signs remain.

Fig. 14. Abandoned storefronts in the Scott River Valley.

logging could be privatized.[70] The newly privatized industry consolidated quickly, leaving little room for independent loggers, skidders, and sawmills that had previously diversified farmer incomes. The industry had also depleted the region's old-growth ponderosa pines, the trees that the local sawmills had been designed to process. With second-growth timber not yet

ready for harvest and the constraints of the Northwest Forest Plan (created to protect the northern spotted owl), the timber industry in Siskiyou and much of the region nearly disappeared.

The demise of the timber industry meant that farmers lost not only access to income but also a type of work that reinforced rugged, masculine identities. Multiple farmers described how the loss of these jobs meant the loss of pride and integrity. Available jobs in the region shifted from timber to government work, which farmers resented as their families increasingly relied on public-sector employment and assistance. As one farmer phrased it, "A lot of people are sitting around their homes collecting some kind of government check for welfare or whatever. And there's no incentive for work because there isn't any work to speak of. If you don't own a ranch, the only other job is working for the county, forest service, or state or the feds."

As timber jobs and farms dried up, nonagricultural water users, including recreational and commercial fishing communities in the lower basin, tribal communities up and downstream, and advocates for the ecosystem itself, began asserting legal claims to water. After decades of unbridled agricultural water use in the Klamath Basin, a series of legal changes created opportunities for other stakeholders to challenge assumptions of agriculture's supremacy.

The 2000s: Water Wars and Government Betrayal

In the 1970s, as the Farmers Home Administration facilitated the expansion of private irrigation infrastructure and farm consolidation quickened, the federal government also passed a series of landmark laws that established environmental protection as a legal obligation for federal agencies managing natural resources. These groundbreaking laws endorsed the controversial concept that humans might need to constrain their resource demands to preserve environmental functioning. The Endangered Species Act of 1973 notably required conservation measures from all federal agencies, including those previously focused solely on development, such as the Bureau of Reclamation.[71]

The state has long treated agriculture exceptionally, both providing extraordinary levels of public support and exempting agriculture from labor and environmental standards that apply to other industries.[72] Agriculture was exempt from many of the environmental protections passed in the 1970s, such as the Clean Water Act's channelized discharge permits, which other industries now needed, but irrigation return flows did not.[73] Yet the ESA

was unique—it did not provide exceptions that agricultural producers had come to expect from other environmental laws. In their legal history of water policy in the Klamath Basin, Doremus and Tarlock argue that environmental protection through the ESA "came to the Klamath as a means to another end: the preservation of Indian tribal cultures in the face of a history of annihilation, dismemberment, and misguided efforts to impose whiteness."[74]

Fish populations declined sharply in the Klamath Basin through the second half of the twentieth century. By the end of the century, agricultural water use exceeded supply seven out of ten years.[75] Furthermore, nutrient-rich agricultural runoff and waterway infrastructure such as dams made it difficult if not impossible for salmon and other migrating fish to spawn. In 1988, the Klamath tribes, along with environmental groups and state agencies, successfully petitioned the federal government to list two culturally critical fish species as endangered. Koptu and C'waam, or shortnose and Lost River suckerfish, were large, slow-growing, and long-lived lake fish that had been historically important to Indigenous diets. These once abundant fish became scarce after the Bureau of Reclamation's drainage of the Everglades of the West, as the shallow lake system of the upper basin was sometimes called.[76]

With the suckerfish listings, project farmers saw small reductions in their water deliveries beginning in 1988. These irrigation delivery reductions were minimal, partly because "the irrigators enthusiastically embraced the theory that crisis can move policy" and filed their own lawsuits against government water restrictions.[77] In 1997, for example, irrigators successfully brought a citizen lawsuit case to the Supreme Court to continue irrigating despite limitations proposed under the ESA.[78]

The Yurok, Hoopa, Karuk, and Klamath Tribes, as well as conservation advocates, continued to work for environmental protections and tribal rights in the Klamath. Beginning in 1997, coho were listed on the Threatened and Endangered Species list under the ESA. By 1999, all of the rivers that salmon could still access in the Klamath Basin had been listed as critical habitat. Farmers in Siskiyou County were now squarely in the middle between endangered suckerfish in the upper basin lakes and endangered salmon in the lower basin rivers. With ESA law requiring water for each of those fish species up and down river, the extremely dry winter of 2000–2001 spelled disaster.[79]

On April 6, 2001, the Department of the Interior announced that there would be no water deliveries that year to farmers in the Klamath Project,

based on biological opinions issued by US Fish and Wildlife and the National Marine Fisheries Service.[80] After nearly a century of entrenched water entitlements, tensions that had been building for decades exploded. When the federal government took the unprecedented action of turning the Klamath Project irrigation water off, the approximately 1,400 project farm families faced the harsh reality that societal goals had evolved. By prioritizing other water users alongside farmers, the federal government's power to undermine agricultural livelihoods became clear, leaving project farmers with dry fields and a deep sense of betrayal.

On May 7, 2001, a month after the federal government's decision to shut off irrigation water to over 240,000 acres of farmland in the Klamath Basin Project, thousands of farmers and other residents from across the region staged a tractor rally and bucket brigade in nearby Klamath Falls, Oregon (fig. 15).[81] Attendees wore blue and black ribbons to represent water and its loss and, as the director of the Siskiyou County Farm Bureau said, the "colors also illustrate the way most of the people in the Klamath Basin feel, bruised and beat up."[82] Forming a line over a mile long, people passed fifty buckets of water from hand to hand. Dipped from Lake Ewauna right above one of the dams on the Klamath River, the water was dumped ceremoniously in an irrigation canal. One farmer, a veteran and homestead recipient, gave a speech to the crowd, saying, "In the 1940s our government's word was as good as gold. Today our government's word is meaningless. . . . I stand here today to say that our government has betrayed us."[83]

People in attendance described early protests such as the bucket brigade as having a festive atmosphere. Attendees brought their families, picnics, and grills and spent time chatting with neighbors. Many thought the water would turn on in time for planting, maybe delayed by a few weeks.

But the water shutoff in the Klamath Basin soon became a "problem shed," in which antigovernment activists from across the West focused their frustrations and anxieties.[84] Protests became increasingly volatile, angry, and lawless. A far-right organization called People's Rights, founded by militant activist Ammon Bundy, worked with two Klamath Project farmers to purchase a small parcel of land next to the irrigation headgates and set up a round-the-clock occupation, creating a playbook for the infamous Malheur National Wildlife Refuge standoff that Bundy would later lead in 2016.[85] In July, a water pipe was illegally placed to bypass the headgates, which were themselves repeatedly forced open by men with crowbars and torches,

Fig. 15. Passing water from hand to hand during the Bucket Brigade in protest of federal irrigation restrictions on May 7, 2001.

letting water flow into the irrigation canals.[86] The local sheriff refused to intervene or prosecute those who had taken matters into their own hands, writing, "I'm not going to be party to enforcing a federal law on federal property that is destructive to the entire community I represent."[87] The sheriff even joined the People's Rights occupation adjacent to the headgates.[88] With local law enforcement's refusal to enforce the law, the federal government sent FBI agents and federal marshals to guard the irrigation headgates. In late July, the federal government released several small allocations of irrigation water (the interior secretary was able to locate an accounting error in the region's water budget), but when those deliveries stopped, tensions redoubled.

A country music artist from Georgia saw the news coverage of the water shutoffs and protests and wrote a song for the farmers of the Klamath Basin "to let them know that they are not alone in this battle and that there are many others across this nation who feel there [sic] pain and anger."[89] The song, titled "Kill the Land," begins with a description of selling the family homestead, "takin' down the photographs . . . sell it off a piece at a time . . . that's a dollar and that's a dime."[90] As fiddles play, the chorus belts:

> Leaving this place I called home for so long.
> Seven generations come and gone.
> I wonder if they'll sell or if they'll burn it to the ground.
> I never thought I'd see the day my country would kill the land.

One of the verses captured the desperation, anger, and blame that many farmers expressed:

> What am I supposed to do? I didn't have much time for school.
> My daddy taught me what he knew and that was how to farm this land.
> The politicians and the eco-freaks, they think they know what's best to see.
> I guess their schools forgot one thing, without water the crops don't grow.[91]

In late August 2001, protesters staged a Convoy of Tears in Klamath Falls. Convoys of pickups and tractors poured into the Klamath Basin from half a dozen Western states, some with canned food donations and deliveries of livestock feed.[92] One man from Montana announced that he was going to bring a ten-foot-tall green swastika that he was planning to burn on arrival, saying, "People have to realize this green movement is based on Nazism."[93] One attendee, part of a convoy from Malibu Beach, California, summarized a common sentiment when he told reporters, "Cutting off water is the same as legislating you out of doing anything with your land."[94] A local mint and cattle farmer summarized the stakes, saying: "A lot of people are right on the edge of bankruptcy."[95]

Some leaders of the tribes implored protesters from outside the community not to fan the flames of discontent, but to little avail.[96] Others embraced the national spotlight and opportunity to draw attention to ongoing injustices against Indigenous peoples. The chairman of the Yurok Tribe told reporters, "One of the most offensive things to me is when I hear of the 'poor farmers.' When we get into the poorest of the poor, we're gonna win that fight."[97]

Although the Klamath Basin water shutoff of 2001 became a political stage for grievances of various kinds from communities outside the region, many people who lived in the basin suffered. Farmers had no irrigation water for the first time. Tribal members and agency staff who lived in the basin reported being refused service at local businesses.[98] Food banks struggled to meet the demand of local families, cases of domestic violence and sui-

cide rose sharply, businesses shuttered, and local school enrollments fell by 30 percent from one school year to the next.[99] One farmer, a World War II veteran and recipient of a homestead in 1949, told reporters, "Fifty-nine years ago, we were welcomed home as heroes and asked to feed a hungry world. Today, we may be reduced to welfare recipients standing in line for rice and cheese."[100] A Butte Valley cattle rancher described to me what he saw project farmers go through in 2001. Pointing his finger at me, he said, "Your government stepped in and gave them 97 dollars per acre for dry land to forgive this and forgive that. But they all suffered that year. Twenty percent went out of business at least."

To this farmer, a government that could betray its promise to provide water to farmers like him was no longer his government. Instead, he described his sense that the federal and state governments had turned their backs on the farmers they had once supported, now preferentially serving urban and environmentalist interests.[101] Farmers described how, after 2001, the younger generation left farming and then left the region. One crop farmer noted, "at least a decade where, you know, there would maybe be one or two, but nobody came back. Everybody after that point in 2001, all the kids went away to college or went somewhere else, and they did not come back here." Another farmer said, "Part of my concern is that my kids watch how much it takes for me to justify my existence and they say, 'Wow, I don't know if I want to work that hard.' " Although most farmers who went bankrupt during that period quietly took down their photographs and sold off what they had "a piece at a time," a few spoke and wrote publicly about their experiences.

In 2002, the year after the water shutoff, one third-generation project farmer in nearby Merrill, Oregon, met with elected leaders and shared about his experience of bankruptcy. He said that government aid, handed out to farmers through the USDA during and immediately after the irrigation shutoff, was not enough. His hay and potato farm lost $800,000 in gross sales in 2001, or about 80 percent of the farm's income, forcing his farm into bankruptcy.[102] Of the $122,000 in emergency payments that farmer received from the federal government, he had to pay $30,000 in rent for farmland, another $30,000 in debt payments, and $60,000 back to the federal government in taxes because taxes on the crop year revenue for 2000 had to be paid in 2001, and he did not have production expenditures such as fertilizer costs to write off for 2001. He described personally knowing at

least seven other families who had filed bankruptcy, and fifteen more on the brink, only three of which held public auctions. Another farmer in Tulelake described to me how, during 2001 and the years shortly after, "there were people, they didn't necessarily go bankrupt. They just sold their land to their neighbor and moved on. It wasn't brought about by bankruptcy, but it was certainly brought about by necessity." When farm failure is understood as moral failure, farmers in economic distress often sell their farms out of social necessity before financial necessity, preferring to sell quietly rather than face the public embarrassment of filing for bankruptcy.[103]

Environmentalists, too, were frustrated by the blunt legal tool of the Endangered Species Act. One person described the act to me as "a sixty-pound sledgehammer, and it will break rocks. But if what you need to do is remove a screw . . . it'll knock it out, but it's not the tool you need for the job. It's a big blunt tool that can actually do way more harm than good." Keeping water in the lakes and rivers for ESA-listed fish meant stopping water deliveries not only to farmers but also to the Tule Lake and Lower Klamath Wildlife Refuge, with devastating consequences for countless species of wildlife, especially migratory birds that rely on this crucial stop along the Pacific Flyway.[104]

Farmers, fishers, tribal members, and environmentalists are all "people striving to realize their differing but deeply held views about what makes a human life satisfying and worthwhile."[105] Yet "the law formally recognizes such culture-based claims on the part of Indian tribes, but not on the part of farming or fishing communities, which do not fit the model of racial, ethnic, or religious groups at high risk of majority oppression. Nonetheless, culturally based appeals from such groups carry substantial political power."[106]

Klamath Project irrigators were successful at appealing to powerful imagery of Jeffersonian yeoman agrarianism and presenting themselves as victims of an unjust government. More than a dozen veterans who had received homesteads (or their widows) wrote letters to Congress in 2001. Nearly all the letters described arriving to the newly reclaimed lakebed in the 1940s with few possessions and working hard to make the land productive, build a community, and raise children. Most of these letters were handwritten and included photographs of the veterans who had been awarded homesteads. Some included scanned deeds signed by President Franklin D. Roosevelt stating that Congress "assigns forever . . . water rights for mining, agriculture, manufacturing, or other purposes."[107]

One letter, handwritten by Velma and Fred Robison, who had won a homestead in 1946 after Fred Robison served forty-one months in the US Air Force, reads, "We were provided this wonderful gift of land and water by the Dept. of the Interior, Bureau of Reclamation. They were our friends and did much to help us get started. Now, these government agencies are our enemies, taking from us what was awarded to us more than 50 years ago, and destroying the livelihoods of many." The Robisons compared April 6, 2001, when the Bureau of Reclamation turned off irrigation water to project farmers, to December 7, 1941, the day Pearl Harbor was bombed, describing the water shutoff as an event that "heralded the end of the world for our community and wonderful farm land."[108]

In interviews, farmers across Siskiyou County consistently connected the various ESA listings into a pattern that many feared had the explicit intent of dispossessing them of their natural resource–dependent livelihoods (fig. 16). They often connected the loss of other industries such as mining and timber to environmental regulations, especially the ESA, and feared that agriculture was next. A cattle rancher explained, "The coho salmon has been viewed as the spotted owl of water in Siskiyou County, so there's a huge fear that we're headed down the same path as we did with the timber industry."

In addition to fear of future regulatory burdens, the government's attempt to manage water overallocation with the ESA reopened old wounds. Farmers regularly described feeling unfairly blamed for environmental harms while their own conservation efforts and local ecological expertise were ignored by scientists from environmental organizations and government agencies. An agricultural adviser told me how the farmers she works with share that they do the best they can to steward the land and water: "There's not a farmer I've met who doesn't want to do everything they can to help their environment. But they get blamed as the bad guy by outsiders." A forage farmer described how "the government agencies are making these decisions without looking at history. . . . They send biologists up these riverbeds that historically go dry, and then there's a pool of water with struggling fish and now all of a sudden it's farmers, it's our fault."

Cattle ranchers described the contemporary sting of blame placed on belching cows for greenhouse gas emissions. One said, "Beef has been the bad guy in the world." An older cattle rancher told me about US Fish and Wildlife scientists visiting at his ranch to evaluate the creek that ran through his pastures and monitor the fish screens he had placed at his irrigation ditch

Fig. 16. The front page of a local newspaper from 2001 hanging on the wall of the Scott Valley Resource Conservation District office.

intakes so they would not suck in juvenile fish. He said the scientists lectured him about salmon habitat, something he knew well, having witnessed decades of spawning seasons, and then the rancher described how the scientists "asked if I knew of any experts in the area who might know something about the history of the salmon here. I was like, 'You're looking at one!' "

Farmers also described numerous examples in which the science of restoration efforts or recommended best management practices had changed. Beavers were a commonly raised example. Farmers said they knew beavers were good for the ecosystem, that their dams helped slow rushing rivers, especially during early spring snowmelt, allowing more water to percolate and recharge the groundwater. But into the 2000s, government agency staff implemented beaver relocation and eradication programs in the area that were quite successful.[109] Many farmers told me that they knew that removing

the beavers would cause negative consequences, but the experts would not listen to them. Indeed, the same agencies that had pushed for beaver removal would end up installing "beaver dam analogs" to slow stream flows just a few years later. One cattle rancher described how Fish and Wildlife officers came to his ranch in 2005 and "killed this gloriously beautiful beaver. . . . They didn't even ask us. . . . And now they've changed their position on beavers. Before it was 'Get rid of all the beavers.' Now it's like, 'No, let's keep the beavers.' "

Farmers told many similar stories—from agency mismanagement of bank swallow habitat along river edges, to selecting the wrong pebble size for coho and Chinook spawning, to preventing riparian grazing and the subsequent proliferation of invasive species, to forestry practices that have created wildfire hazards, to protecting barred owls that predate on spotted owls, to the transition away from flood irrigation and now renewed interest in flooding to recharge groundwater.

The water shutoff in the Klamath River Basin in 2001 was one of these events where technocratic experts dismissed local knowledge. World War II veteran and homesteader Fred Robison described the shutoff as "a shameful, shameful thing. I saw hundreds of thousands of acres of habitat that had been utilized consistently by hundreds of species, literally turned to acres that were inhospitable to any wildlife at all. It was all done in the name of 'single species' management."[110]

Not only was ecological disaster not halted, but it worsened the next year as the Klamath River and its tributaries experienced a massive fish kill. In September 2002, thousands of Chinook came into the basin's rivers to spawn. With little water released from behind the dams, flows were low and tepid. Overcrowding of salmon in these warm, shallow streams provided the perfect conditions for fish parasites and bacterial pathogens to flourish, killing more than thirty-four thousand salmon before they could spawn.[111] Farmers across the Klamath River Basin expressed a sense that they had, as one described, undertaken "some pretty extraordinary efforts to benefit coho." They then interpreted the fish kill as evidence that how they irrigated, or what they sacrificed not to irrigate, did not matter. The fish still died.

Whereas Tulelake farmers' water use competed with water needs for endangered fish upstream and down, farmers in the Scott and Shasta Valleys operated their farms directly where ESA-listed coho spawned, bringing additional concerns and legal risks with physical proximity.[112] With the spatial overlap of farming and salmon in the Scott and Shasta Rivers (and their

cold-water tributaries), farmers were concerned about "take" liability. Some of the most critical salmon spawning areas were in stretches of stream that ran through farms. If an endangered species was harmed or killed ("take"), even by accident, a farmer could be fined tens of thousands of dollars per fish or even face felony criminal charges. Many farmers described feeling stuck between wanting to steward their land to support fish populations and not wanting more endangered fish on their land that put them at greater legal risk.

In attempts to mitigate legal risks associated with ESA-listed salmon, farmers in the Scott and Shasta Valleys adapted their management practices and farm structures. To avoid using surface water, many farmers began relying more heavily on groundwater. When they did use surface water, farmers installed fish screens at the channel intakes to ensure that juvenile salmon would not accidentally be sucked through irrigation infrastructure. Farmers fenced riparian areas from their cattle (the fear of cattle stepping on salmon and killing them seemed to loom large). The USDA's NRCS and local resource conservation districts facilitated and funded many of these projects.

In the late 2000s, a local resource conservation district led an effort to establish incidental take permits (ITPs), which, as a lawyer who worked on the ITP program told me, "essentially says, 'You, landowner, you're going to go do something that's going to kill species. You're going to do something bad. You need to mitigate for the bad thing you're going to do. . . . And in exchange, we'll give you 'take' protection.' " But the program was primed to fall apart and ended in calamity.

One farmer described how "most of the people who actually have skin in the game in production agriculture were saying, 'Show me how this could be the least amount of pain possible, and I'll play,' because we do that all the time, we have to do that." But a small yet vocal set of newcomers to the region began organizing the community against the effort. These newcomers fell into two categories, this farmer explained: export-oriented alfalfa farmers from California's Central Valley and retirees from urban areas: "Most of them were what you would call investment agriculture. These are people who came in with some dollars and bought a little ranch and have a horse or two and a cow and buy hay from me. Their goal is for those property prices to go up, and they will sell it. I would like to see property values go down so I can buy at least those places near my house. So, when these people see an agency come in and they say, 'You could hurt my property value,' they have different goals. And they're not long term."

These newcomers successfully harnessed the recent and raw hurt of the water shutoff in Tulelake of 2001 to stoke antigovernment sentiment and its association with environmentalism. Several local farmers involved in drafting the ITP program described receiving death threats from their neighbors. One farmer told me that he sold his ranch and moved because of backlash over his support of the ITP process. All but one of the resource conservation district staff members quit. When I visited the local resource conservation district archive, five years after the ITP process fell apart, I found the three-ring binders of archival materials from 2009 to 2010, when the ITP process exploded, on the shelf empty. A staff member told me that the period was so hurtful that the records of this time period had been removed from the organization's archive. A farmer described how many people engaged with the ITP by "carrying torches and pitchforks. You know what I mean? For years, they never put their pitchforks and torches down."

To many, the Klamath Water Wars seemed to be a sudden crisis, one that appeared quickly but did not end. Both the drought and the resentments it amplified lingered and grew. A few slightly wetter years in the mid-2000s relieved pressure from the ongoing tensions in the Klamath River Basin, but by 2011, a new wave of drought set in. The drought of 2001 was, it turned out, only the prelude to what became the worst drought in more than twelve hundred years.[113] Still ongoing in the mid-2020s, California's record-setting climate change-induced drought has brought mega-wildfires, extreme heat-waves, and unprecedented water curtailments.[114]

CONCLUSION: A RIGHT TO BE RURAL

Through the nearly two-hundred-year history of settler farming in Northern California, farmers have both driven and adapted to ecological and policy change. In the process, their own identities form and reform in response to evolving norms of what it means to be a good farmer, environmental steward, and rural resident. Scholars of rural persistence emphasize place attachments and relationships with the land as central to identity and value formation. Agrarian writers often describe a profound, even nurturing commitment to land that becomes integral to farmers' identities, born from knowing a place intimately over time and often through adversity.[115] When Siskiyou farmers assert their ecological expertise against that of outsider

scientists or when they record salmon spawning on their land, they express this nurtured knowledge. When farmers emphasize their hard-earned love for place in letters to their elected officials and at protests against government water restrictions, they leverage what sociologists call moral capital to maintain access to both material and symbolic resources.[116] Expressions of hard work and self-sufficiency in rural communities become "external exhibitions of one's morality according to locally constructed norms and understandings," serving as social boundary markers that aid in maintaining hierarchies of resource access amid struggle and decline.[117]

In Siskiyou, the county government participates in this effort to create moral boundaries: the county's website homepage features a document addressed to potential newcomers entitled "A Primer for Living in Siskiyou County," notifying them that locals are "rugged individuals" who value "integrity and self-reliance" and live "outside city limits," where they exercise the "right to be rural."[118] Geographer Levi Van Sant and sociologist Madeleine Fairbairn describe how assertions of a "right to be rural" intensify as popular struggles over access to rural space clash with the reality of profits, or rents, being increasingly derived from owning and controlling scarce assets such as land and water.[119] The rhetorical right to rurality holds potential for liberatory projects, potentially helping communities maintain access to limited resources by prioritizing benefits for those who actually use and depend on them. When farmers and Yurok tribal communities worked together to monitor salmon populations, they built solidarity across otherwise competitive water access conflicts, with potential for broadening decision-making beyond the immediate owners of legal property and water rights. Yet rights for some are often rights denied to others, creating significant potential for exclusionary politics, as exercised so explicitly with reclamation and internment in Tulelake. In the United States, white farmers have long been the beneficiaries of legal and rhetorical rights to rural spaces and resources. But as material security has declined, with climate change–induced water scarcity adding yet another downward pressure, assertions of rural belonging have become even greater sites of contestation.

In Siskiyou County, farmers' relationship with government shifted from reliable friend to fickle foe—a pattern reflected across rural America during the twentieth century—as market liberalization and shifting ecological conditions transformed the countryside. Across the West, federal and state governments invested enormous resources to create racialized rural

spaces of opportunity for white farmers to adapt and flourish. This project required both violence and legal frameworks designed to dispossess Indigenous, Asian, and other minoritized groups from land and water resources. Through such practices as "character evaluations" for homesteading lotteries and explicit racial exclusion laws, the government created what political scientist and anthropologist James Scott calls a "legible" landscape—ordered, productive, white, and serving state interests.[120] Beneficiaries often lent their moral capital to these efforts, emphasizing their deservingness as rugged, hardworking, self-sufficient, and in some cases veteran citizens of a nation that loved them and they loved in return.

During the second half of the twentieth century, the farm debt crises, loss of rural institutions and resource industries, and ecological disaster frayed farmers' relationships with the state in Northern California and across the country. America's small towns and rural communities, which had become reliant on natural resource industries such as farming and timber, hollowed out as national and international markets deregulated and consolidated power and profits. During the farm crisis of the 1980s, farmers from across the United States showed their solidarity and mobilized together, forming activist organizations including the American Agriculture Movement and staging mass public protests such as "tractorcades" in Washington, DC.[121] But at home, in Siskiyou and other communities, many faced the grim reality that their own farm's survival was often at the expense of their fellow farmers. As farms consolidated, resources—physical, human, and financial—flowed away from rural places, increasingly accumulating outside local communities.

A sense of loss set in—loss of community spaces as storefronts and libraries closed, loss of the next generation as youth left for better opportunities, loss of masculine-coded work as government and service employment outpaced jobs in timber and farming, and loss of subsistence as fewer families were fed by what they or their neighbors grew. Then in the spring of 2001, some farmers lost their water, too. California had entered a period of persistent drought that spelled disaster for endangered salmon and suckerfish populations in the Klamath Basin, and the federal government stopped irrigation deliveries to Klamath Project farmers. Government decisions that were mandated by changing legal priorities and guided by nonlocal expertise, reminiscent of similar patterns in the farm crisis of the 1980s and the closing of timber mills in the 1990s, hit once again.

Although disputes over water allocation appeared technical and scientific on the surface, they revealed deeper social fractures. Sociologist Justin Farrell argues that conflicts over resources use and environmental conservation mask "deeply held 'faith' commitments, feelings and desires that define what people find sacred, good, and meaningful in life at a most basic level."[122] In Farrell's study of buffalo and wolf reintroduction in the Greater Yellowstone Ecosystem, "Old West" and "New West" moral values clashed—rugged individualism based on the human mastery of nature versus biocentric conservation and appreciation for the aesthetic amenities of nature.

Rural scholars often describe clashes between the old and new, rural and urban, and insiders and outsiders as animated by a sense that certain rural ways of life are being lost. In many rural places—from former timber towns in Idaho to agrarian communities in Illinois to working landscapes in Washington and Wyoming—these are often stories of rural gentrification.[123] Newcomers from more urban locales, often termed *amenity migrants,* move to rural areas for their natural beauty. Old-timers are misunderstood or even looked down on and are excluded from the economic gains and social groups that newcomers enjoy. Different expectations about rural and community life breed resentment, especially of old-timers toward newcomers.

Residents of Siskiyou County often expressed fears of being pushed out, their livelihoods devalued and replaced. But Siskiyou had yet to experience significant migration from urban areas or associated rural gentrification.[124] Instead, different moral values and narratives about water and environmental managment *within* local communities highlighted the underlying fragility of these seemingly foundational commitments, a dynamic that climate change would later accentuate.

During the Klamath Water Wars, so-called outsiders came to the region, not to stay but instead to strategically mobilize romantic rural imaginaries in their own political struggles. Local tribal communities were joined by environmental groups based hundreds of miles away. Local irrigators were joined by far-right antigovernment activists from across the United States. The local county government seized on these tensions to exert its own territorial claims. When the Siskiyou County sheriff's office refused to intervene as farmers illegally occupied and opened irrigation works in 2001, it asserted that the county government, especially law enforcement, should control land and water use.[125]

Farmers who remained had watched their neighbors lose land and livelihoods, grounding their fears of being pushed out in past experience. An older farmer, echoing a common refrain, told me how over his lifetime, "Environmentalists shut down the logging industry, they've shut down the mining industry, and now ag is the last thing—there's nothing else left." An increasingly nationalized media ecosystem reinforced the impression that an idealized vision of rural life faced siege from outside forces.[126] Resentment toward urban and coastal "elites" deepened.[127] The perception that policymakers prioritized urban environmental concerns while ignoring rural economic needs stoked smoldering institutional distrust and negative perceptions of science that reverberated well into the future.[128] Climate change, framed as an environmental problem requiring personal sacrifice, became another locus of conflict.[129]

By the 2010s, California's record-breaking drought forced farmers and other rural residents to confront climate change not as an abstract global concern but as an immediate local reality. With land relatively inexpensive in Siskiyou, and water more abundant than in much of the state, new waves of in-migrant farmers came to the region. Though relatively small in number, large-scale export-oriented alfalfa growers, diversified direct-market farmers, Hmong farmers who grew crops that included cannabis, and a new generation of multigenerational farmers and ranchers who wanted to return home and farm brought new ideas, values, and identities. Each group had their own vision for the future of the region, but all were forced to adapt to a rapidly shifting political and ecological landscape. Siskiyou County's history is a microcosm of rural America's transformation, revealing how environmental conflict, economic restructuring, demographic change, and climate adaptation play out in a continually contested landscape.

CHAPTER 4

Weathering Change

MARGIANA: "Can you tell me about some of the pivotal moments in your farming experience, when how you farmed changed?"

CATTLE RANCHER: "There's drought, flood that's catastrophe. Those are come-to-Jesus moments when people leave their bad relationship with farming."

In May 2017, a group of climate scientists from around the world met in Addis Ababa, Ethiopia, to outline the Sixth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC). Over the next four years, as extreme weather events peppered the globe, these scientists contributed to and reviewed climate research, producing a dense document filled with graphs, figures, and consensus statements—the distillation of the scientific understanding of climate change.

Published in 2021, the report presented several points of scientific consensus. One was that Western North America, more than many other regions in the world, was already experiencing climatic changes driven by humans' burning of fossil fuels—including climate change–induced drought.[1]

Climate change seemed to accelerate during the period of fieldwork for this book (2017–24). The drought that unfolded was not just severe—it was the worst in recorded history.[2] This new climate reality in California may foretell effects other regions will soon face. But unlike the consensus on climate change science, farmers' experiences of, beliefs about, and responses to climate impacts are deeply personal, woven through a complex tapestry of cultural identity, political belief, place-based histories, and ecological resilience.

Farmers in Siskiyou County are adapting to climate change—both in their fields and in their minds. Farmers already describe trends in climatic change amid the variation in daily weather, and they embrace varying beliefs and explanatory models that shape their understanding of these changes. Their responses to climate change span multiple dimensions: from political activism to shifts in livelihood strategies, from changes in farm management to evolution in group narratives. Farmers in Siskiyou County, as in much of rural America, see in climate change not just a scientific reality but a political flashpoint and an existential threat to a way of life. In this region of Western North America, the changing climate is already etching new realities into the land and the lives of those who work it. In the interplay of science and culture, policy and practice, this farming community illuminates broader struggles to adapt to a rapidly changing world.

SMOKE, WIND, AND WATER: A NEW NORMAL FOR FARMER JOHN

I met John by his hay barn in November 2019. Tall and in his midfifties, John wore a Carhartt vest and a leather belt with a big silver buckle. A fourth-generation farmer in the region, John raised sheep and cattle and grew hay. Although the terms *climate change* and *global warming* were not used in our conversation, John gave me a tour of its impacts on his farm and the surrounding landscape.

John leaned one elbow against the bed of his white pickup near the US Forest Service land at the edge of his property. The forest was dense, a mix of blue-green conifers and brown, dead trees—a tinderbox. "Our public lands have become overcrowded with trees," John said, explaining how, with the Endangered Species Act listing of the northern spotted owl in 1990, "logging stopped." The forests in the region became dense and prone to disease. Dead trees added to vegetative fuels such as brush that had accumulated over more than a hundred years of misguided fire suppression.

Flawed forestry practices, along with warmer and drier conditions, have made catastrophic wildfires routine. Each summer and fall since 2018, megafires (fires that burn more than one hundred thousand acres) across California and Western North America have blanketed Siskiyou County with smoke for weeks at a time. "We just got smoked in real bad," John said, describing the smoke from wildfires the previous summer. "The grass just didn't grow

like it usually does. Neither does the hay," he told me. John had observed his livestock becoming lethargic in the smoke and eating poorly, resulting in "much lighter gain, and the cows didn't look as good going into the winter."

"I doubt our public lands are ever going to be managed the way they should be," John said, an acknowledgment that humans shape the climate through more than just burning fossil fuels. Human land use practices—through fire suppression, groundwater depletion, and species composition shifts—compound fossil fuel–driven climate change. Even seeming reprieves, such as unusually wet winters, exacerbate wildfire risk as brush and grasses grow lush, then dry out and die, creating highly flammable landscapes ready to burn when temperatures rise and humidity drops.[3] This happened in 2021, when several wildfires burned through Siskiyou, including the River Complex Fire, which torched nearly two hundred thousand acres from late July through late October.[4] The next July, the McKinney Fire became one of the largest in California in 2022, destroying homes and killing four people in Siskiyou County.[5]

Although fire and water dominated our conversation, John was quick to point out another, less visible but still insidious, climate change impact. As we walked to his cow pastures, a steady breeze picked up. John noted how the rising winds exacerbated the challenges of farming in an increasingly arid climate. Stronger winds, driven by climate change, hasten evaporation and spread fire more quickly.[6] Several of John's neighbors who grow vegetable crops shared this concern about wind, describing how intensified gusts now flatten crops more frequently and dry out the soil faster than in years past.

The wind tugged at our shirts as John pointed to the mountains in the distance where a sparse dusting of snow revealed another sign of climate change. John recalled how, as a kid, those peaks would be pearly white with dense snow cover by late November. "Now it's noticeably drier," he said, echoing the observations of many older farmers who remembered digging out snow to feed livestock or ice skating on frozen ponds that no longer exist. Historically, 80 percent of California's precipitation fell as snow, and vital mountain snowpack fed rivers and recharged groundwater as it melted throughout the spring and summer.[7] Through much of the twentieth century, farmers in the region routinely grew dryland grain crops just from snowmelt with no additional irrigation. Now, few farmers can harvest a crop without irrigation. With warmer winters and less precipitation falling as snow, this

crucial frozen reservoir has diminished, leading not only to drought but to increased risks of flooding.

As we looked out over John's river-bottom field, with cows and sheep grazing the last of the season's dry grass, he listed off the floods in his memory, ticking them off on his fingers. "We had one in '78 and then '96, [there was also] one in '64." Then, he told me, those once-a-decade floods started coming more frequently—in 2007, 2009, 2012, 2016, then again in the spring of 2019, just months before my visit. John described how limited snowpacks melt quickly now, almost all at once when temperatures climb above 90 degrees Fahrenheit in May, which rarely happened when he was a child. The floods wash topsoil away and deposit sand, weed seeds, and trash. Pointing to the field before us, John said, "It becomes like a lake." John recounted a recent flood. "I was riding a horse that was up to her belly in floodwater with logs floating by us. I don't even know how I was so lucky that I didn't drown. I got the cattle off the field. And my legs all broke out in just a red rash from that crap in that floodwater." John explained how hard it is to build topsoil with such frequent spring floods and how important it is to always have roots in the ground to hold as much soil in place as possible. "I'm still recovering," John told me, shaking his head.

"Right now, I'm flirting right on the edge," John said as we walked back toward the hay barn, "because I don't have probably a hundred acres under optimum production simply because of damage from flooding, drought, flood, drought." The floods are memorable, but the ongoing drought poses an even greater challenge. Once short, bounded events, since 2011, droughts have become a constant, grinding stress.[8] A cattle rancher across the valley described it well. "They just didn't seem to last very long," he said. "You'd have a [dry] summer. But it just didn't seem to go on and on and on and on. This is very different—we had a bad year and then the next year is worse, and we had a bad year, and then the next year is worse. It's like, man, this is really discouraging."

BELIEVING AND SEEING: HOW FARMERS MAKE SENSE OF CLIMATE CHANGE

Research on climate change beliefs encompasses its causes, interpretations, and appropriate responses. Climate change beliefs vary across geographies: in wealthier nations such as the United States, and particularly in rural areas,

skepticism about human-caused climate change prevails more than in lower-income countries, which typically suffer more severe impacts.[9] Demographic factors play a crucial role: older white men tend to express less belief in and concern about climate change than do younger generations, women, and people of color.[10] It is, therefore, not surprising that farmers in rural America, who skew toward older, white, and male, tend to be more skeptical of climate change science than the general public.[11] However, controlling for demographics, there is still a significant divide in climate change attitudes between rural and urban residents.[12] Simple correlation between geography and demographics fails to capture the diversity and complexity of farmers' beliefs about climate change.[13]

Social factors that extend beyond farming, such as cultural and political identity, significantly influence the mental frameworks for climate change and its origins that people hold.[14] Farming experience, history of place, and close observation of the land also shape farmers' understandings. *Explanatory models* refer to the cognitive frameworks through which individuals or communities interpret and respond to environmental changes.[15] In the context of agriculture, these explanatory models shape how farmers understand the causes of climate change, its consequences, and what should be done in response. Beliefs formed and expressed within these explanatory models do more than explain environmental changes; they also help, in turn, shape social factors, contributing to the formation of identities and the expression of political orientations.

Explanatory models became particularly evident when I asked farmers directly about climate change. Many responded with emphatic, even flippant remarks. "Global warming," a cattle rancher said, using his fingers to make air quotes, "would be a good thing because warmer is better." Chuckling and shaking his head, he added, "It would be nice if it was a little warmer." A sheep farmer told me emphatically that "cutting back on carbon dioxide is the most asinine thing. Carbon dioxide makes things grow." Comments such as these align with dominant local politics of climate change skepticism and promote a sense that changes in weather remain beyond human control. The "climate is always changing and we're not going to do anything about it," the sheep farmer told me.

Farmers' beliefs do not exist in isolation; social groups and institutions shape them.[16] Farm advisers, including local staff at public farm support institutions such as the United States Department of Agriculture (USDA)

and the cooperative extension system, often affirm farmers' beliefs about climate change. A cooperative extension adviser, for example, told me that "most farmers would love to see global warming."

This sentiment is not isolated. Surveys of agricultural advisers across the United States reveal that many share climate change doubts with the farmers they work with or are wary of alienating them with talk of climate science.[17] Comments from institutional experts that minimize the negative impacts of climate change lend legitimacy to scientifically inaccurate narratives of an overall net positive impact of climate change.[18] When asked about climate change, a county cooperative extension adviser suggested that farmers can continue to cope with climate change's effects as they have historically coped with weather variability: "I mean, it's changing, it's constantly changing, it's been changing for millions of years. Farmers have constantly been adapting to that change." Assertions that normalize or downplay climate change's negative impacts also reinforce a narrow set of acceptable ideas about climate change, including what kinds of responses it demands.[19] These shared beliefs play a crucial social role for farm advisers—especially those within government institutions—helping them build trust and rapport with farmers necessary for collaboration on such politically sensitive issues as climate change.[20]

Climate or Weather? Cycles and Geography

Generally, both farmers and farm advisers spoke of the changes they observed in terms of weather, rather than climate. An older cattle and hay farmer said, "[The] weather pattern has changed. We have much milder winters. I don't know, I don't feel that the temperature fluctuation has been extreme. Some summers are warmer. Some are cooler. Just quite a bit less moisture." Similarly, another crop and cattle farmer remarked, "Individual weather events, they're just pretty much random. [And] then it got to where we didn't get those kinds of snows."

Climate change beliefs and weather experiences inform each other. Extreme weather can nudge farmers toward recognizing climate change.[21] And belief in climate change can induce farmers to perceive worse weather. For instance, researchers found that farmers in Nevada who acknowledged anthropogenic climate change were more concerned about future severe weather events, and farmers in New Zealand who believed in climate change reported perceiving greater temperature increases than their climate science–skeptical peers.[22] In Siskiyou, experiences of adverse weather rarely altered farmers' beliefs about climate change, and so few farmers shared

their open belief in anthropogenic climate change that it was difficult for me to evaluate how weather perceptions and climate beliefs inform each other.

However, consistent patterns emerged in how farmers' experience and interpret various climatic changes that align with meteorologic data. How farmers interpreted and understood, or their perceptions, of rising temperatures often aligned well with climate data, but how farmers perceived drought varied. Researchers have attributed these differences to the psychological impact of severe weather or the buffering effect of consistent irrigation.[23] But meteorologic recordings and climate models show a trend, or climate signal of increasing temperature and dryness in the region, that will become stronger over time (fig. 17). Yet in farm fields, managing the landscape day to day, farmers experience significant weather variability.[24] Asked about changes in precipitation and temperature, a sheep farmer encapsulated this uncertainty. "Everything changes when you live on a farm," he explained. "You get up in the morning and you don't know what's going to happen. You have no idea. You get to expect the unexpected."

Amid the fluctuations of daily weather, nearly every farmer I interviewed noticed long-term shifts in climate patterns. One farmer in his sixties reflected on the changes. "The trend is it has been lighter and lighter winters," he said. "Now, we're lucky if we get six to eight inches [of snow] that'll stick around for more than three or four days at a time." Another observed, "You're seeing drought cycles that are changing from what we were used to in the seventies, eighties, nineties. Now, when you get into 2000, it's been dry, you can see a whole cycle has changed." Even if they did not use terminology that has become politically divisive, these farmers, like many others, distinguished changes as more than just weather variability—they recognized them as signals of long-term changes in climate.

When asked about climate trends, many farmers responded that the weather is cyclical, remarking that "things are always changing in cycles" and "droughts are always cyclical." Some referenced multigenerational family histories to illustrate these cycles. One multigenerational farmer described family journals that detailed "the river going dry in the 1880s for an extended period of time where they drove wagons down the riverbed every day because there was no water." An alfalfa farmer in his twenties recounted how his parents' generation described a pattern of wet and

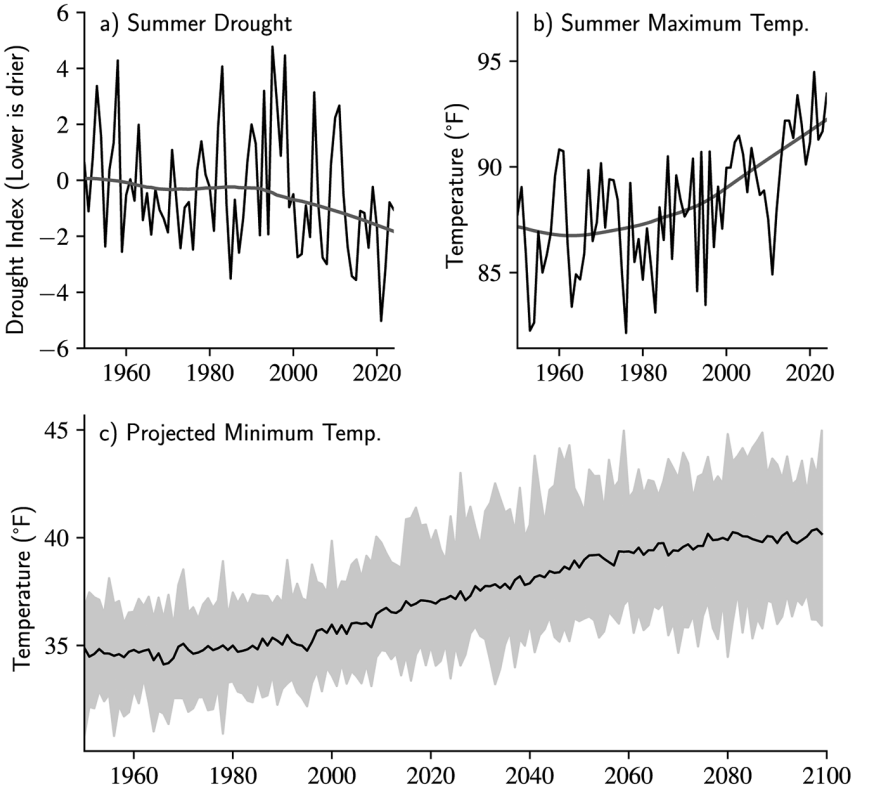

Fig. 17. Summer Palmer Drought Severity Index for the California North Coast Drainage Division (panel a) and summer daily maximum temperature at the Yreka, California, weather station (panel b), 1950–2025. The lines in panels a and b show year to year variability; the line in panel c shows the locally estimated scatterplot smoothing (LOESS) trend of increasingly intense (more negative) summer drought and increasing maximum summer temperatures. Climate model simulations for Yreka (panel c) show average minimum temperature increasing (the shading shows the predicted temperature spread) in a scenario where emissions stay near present-day levels until midcentury and then decline.

dry cycles dating back to their childhoods in the 1950s. "It just comes in waves," he said. "For guys that have been here for forty years you see a lot of patterns."

Occasionally, farmers acknowledged paleoclimate science. A cattle rancher remarked, "We've had climate change since the beginning of time, there have been bizarre events all along." She then described how the climate

has changed for "eons," adding, "We go through cycles, and I think we're in a drier cycle, is what it boils down [to]. I know what the scientists say, global warming and the ice packs are melting and doomsday is ahead of us. But I don't necessarily buy into that so much. But I will admit that, yeah, the climate has changed."

Most of the farmers I interviewed leaned on the idea of natural weather cycles in a harsh environment to explain the climatic changes they experienced as beyond human control. However, a few farmers quietly shared their belief in anthropogenic climate change with me. During one interview, after I asked about the impact of smoke and water scarcity on his farm, a young row crop farmer told me, "I believe in climate change, it's okay." While washing freshly harvested vegetables with an older couple, they confided, "They'd think we're crazy if we say we believe in climate change." Another farmer, sitting at a picnic table behind his house, remarked, "I think you would be silly to not admit it. I think you're watching one news channel too much." He added, "I mean, like it or not, our climate's definitely different than it was twenty years ago." These admissions were often accompanied by requests for anonymity, while the public performance of climate change denial continues to shape the political landscape, allowing those explanations to gain traction.

Findings that most farmers in this region attribute climate impacts to natural cycles and express skepticism about anthropogenic climate change align with previous studies of farmers and ranchers in wealthy countries. For instance, a study of farmers experiencing extreme drought in Australia concluded that belief in natural cycles reduced farmers' willingness to adapt and may have been, in part, a strategy to "avoid an obligation to make adaptation responses."[25] Similarly, Montana ranchers who viewed droughts as part of natural cycles felt less agency to act, holding onto the hope that the climate would eventually return to normal.[26] While Siskiyou County farmers also describe climate change as cyclical, they diverge from these other studies by expressing growing concern that these cycles are worsening and that they need to change their farming practices, especially given their sense of the region's inherently harsh geography.

"It's all normal here," one farmer succinctly shared, encapsulating an understanding that both normalizes extreme weather and acknowledges the need for adaptation given those extremes. "So the climate change," another

Fig. 18. Many farmers described the high desert region's harsh geography and cycles of drought.

mixed vegetable farmer told me, "I mean, our area is so drastic all the time. It's extremely wet, extremely dry, extremely hot, extremely cold." Farmers shared specific examples of "bizarre weather events," such as snow on the Fourth of July or hailstorms in August, as evidence of the region's unpredictable weather that normalized the new extremes they were experiencing (fig. 18).

Agriculture's inherent weather vulnerability underscores this sense of the region's harsh geography. People described a "pretty short growing window" that limited what crops they could grow "because it gets so cold" and "goes from cold and wet to hot and dry too quick." Agricultural advisers often echoed this view, asserting that *only* hay, beef, and timber were suitable for the region's challenging climate, despite the successful cultivation of a wide range of crop types (including orchard fruits, mixed vegetables, and seed crops) and livestock species (including chickens, pigs, dairy, and small ruminants). Experiences with harsh climates and unusual weather can normalize potential future extremes, incentivizing farmers to hedge their bets each year and manage well enough, instead of implementing proactive adaptation strategies.[27]

Although farmers in Siskiyou usually described their experiences through the lens of weather variability, their observations of long-term changes present the imperative to adapt to intensifying trends and

the opportunity for farm advisers to frame adaptation in response to extreme weather that will become more extreme.[28] The perception and assertion of limited agricultural possibilities, however, belies a deeper, more complex relationship between farmers and their environment and between acceptance and adaptation.

Drought, Not Climate Change

Farmers in Siskiyou County, like farmers everywhere, have long contended with their region's unique geography and weather. For generations, weather has been understood as a volatile force, beyond human control—a view succinctly captured by a county government employee who, as we spoke about the weather, told me, "This is still God's country." Whether it is wildfire smoke blotting out the sun, floods reshaping the land, winds flattening crops, or heat waves wilting plants, many farmers view these events as "a Mother Nature thing" or "acts of God," as different farmers phrased it—uncontrollable forces that "there's not much you can do" about.

But drought—the most significant climate change impact these farmers face—is different. Though it results from the same underlying climate processes as other effects, drought is not seen solely as an act of God or Mother Nature. For many Siskiyou farmers, drought is also the result of government action. This dual perception of drought—as both natural phenomenon and policy outcome—came into focus as I stood by the hay barn with John, the fourth-generation farmer we met at the beginning of this chapter. Casting a long look over his hayfields, John's weatherworn face bore the strain of years battling not just the elements but also bureaucracy.

"I'm tired of fighting," he told me. "I go to water meetings—two a week. I just like being on the ranch. I don't like going to meetings. I don't like being on the phone. But you have to do it to stay ahead of the next potential threat. If you don't, you get caught by surprise and you're done." John attends these meetings to advocate not against the threats of wind or smoke—understood as purely natural phenomena—but for more access to water. Understanding this difference is crucial to grasping the politics of climate change. As John pointed out during our tour of his farm, even wildfires and their severity partly result from government decisions—a 150-year history of misguided forest management and policy.[29] Yet John and other farmers recognize a key distinction: when a wildfire starts, it is usually caused by an act of nature,

such as a lightning strike, or if humans are involved, it is typically an accidental spark. But when an irrigation pump turns off, cutting off a farmer's water supply—that is a decision made by someone, somewhere, with the stroke of a pen or the flip of a switch.

Identifying drought as much with policy as with precipitation intensifies the already political nature of farming. John is not alone in his views. Many farmers and farm advisers emphasized that the drought was either caused by or exacerbated by misguided state and national policy decisions. "It's a political drought," they would correct me. "There's no water shortage; it's a political water shortage." A young cattle and forage farmer described the drought as being "forced upon us from Sacramento," the capital city of California.

Water still flows down the mountains and wells up from the ground, even if in smaller quantities than in the past. At one time, water in the American West was seen as God-given, its presence in a sun-drenched landscape a critical aspect of Manifest Destiny. The government deemed irrigation the *highest and best* use of water, enshrining farmers' rights as a form of property ownership.[30] But water, by its very nature, defies easy ownership. It flows across boundaries, seeps underground, evaporates into the air—a fluid challenge to rigid legal structures. Whereas water rights and access are still largely individualized, water management demands action on a grander scale.

The government's role in managing water has evolved over time. Western deserts bloomed through massive federal investments like the Klamath Project, dramatically reshaping landscapes and communities. Farmers who returned from world wars as heroes embraced a new mission to feed the world with government-provided irrigation infrastructure. But as water became scarcer due to overuse and climate change, the government shifted from enabling to restricting access to irrigation water. A local USDA employee described the water restrictions of 2001 as "the biggest drought of my career," not just because of lack of rain. "For political reasons," he explained, "the drought was more severe because [farmers] weren't able to irrigate."

The negative consequences of past policies are now becoming clear, and farmers are not entirely wrong to point fingers at the government. As historian Donald Worster argues in his book *Rivers of Empire: Water, Aridity, and the Growth of the American West,* the development of US agrarian

capitalism and its exploitation of both nature and labor can be attributed, at least in significant part, to the state's conquest of water.[31] State and federal governments directed development of water resources, formed legal structures ill-fitting to water's fluid materiality, and funded research and extension focused on extracting more water and expanding irrigation. Wealthy farm operators benefited, and safeguards to protect smaller-scale farmers were rarely enforced. The Bureau of Reclamation's own 160-acre irrigation limit was proposed to coalesce widespread public support for family farmers' access to irrigation water; however, at the request of wealthy agribusiness interests, the acreage limit was not enforced.[32]

Landscapes vividly display the dramatic efficiency of these government-supported efforts across the American West. In parts of California, the ground has sunk by tens of feet, as if the earth itself has deflated, from excessive groundwater extraction.[33] Rivers and streams have long been overallocated, with more water promised to users than exists, like a check written against an insufficient balance.[34] The state's past water policy failures have created an increasingly unsustainable system in which ecological and political drivers of drought are difficult to untangle.

Climate change now is making wet places wetter and dry places—like most of California—even drier.[35] This shifting distribution exposes flaws in a system built on the assumptions that both water and capital accumulation are limitless. Simultaneously, historically marginalized water users such as tribal nations and wildlife conservationists assert their water rights while cities in arid regions expand and demand more water.

Public institutions struggle to govern dwindling water resources more equitably, leaving some water users high and dry. Agricultural irrigators' once-reliable water sources are becoming ecologically scarcer and more frequently restricted by policymakers in distant cities. With few legal tools to redistribute water proactively, the State of California has resorted to emergency measures, including irrigation shutoffs and water curtailment orders, that can turn off the taps with little warning and after farmers have invested in planting their crops.[36] Although farmers such as John often express skepticism about anthropogenic climate change, their explanatory model explicitly identifies drought as a political issue caused by human action. Humanity, some farmers think, may not be causing climate change, but humans definitely create drought through policy decisions to ration water.

WEATHERING AN ONGOING STORM: STRATEGIES IN A CHANGING CLIMATE

Farmers adapt to climate change across multiple spheres of their lives. Politically, farmers respond by demanding a different response to drought. In the field, they alter management practices. In the household, they shift their livelihood strategies.

Political Adaptation

Farmer's responses to drought took on an explicitly political dimension. The state's role mediating water scarcity and access fueled antigovernment sentiment. Farmers often described themselves as an oppressed rural minority fighting against government policies that threatened their way of life.[37] "Well, the way I see it," a cattle rancher told me, "farmers don't mean nothing to the political stuff. We just don't have the population. . . . The folks in San Francisco and LA, they totally control all [the water]. And we have almost virtually no control."[38] This sense of being sidelined pushed farmers to proactively make their voices heard at both state and federal levels.

Several farmers and ranchers, nearly all white men from large, multigenerational cow/calf or alfalfa operations, described taking regular trips to Washington, DC, and Sacramento, often with financial backing from organizations such as the Farm Bureau or Cattlemen's Association.[39] "You're going to have to go to Sacramento," an alfalfa farmer explained. "They want to stop what we do. . . . They don't want me to use water anymore." He described how, since the most recent intensity of drought began in 2011, he now makes several trips to the state capital each year to "tell our story." Another farmer emphasized the necessity of political involvement. "It's important as a rancher or farmer to be involved in politics," he said, and he recounted traveling to Washington, DC, three or four times annually to lobby for irrigators. His frustration was palpable. Politicians and people in urban areas "think we're just pumping all the water out of the river," he said. "They think 'farmers are raping the land. Farmers only want to take what they can get and make the money.' I'm like, what? You know, that's our livelihood!"

In contrast to the state and national governments, the local county government has made clear that it sides with its agricultural constituents. "Whiskey's for drinking, and water's for fighting," an elected county official

told me. Farmers in the region voiced a desire for greater local control over natural resources, particularly water. "We want to be under local control," one rancher stated firmly, reflecting a long-standing sentiment in many rural communities. The rancher further emphasized this point: "I've been a big proponent of this all along for everything dealing with regulations. Implementation, regulation, oversight, monitoring—all of those components should come at the local level. And the local people are the ones driving those decisions at the local level. It's not somebody sitting in Washington, DC, or Sacramento, [or] San Francisco."

Local control movements have long gained traction in rural Western communities. From the Sagebrush Rebellion of the 1970s to the Wise Use Movement of the 1980s and 1990s to more contemporary county supremacy and consolidation movements, efforts to grant greater authority to county-level governments, especially law enforcement oversight of water and land use decisions, continue to gain in popularity.[40] Crises often fuel these movements. During the Klamath Project water shutoff in 2001, Siskiyou's sheriff joined far-right political activists in defying the federal government's orders; during the Covid-19 pandemic, self-proclaimed constitutional sheriffs in rural counties across the United States refused to enforce state and federal health guidelines at the local level.[41] Climate change, and especially drought, presents another opportunity for county-level governments to advance calls for even greater local control.[42]

For farmers, local control can seem like a solution to a disconnected state that has systematically facilitated resource accumulation for some, especially corporations far away, and dispossession for others, particularly their own neighbors, friends, and families.[43] In these rural "sacrifice zones," the loss of unlimited water access is yet another blow for residents that can be strategically leveraged to pit rural interests against government bureaucrats, urban intellectuals, and racialized "others."[44] Local control movements often employ legal discourse to serve white nationalist and supremacist ideologies that overlap with corporate-elite agendas and harness populist rhetoric.[45] Drought viewed as government overreach helps frame family farmers as an oppressed group in need of solace and recognition provided in right-wing rhetoric.[46] Rural desires for local autonomy and freedom from urbancentric state control then become vulnerable to cooptation by authoritarian populist leaders.[47]

Discussing drought at a farming couple's kitchen table in 2018, two years into Donald Trump's first presidency, the husband described his support of

Trump as a political "outsider" who was disrupting the government that, by restricting irrigation, "put the shackles on the industry and now they're putting the noose down upon the ranching and farming [community]." The wife added, "I think people are just very resentful. I think politically it explains a lot of what's happening across the country."

Farmers in Siskiyou often expressed a sense that urban residents and the government unfairly blame farms for using too much water and emitting too much methane and that they even view rural people with disdain and hostility. Climate change, which seems to promise even more restrictions and regulatory burdens that disproportionately impact natural resource–dependent livelihoods then becomes a flashpoint for broader anxieties and tensions.[48]

Farm Management Practices

"If [water scarcity is] a function of climate change or a function of just natural occurrence, we need to be prepared for the uncertainties that are out there," a young cattle rancher told me while we talked in her living room. "We need to be better prepared to weather future droughts, whether or not it is just a natural occurrence." While guarding her own beliefs, she emphasized that "whether or not" farmers *believe* in anthropogenic climate change, they have to adapt to the material effects on their farms, adding, "So we just mostly confront it as, yeah, of course there's unknown unknowns out there, and so how do we prepare for those?"

Primarily using survey methods, social science research on climate change and farming in the 2000s and early 2010s focused largely on the relationship between farmers' belief in anthropogenic climate change and their interest in implementing climate-beneficial farming practices. This research showed that farmers who believed in climate change were more interested in adopting new climate-related practices, which led researchers to conclude that belief in climate change was a linchpin of climate action.[49]

In the 2000s, when climate change was a more abstract topic—one that scientists told farmers they were experiencing through extreme weather and farmers told scientists they had managed for generations—beliefs about its causes and futures seemed consequential. By the mid-2010s, the situation had shifted dramatically. Climate change had become a regular news feature, a political talking point, and a physical reality.[50] The question of whether farmers believe in anthropogenic climate change matters little to farmers who take action in their fields in the face of wildfire and drought.

Every farmer I met during this research—regardless of their beliefs about its causes or explanations of its effects—changed how they farmed in response to the impacts of climate change.

Scholarship on farmers' decision-making has primarily focused on the adoption of best management practices that improve conservation outcomes as a proxy for understanding changes in climate change–related field management practices.[51] Studies of farmer decision-making that move beyond viewing farmers as merely economically rational actors have found two significant factors that shape how farmers make decisions.[52] First, structural forces—including limited access to credit, restrictive farming contracts, and insecure land tenure—significantly constrain farmers' ability to make farm management decisions. Second, cognitive factors—such as farmers' sense of social identity, personal agency, beliefs, and culture—shape how farmers view different management options.[53] Farmers now have little choice when it comes to responding to heat waves or persistent drought. Structural and cognitive factors shape *which* farm management practices farmers adopt in response to climate impacts, but they alone do not determine *whether* farmers adapt.

Many impacts of climate change—wildfire smoke, floods, wind, and heat—leave farmers with a sense of limited agency. In response to wildfire smoke, some farmers reported shifting when they calved or sold their cattle or planting faster-maturing crop varieties that could be harvested before late summer smoke season. Windier conditions spurred some farmers to plant windbreaks—trees or brush hedges along the edges of their fields that slow wind velocity. Daunting summer heat prompted some ranchers to plant shade trees for their livestock and shift the timing of grazing rotations. Some farmers worried that soon the region would lose its ability to grow crops that require cold winters, such as strawberry starts and carrot seeds, and farmers who grew those plants would need to move their operations or switch to new crops.

There are few easy technological fixes for heat, smoke, and wind. Although industry scientists have long promised genetically engineered crop varieties that can withstand extreme heat, the performance of these crops has consistently disappointed.[54] Crop insurance and disaster relief payments provide limited publicly funded support for climate impacts, helping some farmers cope, but they can disincentivize adaptation and channel taxpayer funds to a relatively small group of beneficiaries—that is, to primarily large-scale commodity producers.[55] Many farmers are left instead to adapt with the

ecology of their landscape, taking such steps as strategically planting trees for wind protection and shade cover.

Drought, however, yields to many farm-level adaptation options. Whatever they attributed water scarcity to, farmers described droughts as "wake-up calls" or "turning points" that spurred them to adapt (figs. 19–21). A livestock farmer told me, "The drought has kind of shaken people up, saying, 'Okay, [water access] is not a guarantee.' " A USDA Natural Resources Conservation Service (NRCS) conservationist reflected on the increased requests for funding for water infrastructure projects in response to recent droughts, which, he said, "forced people to have a drought plan. I think people think about, 'Oh there [are] bad years and there [are] good years,' but consecutive droughts made it 'What do I need to get by?' "

As surface water sources became more precarious, farmers increasingly favored groundwater wells, reduced water use, and increased water storage capacity. Recounting drought conditions in 2018, a young alfalfa farmer said, "Last year sucked. I lost some money last year. That's one thing I learned, it costs more money, but you've got to try to take Mother Nature out of the factor as much as you can, whether [by] deepening your wells or having storage ponds or something."

For farmers in Siskiyou who could afford it or could access USDA funding to help pay for it, digging deeper wells allowed them to access water quickly and avoid surface water restrictions.[56] The driest years in the 2000s and 2010s produced a well-drilling surge. "It was a boom period," a local well driller told me. Farmers reported waiting months for an appointment with a well driller. Permitting and reporting of agricultural wells were spotty at best, making it difficult to quantify this boom. A Siskiyou County official who works on agricultural water issues told me that "farmers don't want the government to know how many wells they have or where their wells are. And we respect that, it's private business."

In addition to drilling wells, nearly every farmer I met had recently upgraded their irrigation infrastructure to deliver water more efficiently to plants with less loss of water to evaporation. For smaller-scale crop farmers, this meant shifting from handline sprinklers or flood irrigation to drip lines; larger acreage farms and those with irrigated livestock pastures replaced irrigation wheel lines with center pivots. To store water, farmers dug stockwater ponds or bought storage tanks, but these held only a small portion of the water needed for a season.

Fig. 19. Movable pastured poultry hutches.

Fig. 20. Pivot irrigation system.

Fig. 21. Diversified crop production for direct marketing.

Farmers often noted that public farm advisers promoted infrastructure technologies, such as new irrigation systems, that must be purchased. A cattle rancher who was installing irrigation pipes and digging deeper wells with NRCS funding said, "We're getting more cheese money right now," using post–World War II slang for welfare payments. NRCS staff also noted that the droughts had "redefined" their jobs and that public funding "shifted" to projects they described as "almost all water related, mostly infrastructure investments." NRCS staff described how the institution's role had, since the early 2000s, moved away from providing technical assistance for conservation projects. One NRCS conservationist summarized the change as "from TA [technical assistance] to ATM [financial assistance]," describing how NRCS primarily funds irrigation wells and pivots and "hardly look[s] at projects that cost less than hundreds of thousands of dollars."

The USDA helped farmers pay for these expensive infrastructure investments either through the Farm Service Agency (FSA), which provides low-interest loans, or through NRCS, which offers cost-share grants. Although the USDA has taken important steps to prioritize funding for "socially disadvantaged" farmers (such as beginning, women, veterans, and farmers of color), smaller-scale or more diversified farmers and those with limited financial resources still face major barriers to accessing capital-intensive technologies.

Even with federal cost-sharing, "unfortunately, it takes money," as one crop farmer lamented, adding that without capital for upfront costs, "I'm still at the mercy of Mother Nature." Additionally, without formal land leases or ownership—a significant challenge for many farmers, especially those with fewer resources—farmers are often ineligible for public funding support, and investing in immobile infrastructure is difficult to justify. Center pivot irrigation systems, the sweeping irrigation wands that form crop circles, work well for large, monoculture-cropped fields of alfalfa but not for diverse fruit and vegetable crops favored by smaller-scale farmers. Accessing public funding programs also requires considerable time and capacity to navigate bureaucratic paperwork. Funding allocation decisions are still made at the local level by individual FSA staff and county committees, composed of a select group of local farmers, meaning that social connections and reputation can make the difference between receiving financial support and not.

Some agricultural researchers have noted that public funding, especially programs such as crop insurance, discourages adaptation: Why invest time or money in improvements if you get paid even when your crop fails? Researchers have also found that technological optimism can encourage farmers to delay adaptation: If technology will continue providing silver-bullet solutions, why not just wait for the next quick fix?[57] While many commodity crop and cattle farms in Siskiyou County have received disaster relief and insurance payments during drought years, most farmers I met expressed a desire both for independence from government support and for improvement to their operations' preparedness for the future.[58] Several farmers also shared disappointment in new technologies that farm advisers had encouraged them to adopt. Speaking about soil moisture probes and their accompanying software, a crop farmer told me that these new water monitoring technologies "didn't tell us anything we didn't already know." Farmers in the region expressed less optimism about technological solutions than they did pragmatism about the need to pursue an array of adaptations simultaneously, especially options that public institutions helped pay for.

Although farmers acknowledged that input-oriented infrastructure improvements—such as digging wells and pivot irrigation—help in the immediate term, some recognized these as temporary coping tools that do not address the underlying problem of increasing dryness, and can even make it worse. Farmers noted that groundwater withdrawals in irrigation-intensive parts of the county correspond with neighbors' wells going dry. "The

demands on water have increased a lot in the last twenty years," an older rancher told me. "It went off the charts because of large commercial—well, I don't want to point the fingers, because they're our neighbors," he said, cutting himself off. His son, who now manages the ranch and had been listening to our conversation, said that "big alfalfa" growers were moving to the region from the Central Valley and "drilling much deeper wells." The older rancher nodded, sharing, "You're putting a strain on the environment of taking more out of the ground than, in my opinion, you should. [And] it's for a very small group of people, a few large commercial operations." Another farmer, who grew vegetables and alfalfa, noted that by subsidizing irrigation projects for the biggest operators, NRCS was "funneling money" to the wealthiest farmers in the region and exacerbating economic divisions within the farming community.

Public subsidies for water-efficient irrigation systems may, paradoxically, accelerate groundwater depletion. "What we see on the ground is that they get the money, get the project," a young farmer told me, but that this did not translate to reduced water use. Shaking her head in disapproval, she described how farmers who received public funding for irrigation improvements would still use just as much water, if not more. Rather than reducing water usage, digging deeper wells for irrigation simply made it possible to extract more groundwater.

Expensive and relatively efficient irrigation equipment can incentivize farmers to irrigate more land. Once a farmer invests in water infrastructure, it makes sense to scale up production to get the most use out of that infrastructure, highlighting *Jevons paradox,* in which efficiency gains lead to greater overall resource use.[59] Farmers who took out loans to invest in water infrastructure could also become caught in what sociologists of agriculture call a *treadmill of production*, needing to expand and intensify production, which meant pumping more irrigation water, to meet the debt payments on that infrastructure investment.[60] Many farmers recognized that even though capital-intensive irrigation infrastructure (hardware and software) was the most easily funded and immediate adaptation, it proved maladaptive.[61] These investments not only fail to address the fundamental lack of water but actually exacerbate water scarcity.

Technological solutions offered immediate relief, but many farmers also turned to ecological practices that address the root causes of water scarcity. One way to reduce overall water use is to fallow land, leaving it unplanted

and unirrigated. Some farmers downsized their operations strategically to allocate the water they did have to their most productive land or their most lucrative crops. An orchardist, for example, prioritized limited irrigation capacity to high-value fruit trees such as cherries, allowing lower-value pear trees to die. Another way to use less water is to "crop shift," or grow different species that require less water. A vegetable farmer described her choice of drought-tolerant crops, including rosemary and dry beans, saying, "You know, they say drought places are getting a little drier. It's not like the water is disappearing right? We have a certain amount of water on planet Earth. [So] maybe I leave the crops that need a lot of water for places that have a lot of water." Adding diverse varieties also helps mitigate the risk of bad weather that might kill one crop but not another. Crop and livestock diversification also helps spread market risks, such as saturated cattle auctions or international tariffs on exported alfalfa, that quickly suppress commodity prices.

Nearly every farmer talked about practices they were adopting to increase organic matter in the soil. Soil organic matter, which comes from decomposed roots, manures, and other organic materials, acts as a sponge, absorbing water when it is abundant and slowly releasing moisture over dry periods.[62] In the soil, a rich landscape of organisms—bacteria, fungi, and small animals such as nematodes—provide often-invisible ecosystem services including nutrient cycling and water purification.[63] Intercropping and crop rotation facilitate biodiversity above and below ground, and greater biodiversity creates the conditions for more organic matter to be incorporated into the soil. "Well-maintained dirt will see you through a season," said one vegetable farmer. Although farmers historically applied organic materials such as compost to their soil to add nutrients, many described recent periods of water scarcity as motivating renewed efforts to increase soil organic matter—they were banking organic material in their soil, making deposits to stabilize their water-scarce future.

Most crop farmers had already been practicing some form of intercropping (with forage production) and crop rotation (with row crops), but farmers cited drought experiences as motivating certain crop rotation decisions (for example, incorporating grain crops into hay and alfalfa rotations) or specific forage species (for example, planting alfalfa and orchard grass together to increase drought response diversity). Livestock farmers were managing pastures to keep more forage in the field, which kept the soil surface cooler and reduced evaporation. Livestock producers also intensified pasture rotation:

some increasing rotation frequency and others implementing adaptive multipaddock grazing that encourages the growth of more diverse plants with deeper root systems and reduces soil compaction.[64] Many cattle producers had started raising additional livestock species, including sheep, hogs, chickens, and ducks, facilitating multispecies rotations that reduced input costs and spread ecological and market risks. These diversifying field management practices—along with planting cover crops, reducing tillage, planting hedgerows, and integrating crops and livestock—increase biodiversity and therefore adaptive capacity.[65] Furthermore, organic matter can help sequester carbon, an essential strategy for climate change mitigation.

Diversifying field practices, sometimes called conservation or agroecological practices, can take significant effort and knowledge to implement, and farmers find little institutional support. Although these practices can take time to yield results, farmers who adopted them were often impressed by their impact. "It gets better and better. Every year that land gets better," a young dairy cow farmer said, describing his recent rapid pasture rotations. "I mean the difference [is] huge. [The] more organic matter you put in the dirt, the better it's going to hold its water." Even farmers who had been skeptical of ecological practices noticed improvements in their neighbors' fields. "There's people looking over the fence," a strawberry seedling farmer told me as we discussed ecological practices. "There's some people that haven't jumped over the fence yet, but they're looking."

Livelihood Strategies

Most academic literature on farmers' climate adaptations focuses on field management practices, yet shifts in the role of farming in people's livelihoods also open adaptation opportunities. Farmers' explanatory models for the climatic changes they were experiencing can shape their livelihood decisions. Understanding climate change impacts such as temperature increases as cyclical might encourage farmers to temporarily cope with extremes. In contrast, because farmers do not see water politics as cyclical, restrictive water regulation can catalyze long-term adaptation planning.

One of the most common adaptive livelihood strategies, shared by about half of farm families I interviewed, was seeking permanent off-farm employment. Temporary, flexible, off-farm wage work has long helped farm families across the United States cope with and persist through hard times.[66] Older farmers in Northern California often recounted a gendered labor division

of seasonal or temporary off-farm work. During lean winter seasons or bad years, their fathers worked in the local logging industry and their mothers in potato packing sheds. Off-farm income also allowed farmers to start their families and pay for childcare and health care. In the twentieth century, women farmers often worked as teachers, while men worked construction for a few seasons to establish their farming operations and help pay for land, barns and other infrastructure, and stock such as cattle. Yet for some farmers I interviewed, recent compounding crises, particularly water scarcity combined with low market prices for hay and cattle, precipitated a shift in how their families approached off-farm employment. Off-farm jobs were increasingly recognized as necessary *long-term* livelihood adaptations—as life rafts, now permanently keeping many farm families afloat in the stormy seas of climate change.

I met one such family on a warm and sunny Saturday in November 2019. When I pulled up to their cattle ranch, the couple, in their forties, and two of their five children were together tacking up horses, getting ready to move cattle from one pasture to another. Standing between a palomino gelding and a chestnut mare, slowly swishing their tails, the mother seemed to shift moods when she told me about her recent decision to take night classes to become an accountant. She said that she was reconciled to this decision, though unhappy about it. She described the goal of this common, and commonly gendered, concurrent on- and off-farm career strategy as intended "to diversify [our] income so [we're] not completely dependent on the weather and the cattle market." Later that week, I spoke with another young woman who shared a similar story. Over tall glasses of iced tea, sheep grazing around us, this woman described how she and her husband were both looking for permanent off-farm employment, resigning themselves to farming on nights and weekends. Voice shaking and tears welling, she described how her dream had been to farm full time. For the past three years, she said, the smoke blotted the sun from the sky and the grass stopped growing for weeks. The livestock became lethargic and did not want to eat, gaining less than half the weight they should have. The couple's already thin profit margins vanished. With thick wildfire smoke now routine each summer, she and her husband decided that if they wanted to keep their farm, they had no choice but to both find permanent off-farm jobs.

Framing pursuit of permanent off-farm work as a necessary response to a harsh climate reality also signals careful navigation of another set of local

norms. The women I spoke to talked about their concern that they would not be seen as *real* farmers when they worked full time off the farm. An off-farm career framed as necessary, rather than voluntary, and as a response to weather, not economic precarity, might allow these farmers to skirt labeling as "just hobby farmers," a description leveled by local USDA staff to denote farmers who work off their farms. Although four out of five farm households in the United States rely on at least one off-farm income, USDA staff who administer low-interest loans and disaster relief payments and cooperative extension staff who provide technical assistance consistently spoke dismissively of "hobby farmers" as "not our clientele."[67]

By suggesting that livelihood diversification deviates from the model of a *legitimate* farmer, institutional staff establish *moral boundaries* that gatekeep certain producers, particularly women and farmers of color, thus narrowing the group of public resource beneficiaries.[68] Exclusion from public farm support programs, especially for those already struggling to cope, can push livelihoods farther to the margins and reduce access to resources for those most vulnerable to climate change. Framing permanent off-farm work as a response to factors beyond individual control may help some farmers mitigate moral judgments surrounding financial failure.

While some farmers take off-farm jobs to survive, others quietly work to morph their farming operations from producing goods to offering services. A rancher who also worked in local economic development said that more farmers were "diversifying the portfolio to where maybe it's not just cattle, but it's different enterprises under that ag umbrella so that they can better sustain fluctuations in the market or fluctuations in the climate." Sam and Susan, whom we met in chapter 2, added farming-adjacent businesses, such as trucking, to diversify their income streams. Another common livelihood diversification strategy was adding agritourism, such as offering glamping (glamorous camping) or hosting weddings. Many establishment farmers and institutional staff viewed inviting urban publics onto the farm through agritourism as a feminized approach, reflecting a shift away from traditional, masculinized views of agriculture as purely production oriented. Tim and Tiffany, whom we also met in chapter 2, described how, in response to limited water, they had scaled down their irrigated acreage and converted part of a hayfield into a U-pick operation—planting pumpkins, strawberries, blueberries, and raspberries—with the hope that the public's willingness to pay for an agricultural experience would help offset lost alfalfa and cattle sales.

Even as many farming families hoped careers off the farm or adding service-based enterprises on the farm would allow them to continue farming, others pursued the transformational livelihood adaptation of leaving agriculture altogether. Farmers and agricultural advisers I spoke to recounted spikes in land sales—both voluntary and because of bankruptcy—during intense drought periods. As in the farm crisis of the 1980s, droughts catalyze debt and dispossession for some and accumulation for others.[69] Multiple farmers I interviewed, such as Sam and Susan from chapter 2, had purchased land as neighbors sold their farms during droughts, especially in the peak drought periods of 2001 and 2011–14. Although foreclosures did occur, few farmers discussed these openly, instead emphasizing farmers' agency in farm sales. One local USDA officer told me that bankruptcy auctions happen at least once a year, more during extreme drought years, but that the families who have gone through bankruptcy are "embarrassed" and have "laid low." Many farmers told me they had considered selling their farms during droughts. Describing his experience of the extreme drought of 2011–14, one young cattle rancher said, "All the springs dried up, so we had no water up on the range. We attempted to haul water, and my God, I didn't think cows could drink that much water. That was a fiasco. I told Dad, 'If that ever happens again,' I said, 'I'm gonna sell the cows.' It was a mess." In 2019, a local FSA officer told me, "That's one drought alternative, 'I'm going to move to Idaho, this is what makes or breaks me.' A lot of people went under because of the drought. I can think of"—she quickly named four multigenerational farm families that had left farming in the previous two years, ticking off each on her fingers.[70] "They went out of business due to drought," she said. "Drought is the nail in the coffin."

CONCLUSION: BEYOND BELIEF

Farmers know the climate is changing. Those in Northern California, like their counterparts across the globe, grapple with the tangible effects of a changing climate—heat waves, devastating wildfires, smoke-filled skies, unpredictable winds, and persistent drought. Whatever their beliefs about its causes, the consequences of climate change demand that farmers respond. In Northern California, farmers' adaptations to climate change impacts reveal a complex relationship between deeply held beliefs, political ideologies, and pragmatic necessities that extend beyond the borders of California and beyond the field of agriculture.

Contrary to findings from earlier research which suggest that belief in anthropogenic climate change is closely tied to climate action, farmers in Siskiyou County adapt to climate impacts regardless of their stated beliefs about its causes. This decoupling of belief and action aligns with findings from recent studies in other regions in North America—from New York to Montana and New England to Alberta, Canada—in which farmers implement climate-adaptive farming practices despite varying levels of belief in climate change.[71]

A trend of adaptation despite disbelief challenges the notion that farmers must be *convinced* of climate science before they will take climate action—an assumption that has limited the scope of programs designed to promote climate resilience.[72] Instead of beliefs about climate change, farmers are motivated to respond by the desire to maintain their livelihoods.

Although beliefs about climate change may not directly determine *whether* farmers adapt, explanatory models play a crucial role in shaping *how* they adapt. Many farmers in Siskiyou County frame their experiences within narratives of natural weather cycles and harsh geography. Drought, however, occupies a unique position within these explanatory frameworks. In contrast to other climate impacts, farmers hold a dual perception of drought—as both an act of nature and an action by the government—with implications for their political response to water scarcity, fueling antigovernment sentiment and calls for greater local control over natural resources. And farmers are not wrong to see the government's hand in their water troubles. Through both unsustainable reliance on fossil fuels that contribute to a greenhouse effect (that is, warming and drying landscapes such as California) and infrastructure development that has expanded irrigation and hastened aridification, government policies have facilitated climate change. These same policy mechanisms have benefited wealthy interests at the expense of those who work the land and the land itself.

Farmers in Siskiyou County respond to climate change through a diverse array of strategies that span multiple dimensions of their operations and lives. On the farm, adaptations range from infrastructure investments such as digging deeper wells and installing more efficient irrigation systems to ecological practices such as boosting soil organic matter and diversifying crops and livestock. Beyond the field, farmers also adjust their livelihood strategies. Some seek permanent off-farm employment to supplement their farm income, while others diversify into enterprises including agritourism

or, in more extreme cases, contemplate an exit from agriculture altogether. Although adaptations are inherently political, many farmers described drought as having sparked their direct engagement in electoral politics—from lobbying for irrigators to advocating for greater local control over natural resources to supporting authoritarian political personalities who promised material change.

Multifaceted adaptations reflect the complex reality of farming in a changing climate, where environmental challenges are inextricably entangled with market pressures, changing regulations, and concerns about the future viability of farming. A growing number of empirical studies have found that farmers across North America are implementing field management practices that increase adaptive capacity and offer mitigation potential, not ostensibly because of climate change but in response to other pressures. For instance, researchers found that farmers in Arizona described climate-related policy changes as more proximate in shaping their farm-level decisions than climate change itself.[73] Similarly, multiple studies find that farmers' concerns about pressing market forces often overshadow steps toward mitigating climate impacts.[74] Farmers in Siskiyou County articulated well-documented proximate drivers of when, why, and how they changed their farms in response to crises, motivations such as saving time and money and reducing regulatory burdens.[75]

Cultural motivations can also catalyze farmers' responses to climate change effects. In a study with ranchers in rural Colorado, residents identified cultural loss of their way of life as the greatest threat of climate change, entwining concerns about a hotter, drier future with concerns about development and urbanization that would, they feared, lead to loss of rural identity.[76] To save the "character" of their community, residents were willing to consider "previously inconceivable or economically irrational" adaptations and engage in conversations about politically unpalatable necessities of climate change, as long as discussions of its causes remained off the table.[77] In surveys, focus groups, and interviews with rural community members across the United States, residents often describe strong place-based identities tied to land and community, as well as parental identities tied to preserving resources for future generations.[78]

Sitting at her kitchen table, a rancher and mother articulated this deeply personal motivation to plan for a different climate future. "My poor kids. You know, that's why I love what I do," she said. "We really take [their future] into

consideration." Talking about droughts and the difficulty that the next generation would face with limited water, she said, "We're just being wiped out." Her two teenage sons sat quietly next to us at the table, listening intently and silently. "It's not appealing to young people," their mother added quietly, "to step into the strain and the struggle and the heartache, just to persevere."

Cultural livelihood reproduction remains core to family farmers' identities and an ultimate measure of success. Many farmers described a desire to pass the farm on to the next generation as a driving force of openness to new ideas and ways of farming. Closely linked to a desire to keep the farm in the family, another underlying motivation for adapting that farmers expressed was the desire to regain control over their means of production—the building blocks of farming such as nutrients, seeds, land, and water. Diversifying agroecological practices that harness biodiversity to provide ecosystem services across a range of conditions can reduce the need to purchase expensive inputs such as chemical fertilizers, in turn increasing farmers' flexibility, control, and self-sufficiency.

Understanding motivations rooted in moral values and identities, which vary across contexts, can create opportunities to mobilize adaptation and mitigation strategies that address not just the physical and economic impacts of climate change but also its social implications. Environmental policy and communications scholar Emily Diamond argues that reframing environmental policies and actions in core cultural values and collective identities, such as focusing on moral responsibility to future generations or emphasizing autonomy and self-reliance in place-based decisions, can better engage rural communities in climate action.[79]

Crises, especially with no end in sight, can also engender innovation and adaptation. In Siskiyou County, some farmers are diversifying their operations, adopting more ecologically sustainable practices, and even reimagining what it means to be a farmer in the twenty-first century. Rather than a uniform, objectively defined phenomenon, crisis recognition emerges through social negotiation, wherein different groups interpret environmental challenges through distinctly local and contextualized cultural lenses.[80] By focusing on farmers' experiences, social context, and practical needs, rather than abstract debates about climate science, broader coalitions for climate action in agriculture can be nurtured.[81]

Understanding peoples' explanatory models of climate change and appropriate responses across cultural and ecological contexts remains

crucial for developing more targeted and effective interventions to support climate adaptation and mitigation. In rural farming communities where climate change is a political flashpoint, avoiding discussing the causes of climate change and framing action in positive terms will likely be more palatable.[82] Discussing climate action in terms of adapting to *normal* versus *abnormal* weather conditions and *temporary* versus *permanent* changes may also be effective.[83] At the end of the day, if farmers reduce water use in the face of drought, does it matter if some did so to save money on electricity, some to keep more water in *their* soil, some because of fear of further water restricting regulation, and some because they believe in climate change?

Farmers are already responding to climate change impacts, and how they implement adaptations in Northern California challenges traditional academic categorizations. Researchers often divide adaptation approaches: reactive or adjustment adaptations that help cope with immediate vulnerability, which tend to align with existing interests and remain dominant in adaptation discourse, versus proactive or even transformative adaptations that address deeper ecological and social roots of the problem.[84] But reality is far more fluid, and there is no clear line between the two.

What starts as a response to an immediate problem can lead to longer-term transformation.[85] As severe weather events become routine, adaptations that may start as temporary, even unplanned, can become permanent and strategic, paving the way for long-term adaptation.[86] Grazing smaller herds of cattle in rapid pasture rotations, for example, may start as an immediate adaptive response to drought-limited forage but thereafter may become a permanent strategy. Sometimes farmers see improvements that motivate continued or expanded implementation of practices that work well. Often there is no going back on such changes in practice, even if the rains come or the smoke leaves. As one livestock farmer explained, "When we have drought years, [you] reduce your animal units. [It] takes a decade or more to rebuild a cow herd, it takes three to four years to rebuild a flock of sheep. We have no choice" but to continue with reduced livestock numbers. She explained that lost land leases, or the shift in timing of calving or calf sales in an inflexible and concentrated market, generally prevent a return to prior farm practice. As climate shocks become chronic stressors, reactive actions become proactive plans, pointing toward new approaches for supporting farmers in the face of climate change.

Farmers need support to adapt, and county-level farm advisers at public institutions are in a great position to help.[87] Cooperative extension primarily provides technical assistance, while the FSA and NRCS offer mostly financial assistance. Historically, the resources offered through these public institutions have primarily benefited larger-scale commodity producers.[88] From research and development to problem-solving with farmers in their fields, public institutions often favor and facilitate capital-intensive solutions to farming problems.[89] Not only have many of these efforts now proved to be maladaptive, but they have, over time, entrenched inequities and differentiated farmers, as some can access those public supports and others cannot. "When power favors the status quo," environmental sociologist Debra Davidson warns, institutions "can reinforce traditional cultural norms and practices at the expense of innovation."[90]

Climate change presents an imperative, and opportunity, for public institutions to rebalance their efforts and prioritize support for the most climate vulnerable farmers and encourage diversifying adaptation practices that serve as long-term investments in ecosystems and communities. In addition to expanding who they work with and what kinds of solutions they support, public institutions can more effectively work with farmers on climate change by moving beyond teaching farmers about climate science. This "knowledge deficit approach," justified by research showing correlations between climate belief and action, has largely failed. For farmers, just as for other groups, structural forces constrain adaptation options. Limited resource access, insecure land tenure, and inflexible market contracts remain significant structural barriers that limit farmers' climate adaptation.[91] Although well intentioned, trying to educate farmers that climate change is real and agriculture is one of its causes does not help address these structural barriers.[92] A focus on education alone can also deepen expert-lay divisions and rarely changes attitudes or behaviors.[93] When people identify as politically conservative, climate literacy education does little and can even backfire, reducing people's interest in taking climate action.[94]

Even though local agricultural advisers are often limited in the support they can offer, with few resources and little capacity, they play an important role in facilitating connections between research and practice and among farmers themselves.[95] Although climate researchers recognize "that there will not be one silver bullet to increase agricultural resiliency," fostering information exchange between farmers and researchers can lead to the

development of more culturally appropriate, effective climate adaptation strategies.[96] Facilitating farmer-to-farmer knowledge exchange holds promise, since farmers, like many people, often express greater trust in their peers than institutional experts.[97] Peer-to-peer networks can be flexible in changing conditions and facilitate social learning through the exchange of ideas and setting of common-good rules.[98] Research on farmer adoption of conservation management practices, for example, suggests that seeing results can help change norms—both for the farmer who implements a new management practice and for other farmers who can read those practices in the landscape as measures that translate into financial benefits and thus the ability to persist.[99] Often sharing similar values and ideology with the farmers they work with, including about climate change, agricultural advisers across the United States can be trusted intermediaries who can help farmers see the success of evidence-based ecological adaptation practices.[100]

In the politically polarized landscape of rural America, adaptation strategies will need to resonate with people's values, moral commitments, and practical needs. As in many rural places, in Siskiyou County farmers understand climate change, and especially the drought it induces, as primarily a political, not scientific, issue. A future continually reshaped by climate change is anxiety-producing. Although adaptation is necessary, it is also risky. Talking openly about climate change, or taking climate action that deviates from local convention, can amplify those risks and threaten belonging.

CHAPTER 5

Don't Tell My Neighbors

On a hot June day in Northern California, I stood with a rancher in the cool shade of his barn, looking out over green, irrigated cattle pastures that ended abruptly at the base of dry brown hills. As I plied him with questions about weather and droughts, more than an hour into our conversation, he stopped me. He said, "I want you to know that I do believe in climate change." He told me about changes in weather patterns that he had observed over the past four decades. He described how his ranch had been affected by longer and more intense droughts, smaller snowpack that melted earlier, and smoke from wildfires that routinely burned dense, dry forests each summer. When I asked how he responded to these crises, particularly which farm management practices he started or stopped using, he paused. "It's important," he said, looking down at his cowboy boots and scuffing the gravel at our feet, "that you not tell my neighbors that I believe in climate change."

Then the rancher told me that in response to the drought of 2001 he implemented some new agroecological management practices, including rapid pasture rotation of his cattle to increase organic matter and his soil's water-holding capacity. In response, he said, other beef ranchers and agricultural advisers in the community ostracized him. Indeed, I had spoken to some of these other farmers who described this rancher as a "weirdo" and a "hippie" who "people laughed at" when he began shifting how he farmed. Since the drought in 2001, the rancher said that he has been more careful about how open he is about his practices and beliefs that deviate from local norms. His caution paid off. Now, two decades later, he said he finally feels accepted as a member of local farming organizations. He once again has a good working relationship with agricultural advisers. He can now access the available public technical assistance and funding resources, such as disaster relief payments during droughts. Perhaps most importantly, he benefits

from positive relationships with many of his fellow ranchers who will herd his cows home when they escape or let him borrow a hay rake when his breaks or lend a hand on branding day.

There are many reasons why someone might be excluded, or feel excluded, from social groups and institutional benefits. This rancher, for example, acknowledged that some multigenerational ranchers already viewed him with skepticism because he had not grown up in the area, having started his ranch a mere thirty-five years before. But social context constructs perception. Climate change highlights a tension between material risks and perceived risks and how farmers who experience the same material impacts can arrive at different understandings of climate change. What is crucial is farmers' *perceptions* of climate change and its risks. But what risks do farmers perceive with climate change? How do those risks influence their responses to climate change impacts? And how are public agricultural advisers navigating perception of risk associated with climate change? Farmers perceive *social risks* associated with climate change action and discourse, risks that shape how they, along with agricultural advisers, navigate the material realities of climate change.

WHAT IS RISK?

In the summer of 2023, my youngest brother started a vegetable community supported agriculture (CSA) on my mother's farm in Massachusetts. He grew beautiful peppers and celery, but his potatoes and winter squash failed miserably. It was an incredibly wet summer with near constant rain, and the potatoes rotted in the ground before they were ready for harvest. The young squash plants quickly developed powdery mildew, a fungal disease that thrives in moist environments. In October, toward the end of the growing season, I asked my brother what had surprised him most, what he thought were the riskiest parts of farming. "The weather," he said, like many farmers in the past and likely many in the future. "It just feels like so much risk that you have no control over."

Farmers perceive risk in many aspects of their operation and from multiple sources, including globalization and associated international trade policies. But the most frequently reported and studied risks posed to farmers are weather related.[1] Farmers have long had to grapple with flooding in the Northeast, drought in the West, hurricanes in the Southeast, and all the

other risks of weather they cannot control or reliably predict. But although droughts and hurricanes are material, risk is not.

"Risk is not synonymous with catastrophe. Risk means the anticipation of the catastrophe," wrote sociologist Ulrich Beck.[2] In the 1980s and 1990s, sociologists such as Beck, along with others including Anthony Giddens and, later, Cordula Kropp, saw a new social order emerging, one defined by, and organized in response to, risk—especially environmental risk. Unlike droughts and hurricanes of the past, however, these new risks were created by modern society itself. These scholars argued that what Giddens termed "manufactured risks" were not simply a side effect of industrialized modern societies but a primary product manufactured through human agency.[3] Writing after the Chernobyl nuclear disaster, Beck published a seminal book in 1986 titled *Risk Society: Towards a New Modernity.* Beck argued that "modern society has become a risk society in the sense that it is increasingly occupied with debating, preventing and managing risks that it itself has produced."[4]

Risk, Beck argued, "is not a personal anticipation, it's a social construction."[5] Risks are not objectively calculated, they do not form direct physical threats independent of contested cultural and cognitive constructs.[6] Instead, social contexts, values, worldviews, and prior commitments to certain beliefs shape how people understand risks and how institutions respond.[7]

Risks are situated in everyday experiences and are experienced through group perceptions.[8] Scholars who study risk often understand its perception to include a person's cognitive experience of the nature, probability, severity, and consequences of a threat.[9] Cultural and individual context shapes these factors, including political ideology, subjective experiences, beliefs about nature, social interactions, and cultural worldviews.[10] People interpret risks based on beliefs, ways of life, practices, and institutional discourses.[11] Peers, for instance, influence each other's approach, understanding, and response to risks.[12] Institutions—such as the USDA and cooperative extension—also shape social perceptions of risks and individual responses, including farmers' willingness and capacity to adopt particular management practices.[13]

Perceptions of risk can propel or impede action, depending on what those risks are and how they are understood. "Virtual risks" do not need to exist physically to cause real social or economic losses.[14] Thus the "distinction diminishes and gradually vanishes between real risks and the perception of risk."[15] Although risk is a socially constructed phenomenon that appears psychologically proximate, climate change may be experienced

as concrete but psychologically distant, leading many individuals to believe that it will not affect them.[16]

Yet farmers are being affected by climate change while also managing many complex risks. Risk framings help contextualize individual farmers' decision-making as they navigate the micropolitics of everyday climate action within broader structural and political contexts, highlighting the entwined relationships between individual and group perceptions and experiences.

Farmers Perceive Multiple Climate Change Risks

Many farmers I know, including those I grew up with and those I interviewed for this research, described farming as a risky business. For more than a century, agrarian scholars have chronicled the evolving ways that farming is uniquely risky. Unlike manufacturing toys or assembling cars, growing crops relies on fickle weather, farmers must wait for crops to grow or cattle to fatten, and tending complex ecosystems remains labor and knowledge intensive.[17] Investors have, historically, accumulated profits more readily upstream and downstream of farming itself, making money by manufacturing inputs such as fertilizers or controlling highly concentrated wholesale markets.[18] And although technological developments have, to some degree, taken nature out of agriculture over the past century, farming remains risky, and climate change is amplifying many of those risks.

Several farmers pointed out to me that change is also risky, an observation based in experience and that can impede adaptation. While sitting at his kitchen table, looking out the window at cattle grazing, one rancher said, "Change implies unknown, which implies risk." A county official told me that "ranchers are fearful, their world is changing." A state environmental agency employee observed that climate risk is a "way of life issue," asking pointedly, "Will farming as a way of life persist in a new climate change era?"

The farmers and agricultural advisers I interviewed in Northern California articulated three types of risk as especially important in how they make farming decisions: physical risks, policy risks, and social risks. Research on farmers and climate change has largely focused on *physical risks* from impacts such as droughts and floods.[19] Perceptions of physical risks of severe weather events generally motivate farmers to adapt and are one of the best predictors of farmers' action on climate change.[20] If farmers are worried about drought, the logic goes, they are more likely to take measures to reduce their

reliance on irrigation water. Studies have often found that physical risk perceptions, climate change beliefs, and actions are systematically linked. In a large survey of grain farmers in the Midwest, for example, researchers found that belief in anthropogenic climate change correlated with perceptions of greater physical risks and intent to adapt to climate change.[21]

Nearly all farmers I interviewed described physical risks of climate change that align with observed meteorological data and climate models. Farmers described milder winters with reduced snowpack that melts quickly in the early spring, increasing the risk of spring floods; water scarcity leading to extreme droughts; and smoky wildfires. Farmers discussed the changes they observed in terms of weather, not climate. As one sheep farmer told me, "The drought just hasn't stopped." Farmers consistently expressed disbelief in anthropogenic contributors and described current climate events and trends as cyclical.

Physical risks and impacts, such as droughts and heat waves, are not the only effects of climate change that farmers experience.[22] People's cultural experiences of climate change, through media exposure and political affiliation, for example, strongly influence climate change beliefs and perceptions.[23] And those individual experiences—and the cognitive factors that form and are formed by those experiences—shape farmers' frames of reference through their roles in society, group interactions, and institutional engagement.[24] Despite growing evidence suggesting that values can exert even greater influence on farmers' decision-making than physical climate impacts, relatively little research examines how social factors and institutional staff shape farmers' beliefs, actions, and perceived risks regarding climate change.[25]

In one study of farmers in California's Central Valley, researchers found that farmers perceived greater risk to their farm operations from government regulations related to climate change than from the physical impacts of climate change.[26] Perceptions of *policy risk* provoke the opposite response from farmers as physical risks, impeding farmers' willingness to take climate action, due to concerns that acknowledging and acting on climate change might invite additional regulatory burdens.[27] In other words, farmers may worry that if they admit climate change is real—and that agriculture is one of its causes—they will experience additional costly regulatory restrictions.

In Siskiyou, farmers already perceived the crisis of water scarcity as the result of overbearing environmental policy. Access to water—crucial for

farming in a high desert environment—was becoming more unpredictable and costly, and farmers often received just a fraction of the surface water for which they had legal title.[28] Regardless of their beliefs about climate change, farmers who discussed the topic with me worried that climate change discourse and legal action would increase environmental regulation that would disproportionately affect their livelihoods. "Climate change means more regulations on us to grow fish. Regulations drive us out without money to get through permitting and all the other requirements, so corporate agriculture or subdivisions are what will come in," an older cattle rancher told me as we drove through bumpy pastures in his pickup. "We don't have a staff of biologists and lawyers." Another rancher told me simply, "The day government acts, is a bad day for citizens."

Perceiving policy risks, many farmers were changing how, and sometimes what, they farmed in anticipation of regulatory water restrictions. While we were cutting alfalfa on his swather, one farmer said that he "saw the handwriting on the wall" that the state would implement more environmental regulations, particularly around water use, which would in turn increase permitting requirements, resource use restrictions, and litigation opportunities. Listing the steps he had taken to reduce irrigation reliance, another rancher told me, "A lot of neighbors think I'm crazy, think I'm a loon, but I want to be ten steps ahead."

During my time working in Siskiyou (2017–24), the State of California began taking more drastic action to regulate both surface and groundwater, which fanned perceptions of climate policy risk. On May 10, 2021, Governor Gavin Newsom declared a drought emergency for Siskiyou and forty other counties across California.[29] The emergency declaration gave the state authority to curtail surface and groundwater users, which it did each summer thereafter.[30] When farmers' water use is curtailed, they receive a letter from the State Water Resources Control Board telling them to cease irrigation immediately. If they do not, they can face fines.[31] But those fines are generally minimal, and the state has little power to intervene in time-sensitive water conflicts.

In 2022, the fourth-driest year on record in California, a group of Siskiyou County farmers and ranchers decided to irrigate despite a curtailment order.[32] The maximum fine the State Water Resources Control Board could impose was five hundred dollars a day.[33] The total fine received by the water user—the Shasta River Water Association, a private water distributor that served

about eighty farmers and is run by its members—was four thousand dollars, which amounted to fifty dollars per farmer.[34] A fifth-generation rancher told reporters that violating the curtailment "was the cheapest way I could have got by," adding that the alternatives like buying in more hay or selling off cows "would have cost us, collectively, a lot more."[35] Another rancher told reporters, "We said, 'To hell with it.' . . . We're starting the pumps."[36] "I've been pretty depressed the last couple of days," this rancher said. "There's no future. We don't have water. Without water, we're done. And we can't sell the place. Who's going to buy a place without water?"[37] The congressman who represents the region, Republican Doug LaMalfa, said, "The dictatorial whims of [the] State Water Board has no authority to tell the people of Siskiyou County what to do with their property they own. I encourage anyone to stop 'voluntarily complying' with government looters."[38]

When these farmers turned on their pumps on August 17, 2022, the Shasta River's flows dropped by nearly two-thirds in a single day, and stayed at that level, jeopardizing spawning fish, including endangered Chinook and coho salmon, until August 24, when the farmers turned off their pumps.[39] "It's an egregious and blatant disregard for the environment and for our regulations," Julé Rizzardo, staff at the water board's division of water rights, told a reporter. "Unfortunately, there are circumstances such as this where the economic gains that folks can get by violating curtailment orders are greater than the potential penalties available to us."[40] Even the farmers seemed surprised that they got away with vocally defying state law, paying a fine that was just a fraction of what they spend in a typical day on electricity to run their water pumps. "They obviously don't have much enforcement power, because they showed up and told us, 'Shut your pumps off right now.' And we said 'no,' " a rancher told reporters. "You would think they'd get an injunction and shut the pumps off, wouldn't they?"[41]

The federal government also imposed water restrictions. In 2022, Tulelake farmers were allotted a mere 20 percent of the water to which they held title.[42] Then in August, before crops were harvested, the Bureau of Reclamation cut off all irrigation deliveries for the rest of the season.[43] One farmer told a local reporter, "We've pretty much made all investments at this point except for the cost of harvest. . . . Basically, we've almost fully spent our budget on growing the crop."[44] The unusual rains of early 2023 did not translate to policy relief for farmers, which only exacerbated a sense of policy risk. "If this wasn't the year that gets us out of that declaration, what does the right

year look like?" a rancher who is also the president of the county's Farm Bureau told a local reporter.[45] Climate change, it seemed, was ushering in a new policy landscape. "No matter what the hydrology does, there's going to be some reason that we have to be under some sort of emergency order," the local Farm Bureau president said, while also expressing a sense of resignation. "If that's the world we're going to live in, where we have to live with minimum flows, we need to find a way to achieve those flows."[46]

Agricultural advisers are in an excellent position to help farmers adapt to limited water futures. Many reinforced farmers' associations of policy risks with climate impacts. A county agricultural adviser said that access to water is "the biggest challenge facing farmers now and [the biggest] they'll probably face in the future," a problem he described as "a policy crisis, a legislative issue I can't do anything about." Another county agricultural adviser connected contemporary regulatory risk with previous environmental legislation. Speaking of the California state government, she said, "When they came for the spotted owl and shut down the logging industry, no one did anything to stop them. It feels like the same thing is happening with water and agriculture, and who is going to stand up for us this time as they try to put us out of business?" Though not a farmer herself, this staff member identified directly with the farmers she worked with, more than the government institution that she worked for.

About half of the farmers who I interviewed described *social risks,* expressing concern about the potential consequences of being associated with climate change rhetoric or management practices. Farm advisers often confirmed this perception of social risk, which could equal or outweigh concerns about the physical impacts of climate change. In a staff meeting I observed an agricultural adviser say, "People here are mostly worried about others' fear of climate change." Only one farmer I interviewed, a woman who had moved to the area a few years earlier and raised pastured chickens and sheep, said that she *openly* discussed climate change. Referring to the local farming community, she said frankly, "They think we're crazy because we say we believe in climate change."

Farmers who told me they did believe in anthropogenic climate change—almost always after double checking that our conversations were anonymous—said they avoided openly discussing climate change, or the practices they adopted in response, with other farmers in the region. After I proposed questions about droughts, fires, and other climate change impacts while

we were digging potatoes, one mixed vegetable and alfalfa farmer, who had been farming in the county for more than thirty years, laughed and said, "You're safe talking about it here." He described how "there's ridicule" of farmers who seem to acknowledge, discuss, or take explicit action related to climate change. He continued, "Of course, there are deniers, but I don't think anybody who's putting up hay can *not* feel this. They may not know where to put it or be able to talk freely about it, but I'm sensing that they're noticing it. I think it adds to their concern." As if we might be overheard out in the potato field, or perhaps so used to avoiding taboo language, even this farmer and others who did believe in climate change often avoided using the words *climate change* or *global warming,* instead referring to "it." When I asked a multispecies livestock rancher (who privately expressed his belief in anthropogenic climate change) whether farmers discussed climate change, he said, "I don't think anyone's talking about that up here, to be honest. I think people just put their heads down."

Social Risk Perception as a Product of Environmental Conflict

Farmers in the region and those who work with them consistently expressed antipathy toward environmentalism and understood climate change to be a taboo topic, at least in the public sphere. As with explicitly endorsing a belief in anthropogenic climate change, implementing ecological field management practices could also be publicly visible and carry social risks. While reviewing the list of climate adaptation and mitigation management practices on my farm structure and practice survey with a local agricultural adviser, she said, "It's hard, because the ranchers and farmers want to do that kind of stuff, but they also have that thought in the back of their mind of, 'I'm not an environmentalist, I don't want to do this kind of thing.' And it's ridiculous because they are environmentalists. They care about the land, they're implementing all these different practices. [It's] super obvious—they just don't want to be associated with climate change."

Framing climate change as an environmental issue has alienated many people, especially in natural resource–dependent communities. Implicitly or explicitly, this frame blames people whose livelihoods most proximately and visibly rely on the environment for causing harm. Seemingly logical solutions then demand personal sacrifice—for irrigators to use less water, for cattle ranchers to not raise cows, for foresters to stop cutting trees, for consumers to spend more money on "green" products.[47] Beyond placing

personal responsibility in the laps of individual people, this frame promises more environmental regulations on top of those that many farmers already experience as unduly burdensome. For farmers whose livelihoods are already precarious, a politics of "less" is a promise of loss.[48]

In Siskiyou, climate change as an environment issue requiring large-scale governance salted still open wounds. In informal conversations around their farms, farmers often described feeling blamed for environmental degradation and greenhouse gas emissions. Local officials agreed. As a county official stated simply, "Environmentalists are trying to put farmers out of business. They've chosen the wrong enemy."

Public discourses focused on the negative environmental impacts of farming have contributed to a counterproductive and adversarial relationship between farmers and environmental policies and organizations across the United States.[49] A national survey of rural voters, paired with focus groups and interviews, conducted in 2019 found that "rural reluctance to accept the science around climate change" was linked to negative experiences or perceptions of environmental laws that can "increase hardships in rural communities."[50] As a *Politico* journalist observed while attending a meeting of the US Farmers and Ranchers Alliance about federal climate policy where no one dared utter the term *climate change,* "In many ways, climate change denial has become a proxy for rural Americans to push back against out-of-touch urbanites, meddlesome environmentalists, and alarmist liberals who are seen as trying to impose their will on small towns and farming communities they do not understand."[51]

Many farmers and agricultural advisers described witnessing or experiencing conflict over irrigation water allocation and endangered species litigation, including the resulting community trauma of bankruptcy and farm loss. Farmers attributed these hardships to decisions made, and actions taken, by environmentalists and policymakers from distant urban areas. In this historical context, it is understandable how farmers in a dry climate may be concerned that drought (and associated heatwaves, wildfires, and winds) will provide fodder for further efforts to curtail their resource use and demonize their livelihoods.

Neighborly Reciprocity and Institutional Access at Risk

On a clear summer day, I sat at a picnic table with a ranching couple in their fifties. We sipped ice water as we talked. Mount Shasta loomed in the dis-

tance. As we discussed the local farming community, the woman observed, "You know, we have a pretty good bunch that if they ever called, you would just drop what you were doing." When I asked if she could share some examples, she continued, "Helping each other at branding time or whatever else. . . . Everybody likes to go do that. It's a big social get-together." Her husband added, "There are people that I can call on if I need help." He described one neighbor who "every time I load to go to the butcher, if I need help with the cows or something, he will carve out any kind of time to come and help me." Then he described another farming neighbor, "When we're gone or tied up, he'll come feed." As we sat in the afternoon sun, the woman described bartering with farming neighbors, trading bull breeding for hay, for example. "We've traded with neighbors down through the years. It's really nice."

Association with climate change could risk access to informal farmer networks of reciprocity. Colin, the young alfalfa farmer from chapter 2, described how climate change "definitely gets a bad stigma here, that word travels fast." He went on to describe how he does not believe in climate change and how he carefully adheres to community norms of conventional alfalfa farming. "All my equipment is always washed and waxed and lined up, and my haystacks are always straight. I take a lot of pride in the way I do things." Colin talked at length about spraying herbicide to kill weeds and keep his field margins "clean," a practice many farmers described to me as an especially important local norm. When I asked how following community norms played out, he replied, "Having your land clean, you have people approach you. Like I would never have gotten the two leases [for farmland] I got this year."

Although farmers often asserted their independence, they frequently described mutual reliance on each other. "Neighbors help neighbors, it's the only way you can get [farming] done," a cattle rancher told me. The most often cited example of this reciprocity was labor exchange. In a place dominated by cow/calf and forage farmers, few operations hired nonfamily labor. Most farmers relied on the assistance of others within the farming community for labor-intensive tasks. For example, one farmer might help a second farmer put up hay, and then the second farmer might help the first brand their cattle. In addition to exchanging labor, farmers also described sharing advice and information like upcoming land sales, borrowing tools and equipment, putting away escaped livestock, and fixing fences as reciprocal actions that they relied on (fig. 22). During one interview, the farmer

Fig. 22. Norms of neighborliness include remnants of reciprocity that farmers rely on, such as assisting each other with laborious tasks including branding, vaccinating, and tagging cattle.

I was talking to received a phone call from a neighbor who had caught her two escaped livestock guardian dogs. Another day, while driving to check irrigation infrastructure with a farmer, we were flagged down by a neighbor seeking advice on his forage seed mix.

Relying on neighborly reciprocity can be especially pivotal for farmers coping with the impacts of climate change. For example, farmers described allowing each other to herd livestock across private property boundaries to access fresh range or water sources such as springs on other farmers' property during periods of extreme drought. In "major drought" periods, one young farmer explained, his uncle let neighbors "push their cows [onto his land] to get water . . . from certain springs." Several farmers described trucking water from neighbors' wells or to neighbors' fields to water cows when ponds or wells ran dry. When wildfire smoke stunted forage and livestock growth, farmers worked together to navigate changing market conditions. Some coordinated with other farmers via shared social and business

networks to purchase feed or sell calves earlier in the season and at lighter weights to save on feed and shipping costs and avoid direct competition with each other.

In addition to trepidation that being associated with climate change may limit access to informal networks of neighborly reciprocity, some farmers expressed concern about losing their ability to derive benefits from formal groups. Group acceptance in organizations such as the Farm Bureau and the Cattlemen's Association enable access to legal representation and marketing assistance. Public institutions including the USDA Farm Service Agency (FSA) and Natural Resources Conservation Service (NRCS) administer technical and financial assistance programs, including emergency drought-relief payments, at the local level. Some farmers expressed concern that they needed to follow local farming customs and discourses to benefit from local administrative discretion within these institutions. A woman who raised pastured sheep, pigs, and poultry described trying to work with her local USDA staff, saying, "It has been a bit of a struggle. I don't know why, but we seem to have some kind of a weirdo badge that we wear when we go in. . . . It's almost like they see us, and we don't get attention." She attributed this inattention to adopting multispecies grazing practices in response to drought, which she described as a practice that deviated from regional norms.

Social risk could also apparently hamper farmers' access to institutional support services when those institutions were perceived to be too closely aligned with climate change and adjacent environmental concerns. Several farmers suggested that local nonprofits such as the resource conservation districts were hindered in their environmental improvement efforts by the implicit association of these institutions with climate change. As one farmer pointed out, these organizations "try to reach out to people, but they are kind of shunned by a lot of people." A few farmers speculated that this was why staff at public institutions such as the cooperative extension and FSA avoided discussing climate change.

Several farmers described their personal experience of being ostracized and what was lost. Tim, from chapter 2, said that after he sold his cows and began rotating pigs and planting cover crops, his neighbors stopped working with him to manage shared irrigation water. Another livestock farmer said that after he mentioned climate change, his neighbor began diverting ditchwater so that it no longer reached his stock pond. Another rancher

attributed his exclusion from local Farm Bureau and Cattlemen's Association meetings to his visible adoption of agroecological practices in response to drought, which he said his neighbors may have interpreted as a statement about climate change.

These stories do not demonstrate causation—people experience interpersonal conflict and institutional exclusions for many reasons. But the fact that these farmers told these stories when I asked about climate change, and the risks they associate with it, shows that the *perception* of social risk is a factor they weigh when considering when and how to discuss climate change or adopt associated practices.

Social Risk Is Not New, but Climate Change Raises the Stakes

For some, climate change brought social risks of losing their insider status and becoming outsiders. But some farmers in the region had been outsiders long before climate change emerged as a topic of public discourse and division.

Judy and Joe, an older farming couple, described how for a long time they were used to their "traditional" farming neighbors being "aggravated" at them, or at least "ignoring" them. That was how it had been since they started farming in Siskiyou County. "We were the 'weirdos' because we were growing organic and direct-market produce, which isn't done here," Judy told me. "If you do hay and beef the way it's done here, then that would be accepted." Judy and Joe moved to Siskiyou County from the San Franscisco Bay Area in the early 1980s, identifying with the back-to-the-land movement. "There was a whole segment of the farming population that we didn't interact with. There was no common language, basically because we weren't growing hay and beef," Judy told me.

During their career growing organic produce (annual vegetables and perennial fruit such as raspberries and cherries) that they drove five hours to market in the Bay Area each week, Judy and Joe described how the local farming community would barely interact with them, even at school functions with their kids. When their kids were growing up, Judy and Joe tilled their front fields near the road while using no-till practices in their less-visible fields. In that front field they planted pumpkins for schoolchildren to pick in the fall (which they described as an acceptable "hobby crop"). Between the pumpkins and their organic fruit and vegetable fields, they tended a tall windbreak of conifers. They told me that the windbreak served

two purposes. The conifers slowed strong winds they observed getting stronger with climate change, which could damage their perennial fruit plants. The windbreak also served as a visual shield, blocking passing motorists' view of their produce and the agroecological practices such as biodiverse cover crops between rows and the fact that they did not spray herbicide at the base of their fruit canes and trees. "We were organic farmers, and we couldn't put our organic sign up because we didn't want to alienate people," Judy told me.

After decades of farming full time in Siskiyou, employing two local residents with year-round jobs, and raising a family on the farm, Joe and Judy had recently scaled back their operation. In their "retirement" they planted alfalfa and were taken aback by the community reaction.

For the first time in nearly forty years, they told me, neighboring farmers suddenly began stopping by, offering to lend a hand, a friendly word of advice, or even for them to borrow farming equipment. "The ranchers would see me changing water and say, 'Hey, how's it going there?' They'd roll down their truck windows and talk to us!" Joe recounted in astonishment.

"The hayfield has allowed us to enter in a whole different way this larger community." Joe and Judy described a sense of having been ostracized because of their farming enterprise (fruits and vegetables) and management practices (organic, direct market) and the values and politics that these choices signaled. Only now that they were being invited into the established farming community did they begin to see the benefits insider status afforded, such as offers to lend a hand or borrow farming equipment.

Farmers and Agricultural Advisers Mitigate Social Risks

Farmers reduced the social risk they perceived in several ways. First, farmers, especially those who privately admitted belief, simply avoided discussing climate change within the local farming community. One young orchardist described this approach by saying, "I believe in climate change [but] we don't talk to people [here] about it." Some, like this orchardist, sought out nonlocal farming communities in which she could openly discuss climate change; every year she drives more than seven hours each way to attend an ecological farming conference. "You can go and dream and talk to people about those things. [But] when you're here by yourself you just kind of see the changes. You're trying to get by every day, and you just do the best you can."

Second, no matter what climate beliefs they expressed, farmers consistently asserted that they implemented adaptation practices for other culturally normative cobenefits of adaptation such as increasing economic efficiency or participating in new markets while studiously avoiding the mention of climate change as a potential motivating force. For example, when completing my farm practice survey, a cattle and hay farmer paused to tell me, "I monitor all our wells. I've got soil moisture meters to determine frequency of application and rate of application through the summer. So, I mean, I *do* do that. It's not because of drought. It's simply to be more efficient and hopefully reduce power costs." It may be less socially risky for farmers to focus their stewardship narratives on the cobenefits of implementing practices that may otherwise be read in the landscape as climate change discourse.

Third, when discussing climate change, related impacts, or adaptations, farmers typically kept their responses vague, saying things like, "We don't get the winters like we used to, for whatever reason," or "Individual weather events, they're just pretty much random." If farmers did name climate change openly, they often denied or downplayed its contemporary anthropogenic drivers. In an interview with his family present, one cattle rancher told me, as his eyes darted around the room, "The climate has, is, changing. I mean, you just look at history, right? Climate changes over the eons of centuries."

Many farmers thus reduced the social risks they perceived to be associated with climate change by avoiding talking about it openly and justifying their adoption of mitigation and adaptation practices through cobenefits. When discussing related topics, many also asserted doubt or denial about its anthropogenic causes. Yet as one rancher put it, "Farmers at the bar talk real loud about climate change as a liberal hoax, but go home and plan for it."

Social psychologists describe the utility of cognitive dissonance when people are confronted with new information that challenges preconceived "knowledge, opinion, [or] belief about the environment, about oneself, or about one's behavior."[52] To ease mental conflict and tension that arises with inconsistencies between values, beliefs, and behaviors, people may reject, avoid, or explain away new, contradictory information, no matter how objective or accurate its evidence.[53] People often retreat to the comfort of their own opinions and seek out others who hold similar belief systems, creating social realities of agreement that tend to become more hardened and extreme over time.[54] Legal scholar Cass Sunstein argues that certain values

and norms become entrenched over others within social context as groups polarize, repeating certain ideas and enforcing them through social sanctions and disapprobation, or strong moral disapproval, if group members deviate from accepted positions.[55] Many farmers are then in a difficult position as they balance the social and physical risks of climate change. To avoid threatening their place in the social fabric that their livelihoods and sense of belonging depend on, farmers reconcile cognitive dissonance by outwardly aligning with anti–climate change politics that then amplify—talking "real loud about climate change as a liberal hoax"—while they also "go home and plan for it," privately adapting to experienced changes.

Farmers are not alone in navigating climate risks. The public agricultural advisers charged with supporting them also navigate perceived social risks of climate change. Staff at local NRCS, FSA, and cooperative extension offices often expressed similar beliefs to the farmers they worked with. Even if they confided their own belief in climate change to me, public employees worried that farmers would not work with them if they discussed climate change. As an agricultural adviser told me, "To put climate change into a sentence, [farmers] shut off or they get fired up, one or the other. You say things like carbon sequestration and they shut off or [get] fired up, one or the other. You know, 'I don't wanna hear anymore. I'm not listening,' or 'All that hippie garbage.' " Overburdened agricultural advisers described climate change, a topic that might alienate their core clientele, as a low priority among many other pressing and less contentious topics (such as farm infrastructure improvement).

When climate change or related topics such as carbon sequestration arose with farmers, agricultural advisers developed strategies and discourses to support farmers while reducing perceived social risks to themselves and their clients. Agricultural advisers described focusing their programming on the most proximate issues farmers face without ever mentioning climate change. One agricultural adviser, for example, said that he focused on drought because "I understand they are much more interested in issues that directly impact them. You know, if you say like, 'Oh, the ocean levels are rising like two inches per ten years,' they don't care. Here is far away from the ocean." Agricultural advisers universally expressed that they could gain more trust and work more effectively with farmers by focusing action and rhetoric on the cobenefits of adaptation practices such as reducing electricity and water costs.

Agricultural advisers also balance their professional positions and personal relationships in the communities in which they live and work. As other researchers have noted, being farmers themselves, or having farming relatives, can position advisers especially well as trusted sources of information about climate change.[56] But strong local ties embedding institutional staff in the community can also increase the social consequences of deviating from local norms. In Siskiyou, public agricultural advisers—many of whom had personal ties within the local farming community—reflected, reproduced, and reinforced ideas about climate change voiced by prominent farmers in the region, including their skepticism of climate science.

Agricultural advisers described valuing their high degree of local autonomy. This independence allowed them to tailor programs to those they defined as their clientele by, for example, not discussing climate change with farmers who identify as politically conservative. Autonomy can facilitate culturally appropriate framing of climate change to reduce or mitigate the perceived social risks of farmer engagement. As one agricultural adviser counseled, "Just don't lead with something that will turn some people away at the door." Local autonomy also means that agricultural advisers can entirely avoid socially risky topics such as climate change. Indeed, when asked directly, every agricultural adviser I interviewed said that they had no intention of including climate change in current or future programming. As one adviser emphasized, "I'm *not* going to talk about how drought is impacted by climate," adding, "I step carefully when that topic comes up."

NORMS OF NEIGHBORLINESS, GROUPS, AND FARM ADVISORY INSTITUTIONS

Farmers' perceptions of social risks associated with climate change mediates how they exercise micropolitics through practice and discourse, shaping local and global outcomes. "Climate change is fear-inducing," said a mixed vegetable farmer who, in the anonymity of our interview, told me that she believes in climate change. She described how she wanted to "start openly talking about, you know, put your toe in the water and see if it doesn't get bit off," but she was not yet ready to risk being ostracized from the farming community in which she had grown up. In the meantime, she shared her plan to quietly begin crop shifting to more perennials and to integrate sheep into her rotations to build the capacity of her soil to hold more water.

Although farmers respond to climate change impacts, social risk perception may impede the pace, quality, and scale of adaptation and mitigation. Social risk perception anticipates potential social costs and consequences of culturally unacceptable discourses and actions related to climate change. The social risks that farmers perceived in Siskiyou include exclusion from formal and informal farming groups and loss of access to the support benefits they provide.

Explicitly situating individual risk perceptions in group norms helps explain the divide between climate change impacts and action. Social norms are the group rules that determine individuals' understandings of acceptable and deviant discourses and actions.[57] In the case of farming practices, social norms can delineate belonging, and they partially explain the "adoption gap" that scientists have identified between environmental impacts and actions.[58] Farmers in Europe, for example, who deviate from productivist norms by adopting conservation practices face loss of social standing in their communities.[59] Crop farmers in Australia and cattle ranchers in Brazil who, conversely, experience social pressure to implement conservation practices express greater willingness to adopt such practices.[60] The social risk of discussing climate change publicly in Siskiyou may also contribute to observed divides between intent and actual adoption and obscure the fact that farmers do not always mean what they tell researchers.[61] Farmers, however, often described to me the benefits of reputation and group inclusion from adhering to social norms and the risks of exclusion if they deviate from those norms.

Farmers were especially concerned about losing access or ability to derive benefits from neighborly reciprocity, rewards such as labor exchanges and permeable private property boundaries, or what property law scholar Robert Ellickson termed "norms of neighborliness."[62] Ellickson used this terminology to describe the extralegal rules that governed rancher interactions in Shasta County, California, just south of Siskiyou. If ranchers were in conflict, for example, norms of neighborliness dictated that self-mediation, not formal legal action, was the appropriate response. He described norms of neighborliness as operating via incomplete reinforcement and mental accounts of ownership. Norms of neighborliness also governed "how deviants who violate these norms are informally controlled."[63] In Shasta County in the 1980s, those who deviated from locally accepted practices of neighborly norms—for example, by allowing one's cows to eat forage earmarked

for another rancher's livestock—risked experiencing violence, ranging from negative gossip to threats of killing livestock.[64] Exercising this control—be it through the use of force, spreading rumors, or refusing to return a neighbor's escaped sheep—exposes the darker underbelly of neighborliness.

During the 1980s, farmers across the United States were experiencing a crisis. As is the case today, farmers perceived the rapid economic decline and vulnerability of their cultural livelihood as resulting primarily from failures of policy. As now, the farm crisis of the 1980s highlighted the contradictions of capitalist agriculture, particularly how neighbors both rely on and compete with each other.[65] Farmers and ranchers may assert rhetorical values of independence, and yeoman ideology continues to powerfully shape agricultural policies and perceptions, but many farmers depend on one another.[66] Ellickson noted that norms of neighborliness were especially crucial for multigenerational farm families to persist through numerous crises and growing inequalities. In their research on ranching norms and shifting land ownership in Montana, rural sociologists Laurie Yung and Jill Belsky noted that norms of neighborliness "governed long-term relationships and determined restraint, reciprocity, and debt among landowners."[67] Neighborly norms of reciprocity extend beyond the material benefits of getting along with neighbors. In deeper and subtler ways, these norms facilitate the recognition and linkage of precarious livelihoods and provide mechanisms that define and bound belonging.

Norms of neighborliness are far from universal, even in a particular locality. They evolve within and between social groups, negotiated among people who share "common goals and values."[68] Neighborly norms can also operate within and between the boundaries of social groups that foster differing perceptions of climate change. Climate change practice and rhetoric can become sites of conflict and boundary formation between those who hold divergent values and visions of the land. Norms of neighborliness, then, offer both a mechanism and a canvas for social risks to be perceived and micropolitics performed. These vestiges of rural reciprocity can both mediate farmer decision-making in response to change—by setting the norms of socially acceptable and unacceptable responses—and can illuminate the benefits or sanctions associated with following or deviating from local customs. Farmers recognize that adhering to acceptable climate change practices, including particular responses to climate impacts and ways of discussing climate change, can confer social and institutional benefits, while deviating from

those norms can risk losing access to benefits of inclusion in neighborly networks of reciprocity.

Social risks are, of course, culturally specific, meaning that the array of social risks that farmers perceive related to various norms and expressions vary across different contexts. In Siskiyou, farmers and ranchers relied on informal and formal group belonging for neighborly reciprocity, which set high stakes for adhering to anthropogenic climate change denial shaped by broader political and economic forces.

Perceptions of social risk, like perceptions of policy risks, motivate anthropogenic climate change denial and inaction where social pressures to adhere to normative conventional practices and politics of disbelief are strong.[69] Inaction around climate change and climate denialism discourse may, for some farmers, enact the pretense of disbelief. By motivating the facade of climate change disbelief and inaction, social risk perception further illuminates the decoupling of belief and action. Perceptions of social and policy risks operate in opposition to perceptions of physical climate change risks, which are generally thought to motivate belief and action.[70] Farmers in Siskiyou did perceive physical risks associated with climate change impacts, which spurred the adoption of new farming practices and livelihood strategies. Yet policy risks of climate change such as concerns about increasing water regulation and associated litigation, in the context of the region's history of government resource intervention, amplified the social risks of acknowledging climate change's anthropogenic drivers.

Scientists often use the concept of psychological proximity to describe the observation that physical and policy risk perceptions influence farmer actions more strongly than abstract and psychologically distant ideas about climate change.[71] Social risk perception helps bridge this divide between risk perception and concepts of causation. Perceptions of social risks are both psychologically proximate, presenting immediate concern for material impacts, and shaped by abstract ideas about risk and situated normative responses.

Just as past experiences with weather and climate shape farmers' perceptions of the physical risks of climate change, previous cultural experiences and political commitments shape their perceptions of climate-related risks.[72] Politically conservative media, for example, downplays the physical risks of climate change and reinforces in-group solidarity, potentially increasing the social risks farmers perceive.[73] Public and private institutions also shape

risk perception, including by socially constructing "objective facts" about risks, often in ways that benefit wealthy firms.[74] This playbook is not new. A small group of industry-backed scientists systematically manufactured doubt about established scientific consensus on issues ranging from tobacco smoke to acid rain to climate change in order to delay regulatory protections that could dampen profits.[75] Petroleum companies in Pennsylvania hid environmental and health risks of hydraulic fracturing behind often-overblown narratives of economic opportunity to convince farmers to sign leases that left them with little recourse when those risks materialized.[76] Government agencies have framed industrial development and resource extraction as a public good and opportunity for economic gain, whereas the risks of polluting industries are consistently borne by locals and the wealth they produce accumulates elsewhere, leaving rural places "hollowed out."[77]

In a society rife with inequities, wherein risks are disparately perceived and experienced, risk perceptions serve the important societal function of promoting social solidarity by providing shared outlets for anxieties.[78] Compounded by market inequities, regulatory uncertainties, and concerns about generational change, newly extreme weather variability exacerbates livelihood precarity. Within the context of uncertain futures, group norms around climate change response are especially important for farmers' decision-making.[79] Individuals feel greater social pressure "to view climate change as a risk that requires action" as more people in their social group perceive it this way.[80] Dense networks of close social bonds may promote cohesion that facilitates learning and helps new ideas be accepted.[81]

Conversely, densely linked networks can be hard for newcomers to enter, leading many researchers to find that informal and flexible networks are more conducive to change.[82] Environmental risks can be especially divisive, functioning to bring in-groups together and cast blame on "others."[83] Individuals within groups—both informal networks and institutions—have incentives to maintain what they consider the status quo, constraining adaptation.[84] Social groups can also be insular, exhibiting a "reflection problem" in which particular ideas and practices—even maladaptive ones that exacerbate the problem, such as digging deeper wells in response to drought—become understood as correct, allowing those who adhere to dominant identities, discourses, and actions to benefit.[85]

In addition to social groups, risks and the norms they help structure also shape institutional rules and discourses, which in turn "privilege some

rationalities while excluding others, narrowing the range of adaptation pathways."[86] Public agricultural advisers are uniquely positioned in the boundary spaces between farmers and climate science to support actions to mitigate climate impacts.[87] Yet across the United States local agricultural advisers have been reluctant or slow to incorporate climate change into their work.[88] A California-wide survey of cooperative extension advisers in 2017, for example, found that fewer than half of respondents included climate change discourse in their programming, often due to fear of alienating their clientele. As in Siskiyou, agricultural advisers across the United States often report that they themselves are skeptical of climate science.[89] And witnessing crop loss from physical climate impacts rarely increases agricultural advisers' belief in anthropogenic climate change.[90] Perceptions of climate change–related social risks to themselves and their clientele may inform the reticence of many agricultural advisers to engage with such a timely and significant topic.

Agricultural advisers serve as resource and information gatekeepers, with latitude to reinforce or shift dominant beliefs and norms. Local autonomy can hinder climate action, but it can also enable flexible programming that focuses on rapidly changing, context-specific adaptive practices. Situating programming in terms of climate change and focusing on climate change–induced flood risks may be appropriate in Vermont, where farmers more openly discuss climate science, but would likely not prevail in Northern California, where doing so may engender more social risks.[91] Policies and programs designed to support farmers will likely be more effective if they account for context-specific perceptions of social risk that can limit climate action.[92]

The strategic steps farmers take to maintain belonging and mitigate potential social risks of climate change are evident in other agricultural communities around the world. In a study of Australian crop farmers' experience of climate change–induced drought, researchers noted that farmers' climate skepticism was a strategy that allowed them to maintain hope for the future and continue farming, preserving core identities and cultural norms.[93] In Italy, researchers found that although farmers acknowledged climate change's anthropogenic and agricultural causes, they "defended their stakes" by strategically avoiding discussing causes related to the type of agriculture they practiced—for example, dairy farmers avoided discussing greenhouse gas emissions from cows, and rice farmers from rice.[94] Policies and support

services that focus on the physical risks of climate change are important. But imposing regulatory penalties or offering financial incentives to adapt or mitigate climate change without attention to the shifting and situated social norms within communities may be ineffective or even counterproductive. Addressing the broader range of risks that shape farmers' experiences in different contexts can help avoid exacerbating social risks that can reduce climate action or reinforcing harmful stereotypes of farmers as in need of industrialization.[95]

CONCLUSION: REVISITING RISK

In sociologist Ulrich Beck's final article, published after his death in 2015, he wrote explicitly about climate change. He offered an amendment to his famous work on risk societies, proposing "emancipatory catastrophism" that "is not about the negative side effects of goods but the positive side effects of bads."[96] Understanding physical risks helps illuminate climate change–induced heatwaves and drought as negative side effects of burning fossil fuels in the interest of economic growth and wealth accumulation. Adding social risks, alongside physical and policy risks, brings focus to future possibilities: What *goods* might be possible as side effects of climate change's disruption? Who determines what future is desirable, and who stands to benefit from adaptation and mitigation efforts?[97] These questions are especially important as the ways individuals, groups, and institutions understand and act on risk can easily perpetuate existing inequalities and harms.

Beck argued that "climate change induces a basic sense of ethical and existential violation which creates all sorts of new developments," including new norms.[98] Social risk shapes both those norms and people's perceptions of the consequences of deviating from them. Because norms of discourse and practice are socially constructed, they are dynamic and can change. In Siskiyou County, for example, vocal climate change denial was a relatively recent norm that gained traction with growing national political polarization. Institutions can hamper or support equitable climate responses, depending on the ability for rules and norms to change.[99] Even flexible institutions and networks, however, can be maladaptive, producing new forms of spatial and social exclusions that further concentrate wealth and power.[100]

On his deathbed, perhaps searching for hope for the world he would soon leave, Beck envisioned a future that was "not about progress, or about

apocalypse," but instead a metamorphosis of the world that would lead to "social catharsis."[101] Echoing an idealist notion some social scientists hold of present inequities leading to emancipatory futures, he explained that global climate risk was embedded with its own power structure, wherein there is

> a fundamental distinction between those who produce the risk and those who are affected by it. . . . These groups or people are completely different; they belong to completely different worlds. . . . Whether presenting climate change as a transformation of human authority over nature; as an issue of climate (in)justice; as concerning the rights of future generations; or as a matter of international politics and international trade; or even as an indication of suicidal capitalism—all this is about the dramatic power of the unintended, unseen emancipatory side effects of global risk, which already have altered our being in the world, seeing the world and imagining and doing politics.[102]

Climate change certainly is altering the way farmers experience the world and its risks and how they imagine and engage in politics. Agriculture, in its globally dominant form, contributes significantly to the production of climate change risks, and then those risks disproportionately affect farmers and the ecosystems they depend on. On the vanguard of climate impacts and debates about solutions, farmers have considerable opportunity to shift our shared climate future. Even, or perhaps *especially,* farmers assigned relatively little power in the dominant agrifood system can respond to climate impacts in novel and exciting ways.

CHAPTER 6

Reshaping Rurality from the Margins

Across the United States, a growing proportion of farmers are women, and women are receiving greater recognition and respect within households, and in surveys, for their role as farmers.[1] Older US farmers, a majority of them white men, retire or sell their farms for a range of reasons, but the effects of climate change—both physical changes such as drought and policy changes such as new groundwater reporting requirements—are accelerating the turnover of farms. Many of those farms will transition from being owned by individual farmers and instead will be purchased for development, conservation, or consolidation with larger agricultural enterprises. The farms that do transition to new and beginning farmers are managed by a growing proportion of women and farmers of color, despite land access and affordability challenges.[2] In Northern California, farmers have noticed gendered shifts in their profession. "When I was in high school, I [couldn't] imagine a daughter or wife in management," an older cattle rancher told me, adding, "There are no such thing as spouses of farmers anymore. They're farmers, too."

Women in the United States, on average, operate smaller farms that generate less income than men, and they face significant barriers to accessing resources including land and capital.[3] Globally, women also bear the brunt of climate change impacts and the burden of coping with those effects.[4] Unsurprisingly, then, women tend to perceive climate risks differently than men, which influences their adaptive strategies.[5] Some scholars note that women farmers approach farming in more socially relational and environmentally sustainable ways than their male counterparts.[6] And evidence suggests that when women farmers gain control over resources and decision-making, they implement climate adaptation practices that not only sustain their livelihoods but also contribute to broader community resilience.[7]

Performed and socially constructed, identity differences—including gender—compound challenges such as access to institutional resources that could help farmers marginalized by political and economic hierarchies navigate climate crises.[8] Women farmers whose minoritized social positioning can result in their exclusion from entrenched power relations—conditioned by gender, as well as race, class, immigration status, sexuality, and other axes of intersectional identity—often farm differently than those with ready access to the institutional, social, and material resources that structure the conventional agrifood system. Alternative approaches emerge not just by choice but from structural inequities that breed necessity.

The feminist scholar Silvia Federici describes how structural challenges are entrenched in patriarchal systems of capital accumulation that are "necessarily committed to racism and sexism" and have "been above all an accumulation of differences, inequalities, hierarchies, divisions, which have alienated workers from each other."[9] Within the food system, these divisions manifest in gendered social norms, institutional barriers, and economic inequities that pose significant challenges for women. Women hold many of the lowest-paying jobs—in food service, packing sheds, and farm fields.[10] Gendered divisions of household labor place the burden of less visible, undervalued, and unpaid tasks of reproductive household labor on women.[11] Women farmers in Siskiyou County, as in many places, were often caretakers, not just of their land, crops, or livestock, but also of their children, partners, or parents—a commitment that intensifies under climate pressures.

Women in multigenerational farming households are also both caretakers of culture and agents of change—a dual role that becomes especially visible when climate disruption demands adaptation.[12] Balancing being both insiders and outsiders, farmers at the margins of the dominant agrifood system can innovate farming strategies that both maintain and challenge tradition. In the context of increasingly frequent and severe droughts in Northern California, women often stand at the forefront of diversifying, agroecological adaptation efforts that deviate from conventional practices. As one farmer, an older man who grew hay and raised cattle, observed, "The lion's share" of ecological adaptation "is being spearheaded by women."

Women in Siskiyou may perceive fewer social risks (and less to lose) by adapting to climate change in ways that differ from conventional local norms than those more deeply embedded in established farmers' social groups.

"Change—it comes from outsiders," observed one cattle rancher, the father of a young woman who was diversifying the family ranch. "And even though you're a fifth generation, if you're a girl, you're in essence an outsider. You're part of it culturally, but you're not part of the good ol' boys club." This exclusion paradoxically granted women a certain freedom: already excluded from that club, women faced less pressure to follow its informal rules and were better positioned to introduce new ideas and practices. Effectively, women exercised a certain power in the powerlessness assigned to them by dominant institutions and other farmers—a powerful freedom from the constraints of tradition and expectation. As one young woman farmer put it, women are not "burdened by past practice."

These insights find concrete expression in the stories of six women farmers I met in Siskiyou County—women whose adaptation strategies broke from conventional practice not just in their farm fields but in their conceptions of belonging in rural communities. Their experiences reveal how being an insider or an outsider was about not just where someone was from but *who* they were and *how* they approached, and ultimately changed, expectations about what it means to be a farmer. Through institutions, community social structures, and especially within the household, a gendered and generational politics of adaptation emerged.[13] The following pairs of stories illuminate these dynamics, each showing different facets of how gender and other aspects of social position shape climate adaptation in rural spaces.

The first pair of farmers illustrates how old-timer and newcomer status shapes gendered adaptation strategies. Barbara, the matriarch of a politically powerful multigenerational farm family in Siskiyou County, along with "the girls" in her family, pursues adaptation practices that build ecological capacity while the men in her family follow conventional approaches on the same land. Barbara models her new farming practices on newcomers to the region, including Ashley, who is a direct-market, diversified farmer.

Without the buffering effect of a family name that goes back generations, Ashley's experiences of social group and institutional exclusion prove more typical of what many women farmers described to me: being dismissed or not taken seriously by institutional staff at local USDA and cooperative extension offices and by members of majority-male farm organizations such as the local chapters of the Cattlemen's Associations and Farm Bureau. Facing extreme climate impacts while being denied the financial and technical

support of public institutions and being excluded from conventional farmers' social groups, Ashley enjoys few adaptation options beyond those she can harness from the land itself.

The next set of farmers' stories highlights different gendered divisions of labor and approaches to work within farming families. Lisa, a farm matriarch with family roots in the region, exemplifies a rural-coded approach to hard work. As the effects of climate change continue to add stresses, she has begun working a quadruple day: she works on the farm, holds an off-farm job, manages the household, and now leads efforts to educate urban consumers that farmers are not to blame for environmental problems like climate change.

Jessica came home after college to comanage the family ranch with her father. In the face of climate impacts, she has introduced new farming practices and new ideas about work that challenge dearly held notions of rural identity. Like many young people trying to farm, Jessica wants to go on vacation occasionally and make the farm earn her a living wage. She also holds new ideas about how to engage urban consumers—she does not want to sell them on a romantic ideal of faraway rurality but instead invite them into rural spaces and onto her farm. Her urbanizing ideas threaten to reshape the vision of rurality that her father and many farmers in his generation hold as core to who they are.

The third pair of farmers' stories illustrate how other dimensions of social positioning affect resource access and class differentiation. Shelly, a farmer in her eighties, and her partner, Betty, have raised goats in the county for more than three decades on a small acreage of rocky, marginal land. Other farmers gossip about their sexuality and refuse to say hello, and institutional staff have failed to help during crises.

Whereas the other women in this chapter identify as white, Cindy is Hmong American. She and several thousand Hmong Americans have moved to the region since the mid-2010s to raise subsistence livestock and farm crops on small plots of dry, rocky land. The local government has denied Cindy the identity of being a farmer at all because she grows cannabis (among other crops) and has fined her for practices other farmers routinely engage in, such as hauling water during droughts. Shelly's and Cindy's stories demonstrate not only how intersectional identities condition resource access but also how farming is a choice for some and remains among limited livelihood options for others.

GENDERED ADAPTATION ACROSS MULTIGENERATIONAL AND NEWCOMER DIFFERENCE

Barbara: Divergent Adaptations Within the Family

Barbara's family has responded to environmental and economic pressures by pursuing two simultaneous, but highly gendered, adaptation pathways. Barbara's story reveals how power and politics are expressed through a gendered division of labor within the farm household, resulting in bifurcated adaptation processes.

Barbara's family proudly traces its roots in Siskiyou County back to the 1850s, when her ancestors, originally of English descent, came to the region looking for gold and, as she told me, stayed for grass. The farm, now about six thousand acres, has grown and evolved over six generations from a diversified homestead to a focused beef cattle operation. The farm, with about a thousand mother cows, supports four families—Barbara and her husband, Bob, who are in their sixties, as well as the young families of three of their grown children. The extended family is tight-knit. Not only do they share the work of farming, but they share daily meals—lunch cooked by the wives in each couple—that rotate between the four households. During these group lunches, decisions are made and tasks distributed.

Drought features as a common topic around the table. During one lunch on a hot June day in 2019, the third day in a row with temperatures exceeding 100 degrees Fahrenheit, and without a drop of rain in more than a month, the family told me about the trauma of drought. Active in local chapters of the Farm Bureau and the Cattlemen's and California CattleWomen Associations, the family had seen other farmers in distress when streams and irrigation ditches ran dry or the government issued emergency surface water restrictions. They had witnessed other farmers scramble to buy water by the truckload for thirsty cattle and hay to replace grass that would not grow. Searching for more control over their water, the family began digging deep wells during the drought of 2001. Family members quietly and relatively cheaply bought land as other farmers sold, which enabled them to grow and store enough hay to forestall buying feed during droughts. As Bob listed the names of the farming families they had bought out—six in total—he emphasized that drought was one issue these families faced, along with generational change when they "didn't have any sons, only daughters."

Bob proudly described the effort he and his sons led to "streamline" their farm in response to persistent drought since the mid-2010s. Concerned that the government would further restrict water access, or even take punitive action against farmers for using too much water, Bob pushed the family to invest heavily in such efficiencies as laser-leveled fields and pivot irrigation infrastructure, with the goal, as Bob phrased it, to "stay ahead of regulation."

Their investments helped as drought conditions intensified. While the women were cooking lunch, I asked Bob and the young men of the next generation about how they handled recent droughts. Everyone at the table looked at me with a blank stare. After a few moments one of the sons said, "We kind of kept our same practices." He explained that they did not feel the droughts in their fields because their deep groundwater wells kept water flowing as their neighbors' ditches and shallow wells went dry. Another son added, "We did pump a lot of water." And the family had begun turning the pumps on earlier and off later in the season each year. During the growing season, they were spending more than ten thousand dollars a month on extra electricity costs just to operate their water pumps. In the height of dry summers their electricity bill frequently climbed to more than forty thousand dollars a month.

Barbara, like many farm family matriarchs, paid the bills. She saw their operational costs rising just to keep their income stable. While working cattle, keeping the books, and cooking the family meals together, Barbara and her daughters-in-law began discussing another adaptation pathway. Beginning in the early 2010s, they had noticed the success of another group of new in-migrant farmers to the area who raised grass-fed livestock and sold meat directly to consumers. Seeing an opportunity to diversify and capture a greater share of consumer dollars, "we got all the girls [of the family] together [and] then we had a few family meetings and talked about it," Barbara explained. The women pointed out that their cows ate grass, too, after all; their beef was just as high in quality as what the newcomers raised, at least until it went to auction and then feedlots, where its value per pound dropped to a fraction of what their neighbors' grass-fed beef could garner.

A divide in adaptation strategies emerged within the family as "the girls," as Barbara called herself and her daughters-in-law, initiated a new venture: direct marketing grass-fed beef. "It's all run by us," she said, referring to the women in the family, while playfully adding, "except they"—gesturing at the men at the table—"do the heavy work."

Pointing to one of her sons, Barbara said, "His wife is a marketing guru." Pointing to another son, she added, "and his [wife] keeps us very, very organized." The women's initiative began modestly but quickly grew. Within a year the women were supplying beef to two local restaurants, a summer camp, and a farm-to-table restaurant and butcher shop in the Bay Area. When I visited, the women were on track to process and sell about fifty cattle directly to consumers that year. Despite the women's success, Bob was quick to point out that their direct-market venture represented only a small percentage of the cattle they sell. Barbara quickly added, "We're still in a very beginning stage. [We're] still not moving tons of meat for six girls, [but] we have had some good luck."

A large part of that "luck" may be credited to the family's deep roots in the region and respected status within the traditional farming community. The family quickly established direct-market sales channels through relatives and friends who owned local restaurants. They became the only nonowners allowed to use another ranch's private, USDA-certified slaughterhouse in the county. Barbara and Bob were proud to emphasize their family's status in the community, and they recognized the privileges their strong ties to local leaders in the county government and farming organizations afforded. The family had long worked with local cooperative extension and USDA staff, who offered advice and provided cost-share grants to "the girls" as they began implementing new farming practices that could reduce costs in drought and increase the value of their beef. They implemented rapid pasture rotations and left more residual dry matter on their pastures to increase the soil's capacity to hold water (and store carbon, although the family did not name carbon or climate change during our conversations). They developed a ranch management plan to protect salmon habitat in the river that ran through their property, which allowed them to market their beef to environmentally conscious consumers as "salmon safe."

Their status as a well-respected multigenerational farming family facilitated Barbara's ability to adopt new farming strategies without risking the family's overall reputation in the community. That social standing made the men in her family hesitant to fully embrace strategies understood as "alternative" to dominant local norms. Both to me and to other local farmers (at, for example, Farm Bureau meetings), the men in the family described Barbara's diversification efforts as an "experiment" and expressed concern about the stability of urban direct-to-consumer markets and the higher price

point of their beef that, as Bob told me, "a lot of people can't afford." He shared skepticism about the ability of ecological farming practices to "feed the world," reflecting broader tensions within the farming community about losing a powerful claim of identity. Later that summer I was talking to a different rancher who mentioned Barbara and Bob's farm in passing. He said the men were staying out of direct marketing for now but were watching the work of the women in their family closely. The nearby rancher said, "If it fails, they can go, 'Hahaha, well, the women made a mistake.' "

Framed as the women's "experiment," alternative practices that did not become profitable or accepted could be dismissed without risking the family's privileged social position in the wider farming community. Simultaneously, women with multigenerational roots in the area, such as Barbara, can leverage their position—as simultaneous insiders and outsiders—to foster innovation. Such women occupy an especially powerful position as *traditional* farmers, even as they deviate from local norms to change practices and create new traditions. Already not taken very seriously as farmers, even within their own families, women work unbound to a limited set of culturally acceptable practices that constrains the men who have long been identified as the farm decision-makers. Whereas men in Barbara's family worried they would lose standing within the community if they deviated from norms of conventional farming practices, the women had less to lose because they were already at the margins of male-dominated social groups. Barbara's story illustrates the farm household itself as a site of internal divisions, discursive micropolitics, and power exercised differently by various family members as they both change the environment and adapt to environmental change.

Ashley: Institutional Exclusions

Ashley is one of the direct-market, diversified farming newcomers whom Barbara noticed moving into the region. Ashley, who was in her thirties, moved to Siskiyou County in 2017 along with her husband and their young child. They had previously farmed rented land in the Central Valley for six years. Ashley wanted to scale up their diverse, pastured livestock operation, a mix of laying hens, meat chickens, pigs, and sheep. She also wanted to begin building financial and ecological wealth through land ownership. "We were really improving our landlord's place," she reflected. Unable to afford to buy land in the Central Valley, they moved to the northern reaches of the state to purchase sixty acres.

Ashley's approach to farming is rooted in her college education in ecology and soil science. "We try [to] do things as humanely and sustainably as possible," she told me. Though they could not afford organic certification, she said, "We're trying to have as light of a touch with the animals on the land as we can." She uses multispecies rotational grazing as a tool to improve soil health. After her sheep graze an area, the chickens graze next. The birds scratch the sheep manure into the grass as they search for bugs. Then the pigs move in, lightly rooting and aerating the soil as they search for scraps of chicken feed left on the ground. None of the animals stay long enough to eat the grass down to its roots—they are rapidly moved to the next field section enclosed in movable electric fencing. "I'm super into the idea of sequester[ing] carbon," she told me. "The idea of growing more grass but also sequestering more carbon through leaving cover and no bare ground, that is super fun to me—I love that." Ashley also planted trees across her fields, carefully selected and spaced to create silvopasture—a farming system that integrates trees, forage, and livestock—that provides shade for her livestock and reduces soil evaporation as summers get hotter.

Ashley's farming approach often puts her at odds with more traditional farmers in the area. "What we're doing is very different, very strange, for Siskiyou County," Ashley told me on a visit to her farm in November 2019. She shared experiences trying to integrate with the local farming community. She attended meetings and events organized by both farmers and farming institutions. Consistently, Ashley told me, "I felt very other." At an event hosted by the local USDA office a few weeks before our conversation, Ashley described a room full of farmers, all from cow/calf and hay farms. Ashley recounted that at the beginning of the meeting, the organizer, a USDA employee, "just called me 'hipster farmer.' She's like, 'There's room for hipster farmers, too.' [She] was super condescending." Ashley described how the attendees and the USDA staff "were just bagging on people who care about the environment, and it's like, 'Well, those people are actually supporting my income, and they could support yours, too!' "

The difficulty of getting her meat animals slaughtered and processed was another challenge that sharpened Ashley's sense of exclusion. She tried to work with the nearby USDA slaughterhouse that Barbara used, which was owned by a local ranching family. But they would not return her calls or would cancel her slaughter appointments at the last minute, and eventually they told her they simply would not process her meat, leaving Ashley to drive

more than six hours each way to the next nearest slaughterhouse in Oregon. Experiences trying to connect with established farmers in the area left Ashley feeling even more isolated and that farmers like her were unwelcome "unless you're old community, unless you've been here a long time, raised cows."

Experiences of exclusion and undercurrents of dismissiveness that many women farmers shared with me carried significant material consequences. Ashley described trying to seek a small loan of ten thousand dollars from the local USDA Farm Service Agency (FSA) office as "a real struggle." Ashley's husband's salary from a local not-for-profit organization barely covered their basic needs, and she needed this money to help buy stock and feed her first year in Siskiyou, before she had mature livestock to sell. She said she felt "totally alone" trying to navigate the loan process and paperwork. The FSA loan officer with whom Ashley met seemed to decide whether to help her based on "whether they think you're a legit farmer or not."

I had interviewed multiple USDA staff members at the local FSA and Natural Resources Conservation Service (NRCS) offices who corroborated Ashley's experience. An FSA officer explained that county staff must distinguish "between who is a hobby farm or a real commercial farm," stressing that hobby farms are not their clientele. An NRCS officer asserted that farmers who had off-farm jobs "are just not real farmers—they are hobby farmers." Beginning, women, and socially disadvantaged farmers often rely on off-farm jobs to start and maintain their farms, and they are exactly the farmers who would most benefit from the taxpayer-subsidized financial assistance programs offered by the USDA as they face climate change impacts with few resources.[14]

On one of multiple visits with Ashley in the fall of 2019, she described an experience of being dismissed and ultimately denied public climate disaster relief. The previous summer, in 2018, thick smoke blanketed the region. She described feeling sick day after day from working outside in the smoke. In addition to her other livestock, Ashley was raising four thousand meat ducks that summer on contract for a pastured meat brand. In the smoky conditions, the ducks became so lethargic that they did not want to eat. At slaughter, the ducks were so underweight that the contract payment, based on weight, did not cover what Ashley had invested to buy the ducklings, feed, and fencing to raise them.

When the FSA announced that livestock farmers in the region were eligible for disaster relief payments because of the smoke, Ashley called her local

FSA office right away. Their response was sealed into her memory: "Oh, well, just say it's smoked duck." Ashley recalled the FSA officer laughing at her on the phone. "They thought that was so funny. How can you say that to someone? I mean this is some serious money, and it made me really angry." The FSA officer declined her request for disaster relief, leaving Ashley to make desperate phone calls to try to push back payment due dates at the feed company and slaughterhouse, to try to negotiate a better price for her meat, and to go to "knock on doors, trying to figure out how, if, we can even keep farming." Ashley was barely able to scrape together enough support from friends and family outside the region for her farm to survive to the next season. Reflecting on her experience seeking USDA support, Ashley told me, "That's how it is to be a beginning farmer and you're not raising cows. [I] just wish there wasn't judgment [and] attitude."

When I first met Ashley in 2019, she recognized her privileged position as a college-educated white woman with a social support network outside of farming. She also told me how the financial precariousness of farming was a constant source of stress for her family. "Every year you lose money and you're like, 'Okay, when's the breaking point? When are we going to throw in the towel?' It's always a shadow," she told me. Over the next five years, Ashley began taking on more hours in her off-farm job, until she was working full time. She scaled back livestock numbers by half, raising about forty sheep instead of eighty by 2024—just what she could handle on nights, early mornings, and weekends.

In July 2024, when I visited Ashley on her farm, she told me how she had given up on trying to fit in with the conventional farming community, and instead the farmers "doing alternative farming stuff" had grown their own systems of mutual support. She talked about how eager people who did not "fit in" were to create community together. When you meet someone else who has been, as she described "othered," because of who they are or how they farm, Ashley explained, "It's like, 'We're gonna be best friends!' " One of Ashley's local farming friends, who identifies as nonbinary, was sitting with us as we caught up. "We've cultivated a big community of queer people here," they said. "Siskiyou County, we're making it more gay every day."

As we caught up, Ashley described a recent foray back into the traditional farming community. At a farmer-to-farmer gathering for women farmers in the region, she found herself in a group of primarily older women from multigenerational cow/calf and hay operations (fig. 23). "It was interesting

Fig. 23. A mural painted on a building shared by the local USDA and cooperative extension showing "traditional" farming men, cattle and alfalfa production, and technology such as pivot irrigation.

because all of them also had off-farm jobs," Ashley reflected. Despite differences, "We're in the exact same financial situation." Ashley was struck by how much these other women accepted and normalized "how hard they work and how little pay they get [because] they love it and it's their culture." Ashley explained her perspective: "To me, it's like, well we should change that, that shouldn't be the way it is." Ashley described how farmers—"real" farmers who are not corporate entities motivated by gain alone—do not "get paid enough for what we're doing." In agriculture, not all farmers start on an even playing field, she noted, but the idea that many farmers themselves seem to have internalized, that they should just keep "doing the exact same thing and not making any money from it, 'I'm gonna struggle on,' " she stressed, "just doesn't make any sense. That's ridiculous!" Ashley was not the only farmer I met who was questioning the value placed, and morality assumed, in self-exploitation and a vision of yeoman independence.

WORK AND URBAN ENGAGEMENT ACROSS GENERATIONS

Lisa: The Quadruple Day

As a fifth-generation farmer in the region, Lisa's deep connection to farming "is in my blood," she told me, and drives her to work tirelessly, advocating for a way of life she sees as increasingly misunderstood by the broader public.

Lisa's childhood shaped her rural identity, which aligns closely with traditional, rural values of hard work and independence. When we first met in 2018, she described growing up on a farm nearby that her grandfather, who was of Scottish decent, had been granted as a Homestead Act parcel. Her family raised cattle, hogs, and sheep "with no irrigation, none." She recalled the days they herded the livestock to the local train station and loaded them to ship to meatpackers in California's urban centers. She described riding a horse to school and her childhood home without electricity or running water. At seventeen, she said, she moved to a city for the first time to attend college in central California, where she met her husband, who was also from a farming family.

After graduating, her husband worked on farms in the Central Valley and Lisa worked at a farm credit bank. In the mid-1980s, they moved back to Siskiyou County, where, in Lisa's words, they were "gypsy cowboys, because we just rented pasture wherever we could find it." In the mid-1990s, Lisa and her husband bought their own ranchland, a fifteen-hundred-acre parcel with little infrastructure that a bank had been sitting on since foreclosing against its previous owner in the farm crisis of the 1980s.

Now in her early seventies, Lisa still begins her day before dawn, a routine she has followed for decades. Like many farm women, Lisa manages the home and does much of the care work for her family alongside her many other duties. She cooks and cleans for three generations who live together. Lisa makes sure her grandson does his homework and gets off to school. She also manages the family and farm finances. Recently, she has been dedicated to planning her own livelihood reproduction—for the ranch to transition to the next generation. Lisa's parents sold their land to pay for their health care needs when they aged and to pay farm debts that they did not want to pass on to her generation.

Lisa and her husband raised their two daughters to love the land. They gave their children autonomy: each daughter paid for college with her own livestock. The next generations were treated as farming partners and included in decision-making—even her twelve-year-old grandson is "treated as an equal in adult decisions," Lisa told me. Lisa's children want to work on the farm, "but there's not room for them to come back" right now, Lisa explained. The ranch is "too much for one family, but you can't afford to feed two families on it." Her children have full-time off-farm careers (one lives on the farm with her family and works for the county government, and the

other one manages a larger ranch several counties away). "We don't want to pass on an albatross," Lisa told me. "It's got to be financially stable enough to make it worth them pursuing."

Meals prepped and bills paid, Lisa is already deep into her farmwork most days by the time the sun rises. With two hundred cow-calf pairs and more than two hundred acres of irrigated organic hay to manage, there is never a shortage of tasks. And while Lisa has always managed their livestock, she is doing even more of the "day to day" that her husband, whose health is declining, used to do, including managing the hayfields and learning mechanics.

Lisa describes her family's approach to farming as "thrifty," with the goal to "improve the land and livestock." They try to be as self-sufficient and debt-free as possible. They save their own seed to replant the hayfields; they certified their hayfields organic because, as Lisa said, "We couldn't afford the high fertilizer price anyways" (they sell their high-value organic hay to organic dairy farms and buy in cheaper nonorganic hay to feed their own cows in winter); they installed solar panels to run their well pumps and electric livestock fences; they "do everything we can to support ladybug populations" to control pests; and they buy mostly used equipment (with the exception of new irrigation pivots for their hayfields that NRCS helped pay for through a cost-share grant).

In response to milder winters and drier summers, which Lisa attributes to natural weather cycles, the family has changed how they manage their land. As drought shifted from discrete events to a constant stress in the early 2010s, Lisa and her husband took a course on rotational grazing at the Ranching for Profit School in Wyoming. They also began regularly participating in holistic management workshops offered by the Savory Institute, an international regenerative ranching organization. Through these organizations, Lisa told me that she learned about "ecology and ecosystem processes and trying to improve soil health." She began strategically rotating their cows across the landscape to build soil organic matter and water-holding capacity. She saw improvement in the soil and pasture quality, not just on their own land, but also on the range parcels they lease from both private and public landowners. "The US Forest Service is very happy with how our ground looks. [The land has] shown continual improvement in just the way we're grazing the cattle," Lisa told me proudly.

Despite the long-term benefits they provide to the landowners whom they lease from, Lisa's family continues to face challenges securing land

leases. Lisa explained that many large landowners, most of whom do not live on their land, just lease to the highest bidder each year, without attention to their management practices. She also noted that as more parcels in the region have been purchased by conservation organizations or "environmentalists who lock it up and make it a nature preserve and don't want a cow to set foot on it," the price for the leases that remain on the market continues to rise.

As the day winds down, Lisa's work is far from over. In response to rising costs, Lisa also started a new job. Her paid work now is part-time, ten hours a week as a virtual administrative assistant, which she squeezes into her evenings before bed. She has held other off-farm jobs at critical periods in the farm's lifecycle. When they first bought the ranch and had their children, Lisa worked as an elementary school teacher. Even though she worked on the ranch, too, that full time job was essential, she told me, to have health insurance while raising their family. In the intervening decades, she has taken shifts at local stores and managed finances for bigger farms during "lean years" when the family needs extra income. But her off-farm work that takes the most time is unpaid.

Lisa dedicates significant time to advocacy work through California CattleWomen, focusing on educating urban consumers about farming with the goal of countering negative perceptions of agriculture. "It's important for farmers to tell their stories," Lisa said. "Communicating the importance of agriculture to the public is critical because with all the regulations that keep coming down, and all the bad press, you know, they're making the farmers and ranchers out to be the bad guys." Lisa expressed frustration with state and federal government agencies that "don't listen to locals" and instead prioritize the requests and needs of urban consumers who do not understand farming and therefore blame farmers for environmental harms—especially blaming cattle ranchers for greenhouse gas emissions.

Over the past decade, as climate change has become a topic of public and policy debate, Lisa and other farm women have taken on a new unpaid job: combating misconceptions that many feel lead to unfavorable regulations. "We have to reach out and tell our story, our daily life," Lisa told me. If farmers do not share their stories, Lisa cautioned, "our voices are never gonna be heard. We are so outweighed by the environmental side." She described how people in urban areas "just don't know because they've never heard our side of the story, where their food comes from" or what it is like "working every

day." In her advocacy efforts, Lisa often finds herself presenting a somewhat romanticized version of rural life to urban audiences. Yet, to Lisa, these portrayals are not just marketing tactics; they represent what she sees as the true essence of farming: connection to the land through hard work and self-sufficiency.

Lisa's story testifies to the many roles that farm women often juggle, illustrating a *quadruple* workday that has become increasingly common—managing the farm, running the household, working off-farm for a wage, and advocating for agriculture in a changing world. As agriculture evolves, women such as Lisa play a crucial role in maintaining traditions, including values and approaches to work they consider traditional. But a generational divide is emerging in how farm women approach work, which threatens to undermine moral claims that help defend belonging in rural places.[15]

Jessica: New Approaches That Blur Rural-Urban Binaries

As the daughter of a conventional rancher, Jessica journeyed back to the family farm drawn by a desire to do things differently. Her sense of place developed by leaving it, and drove her to return and engage in a politics of land as place making.[16] "I believe that farming and food is the one place in my life where I feel like I have any sort of actual political power," Jessica reflected when we first met in 2019 and discussed her motivation to farm. After graduating from college in 2010, Jessica worked on several other farms across California and found a farming mentor, an older woman who owned a highly diversified direct-market vegetable farm. Working in the field together, Jessica's mentor told her, " 'You're not a boy, you don't have to prove yourself, you can come inside and have a popsicle, you can take a nap, you can do that. You'll be a better, happier employee if you take care of yourself first,' " Jessica recounted to me. "What a mind-blowing concept!"

Jessica and her sisters grew up with a father who she described as "classically male." Jessica's father did "not believe in the glass ceiling, he's like, 'No, there's no inequality, just do it!' It was, 'Go get hay, go hunting,' " she told me. "My dad treated us the same way he would have treated a boy." For Jessica, that meant she was always "hearing his voice in the back of my head [asking,] 'You only worked thirteen hours today?' " But, Jessica told me, working that hard for that little pay "doesn't feel sustainable."

Jessica described how, growing up, it was "really stressful having just cattle and hay." Her goal in coming back to her family ranch in 2017 was to

"change the way that agriculture is done here in this valley." She described how her father's generation was influenced by their own cultural context that was "more conservative" and "very male-oriented." Jessica explained how her father's peers still hold onto "hundred-year-old practices [that] are not where ag is going." She also noted that her father's generation had not gotten off the farm much, but "the next generation is being exposed to much more." Looking to the future, Jessica saw two options for farmers: to "get big or get diversified," she said. "You can either buy out your neighbors or market better than your neighbors." For Jessica, diversification presented the key to maintaining a family-scale farm that was a "manageable-size operation that's not too big."

Jessica added new enterprises to her family's farm. She described paying close attention to the changing ecology of their land. Biannual plants, including parsnips and carrots, need winter freezes to bloom in their second year—something California farmers farther south cannot count on anymore. Jessica saw a diversification opportunity and leveraged family connections with a seed company to grow biannual crop seed on contract. To increase water retention in their soil, Jessica started raising laying hens and meat chickens that she could rotate between the cattle and sheep. She told me, "The grass is my jungle. I'm going to clear my little spots and let the jungle come back in."

After just two years farming with her father, Jessica had already shifted the majority of their sales from wholesale to direct-to-consumer markets. She sold beef, lamb, chicken, and eggs at several farmers markets over the border in Oregon and through a buying club. While farm women of older generations, like Lisa, often emphasized their efforts to educate urban consumers—kept spatially separate from rural landscapes—younger farm women like Jessica increasingly invited consumers to the farm itself. "We need outsiders for economic revitalization," she told me. Jessica had begun hosting farm dinners, concerts, and other agritourism events to attract "urban people" to the farm. She said that, like the older rural farmers she grew up with, she viewed urban tourists as "annoying," but she understood their presence in rural places as a "necessary annoyance if you want to keep ag in the family."

Jessica embraced another approach that blurred rural-urban divides: proactively working with environmental groups, often based in urban areas. Making air quotes with her fingers, Jessica told me that, as a farmer, it was

crucial to work with "the other side." She described growing up as escalating tension over water pitted farmers against environmentalists (along with tribes and the government). She grew frustrated that "everyone argues over water [while] everyone has the same end goal. Nobody wants to see the water go away, and nobody wants to lose their lifestyle and livelihood." Representing farmers in these water conflicts, agricultural advocacy groups including the Farm Bureau and Cattlemen's and California CattleWomen Associations were, Jessica said, "social clubs that are behind the times." Led by older generations who valorized rugged individualism and human mastery of nature, Jessica saw their tactics as antagonistic, which only made water politics "more and more polarized." Instead, Jessica and many other younger farmers I met were uniting after years of impasse to find policy solutions that worked for farmers and tribal communities, for irrigation and fish. "You aren't going to win that argument if you don't have anything but stubbornness to bring to the table," she told me. "I don't see polarizing as the answer. You just sticking up the middle finger, you're never going to win."

In another significant departure from often-asserted rural values, Jessica, like many young women farmers I met, adopted a different approach to farmwork. Jessica did not support the traditional view of farming as a calling that requires, even glorifies, sacrifice. "I'm already exhausted, I'm already overworked, I'm already under-slept, I'm already underpaid," Jessica told me, clear that she did not glorify hard work and self-sacrifice as her father did. She described the gendered and generational dynamics of the farming culture she grew up in, saying that it often felt as if there was competition for "who's the toughest, who hasn't taken care of themselves the longest, who hasn't taken a vacation in fifteen years." Exasperated, she added, "It's like, 'Dude, just ask for help!' " Jessica explicitly wanted to earn a living wage from farming, to take vacations, and to work reasonable hours—goals often seen as antithetical to a farming lifestyle and moral code of rural belonging rooted in a masculine vision of self-sufficiency through hard work.

Jessica described a "culture in agriculture, probably tenfold in agriculture, if you come in and you're new and you're trying to do something that's maybe on the cutting edge or maybe not how it's always been done here, then you're kind of shunned a little bit." But she took care not to entirely dismiss her father's experience as she found ways to blend new ideas with established practices. Reflecting on her favorable social positioning as a member of a multigenerational farm family, she said, "I'm in a very lovely

position where I'm a member of the community, so I don't represent a threat to anyone's lifestyle, but I'm choosing a different one."

Complex family dynamics present their own challenges. Jessica described "the stress of trying to make a living in agriculture and then trying to reform a relationship with your family members." Like many young farmers returning to their family operations, Jessica maintained an informal agreement to farm the land with her father, both privileged and precarious. "Part of me wishes that it was a little more black-and-white," she said of her land access arrangement. "I would rather give you money and not be the, 'Hey you, drop what you're doing' person." But Jessica acknowledged that she likely would not be able to farm (especially, she said, given her college debt) without access to land that her family owned, "land that I love already."

Like Ashley, Jessica also met challenges trying to work with public farm support institutions. When Jessica began growing vegetable seed, she went to the local cooperative extension office to see if they could provide technical assistance, but she told me, "The local ag extension, they don't really understand vegetable farming. I don't feel like they're organic leaning. So, I kind of gave up with them." Jessica also described how hard it was to "get anywhere" with USDA staff. When she tried to get a loan from the local FSA office, "Everybody I talked to kind of gave me that, 'Oh, isn't that cute,' " she explained. "If you're trying to do anything that varies from the conventional norm, I don't want to call it condescending, but they just don't take you seriously. And I feel very seriously about it. I don't think what I'm doing is 'cute.' " Eventually, Jessica stopped trying to work with the USDA and cooperative extension, worried, she said, about "what kind of eyebrows are going to get turned up at me?"

As she navigated institutional barriers, family relationship dynamics, and her wider rural community's farming expectations, Jessica found herself not only reimagining farming approaches but also questioning the identities that she holds and how they formed. Over the years that I spent time with Jessica, she grappled with her identity as a woman in a traditionally male-dominated world. "I am a woman, and I am trying to come to terms with what that means," Jessica reflected when we spoke in the summer of 2024. "Does that mean that I'm not trying to build an empire? Does that mean that I'm not trying to cultivate as much of the land as I can, like I'm not trying to sew all my oats?" In our conversation, Jessica shared her observation that men and women in her community often take different approaches to farming,

and she struggled with her own relationship to gendered expectations and expressions. "I've resisted pink for years, like if I want to be taken seriously, in any sort of room then 'Don't wear fucking pink whatever you do!' You know, who am I serving by doing that?" she posited. "It's like, who am I serving by resisting to prepare food? I'm definitely not serving myself food!"

Wondering aloud about her own experience of gender, Jessica asked, "If something comes more naturally to me, should I resist that? Like is it that I'm more nurturing as a woman?" Jessica saw strength in gendered traits typically undervalued in conventional agriculture. "I'm phenomenal at creating relationships and networking and bringing people to the ranch, and that is not something that has been encouraged or recognized or fostered in me, because it's not that classic, 'Go out at the crack of dawn, you work like an animal, and then you come in and eat like a hog,' " she observed. "That's not me." Instead, Jessica said, she aimed for work-life balance, tried "to engage the environment," and prioritized community and collaboration. In response to the loneliness and isolation that Jessica described experiencing when she began farming, she worked to build connections with like-minded farmers who shared her vision. "Instagram is kind of an important feature of my moral support in farming," she noted. Even remote connections with other farmers who were challenging "traditional" notions of farming identities helped combat isolation and reinforce innovation. In 2024, she and eighteen others—many of them also young women with their own production farms—started a two-acre cooperative subsistence vegetable garden on one of their farms. Twice a month they tend the land together, sharing the work and harvest as a community.

Farmers like Jessica do not just change their own farms; they reshape rurality. By bridging narrowly perceived divides between urban and rural approaches—to work, to conservation, to farming, to community—they are creating new visions of agriculture and what it means to be a farmer in a changing world; they are shifting the often-guarded boundaries of belonging in rural spaces from performances of independence and self-sufficiency to the reality of interdependence and reciprocity.[17] Beyond mere "micro-alternatives," these farmers are literally creating spaces of their own belonging grounded in moral codes and values that can expand and change.[18] As Jessica put it, "I think that there is a lot to be said for peer pressure." Perhaps, through the efforts of young farmers like her, the pressure to conform to outdated farming approaches will give way to a new, more sustainable and inclusive agricultural paradigm.

INTERSECTIONAL IDENTITIES CONDITION RESOURCE ACCESS

Shelly: Gender and Sexuality Intersect to Heighten Exclusions

I met Shelly in 2019, shortly before her eighty-third birthday. We sat in the shade of a grape arbor outside the trailer home she shared with her seventy-five-year-old partner, Betty. Together, they operated a small goat farm in Siskiyou County, a venture they began three decades earlier after divorcing their husbands. "We were two women with no viable income," Shelly recalled, her voice a mix of pride and weariness.

"We wanted to raise goats and needed land," Shelly explained when I asked how they had come to the region. After searching across California, the only property they could afford was twenty-five acres of dry, rocky hillside in Siskiyou. Believing strongly that "grains are best used as human food" and water was for drinking, they grazed their herd on unirrigated pasture. They practiced organic methods but could not afford organic certification. Instead, they built trust with their direct-market customers who bought goat meat at farmers markets over the border in Oregon. Their primary income, however, was from an essential role in livestock industries that smaller-scale so-called hobby farmers often play: selling breeding stock, which in Shelly's case included providing mentoring to people across the country who bought their multipurpose Nubian goats. While they could not afford to build a dairy processing facility that met health code specifications, Shelly and Betty drank their own goat milk and made cheese and yogurt for themselves.[19] Shelly also grew nearly all their food in a large vegetable garden and reused or created as many of the materials and tools they needed to keep costs low. "We're not trying to create any debt, let me tell you," Shelly said.

Although they were prepared for farming to be hard work, Shelly said they were not ready for the degree to which they were ostracized by the local farming community. Her tone matter-of-fact, Shelly said, "When we came here, the talk started immediately. 'These two have to be a same-sex couple.' Because if you're a woman and you're competent in ranching, there's gotta be something wrong with you." Already considered outsiders because they "haven't been here for generations," the assumption of their sexuality, Shelly explained, was wielded as social prejudice. "When they think that's an insult and that's what they're going to call me, then I take exception, that's when it's wrong," Shelly asserted with a hint of defiance. "A whole bunch of people

out there in the farming community have never met us"—even after thirty years—because, Shelly said, they "think we are lesbians."

The social isolation Shelly and Betty experienced was compounded by institutional exclusions. Shelly described trying to work with the local USDA and cooperative extension staff. "Sometimes men have a hard time working with women who run a farm. They just don't think that we know what we're doing or that we're willing to work at it. And we were not treated with the proper respect that we thought we deserved," she explained. "So, we didn't go back."

Despite these exclusions, Shelly found profound meaning in her work, and her affection for her animals ran deep. "The goats have taught me so much," she said, reflecting on the lessons learned through interspecies relationships. "I wish I'd had [goats] as a young mother, they've taught me so much about mothering." When I asked why she farms, Shelly responded simply, "What else would I do? Farming took over as my way of life." As she and Betty have aged, they have had to scale back from two hundred to sixty goats. They could not afford to hire labor. But recently, they received help from neighbors that underscored to Shelly just how alone they had been for so long. "We had a lovely same-sex couple that live just right over this hill in a little house next to us," Shelly told me, gesturing beyond the hillside where their goats grazed. Her voice cracking and her eyes watering, Shelly described how the two young men who were their new neighbors came over to check in on them, brought baked goods, and helped them with farm chores when she or Betty were not feeling well—kindnesses few others in the region had shown them. "They are lovely people," Shelly said quietly. "They really did help us a couple of times out of really tight spaces."

Shelly's experiences underscore the intersectional challenges she faces as an older queer woman with few financial resources in agriculture. Despite the exclusions she faced, which she explicitly attributed to the identities she holds, Shelly perseveres. With a smile and tone of triumph, Shelly told me, "These men ranchers, they never expected us to last." After three decades of farming, as she looked to the future, Shelly shared a mix of practicality and hope. "There's more behind us than there is in front of us," she acknowledged. Her children lived far away and were not interested in farming, "We are certainly not building a dynasty," Shelly explained. "I want to be able to live out my years here. I would love it if I could have a few goats until I go." She then told me a story about her favorite doe, named Honey, whom

she had found dead in the field one day, Honey's head resting on a log as if sleeping on a pillow. Shelly described her process of grieving Honey's death, and then thinking, "Isn't that how we humans want to die? No distress, no pain or fear. We have a saying here when we experience this kind of death: 'God must have loved her to have taken her like that.' " Gazing out across the landscape, Shelly added, "God must have loved Honey."

Cindy: Gender and Race Intersect to Heighten Exclusions

Cindy's story is different from the other farmers in this chapter in many ways. I did not conduct formal, recorded interviews with Cindy. Instead, Cindy shared her experiences, often grounded in those of her mother, with me during many less formal participant observation visits over two years. We ate meals together, we took walks through the scrubby junipers near her land, and I accompanied her to meetings with county officials. I include fewer quotations and draw more heavily from research about her situation. Cindy's experience as a Hmong woman grappling with climate change while being denied the identity of being a farmer is important to understanding the political importance of farmer identities in rural place making and belonging.

Cindy was born in Laos in 1975, two years after the United States' Secret War in Laos ended, leaving Hmong people, an ethnic minority who had fought alongside the United States, persecuted by the communist government. When Cindy was a year old, her mother fed her opium the night they crossed the Mekong River to keep her from crying as the family swam to Thailand. Until she was fifteen, Cindy lived in Ban Vinai Refugee Camp in Thailand. She did not leave the camp until 1990, when her family was resettled as refugees in Saint Paul, Minnesota. Within a year of moving to the United States and starting high school, Cindy was married to an older man. By the time Cindy graduated high school, she had three young daughters and two jobs and had divorced her husband, which brought gendered stigma that still follows her within the Hmong community decades later. Through her twenties and early thirties, she raised her daughters and earned her community college degree in education while working both at the after-school program where her daughters went to school and at a medical device factory on the night shift. Her little spare time was spent helping her mother farm a small plot of land a thirty-minute drive outside Saint Paul.

When I first met Cindy in Siskiyou County in October 2022, she showed me photos of her mother's quarter-acre farm in Minnesota from a few years

earlier, lush with corn, long beans, bitter melons, cucumbers, and squash. Her mother grew most of the family's produce and sold the extra to neighbors and friends. Cindy's mother had no formal education and did not drive, which left Cindy to bring her to, and pick her up from, the farm. "Farming is what she knew how to do," Cindy told me.

In 2015, one of Cindy's uncles moved to Siskiyou County, part of the first wave of Hmong in-migrants to the region. At that time, the county had a permissive medical marijuana ordinance and a long "hippie growing history," as a board supervisor described, that was "kind of culturally accepted." Mostly white men had been growing cannabis in the region for decades without issue. On the eve of California's legalization of commercial cannabis, several thousand Hmong farmers sought new agricultural lives and economic opportunities in Siskiyou County. Many of the early Hmong in-migrants were elders, including Cindy's uncle, who described wanting to own their own land, to live near mountains that reminded them of Laos, and to grow medicine that could ease pain from war injuries and decades of repetitive farm or factory work.

The county was home to several large, rural subdivisions in which Hmong farmers, a majority of whom had been resettled in racially segregated and poor urban areas, could afford one-to-two-acre plots of marginal, dry, rocky, sloped land.[20] With few houses and no public services such as water, electricity, or paved roads, these plots were inexpensive—often selling for under twenty thousand dollars in 2015. Each subdivision featured several thousand plots, which allowed families and friends to buy land near each other. By 2021, officials estimated that the largest subdivision, where Cindy's family owned land (and where Cindy moved in 2021), was home to between four thousand and eight thousand people, 75 percent of them Hmong.[21] For elders including Cindy's uncle and mother, who had spent their lives moving from place to place and had struggled to navigate life in the unfamiliar cities they had been resettled in, the rural subdivisions in Siskiyou promised a utopian future. "My mother could navigate the world of the subdivision on her own, she could go around and make friends and live her life without the handicap of not being able to speak the language or read or write," Cindy told me.

But Hmong farmers encountered what many described as xenophobic and anti-Asian responses from white residents and county officials. When California voters legalized commercial cannabis in 2016, the county government quickly used the new local control capacities granted in the ballot

initiative to ban commercial cannabis cultivation at the local level (more than two-thirds of local governments had banned cultivation by 2024).[22] The county quickly shifted its governing capacity and resources—through ordinances, zoning amendments, budget allocations, and increased law enforcement—to what county officials called the "out of control problem" of cannabis cultivation that "threatens our way of life" and the Hmong residents they associated with the "problem."[23]

In 2019, Cindy's father died, and her mother's health was failing. While cannabis was still stigmatized in many Hmong communities, and rarely discussed openly, Cindy's uncle spoke of the fresh mountain air and peaceful agrarian life in the mountain valleys of Northern California. Hoping that being near extended family and having land of her own to live and farm on would relieve her mother's physical and mental health, Cindy bought her mother a two-acre parcel and a recreational vehicle to live in. On moving, Cindy's mother seemed happy—she raised a flock of chickens, built raised beds, and grew vegetables, medicinal herbs, and about fifty cannabis plants. She took steam baths infused with cannabis and her mobility improved. She visited with friends and relatives and left the subdivision only once every few months to buy food staples such as rice, fuel for her RV generator, and feed for her chickens. She even sent a little money from her first harvest to help one of Cindy's daughters pay for college tuition. But what made the land affordable also made it vulnerable to climate change—both the physical impacts of drought and wildfire and the targeted enforcement of rapidly evolving local land and water use policy.

The county government found that water scarcity and climate anxieties proved fertile ground on which to build anticannabis coalitions and pass local regulations that did not name race or ethnicity but disproportionately affected Hmong farmers. In 2020 and 2021, the county passed a series of water ordinances that banned the use of groundwater to grow cannabis, banned moving water from one parcel to another, and then banned transporting more than one hundred gallons of water on certain county roads—only the roads next to the subdivisions where Hmong farmers lived.[24] Without their own wells or a public water system, residents in the subdivisions relied on water trucks that filled from several large irrigation wells, owned by a few local white alfalfa and cattle farmers. After the ordinances passed, the wells shut down and water trucks were impounded.

Enduring the hottest summer on record in 2021, farmers in the region, including Cindy's mother, became desperate for water—not just for grow-

ing cannabis but also for drinking, bathing, watering livestock, and irrigating vegetable gardens.[25] Cindy's mother spent hours each day trying to find water. She drove an hour each way to Yreka, the nearest city, to fill every cooler and jug she had from gas station hoses.[26] One day in early June, driving back from town, Cindy told me, her mother was pulled over by a sheriff's deputy who counted just over the hundred-gallon limit. The officer issued her a fine, which she could not afford to pay, and impounded her pickup. Although people of Asian and Pacific Island descent comprise only 1.8 percent of the county's population, over 70 percent of fines under these ordinances were against Asian Americans such as Cindy's mom, and 88 percent of the fifty-two property liens the county placed for unpaid fines in 2021 were against Asian American landowners.[27]

Just a few weeks after the water violation, another, even bigger crisis erupted. On June 28, 2021, a wildfire, named the Lava Fire because its burn pattern seemed to flow down the slopes of Mount Shasta, burned nearly a third of the rural subdivision where Cindy's mom lived. Local law enforcement officials fanned fears of organized crime, and firefighters were slow to enter the subdivision and respond to the emergency.[28] Despite evacuation orders, some Hmong residents, including water truck drivers, stayed to fight the fire themselves.[29] Police shot and killed one man who defied the evacuation orders, a thirty-five-year-old named Soobleej Kaub Hawj, as he tried to drive through a checkpoint.[30]

After the Lava Fire and police shooting, Hmong residents organized protests, marching in Yreka with signs that read, "We need water," "Water is a human right," and "Asian lives matter."[31] The county's policies and enforcement strategies had such disproportionate impacts on Hmong farmers that the American Civil Liberties Union of Northern California helped file a series of legal actions, including a class action lawsuit, under the constitution's equal protection clause.[32] Cindy's family land had been spared by the Lava Fire, but stress from the trauma of the summer's water scarcity and wildfire caught up with Cindy's mother, whose health worsened.

Cindy had been piecing together odd jobs since she lost her after-school position in 2020, when the school she worked at closed during the Covid-19 pandemic. Now that her daughters were grown, she thought she would try farming, and she wanted to spend more time with her mother in California. But, in October 2021, within a few months of her move to Siskiyou, Cindy's mother died. "This place holds memories of my mother," Cindy told

me through tears one afternoon in the summer of 2024. As we ate spicy khao poon noodle soup at a food stall in one of the subdivision's informal food markets, Cindy described the tension of wanting to farm this land her mother loved but being "driven out" by the county government.

Cindy frequently reiterated that there were few crops besides cannabis she could grow on an acre or two of dry, rocky land and still hope to turn a profit. In 2022, Cindy's first growing season, she invested in two hoop houses and planted ninety-nine cannabis plants. In a drought and under the county's aggressive efforts to restrict water access to the subdivisions, Cindy watered her plants sparingly. Although the county estimated that each cannabis plant used six gallons of water per day, Cindy gave each of her plants just one quart. Whereas the county emphasized concerns of toxic chemical use, Cindy described sparingly feeding her plants fish emulsion, noting that having worked on factory assembly lines, she did not want *more* chemical exposure. Like many Hmong residents I spoke to, she expressed confusion about California's evolving cannabis cultivation policy. She said that she thought it was still legal to grow up to the medical limit of ninety-nine plants in California, and she did not know "why the county is not following state law."

In addition to enabling local cultivation bans, when California legalized commercial cannabis in 2016, the state defined cannabis as an agricultural *product,* not an agricultural *crop.*[33] This technicality excluded cannabis growers from agricultural legal protections such as right-to-farm laws and allowed localities to deny the identity of being farmers to people who grew cannabis. "It is not agriculture in any way, shape or form," a county agricultural official told me when asked about cannabis. The county official vehemently asserted that the people who grow the plant "are not farmers." People denied the culturally and politically powerful identity of being *farmers,* such as Cindy and many other Hmong farmers, were fully excluded from traditional farmers' social groups and agricultural support institutions and the benefits and services they provide.[34]

Cindy described her only interaction with local government as punitive. In the summer of 2023, her land was raided. County law enforcement chopped her plants, bulldozed her greenhouses, crushed the above-ground swimming pool she used for water storage, and ransacked her RV looking for cannabis. She was fined more than $30,000 (including $5,000 for cultivating marijuana on a parcel without a legal residence; $6,000 for cultivating

marijuana outdoors; $1,000 for having an RV that did not lock; $1,000 each for two unpermitted high-tunnel greenhouses, a swimming pool, a generator, a propane tank, a woodstove, a garden storage shed, and camping on her own property; and $5,000 each for using groundwater and moving that water to her parcel, reasoned by the sheriff's deputies who saw water stored in the swimming pool and no water source on the land). When we spoke the week after the raid, Cindy told me that she was frustrated. Many white farmers had high tunnels, generators, RVs, and sheds on their property without permits or fines. White farmers routinely moved water from one parcel to another to water their cows or irrigate a field from a neighboring well without issue. But Cindy had little choice but to pay the fines before they grew; county code stated that each fine could be applied *each day* that it went unaddressed.[35]

When she began growing cannabis on the land she had bought for her mother, Cindy said that she hoped "to give my daughters a better life than I had." But after the raid, she owed the county more than her property was worth. And the price of cannabis had crashed with legalization—the state permitted more cannabis than could be consumed in the state, and cannabis farmers faced a crisis of overproduction. A pound of unpermitted marijuana that might have sold for over four thousand dollars before legalization was selling for around two hundred dollars by the 2020s. In the summer of 2024, Cindy was making plans to move back to Minnesota to live with one of her daughters. She had lost her savings in Siskiyou County and its government was closely monitoring her land, which the county required her to return to its "original" state. Without infrastructure or farming activity, the land was worth little.

In addition, Cindy's identity as a woman, especially a single, *divorced* woman, pushed her to the margins of intracommunity support systems. There are mutual-care networks within the subdivisions that help individuals whose farms have been raided hire lawyers and rebuild. There is a crew that helps fight fires when the state fails to provide that service. There is even an organized information technology team that helps elders fix their phones. But the extension of these supports was limited for Cindy, who was then even more vulnerable to the county's actions. The county's cultivation ban and hardline enforcement approach had not worked to reduce unpermitted cannabis cultivation, which had, in fact, increased under the ban policy, but the county was succeeding in driving resource-limited Hmong farmers, like Cindy, out of the region.[36]

Although Cindy was planning to leave her land, at least for now, many other Hmong farmers were staying. Some had few other options and nowhere to return to. Others still believed they could create a brighter future, an agrarian community, a place they could call home. One of Cindy's neighbors, an older Hmong man, told me, "My entire life I was born into conflict, searching for a home to make permanent. It is so sad that I am still driven out from my home, I'm always forced to flee with violence." But he was resolute that he would live out the remainder of his life in Siskiyou. Cindy hoped to return someday, too. "I have my mom with me here," she told me, "I can feel why my mom loved farming so much."

Farmers' intersectional identities such as gender, class, and race shape opportunities—for Cindy, the only land she could afford could grow little else besides cannabis. Histories of dispossession and inequalities that push minoritized farmers onto land that makes them more vulnerable to climate change are just one expression of the structural violence that amplifies and is amplified by disproportionate climate change exposure. Climate anxieties can also be leveraged to *structure* racialized violence, such as the disparate enforcement of laws written to address pressing climate crises of water scarcity or wildfire risk. Although Cindy adapted her farming practices in response to drought, the water limitations she experienced seemed to have broader political motivations.[37] Rurality is often framed, and even defended, as "a site saturated in whiteness by political pundits."[38] But no matter how hard some defend a particular imagined golden age of (white) agrarianism, who is farming, what they are farming, and how they farm continually form and re-form rurality.[39] Cindy, along with the thousands of other Hmong farmers who moved to Siskiyou County, challenge assumptions of who *belongs* in rural spaces and how belonging is framed as contingent on conforming to white cultural norms and practices.[40] In reality, rural spaces have been and are racially and ethnically diverse, and belonging is constantly negotiated within and between communities and the land itself.[41]

CONCLUSION: GENDERED AND GENERATIONAL CHANGE

Climate change is disruptive, forcing diverse and uneven responses that will continue to transform rural communities. Positioned as relative outsiders within conventional farming groups, women in Siskiyou often lead adaptation efforts toward a more diversified, inclusive, and nimbler agri-

food system.[42] Farmers in the next generation and those on the margins of conventional farming systems may perceive fewer social risks of deviating from convention, and they can challenge widely asserted values of utilitarian resource use and independence.

The moral economies that long sustained rural communities such as Siskiyou—grounded in claims of self-sufficiency, hard work, and human mastery over nature—have reached a critical inflection point.[43] These values served earlier generations, particularly white male farmers, who successfully converted moral capital into public support during crises such as the farm crisis of the 1980s and the Klamath Basin water wars of 2001. But the contradictions are now undeniable: interdependence, not independence, sustains family farms; the economic value of rural labor increasingly accrues elsewhere; and ecosystems are dynamic beyond human control. For family farming to persist—the ultimate goal stated by many—they must challenge assertions of rugged masculinity that previous generations relied on.

Being an "insider" or an "outsider" is not just about where you are from but *who* you are and *how* you farm. Cindy and Shelly challenged narratives of rurality as white and heterosexual spaces. Jessica and Ashley challenged the yeoman myth of an independent farmer who works from before dawn until past dusk to conquer and control his landscape for glory and little pay, instead asserting that farmers deserve living wages and reasonable hours.[44] They scaled down their operations to be manageable in the workday, shortened their supply chains, and invited consumers into farm spaces. While Barbara and Lisa maintained generational connections to farming traditions, they, too, diversified their farms to build adaptive capacity in collaboration with the land.

Changes extended beyond individual farms. Ashley's community grew to share farming work and food among women and queer farmers—a community that contrasts sharply with the isolation Shelly described experiencing throughout her long farming career.[45] Jessica articulated the complex negotiations of internalized gender expectations and performances in farm work. Cindy navigated gendered and racialized challenges of farming in a place where the local government actively defines and defends a particular "right to be rural"—a right reserved for presumed white, masculine "rugged individuals."[46] Each of these women, through everyday practices and relationships, challenged traditional performances of gender and rural belonging.

Power operates at multiple scales in these transformations. These women were all, in some sense, outsiders, but some more so than others. Multigenerational farmers such as Barbara, Lisa, and Jessica capitalized on family status and community connections to access institutional resources that were out of reach to newcomer farmers. Barbara secured privileged access to the only USDA slaughter facility in the county. Lisa leveraged relationships with local USDA staff to fund infrastructure investments. Jessica benefited from access to her family land. But as Ashley astutely remarked, gender, like race and class, does not form a coalition.

Multigenerational farmers such as Lisa and Barbara were also gatekeepers of who could access the benefits of inclusion in established farming groups like the California CattleWomen. Just as processes of Capital conceals women's unpaid labor and thereby expands the work expected of them (as Lisa's quadruple day highlights), these processes also plant "deep divisions that have served to intensify and conceal exploitation."[47] These divisions are fed by an identity politics that polices who counts as a farmer and who can claim easy belonging in rural communities.

While some farmers, such as Shelly, described exclusions in terms of the identities they hold—in her case, being perceived as a queer woman—many suggested a subtler form of exclusion rooted in circular logic. Labeled as "hobby farmers" by institutional staff because of their reliance on off-farm wage work, women such as Ashley were denied the resources that they needed to scale up their farms to provide enough on-farm income to support their families. Hmong farmers who grew crops that included cannabis, such as Cindy, were denied the identity of being farmers at all, justifying their complete exclusion from institutional resources that could help them access the land and capital necessary to enter permitted cannabis markets or grow other crops.

Farmers who are denied land and financing remain the most vulnerable to climate change. Hmong farmers such as Cindy experienced extreme water restrictions and wildfires that burned across fire-prone land.[48] Meanwhile, federal programs that buffer the effects of climate change, such as crop insurance payments, heavily favor higher-income farmers and less diversified farms, protecting the incomes of larger-scale commodity growers, mostly white men, during extreme weather.[49] Yet paradoxically, institutional exclusions can empower, even force, adaptations that break from convention. Like the Latino farmers whom Laura-Anne Minkoff-Zern chronicles in

The New American Farmer: Immigration, Race, and the Struggle for Sustainability, most of the women farmers in this chapter farmed differently both because they were excluded from conventional opportunities *and* because their social positioning shaped a desire for a different future.[50]

Ideological change *within* communities can galvanize fears of loss that are well documented in rural places where wealthy newcomers fuel gentrification.[51] In Siskiyou, older, conventional farmers often shared concerns of being left behind economically and their way of life devalued. But what many feared most was losing the next generation of farmers in a profit-hungry system where rootedness and success are often framed as antithetical.[52] For the next generation to persist in place, their way of life and relationships must continue to adapt.

In *Belonging: A Culture of Place,* bell hooks wrote about the emotional process of rural place making in which the land and landscape participate in dialogues of belonging. hooks pointed out that "our constants exist within a framework where everything is always changing."[53] As the climate changes, the most important constants—connections between land and community—invite transformations that ripple beyond individual farms and families. Especially women I met in Siskiyou were challenging narrow rural-urban binaries that structure contemporary political discourse, resisting both romanticized returns to precapitalist agriculture and the dominant system's inequities.[54] Instead, many forged relationships built on respect, reciprocity, and recognition of mutual vulnerability *within* existing political economies.[55] In the constant negotiation of belonging, their work extended beyond individual place making.[56] They were not just adapting to climate change; they were changing the rural climate.

Diverse adaptations demonstrate that multiple futures remain possible.[57] As rural communities worldwide grapple with climate change, the experiences of these women farmers show how people can innovate and that the future of rural places depends on expanding, not policing, who belongs there. By reimagining rural identity beyond narrow performances of independence and sacrifice, these farmers chart paths toward more sustainable, inclusive, and resilient agricultural futures. Their stories remind us that attending to diverse adaptation approaches in the present reveals the emerging futures in which rurality signifies not isolation but connection, not homogeneity but productive difference, and not rigid tradition but culture continuously remade by those who tend the land.

CHAPTER 7

Climate Change in Rural America

The day after Donald Trump was reelected in 2024, I phoned my mom, a farmer in New England. She described a sense of dissociation as she went through the motions of routine farm chores—milking goats, watering chickens, and planting garlic—on a shockingly warm November day. Her kin mourned while her neighbors celebrated. In a world of stark inequities, isolationism and resentment drew eager converts. The politics of a troubled world stand to quicken the pace of climate change. The warmth of that autumn sun, my mom remarked, filled her with fear of what would come.

That day, on the college campus where I teach, I tried to offer comfort to some of my students. Adaptation, I told them limply, is a helpful framework. And then gloom overtook me. As borders tighten, food prices will rise, I explained. As the incoming government rolls back limited environmental protections, climate change will intensify and biodiversity will decline; as tariffs are imposed, consumer goods will become more expensive; as research funding is cut, innovation will slow and become even more privatized; as public investment in infrastructure and rural programs is clawed back, communities will lose jobs and economic opportunities; as the ultrawealthy and consolidated corporate interests exert greater control over politics, global inequalities will become even more extreme.

I paused, suggesting that sometimes, adapting means making the worst slightly less bad. But adapting is difficult. Relational work, rooted in social connections and reciprocity, holds promise, but is challenging within the confines of capital-state entanglements.[1] Although state-based regulations can compel change, backlash often follows. And although local control can seem like a quick fix for a federal government that fails to address the needs of its populace, uncritical calls for local autonomy often result in the reinforcement of power for the already advantaged.[2] Throughout history, com-

munities have formed their own systems of care and resilience, although often limited in scale. Ultimately, to adapt to climate change (and avoid the worst potential futures) and build more just and resilient agrifood systems will require changes far beyond food and agriculture. Yet emancipatory structural change seems far out of reach.

What, then, can be done? The micropolitics of climate adaptation offer spaces in which to contest divergent futures and cultivate transformation. Everyday adaptations—in households, farm fields, and ever-changing rural communities—ripple into the future. Politics lies in these "fine-grained and easily overlooked" actions, however small.[3] The everyday are where broader transformations are seeded and hope germinates.

ADAPTATION TODAY SHAPES FUTURE POSSIBILITIES

Farmers around the world already experience the effects of climate change. From droughts and floods to wildfires and extreme heat, the physical manifestations of our warming planet reshape how farmers work with the land and sustain their livelihoods. In rural America, climate change has become entangled with political agendas, corporate control of agricultural land and food production, cultural identities, economic anxieties, and a sense of rural communities under siege. People's awareness and experience of climate change then manifests through complex identity construction, political positioning, and moral reasoning. As climate change reorganizes rural life, adaptations—from everyday politics asserted through farming practices to major ruptures that reorient rural relations—create new climate futures.

Adaptation is no longer a choice but a necessity. *How* farmers adapt will determine not just their own survival but the future of the food system, rural communities, and the ability of working landscapes to sequester carbon and support biodiversity that can facilitate ongoing adaptation.[4] Adaptation options vary, and what is *climate smart* for one group can harm another. What might alleviate a problem today can exacerbate it later. Pumping water from deeper wells makes a region drier. Expensive proprietary crop-monitoring software excludes those already struggling to make ends meet. Short-term solutions, such as paired herbicides and seeds genetically engineered to withstand spraying, can have long-term consequences, such as reducing biodiversity, as farmers are forced to grow a limited genetic pool of pesticide-tolerant crops.[5] Building the capacity to nimbly adapt in

the future necessitates diversifying ecological, political, knowledge, dietary, and sociocultural systems now.[6]

In farm fields, adaptation practices that foster biodiversity across space and time—including integrating crops and livestock, cover cropping, and crop rotation—build adaptive capacity for the future and deliver mitigation cobenefits by sequestering carbon. These practices also provide economic benefits to farmers by reducing dependence on chemical fertilizers and other expensive inputs or energy to pump water. Such practices may be more widely adopted if they employ culturally situated discourses and prioritize challenges proximate to farmers' daily experience.[7] Increasing soil organic matter, for example, can be framed as a way to help farmers maintain control over water, rather than primarily as a carbon sequestration effort.

I set out to understand how climate change is reconfiguring social, political, and ecological relationships in rural America. The case of Siskiyou County shows how farmers navigate climate change impacts in the context of intense political polarization. Like the everyday practices described throughout this book, farmers' experiences of and responses to climate change do not fit neatly into a single theoretical framework. Instead, listening to farmers describe their strategies and the meaning of their decisions highlights important lessons with broad resonance in rural America.

As they adapt, farmers everywhere must carefully manage both their farming practices and their social standing within their communities while also facing structural constraints including regulatory requirements and market concentration that limit adaptation options. How people adapt, and the ways they frame climate action, often reflects deeper cultural logics of community resilience and persistence.

Farmers experience climate change not just as a physical phenomenon but as a continuation of contested state power over natural resources and rural belonging. Rather than seeing climate-driven drought as an ecological reality requiring collective adaptation, farmers often perceive water scarcity as yet another instance of government overreach that privileges urban environmental concerns over rural livelihoods. A sense of betrayal, which could only exist because of historical government support, creates an opening for far-right politicians to exploit legitimate rural grievances by stoking anti-government sentiment.

As climate change accelerates, even people who do not openly discuss it are nevertheless adapting, challenging assumptions that climate change belief must precede climate action. Spending time with rural communities in Northern California, I came to appreciate that the most crucial beliefs are not about climate science or anthropogenic causes but action.

Farmers carefully manage not just physical risks of climate change but also social risks in how they take climate action and how they discuss it within their communities. Farmers are creative, negotiating local expectations in their everyday adaptations to maintain access to crucial community networks and institutional resources while also challenging and changing political, economic, and ecological relationships.

Farmers on the margins of conventional agricultural groups and institutions —including women, as well as farmers of color and beginning farmers—can paradoxically exercise greater flexibility to innovate because they have less to lose by deviating from established farming conventions. By adopting practices that foster biodiversity, embrace direct marketing and agritourism, and build new relationships to work and community, these farmers challenge narrowly conceived rural identities and values that have helped maintain inequitable agricultural power relations and historical resource entitlements.

The experiences shared throughout this book—rural-urban animosity, distrust of and reliance on government institutions, extreme imbalances of power and wealth that breed resentment, exploitation of rural grievances for political gain, and the micropolitics of community and household relationships—are echoed across the rural United States. Attending to the meaning people make of these experiences, and how they construct and navigate their social worlds, can help expand climate politics to be more inclusive. Agriculture can sequester carbon, foster biodiversity, and facilitate more equitable distribution of resources. Moving forward will require understanding and empathizing with rural experiences.

GROWING PAINS: REGULATIONS AND RESENTMENT

I put people at the center of this story, and even though their experiences are diverse and place specific, their collective accounts of a changing climate speak to broader potential transformations. In Siskiyou and across rural America, farmers often identify with an owning class, despite their positioning similar to workers whose labor is accumulated by firms

up- and downstream of farming.[8] They often envision themselves as a minority resisting oppressive state control, despite state supports and resource entitlements that benefit agriculture.[9] Rural residents often describe a sense of political disenfranchisement relative to urban residents, overlooking rurality's significantly greater per capita representation in Congress.[10] Despite their limited numbers, family farmers exercise considerable cultural power in US politics, which could in theory be leveraged to promote ecologically sustainable and economically equitable transformation. Farmers often resist environmental protections, yet their livelihoods—more proximately than most—rely on environmental functioning.

Like other resource-dependent communities, farmers often perceive the federal and state governments as having forgotten them, until those governments impose new regulations that restrict long-enjoyed resource access or impose burdensome environmental monitoring and reporting requirements or threaten to fine or sue farmers for harming endangered species. One farmer said, "People really do experience the state as not offering any help but merely restricting their freedoms." In Siskiyou County, the state represented a set of complex relationships steeped in histories of harm and perceived injustice. One farmer explained how "people in rural, remote places have to be independent and always have been." He described how, when he was growing up, people in his community "didn't call the cops if something went wrong because it took them three hours to get there. [We] learned to deal with our own problems." He asserted that "our environment raises a different group of people," a group he described as rugged and independent, one that was now imperiled by a government composed of "city people" who pay attention to rural residents only when urban populations are "asking for things" and who look for ways to "deal with their problems on the backs of independent people here."

Responses to climate change threaten to amplify existing rural grievances. Climate policies are "often implemented on and through agrarian landscapes."[11] Adaptation and mitigation projects—from renewable energy development such as large solar arrays to geoengineering for carbon capture to afforestation for carbon markets—require land. Globally, these climate solutions often rely on dispossessing "allegedly marginal land uses and users in order to make way for large-scale projects designed to maximize the monolithic production of some commodity (whether a crop, energy, or sequestered carbon)."[12] Rural land and livelihoods are seen as for

the taking by national governments and private developers, in part because rural residents are understood as less likely to mount organized resistance than wealthier urban populations.[13] Predictably, rural communities resist. In California's aridifying landscape, water has become the central focus of that resistance.

Confronting climate change, the State of California's efforts to manage water amplified rural discontent. Even farmers who have long benefited from water entitlements find their access precarious. Although few farmers identified climate change as a crisis, policy measures to combat its effects can themselves present an immediate crisis for farming families. A county official told me that the California State Water Resources Control Board, which implements emergency water curtailment orders, are "monsters, literally." David, the young livestock farmer from chapter 1 who described water as "the blood of land," told me that, with drought on top of everything else, he "feel[s] like there's just this kind of impending doom." In that conversation, he explained that water "on your property belongs to the state, not the farmer. The water under your land, you don't have control over, and the water that falls on your land, you don't have control over, and the water that flows through your land, you don't have control over."

The administrative and financial costs of compliance with evolving environmental standards largely fall on farmers themselves. Whereas large corporate firms can hire staff to comply with new regulations, smaller-scale farmers, operating on razor-thin margins, do not enjoy that option. "We had to do all that work and piece together the money," a farmer told me as she described projects to install fish screens and riparian fencing. Instead of "forcing us to do it," she said, the state "should have come in and said, 'And here's the money now.' It should have been on [the state's] back, not ours. You want something, you pay for it, and they're not doing that. It's very frustrating."

Farmers reported stress and negative mental health effects of water restrictions and associated regulatory compliance, monitoring, and reporting in extreme terms. "I call it government intrusion," a cattle rancher told me, describing how a required riparian fence divided her land. "I was very, very, very upset," she said. "Now we have fences everywhere. I can't move around my property anymore the way I used to. It's emotional. That has nothing to do with business. But that's extremely important to me." Many farmers also express concern that growing regulations, permit requirements,

and compliance paperwork would scare the next generation away from farming, threatening the reproduction of a cultural livelihood held dear by rural residents. "I think there [are] also a lot of folks who are saying like, 'Yeah, I'm gonna go off and do something else that isn't stressful,' " a multigenerational cattle rancher told me. "I mean, if it was just ranching that dominated your time, that would be great, right? But it's the regulatory side of things and the [compliance] paperwork that dominates a lot of [our] time."

Although environmental regulations often deepen resentment and ignite backlash against state and federal oversight, they also stimulate adaptation. Farmers in Siskiyou County are working with tribal communities to conserve endangered salmon because of fear of legal risks stemming from the Endangered Species Act. Farmers are changing how and what they farm to reduce water use and increase carbon storage in response to changing regulatory requirements. They have invested in new equipment that complies with California's fuel efficiency and clean air laws. "It's better to be in front of the curve than behind the curve," a farmer told me when describing his adoption of fuel- and water-saving farming practices. Some farmers came to appreciate the benefits of adaptations "pushed on us," in one farmer's wording, when those changes led to material benefits such as lower electricity costs or greater water-holding capacity in their soils. But many more farmers understood regulatory actions in the name of the environment as impositions by ungrateful and ignorant outsiders who were biting the hand that feeds them.

"Living in the country is totally different than thinking about the country," a retired teacher who now raises sheep told me. Rural residents in Siskiyou described "an extreme disconnect" between urban and rural experiences. A farmer echoed sentiments shared by many others when she described "a lack of understanding and knowledge about operating ranches and farms in the rural environment because policymakers are located in the urban environment." The people making decisions while "sitting behind a desk in Sacramento and San Francisco or LA," she said, are "book smart and work stupid."

A pervasive sentiment in the region held that people who live in urban areas look down on rural residents and their livelihoods. "City people think farmers and ranchers are dumping chemicals in the river," a local USDA staff member told me. "But [farmers] never would." She asserted that "no one is a better steward of the land than a person who loves it," and farmers treat the land with "the passion of an intense love affair."

As the climate changes, "near-hand human culprits" are often blamed for environmental declines.[14] And although rural residents describe a sense of being unfairly blamed for environmental problems, they, too, cast blame. Rather than directing frustration at the corporate firms that profit from wealth extraction and waste dumping, rural residents found more human targets—in, as several farmers phrased it, "the city people."

The politics of climate change in rural areas cannot be separated from perceptions of rural-urban divides. Regulations regarded as privileging urban environmental concerns while ignoring rural economic needs reinforce perceptions of government as an outside force that serves other interests. Climate change, along with its promise of additional environmental regulations, has proved fertile ground for far-right politicians to stoke anti-urban and antistate anger.[15]

Government policies that have facilitated the stripping of wealth, resources, and support institutions from rural communities have understandably fostered resentment that flares when new problems arise.[16] What sociologist Loka Ashwood calls a "moral economy of democracy" then legitimizes resistance against a government seen as having betrayed its moral obligations.[17] During one interview with a cattle rancher, whenever the government came up, he shook his finger at me and said, "That's your government!" Rather than necessary efforts to manage a dwindling resource, government responses to limited water were often understood by farmers as illegitimate state control, which morally justified growing antigovernment sentiments.[18] In Siskiyou, established farmers routinely flout state water restrictions, and county officials refuse to enforce state and federal mandates. As one local county official told me, the county government "stands up against [state and federal] agencies." But although these resistance efforts may have a grassroots feel couched in antistate rhetoric, they do little to shift the underlying structural causes of rural economic decline.

Rural discontent has long been harnessed by far-right politicians and authoritarians.[19] During the farm crisis of the 1980s, for example, extremist groups channeled farmers' legitimate grievances. Agricultural extension agent Tracy Watson and geographer Bradley Wilson described how

> right-wing and "hate groups" sought to exploit rising stress levels and media coverage of rural distress to advance their groups and cause. . . . As family farmers faced the daily threat to their way of life with little to no recourse

> (i.e., interventions, retraining, jobs, and so on), extremist groups began campaigns of disinformation, playing upon the desperation and distress of the farming community. . . . These groups played into, and upon, the neoliberal device of producing social separateness. . . . The farm crisis provided a perfect storm for exploiting the unmet need of farmers by offering a counterfeit medium through which to channel (and coopt) farmers' legitimate rage, grievances, and distrust of the government.[20]

Far-right politicians have learned to skillfully twist antistate rhetoric to benefit the corporations that extract and accumulate wealth from rural areas. The resulting corporate-state alliances then maintain resource entitlements for those who have long held them, and expand police power and enforcement to protect their investments.

Yet a far-right authoritarian turn in the United States and around the world is not inevitable, nor is it the only populist path. Rural populism has historically leaned toward antimonopolistic, even radical causes, as when farmers in the Midwest organized against the monopolistic power of railways, grain dealers, and bankers in the early twentieth century.[21] In contemporary rural resistance movements, similar pleas for popular sovereignty can be heard across political identities and divisions—from protests against oil pipelines to opposition to large-scale renewable energy development; from farmworker rights to the Bundy family's occupation of public lands.[22] New, diverse coalitions could form against the corporate beneficiaries of fossil fuel extraction and climate risk financialization.

One critical step is to recognize the diversity and dynamism already within rural places. Too often, farmers are portrayed as either climate polluters or a minority group under attack from urban centers, depending on what media one consumes. These narratives flatten the rich diversity of farms and farmers, the tapestry of rural relationships and working landscapes, and the range of values and moral commitments people hold.

Climate change trends are intensifying even faster than scientists predicted.[23] Over the years that I have been returning to Siskiyou County, farmers from many different backgrounds described changes in droughts, wildfires, land use, and policy responses in increasingly apocalyptic terms. The imperative of adaptation presents opportunities to rebuild community and ecological reciprocity and assert different climate futures, as diverse and unlikely alliances form and reform.

UNLIKELY ALLIANCES

People form alliances—if often fleeting and fragile—around shared experiences, common threats, and mutual needs. Temporary assemblages arranged around singular goals shift quickly. Formed in resistance to an objectified "other," coalitions create in-groups and out-groups, which challenge or reinforce existing power structures and alleviate or exacerbate inequities.[24] As resources dwindle, the temptation to protect against outsiders grows. Looking closely at how threatened communities actually experience these conditions reveals that their goals are not always emancipatory.[25] As climate impacts intensify, the politics of adaptation will continue to create opportunities for unlikely alliances that challenge both romantic notions of rural solidarity and narrowly conceived urban-rural divides. Political philosopher Nancy Fraser suggests that as crises reach beyond economic and financial realms and into the ecological and social worlds that life itself relies on, we must ask whose values and visions of the future are prioritized.[26]

Rural scholars often highlight examples of unlikely alliance formation that lead to greater justice and equity. In the 1980s, for example, white and Black family farm activists in Iowa organized together against far-right agitators through the Prairiefire Rural Action group and *Catholic Rural Life* magazine.[27] In 2012, local ranching and mining families and environmental organizations and recreators in Wyoming pooled funds to buy oil and gas leases to stop natural gas drilling near Yellowstone National Park.[28] Yet as in broader social movements, such unlikely alliances often feature internal contradictions and ideological inconsistencies, and can be reactionary, regressive, and unjust.[29] In the 1930s, for example, white growers and business tycoons in California "relied on forging political alliances around socially conservative values" through the Associated Farmers organization to oppose multiethnic workers' struggles.[30]

As rural residents of the Klamath River Basin grapple with climate change, unlikely alliances emerge and shift, revealing diverse and competing visions for the future. After years of failed negotiations to balance the water needs of farmers, tribes, and conservation in the Klamath River Basin, a group called the Coalition of the Willing began meeting in 2018.[31] The coalition, which included tribal members, farmers, and people who worked in environmental organizations and local governments (but participated in the coalition as individual basin residents), took a pragmatic approach. One coalition member told me that resource users needed to "find opportunities to do

something together" to build trust through immediate, achievable projects. The coalition focused on multibenefit projects, such as water quality analysis and habitat restoration, and consensus-based decisions that prioritized shared understanding over adversarial positions.

A farmer who was part of the coalition explained finding common ground with Yurok tribal members around hatchery fish. "They said they need fish, and I told them, 'I can work with you because this is what I do.' I don't go out and try to find wild cows and harvest a few. You know what I mean? I do a lot of management to get done what I do, and that's my mindset and it works. I am very willing to help people who need more fish do some management practices to allow that. I'd like to bury the Yurok people in fish; I would love to do that!"

Groups presented as monolithic—whether tribes, farmers, or governments—are themselves collections of shifting alliances, united temporarily around particular issues. Some tribal communities, for example, contest the use of hatchery fish and some farmers disagree about dam removal. With hopes that removing dams along the Klamath River would improve fish populations and therefore facilitate more reliable irrigation water deliveries, many farmers in the upper basin (Tulelake) championed removing dams. But farmers in the lower basin (Shasta and Scott Valleys) fiercely defended dams on principle. Although the dams did not provide personal benefits such as inexpensive electricity or water access, lower basin farmers described dam removal as part of broader efforts to "de-develop" the West.[32]

When it eventually became clear to the dams' owner, PacificCorp, that the cost of fixing those old hydroelectric dams was greater than simply removing them, the grassroots dam removal efforts led by tribal and environmental groups and supported by upper basin farmers gained traction. The largest dam-removal project in US history was completed in October 2024. Four dams fell, allowing more than four hundred miles of river to flow free for the first time in over a century. One Yurok tribal member who had worked on dam removal reflected, "I feel like the weight of all that concrete is lifted off my shoulders."[33]

Dam removal, though long overdue, will not fix all of the region's water problems. And as drought intensifies with climate change, a new set of agricultural water users has been unwelcomed. Hmong farmers (including Cindy, from the previous chapter) have moved to the region since the mid-2010s to grow crops that include cannabis. Despite differences in their back-

grounds and politics, white and Hmong medical cannabis growers formed a group called Siskiyou Alternative Medicine (SAM) in 2014 to advocate for lenient medical cannabis allowances.[34] Many of the white cannabis growers I interviewed were members of the local Tea Party, and some self-identified as members of far-right vigilante, militia, and white supremacist groups. One told me that he had traveled to the Malheur National Wildlife Refuge in eastern Oregon to participate in the infamous Bundy ranch standoff, taking up arms against the US Bureau of Land Management. Like their new Hmong neighbors—including veterans of the United States' Secret War in Laos—many white growers were older veterans who grew medicinal cannabis to soothe their injuries and ailments such as arthritis and to gift to friends and neighbors.

White and Hmong members of SAM successfully organized and worked with local government leaders to pass permissive medical marijuana regulations in Siskiyou County in April 2015. But as more Hmong farmers moved to the county and many began exercising their political power as citizens, veterans, and farmers, the county government shifted tactics, taking a firm anticannabis stance.[35] By 2016, with recreational cannabis legalization on the state ballot and proposed cultivation restrictions on the county ballot, SAM organized voter registration drives to help newly arrived Hmong residents register to vote. Claiming suspicion of too many people with the same last name registering to vote—there are only eighteen Hmong surnames—the county filed a state voter fraud complaint.[36] In June 2016, the sheriff's office then accompanied state investigators to the properties of Hmong residents, by multiple accounts with guns drawn, leading SAM to file a lawsuit against the county for voter intimidation.[37] By September 2017, the lawsuit was dismissed, for lack of evidence of "racist intent" (which is notoriously difficult to prove) and because plaintiffs were fearful to identify themselves and risk retaliation from local law enforcement.[38]

The story of SAM is not simply about an unlikely alliance that was ultimately overpowered. In 2022, I met individually with several people who had been active in SAM, both white and Hmong. I had last met with all these farmers together in June 2019, at one of their homes. During that visit in 2019, we sat around the dining table drinking tea together as they described the county's ever-increasing enforcement efforts. They described how people were increasingly afraid to engage publicly in political advocacy through SAM and how the county was using drought—both fear of limited water and

new legal tools regarding water conservation—to target cannabis growers. When I went back to Siskiyou in 2022, I was surprised by how much had changed. Cannabis growers were still trying to keep a low public profile for fear of being raided by law enforcement, but the relationships that had formed the basis of SAM had soured. Friends who had shared tea in 2019 described feeling let down and even betrayed by fellow organizers. One of the white growers explicitly described resentment toward Hmong farmers for reducing the anonymity of whiteness he had enjoyed for decades growing cannabis without issue from the county. His position had changed so sharply that, even though he still grew cannabis himself, he had joined anticannabis activists who protested outside the Hmong-majority subdivisions.[39]

During the height of the Covid-19 pandemic, in August 2020, protests erupted against water use for cannabis cultivation near the rural Mount Shasta Vista subdivision, where approximately three-quarters of residents are Hmong.[40] Many of the anticannabis activists at the protest were, according to interviews with those involved, members of religious groups and far-right vigilante movements that expressed alarm about moral degeneration. These activists found common ground with environmentalists who were concerned about declining fish populations in the region's shrinking streams and rivers. Nearby homeowners whose wells were running dry were the most vocal at these protests.[41] Many were retirees of modest means, for whom digging a deeper well posed a prohibitive expense. As the occasional water trucks drove in or out of the subdivision, protesters waved hand-painted signs with slogans reading, "Stop trucks that support illegal pot growers" and "Water for life, not for profit," apparently missing the irony of the vast acreage of irrigated alfalfa spreading to the horizon from behind where they stood.[42] Protesters successfully leveraged the power of their unlikely coalition. The county not only banned groundwater use for cannabis cultivation but specifically targeted water deliveries to the Mount Shasta Vista subdivision, cutting off water access to thousands of residents, most of them Hmong, overnight.[43]

The story of water access in the rural subdivisions of Siskiyou County is still unfolding, but it illustrates how climate change creates new terrains of rural resistance where alliances are constantly forming, dissolving, and reforming around shifting interests and goals. Efforts to assert popular sovereignty achieve their goals most effectively when they identify shared values that transcend political divides and tap into mutual moral frameworks. Yet

as drought intensifies and resources become scarcer, these alliances can either "articulate pathways toward climate justice embedded within agrarian livelihoods" or align with resource nationalism and other politics that perpetuate rural extraction.[44] Understanding these dynamics will be crucial for building more inclusive and lasting coalitions that can advance liberatory instead of exclusionary politics. As rural communities navigate climate adaptation, the micropolitics of everyday decisions ripple outward, shaping future climate action.

CHANGE WITHIN AND BEYOND THE AGRIFOOD SYSTEM

Rural landscapes stand at the heart of both climate change impacts and solutions.[45] As climate change accelerates, policies that support the adoption of agricultural practices that increase adaptive capacity are urgently needed. Prescriptions about what *should* happen to rural people and places abound. Yet if interventions fail to address material needs and do not recognize the social risks that people navigate as they adapt to climate change, those efforts are unlikely to succeed and may exacerbate inequalities.

Benefits of the massive farm safety net in the United States primarily accrue to larger-scale, simplified operations. USDA programs such as crop insurance encourage homogenization because farmers must grow just a handful of qualifying crops to access most funding streams.[46] Disaster relief payments, a source of now-routine payouts in regions afflicted by droughts and flooding, are typically calculated based on measures of farm size; small farms receive few such benefits, which accrue largely to major operations that are most likely to have a financial cushion.[47] Cost-share programs to improve environmental quality may go where they are most impactful—for example, to help concentrated animal feeding operations build manure lagoons—but in doing so, they subsidize a type of agriculture that causes major social and environmental harms.[48] These public programs provide important buffers against the most deleterious effects of industrialized agriculture in a volatile climate, but they also limit adaptation, as qualifying farms get payouts to maintain the status quo. This policy infrastructure leaves smaller-scale, more diversified farmers with few financial and material supports to scale up or implement what these programs preach.[49]

There are many opportunities for reform of current US food and farm policy. The USDA could shift resources toward the most climate-vulnerable

farmers and expand access to support for farmers who have been harmed or left out of the publicly funded farm safety net. Publicly funded research could focus on diversifying farming strategies, which foster biodiversity and sequester carbon. Income caps, ecological farming practice requirements, and greater prioritization of socially disadvantaged farmers—all relatively small tweaks to existing federal farm support programs—would help build a more just and resilient agrifood system.

State governments can create and manage viable alternative market, processing, and distribution infrastructure that can help smaller-scale farmers persist.[50] For example, California's Department of Food and Agriculture provides grants to community organizations to plan and implement community food hubs that aggregate, distribute, and market regional farm products.[51] Land-grant universities in many states have helped farmer-owned business organizations, or cooperatives, democratically control input procurement and product marketing.[52] States such as Michigan have evaluated meat-processing infrastructure needs for smaller-scale livestock farmers.[53] States across New England have come together to expand institutional purchasing of regionally produced food by schools and hospitals.[54]

Although initiatives such as these that help smaller-scale farmers reach regional markets can meaningfully support individual farmers, they do not challenge dominant agribusiness or the underlying drivers of inequity for either farmers or consumers.[55] Relatively new programs in several states are working to address structural issues, especially land and credit access. The Rhode Island Farmland Access Program uses state funds to purchase farmland and sell it affordably, with agricultural easements, to beginning farmers.[56] With federal funding for rural infrastructure faltering, these state programs will become increasingly important and will require coordination with local governments where resource use decisions most directly affect farmers' adaptation options.

Local municipalities, such as city and county governments, can also shape land use through, for example, zoning that helps protect agricultural land in floodplains as a climate resilience strategy, allows agritourism as a pathway for farm diversification, or restricts concentrated animal feeding operations.[57] Municipalities could work to repeal or amend right-to-farm laws that benefit the largest operators at the expense of smaller-scale and more diversified farmers.[58] As farmers migrate, grapple with changing conditions, and change how they farm, local land and water use policy will need

to evolve and be updated. For example, Siskiyou County Code still includes language from 1986 that restricts raising any commercial livestock in the county except beef cattle, which has put farmers who raise other species in a precarious position of technical noncompliance.[59]

As local land use and other regulations require updating, accountability mechanisms will be crucial to these processes. County supremacy and "constitutional sheriff" movements that aim to place resource use decisions within local law enforcement agencies are gaining traction in rural places, expanding police powers that ultimately protect entrenched economic interests and resource claims.[60] The rapidly worsening effects of climate change are creating openings for municipalities—specifically sheriffs and others who already exercise considerable power—to call for greater local control over water and land use decisions with potential exclusionary outcomes for marginalized groups.[61]

As key intermediaries between farmers and the government institutions they work for, public farm advisers can help farmers understand and navigate context-specific perceptions of social risk, framing adaptation in locally situated ways. These advisers can use their local autonomy to work with a wider range of farmers beyond their established, conventional clientele, and they could prioritize ecologically based practices. Rather than focusing on climate science beliefs, advisory institutions could support culturally resonant adaptation strategies with material resources.[62] More broadly, rebuilding trust in government institutions will require equitably administering financial and technical assistance to farmers.

Private farm support organizations, both nonprofit and for-profit, are increasingly filling the void created by public funding and program reductions. Private farm support institutions operate without public oversight and promote a range of approaches and goals. Some, such as the American Farm Bureau Federation, have denied climate science and have opposed legislation to reduce greenhouse gas emissions.[63] Others work to help farmers directly with various challenges, such as finding and affording farmland, and innovate shared ownership through, for example, community land trusts.[64] Some organizations, including the National Young Farmers Coalition and National Sustainable Agriculture Coalition, advocate for smaller-scale, agroecological, and socially disadvantaged farmers to have greater influence in policy decisions. Agricultural support organizations can bridge institutional and community divides and assist farmers in balancing tradeoffs of different

adaptation practices.[65] Importantly, farmers and other agrifood system workers need more than technical assistance to transition away from processes that perpetuate current social inequities and environmental externalities; they also need money.

The challenges facing farmers cannot be solved solely within the agrifood system. Addressing growing economic inequality requires confronting broader systems of power. Competition policies and practices, such as stronger antitrust law enforcement, could help break up oligopolies that exert corporate control over agricultural inputs, processing, and markets that constrain farmers' adaptation options.[66] Robust regulatory frameworks to protect worker and environmental health could help limit opportunities for large firms to exercise their market dominance in ways that undermine broader societal functions.[67] Shifts in public research spending away from proprietary products could help expand access to innovation and diversify adaptation options.[68] Restrictions on financial speculation of farmland and water markets could help prevent further corporate control of rural resources.[69] Regulation of campaign financing and corporate lobbying could help limit the disproportionate political power of wealthy firms.[70] These and other structural changes will likely require broader reforms that advance material benefits, not just to the privileged few, but to all, including the working and landless poor.

To achieve broader change, a shift in dominant climate discourse may help. Geographer Matthew Huber cautions against how climate change has been framed by professional classes as an environmental issue requiring guilt-driven personal sacrifice. Huber notes that "a politics of 'less' and 'limits' has no resonance for the vast majority of people already living precarious and insecure working-class lives."[71] Like other rural, natural resource–dependent workers, many family farmers are already struggling economically. Climate solutions that demand additional sacrifice, including the ceding of control over resources such as water, breed resentment. The political right has effectively capitalized on climate change by validating past injustices and amplifying the real potential that climate adaptation and mitigation projects can lead to more losses—of rural land, resource access, and livelihoods—in the future.[72] But agriculture also presents numerous opportunities to develop a "politics of more" in response to climate change that delivers tangible material benefits to rural and working people. Framing adaptation positively—including recognizing and rewarding the environ-

mental and societal benefits that many farmers already deliver—offers less socially risky opportunities to increase climate action by farmers.

In farm families and communities, prioritizing the needs of resource and property users, not just owners, can enhance self-sufficiency against market volatility and bolster rural prosperity for the next generation.[73] Climate politics that invite rural participation can underscore the importance of belonging and place across generations. These values resonate beyond farmers. A survey in 2019 of rural voters in the Midwest, many of them not farmers themselves, found that support for climate-oriented policies jumped by more than 20 percent when those actions were explicitly framed as helping farmers.[74]

Across the United States, rebuilding trust in democratic institutions necessitates that those institutions tangibly improve people's lives. Federal investment in rural infrastructure and climate projects through public spending such as the Inflation Reduction Act of 2022 promised just that. But these funds and projects were slow to materialize. By the presidential election of 2024 two years later, less than half of the $1.6 trillion appropriated across four large spending bills had been spent. Much of that funding had yet to positively affect rural voters and could be clawed back by the Trump administration.[75]

Implementation failures strain fragile relationships between government agencies and rural communities. Programs to help farmers should reduce participation burdens, such as onerous paperwork.[76] In addition, farmers may be restricted to a limited set of practices, explicitly or implicitly, through market contracts that lock them into certain management regimes or production quotas.[77] Many farmers, especially those most vulnerable to climate change, have limited access to resources like money and time.[78] Access to affordable land with secure long-term tenure is often identified by farmers as the single greatest challenge they face and poses a significant barrier to adoption of climate adaptation and mitigation practices.[79] To be effective, research and policy will need to give credence to farmers' experiences and perceptions of climate change, and grapple with various types of risks—physical, political, and social.[80]

IN CONCLUSION

Climate change impacts and responses are fundamentally political. The implications of how farmers navigate the politics of climate change in rural America extend far beyond the farm gate. Who controls land and water—and how these resources are managed—affects everyone, not just

because we all need food, but because these decisions shape our collective political and climate trajectory.

Farmers in Siskiyou County rarely discuss anthropogenic climate change openly, yet they are acutely vulnerable to its impacts. Through careful attention to the practice of adaptation—from household dynamics to community tensions to institutional relationships—we can better understand the politics of climate change in rural America. How farmers in Siskiyou, and rural communities more broadly, experience and respond to change suggests new directions for research and practice. Future research must consider farmers' experiences and perceptions, investigating how multiple understandings of climate change affect adaptation and mitigation, how farm advisers can effectively bridge local perceptions and climate science, and how beliefs about the benefits and consequences of various practices and policies shape adaptation implementation. Building more resilient and equitable food systems means addressing not just technical solutions but also the cultural and political dynamics of climate change experiences on the ground.

Humans have, for far too long, allowed competition and gain to alienate us from each other and the relationships we all depend on. Instead, we must engage with the complex ways farmers already adapt while working to transform the broader political economic systems that constrain our shared flourishing. This means recognizing that rural communities' resistance to environmental regulation often stems from legitimate concerns of loss rather than simple antienvironmentalism. It means developing regulatory frameworks that incorporate local knowledge and social relations to balance competing needs and create scale-appropriate regulations.[81] It means reframing climate change from a crisis that demands personal sacrifice to an opportunity to reconsider policies that have led to extreme inequality and social division. It means supporting farmers' existing adaptation efforts and framing farmers as potential climate heroes instead of villains. As a farmer implored during one interview, "You know, we are not the problem. Don't blame us. Let us be part of the solution."[82]

What might be possible if farmers and other rural workers moved past current politics that separate and isolate? What if governing institutions moved everyone's standard of living forward, instead of enabling wealth to accumulate in fewer hands? With deeply entrenched entitlements and inequalities built into nearly every aspect of property and policy, how might a more equitable new rurality emerge?

Our collective future hangs in the balance. As climate impacts intensify, rural communities face unprecedented challenges. But the creative responses of farmers and the emergence of unlikely alliances reveal possibilities for more abundant and sustainable futures. Far from passive actors that climate change is happening to, farmers are actively reorganizing landscapes and relationships. Understanding how rural communities already adapt to climate change while grappling with questions of identity, belonging, and survival points toward new possibilities for bridging political divides and building more just and resilient societies in a changing climate.

Notes

All unattributed quotations in this book are from interviews and participant observation fieldnotes.

CHAPTER 1. WATER IS THE BLOOD OF LAND

1. According to the World Meteorological Organization, the ten hottest years ever recorded on Earth were the ten years between 2014 and 2024; see https://wmo.int/publication-series/state-of-global-climate-2024. See also "Climate Change Indicators: U.S. and Global Temperature," US Environmental Protection Agency, updated February 4, 2025, www.epa.gov/climate-indicators/climate-change-indicators-us-and-global-temperature; and "Global Temperature," National Aeronautics and Space Administration, updated January 28, 2025, https://science.nasa.gov/earth/measuring_global_temperature/.
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3. Tapan B. Pathak, Mahesh L. Maskey, Jeffery A. Dahlberg, Faith Kearns, Khaled M. Bali, and Daniele Zaccaria, "Climate Change Trends and Impacts on California Agriculture: A Detailed Review," *Agronomy* 8 (2018): 25; IPCC, "2021: Summary for Policymakers," in *Climate Change* 2021*: The Physical Science Basis; Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change,* ed. V. Masson-Delmotte, P. Zhai, A. Pirani, S. L. Connors, C. Péan, S. Berger, et al. (Cambridge University Press, 2023).
4. Adaptation can be defined as processes of adjustment to actual or expected climate and its effects, including small tweaks and transformations, and the concept has

been critiqued for obscuring the political dimensions of climate change and encouraging technocratic interventions that reproduce unequal power relations. See, e.g., Michael J. Watts, "Now and Then: The Origins of Political Ecology and the Rebirth of Adaptation as a Form of Thought," in *The Routledge Handbook of Political Ecology,* ed. Tom Perreault, Gavin Bridge, and James McCarthy (Routledge, 2015); Kasia Paprocki and James McCarthy, "The Agrarian Question of Climate Change," *Progress in Human Geography* 48 (2024): 691–715; Natasha Iskander and Nichola Lowe, "Climate Change and Work: Politics and Power," *Annual Review of Political Science* 23 (2020): 111–31; Kasia Paprocki, *Threatening Dystopias: The Global Politics of Climate Change Adaptation in Bangladesh* (Cornell University Press, 2021), 17.

5. Paprocki, *Threatening Dystopias,* 2.
6. By *livelihoods,* a term I often employ, I mean the practices, strategies, capabilities, and assets—both material and social—through which people secure their meaning in life.
7. For more on the ability, and limits, of agroecological practices to enhance soil moisture holding capacity, see Miguel A. Altieri, Clara I. Nicholls, Rene Montalba, Lorena Vieli, and Luis L. Vazquez, "Agroecology and the Limits to Resilience: Extending the Adaptation Capacity of Agroecosystems to Drought," *Frontiers in Agronomy* 7 (2025): 1534370.
8. Michael Grunwald, "Sorry, but This Is the Future of Food," *New York Times,* December 13, 2024, www.nytimes.com/2024/12/13/opinion/food-agriculture-factory-farms-climate-change.html; Eliza Barclay, "What to Eat on a Burning Planet," *New York Times,* July 29, 2024, www.nytimes.com/2024/07/29/opinion/what-to-eat-on-a-burning-planet.html; David Wallace-Wells, "Food as You Know It Is About to Change," *New York Times,* July 28, 2024, www.nytimes.com/2024/07/28/opinion/food-climate-crisis-prices.html.
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10. Adam Calo, "The Useful Idiot—Where I Keep Warning You About the Resurgence of Lazy Land Sparing Rhetoric," Substack.com, December 16, 2024, https://adamcalo.substack.com/p/the-useful-idiot.
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14. Quoting RFK Jr., beginning at minute 3:23, "WATCH: Sen. Steve Daines Questions RFK Jr. in Confirmation Hearing," posted January 29, 2025, by *PBS NewsHour,* YouTube, www.youtube.com/watch?v=LUrXhgXcdP0&ab_channel=PBSNewsHour.
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114. In each interaction and research decision, I engaged in "a power-charged social relation of 'conversation' " with the person (or people) I worked with. In doing so, we embraced the partial, locally embedded, situated, and relational characteristics of knowledge production. See Donna Haraway, "Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective 1," in *Women, Science, and Technology,* ed. Mary Wyer, Mary Barbercheck, Donna Cookmeyer, Hatice Ozturk, and Marta Wayne (Routledge, 2013), 593.
115. I made nine fieldwork trips between 2016 and 2019; then the Covid-19 pandemic hit, and I did not go back to Siskiyou until 2022. From 2022 to 2024 I traveled to Siskiyou seven more times, usually in the spring and fall each year.
116. I contacted people through a social network sampling recruitment method (snowball sampling), which allowed me to trace social connections. See Charlie Parker, Sam Scott, and Alistair Geddes, "Snowball Sampling," in *SAGE Research Methods Foundations,* ed. Paul Atkinson, Sara Delamont, Alexandru Cernat, Joseph W. Sakshaug, and Richard A. Williams (SAGE, 2019).
117. I transcribed the qualitative data for this work using Trint software. I corrected errors by hand and then coded my transcripts and research notes in MAXQDA software, informed by a grounded theory approach. See Uwe Flick, Robert Thornberg, and Kathy Charmaz, "Grounded Theory and Theoretical Coding," in *The SAGE Handbook of Qualitative Data Analysis,* ed. Uwe Flick (SAGE, 2014).
118. Of the eighty-four farmers I interviewed, twenty-eight grew only crops, twenty-five raised only livestock, and thirty-one farmed a mix of crops and livestock; thirty-six identified as women and forty-eight as men; seventy-two identified as white and six as Hmong; six did not describe their racial or ethnic identity.
119. Survey results are not statistically representative due to my use of a purposive sampling frame. For the use of purposive sampling frame in similar contexts, see Laurie Yung and Jill M. Belsky, "Private Property Rights and Community Goods: Negotiating Landowner Cooperation amid Changing Ownership on the Rocky Mountain Front," *Society and Natural Resources* 20 (2007): 693.
120. Of the sixty-six key informant interviewees, thirty-five people identified as women and twenty-nine as men. I did not ask these participants to identify their racial or ethnic identity. Ten of these participants also farmed in some capacity, although I interviewed them primarily in their nonfarming roles.

121. Fieldwork was often lonely. There were sweet moments of shared meals and shared tears with the people I talked to. There were also times when I felt unsure and even unsafe, when people made racist comments, showed me their gun collections, or responded to interview questions in sexually suggestive ways.
122. For four political economy questions, see Henry Bernstein, *Class Dynamics of Agrarian Change* (Fernwood and Kumarian Press, 2010), 22.
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126. Jessica Smith, "Racializing Rural Places Through USDA Home Economics Agricultural Extension, 1965–1982," *Journal of Rural Studies* 106 (2024): 103240.
127. Megan Horst and Amy Marion, "Racial, Ethnic and Gender Inequities in Farmland Ownership and Farming in the US," *Agriculture and Human Values* 36 (2019): 1–16.
128. Helga Leitner, "Spaces of Encounters: Immigration, Race, Class, and the Politics of Belonging in Small-Town America," *Annals of the Association of American Geographers* 102 (2012): 834.
129. For more on the "white rural idyll," see Kate Cairns, "Youth, Dirt, and the Spatialization of Subjectivity: An Intersectional Approach to White Rural Imaginaries," *Canadian Journal of Sociology* 38 (2013): 642. For more on new ruralities, see, e.g., Cristóbal Kay, "Reflections on Latin American Rural Studies in the Neoliberal Globalization Period: A New Rurality?," *Development and Change* 39 (2008): 915–43; and Susanna Hecht, "The New Rurality: Globalization, Peasants and the Paradoxes of Landscapes," *Land Use Policy* 27 (2010): 161–69.
130. Paprocki, *Threatening Dystopias,* 14.

CHAPTER 2. ON SHAKY GROUND

1. "Land Use, Land Value and Tenure—Farmland Ownership and Tenure," USDA, Economic Research Service, www.ers.usda.gov/topics/farm-economy/land-use-land-value-tenure/farmland-ownership-and-tenure.

2. "Heirs' Property," USDA, National Agricultural Library, www.nal.usda.gov/farms-and-agricultural-production-systems/heirs-property.
3. Megan Horst and Amy Marion, "Racial, Ethnic and Gender Inequities in Farmland Ownership and Farming in the US," *Agriculture and Human Values* 36 (2019): 1–16; Margiana Petersen-Rockney, Patrick Baur, Aidee Guzman, S. Franz Bender, Adam Calo, Federico Castillo, et al., "Narrow and Brittle or Broad and Nimble? Comparing Adaptive Capacity in Simplifying and Diversifying Farming Systems," *Frontiers in Sustainable Food Systems* 5 (2021): 564900.
4. Judith Z. Kalbacher and Diana DeAre, *Farm Population of the United States,* 1985 (US Department of Commerce, Bureau of the Census, 1986).
5. Kathleen Kassel, "Agriculture and Its Related Industries Provide 10.4 Percent of US Employment," USDA, Economic Research Service, www.ers.usda.gov/data-products/ag-and-food-statistics-charting-the-essentials/ag-and-food-sectors-and-the-economy; Wenson Fung, Kimberly Prado, Amanda Gold, Andrew Padovani, Daniel Carroll, and Emily Finchum-Mason, *Findings from the National Agricultural Workers Survey (NAWS),* 2021–2022*: A Demographic and Employment Profile of United States Crop Workers,* Research Report no. 17 (US Department of Labor, September 2023), 7, www.dol.gov/sites/dolgov/files/ETA/naws/pdfs/NAWS%20Research%20Report%2017.pdf.
6. Kasia Paprocki and James McCarthy, "The Agrarian Question of Climate Change," *Progress in Human Geography* 48 (2024): 694.
7. Adam Calo, "Family Farm Myths and the Effacement of Labor," in *Oxford Research Encyclopedia of Food Studies,* October 23, 2024, https://oxfordre.com/foodstudies/view/10.1093/acrefore/9780197762530.001.0001/acrefore-9780197762530-e-66.
8. Calo, "Family Farm Myths"; Paprocki and McCarthy, "Agrarian Question."
9. Walter Goldschmidt, *As You Sow: Three Studies in the Social Consequences of Agribusiness* (Allanheld, Osmun, 1978), 283.
10. Calo, "Family Farm Myths."
11. For other examples of independence and self-sufficiency identified by rural residents as core values, see, e.g., Ryanne Pilgeram, *Pushed Out: Contested Development and Rural Gentrification in the US West* (University of Washington Press, 2021); and Jennifer Sherman, *Dividing Paradise: Rural Inequality and the Diminishing American Dream* (University of California Press, 2021).
12. Horst and Marion, "Racial, Ethnic and Gender Inequities."
13. "Family Farms," USDA, National Institute of Food and Agriculture, www.nifa.usda.gov/grants/programs/family-small-farm-program/family-farms.
14. For some scholars, control of their means of production (Susan Mann and James M. Dickinson, "Obstacles to the Development of a Capitalist Agriculture," *Journal of Peasant Studies* 5 [1978]: 466–81) and the centrality of kinship networks (Nola Reinhardt and Peggy Barlett, "The Persistence of Family Farms in United States Agriculture," *Sociologia Ruralis* 29 [1989]: 203–25) are defining features of family farms. Family farmers are often characterized as petty commodity producers who engage in circuits of money, but not capital, to achieve their primary goal of livelihood reproduction. See Henry Bernstein, *Class Dynamics of Agrarian Change* (Fernwood and Kumarian Press, 2010). For many researchers the absence of all or most wage-labor is key to this

classification, e.g., Max Pfeffer, "Social Origins of Three Systems of Farm Production in the United States," *Rural Sociology* 48 (1983): 540–62; and Mann and Dickinson, "Obstacles to Development." I use a definition from Linda Lobao and Katherine Meyer, "The Great Agricultural Transition: Crisis, Change, and Social Consequences of Twentieth Century US Farming," *Annual Review of Sociology* 27 (2001): 104, for the "great agricultural transition," based on family labor and management.

15. Reinhardt and Barlett, "Persistence of Family Farms."
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19. "Land Values: 2017 Summary," USDA, National Agricultural Statistics Service, 2017, www.usda.gov/nass/PUBS/TODAYRPT/land0817.pdf; Madeleine Fairbairn, *Fields of Gold: Financing the Global Land Rush* (Cornell University Press, 2020), 135.
20. "Land Use, Land Value and Tenure," USDA, Economic Research Service, January 27, 2025, www.ers.usda.gov/topics/farm-economy/land-use-land-value-tenure/; Adam Calo and Kathryn Teigen De Master, "After the Incubator: Factors Impeding Land Access Along the Path from Farmworker to Proprietor," *Journal of Agriculture, Food Systems, and Community Development* 6 (2016): 111–27.
21. Christopher Pudenz and Lee Schulz, "Multi-Plant Coordination in the U.S. Beef Packing Industry," *American Journal of Agricultural Economics* 106 (2024): 382–415; Mary K. Hendrickson, Philip H. Howard, Emily M. Miller, and Douglas H. Constance, *The Food System: Concentration and Its Impacts,* Farm Action, 2020, https://farmaction.us/concentrationreport/.
22. Mark Brunson and Lynn Huntsinger, "Ranching as a Conservation Strategy: Can Old Ranchers Save the New West?," *Rangeland Ecology and Management* 61 (2008): 137–47.
23. Jennifer Clapp, "The Problem with Growing Corporate Concentration and Power in the Global Food System," *Nature Food* 2 (2021): 404–8.
24. Lobao and Meyer, "Great Agricultural Transition," 106.
25. It is important to also remember that many farmers, including the majority of those in Siskiyou County, are still land *owners.* Frederick H. Buttel, "Some Reflections on Late Twentieth Century Agrarian Political Economy," *Sociologia Ruralis* 41 (2001): 165–81; Ingolf Vogeler, *The Myth of the Family Farm: Agribusiness Dominance of US Agriculture* (CRC Press, 1981), 289.

26. Buttel, "Some Reflections."
27. Lobao and Meyer, "Great Agricultural Transition," 111.
28. Austin Frerick, *Barons: Money, Power, and the Corruption of America's Food Industry* (Island Press, 2024), 82–88. See also reporting on beef checkoff fund use to downplay the climate impacts of beef production: Joe Fassler, "Inside Big Beef's Climate Messaging Machine: Confuse, Defend and Downplay," *Guardian,* May 3, 2023, www.theguardian.com/environment/2023/may/03/beef-industry-public-relations-messaging-machine.
29. Frerick, *Barons,* 84.
30. Julie Guthman, *Wilted: Pathogens, Chemicals, and the Fragile Future of the Strawberry Industry* (University of California Press, 2019); Richard A. Walker, *The Conquest of Bread:* 150 *Years of Agribusiness in California* (New Press, 2004), 104. See also Jim Hightower, *Hard Tomatoes, Hard Times: A Report of the Agribusiness Accountability Project on the Failure of America's Land Grant College Complex* (Schenkman Books, 1973); and Robert Lee and Tristan Ahtone, "Land-Grab Universities," *High Country News,* March 30, 2020, www.hcn.org/issues/52-4/indigenous-affairs-education-land-grab-universities/.
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32. The US Senate Committee on Agriculture, Nutrition, and Forestry projected total 2023 Farm Bill spending at $1.51 trillion as of its May 2023 omnibus drafting. "Minority Analysis: The May 2023 Farm Bill Scoring Baseline," May 15, 2023, www.agriculture.senate.gov/newsroom/majority-blog/minority-analysis-the-may-2023-farm-bill-scoring-baseline.
33. Hightower, *Hard Tomatoes;* Vogeler, *Myth of the Family Farm;* Lobao and Meyer, "Great Agricultural Transition."
34. Kate Nash, "The 'Cultural Turn' in Social Theory: Towards a Theory of Cultural Politics," *Sociology* 35 (2001): 77–92; Amita Baviskar, "Cultural Politics of Natural Resources," *Economic and Political Weekly* 38 (2003): 5051–55.
35. Cécile Barnaud and Nathalie Couix, "The Multifunctionality of Mountain Farming: Social Constructions and Local Negotiations Behind an Apparent Consensus," *Journal of Rural Studies* 73 (2020): 35.
36. For more on farmers knowing a place and the land, see Brooks Lamb, *Love for the Land: Lessons from Farmers Who Persist in Place* (Yale University Press, 2023).
37. Kathryn Dudley, *Debt and Dispossession: Farm Loss in America's Heartland* (University of Chicago Press, 2000).
38. Like most multigenerational farmers in Siskiyou County, Susan and Sam raise calves that they sell once a year into the commodity market via video auction. This means they make most of their income in just a few minutes, taking the price offered that day. They have also begun growing alfalfa for export markets. Though this market is not as concentrated as the beef industry, alfalfa brokers similarly set the terms and price.
39. Calculating, for example, that if you use 40 percent less water you can still expect 80 percent of your optimal yield.
40. The USDA's Environmental Quality Incentives Program (EQIP) program is the largest public cost-share granting program for farmers to purchase infrastructure and pay for

farm improvements that, theoretically, benefit the environment. Farmers generally must supply the initial capital for these investments and are then reimbursed a certain percentage of the costs. Many farmers, like Susan and Sam, register the improvements under the name of a woman or young member of the family, therefore qualifying for advanced payment and a higher reimbursement rate under the USDA's "socially disadvantaged" farmer definitions.

41. Clapp, "Problem with Growing Corporate Concentration"; Patrick Baur, "Agrifood Systems' Deep Dependence on Fossil Fuels Was 150 Years in the Making; Undoing This 'Lock-in' Requires Rapid and Systemic Diversification," paper presented at the Indian Ecological Society International Conference, November 2024, Ludhiana, India; Henry Bernstein, *Class Dynamics of Agrarian Change* (Fernwood and Kumarian Press, 2010), 55, 104.
42. Custom farming is a business structure wherein farmers are hired, often by nonoperator landowners or other farmers, to do a specific farming task, often because the custom farmer has a specific knowledge and skill set, or specialized farming equipment for a particular task.
43. Margiana Petersen-Rockney, "Farming Water," *Grist,* February 26, 2019, https://grist.org/article/this-conservation-group-wanted-to-balance-cows-and-salmon-so-wheres-the-beef/.
44. Barnaud and Couix, "Multifunctionality of Mountain Farming."
45. The American Farm Bureau Federation, founded in 1919, was an organization "of and for wealthy farmers" that worked hand in hand with public institutions such as the cooperative extension system, positioning the Farm Bureau as a private intermediary between public agricultural research institutions and farmers. Vogeler, *Myth of the Family Farm,* 270. The Farm Bureau evolved into a powerful political advocacy organization that represents agricultural interests at national and state levels, often championing politically right policies that support large-scale agricultural producers and agribusiness interests. For more on this history, see Deborah Kay Fitzgerald, *Every Farm a Factory: The Industrial Ideal in American Agriculture* (Yale University Press, 2008).
46. Although pigs will graze, if left on a parcel too long they will also root up the plants, tilling the soil. Rooting is undesirable if a farmer wants the pasture to remain, but pigs can be used as a tool between crops because their rooting (and manure) increases decomposition and soil fertility. Tim has also used the pigs between alfalfa plantings to root up this crop, which needs to be replanted every few years.
47. This would, however, require the county to amend local land use code to allow both agritourism and commercial noncattle species, both prohibited under county code, and both surprisingly contentious issues.
48. Natasha Iskander and Nichola Lowe, "Climate Change and Work: Politics and Power," *Annual Review of Political Science* 23 (2020): 111–31. See also Helga Leitner, "Spaces of Encounters: Immigration, Race, Class, and the Politics of Belonging in Small-Town America," *Annals of the Association of American Geographers* 102 (2012): 828–46. On conceptualizing micropolitics as a mechanism of social transformation, see Tom Burns, "Micropolitics: Mechanisms of Institutional Change," *Administrative Science Quarterly* 6 (1961): 257–81.

49. Petersen-Rockney et al., "Narrow and Brittle."
50. For another, albeit quite different, example of longtime residents welcoming industry and development that can ultimately lead to their own marginalization, see Pilgeram, *Pushed Out.*
51. David L. Levy and André Spicer, "Contested Imaginaries and the Cultural Political Economy of Climate Change," *Organization* 20 (2013): 660.
52. This is one of the primary points illustrated in Dudley, *Debt and Dispossession.*
53. Michel Foucault, "Two Lectures," in *Culture/Power/History: A Reader in Contemporary Social Theory,* ed. Nicholas B. Dirks, Geoff Eley, and Sherry B. Ortner (Princeton University Press, 1994), 214.
54. Seumas Miller, "Foucault on Discourse and Power," *Theoria: A Journal of Social and Political Theory* 76 (1990): 115–25.
55. Lia Bryant and Bridget Garnham, "Beyond Discourses of Drought: The Micro-Politics of the Wine Industry and Farmer Distress," *Journal of Rural Studies* 32 (2013): 1–9.
56. On economic decline and racialization, see Kate Cairns, "Youth, Dirt, and the Spatialization of Subjectivity: An Intersectional Approach to White Rural Imaginaries," *Canadian Journal of Sociology* 38 (2013): 623–46.
57. Quotation from Stephanie Erev, "Feeling the Vibrations: On the Micropolitics of Climate Change," *Political Theory* 47 (2019): 838. See also Leitner, "Spaces of Encounters," 834.
58. See Lamb, *Love for the Land,* for examples of farmers refusing to "get big" because scaling up would compromise their intimate knowledge of the land. Yet Sam and Susan demonstrate how sometimes persistence demands limiting the extension of relationships to both community and land. Carrying nearly half a million dollars in debt, they expressed a sense of having little choice but to be ruthless in pursuing economic opportunities while maintaining that their motivations center on family rather than greed.

CHAPTER 3. FROM FRIEND TO FOE

1. Siri Eriksen, Andrea J. Nightingale, and Hallie Eakin, "Reframing Adaptation: The Political Nature of Climate Change Adaptation," *Global Environmental Change* 35 (2015): 523.
2. See, e.g., Kari Marie Norgaard, *Salmon and Acorns Feed Our People: Colonialism, Nature, and Social Action* (Rutgers University Press, 2019); Andrew C. Isenberg, *Mining California: An Ecological History* (Macmillan, 2005); and Brook Thompson, "The Familial Bond Between the Klamath River and the Yurok People," *High Country News,* August 24, 2021, www.hcn.org/issues/53-9/indigenous-affairs-klamath-basin-the-familial-bond-between-the-klamath-river-and-the-yurok-people/.
3. Frank R. LaPena, "Witntu," in *Handbook of North American Indians,* vol. 8, *California,* ed. Robert F. Heizer (Smithsonian Institution Press, 1978).
4. For example, Irish immigrants in the nineteenth century were not considered white. Robert Wilson, "Landscapes of Promise and Betrayal: Reclamation, Homesteading, and Japanese American Incarceration," *Annals of the Association of American Geographers* 101 (2011): 424–44.

5. Chang et al. v. County of Siskiyou et al., No. 2:22-cv-01378-KJM-AC (E. D. Cal. 2022).
6. *Yreka (CA) Union,* January 22, 1879, quoted in *Chang,* 2:22-cv-01378-KJM-AC, at 9.
7. Board of supervisors meeting, June 15, 2015, quoted in *Chang,* 2:22-cv-01378-KJM-AC, at 9.
8. Holly D. Doremus and A. Dan Tarlock, *Water War in the Klamath Basin: Macho Law, Combat Biology, and Dirty Politics,* 2nd ed. (Island Press, 2008), 38.
9. A. Dan Tarlock, "The Future of Prior Appropriation in the New West," *Natural Resources Journal* 41 (2001): 769–93.
10. An Act to Provide for the Sale of Desert Lands in Certain States and Territories, 19 Stat. 377 (1877).
11. Doremus and Tarlock, *Water War,* 39.
12. Richard A. Walker, *The Conquest of Bread:* 150 *Years of Agribusiness in California* (New Press, 2004).
13. California Land Act of 1851 (9 Stat. 631); "Placer County Homestead Claim Records, 1860–1939," Placer County Archives, Online Archive of California, https://oac.cdlib.org/findaid/ark:/13030/c8ns11x7/; C. W. Adams, "Homestead Legislation in California," *Pacific Law Journal* 9 (1978): 723.
14. Popularized by Thomas Jefferson, yeoman farmers were envisioned as self-sufficient and independent, the idealized (white male) citizens associated with Jeffersonian democracy. Adam Calo, "The Yeoman Myth: A Troubling Foundation of the Beginning Farmer Movement," *Gastronomica* 20 (2020): 12–29. It is surprisingly difficult to identify how many homestead grants were given in the region, but one source identified 1,488 federal homestead patents granted in Siskiyou County between 1862 and 1948. "Homesteading, Mining, Ranching, Logging in Siskiyou County, California," The Land Patents, n.d., https://thelandpatents.com/usa/california/siskiyou-ca093.
15. "Siskiyou County Comprehensive Land and Resource Management Plan," Siskiyou County, February 1996, www.co.siskiyou.ca.us/sites/default/files/fileattachments/board_of_supervisors/page/971/bos-199602-comprehensivelandresourcemanagement-plan.pdf, 67.
16. "Siskiyou County Comprehensive Plan."
17. Wilson, "Landscapes of Promise."
18. Wilson, "Landscapes of Promise."
19. One rancher in Scott Valley told me about family journals from the 1880s that describe how the rivers in the valley were completely dry and people used them as wagon trails, riding horses and driving wagons between farms on the dry riverbeds. Eric A. Stene, *Klamath Project,* Bureau of Reclamation, 1994, www.usbr.gov/projects/pdf.php?id=129, 4.
20. For more on the history of the Reclamation Bureau, see Donald J. Pisani, *Water and American Government: The Reclamation Bureau, National Water Policy, and the West,* 1902–1935 (University of California Press, 2002).
21. For more on the Progressive Era utopian visions of a planned private society, see E. Melanie Dupuis, *Nature's Perfect Food: How Milk Became America's Drink* (New York University Press, 2002). For more on the exploitation of water in the American West,

see Donald Worster, *Rivers of Empire: Water, Aridity, and the Growth of the American West* (Pantheon Books, 1985).

22. "Klamath Project," US Bureau of Reclamation, www.usbr.gov/projects/index.php?id=470.
23. A note on naming: Tulelake is the name of the town (and surrounding farming area) that is on the drained land that was Tule Lake. The watery area that remains today is often referred to as the Tule Lakes because of the intensive engineering that forms a series of shallow lakes that move year to year. Stene, "Klamath Project," 9.
24. Stephen Most, "Klamath Basin Project (1906)," Oregon Encyclopedia, July 20, 2022, www.oregonencyclopedia.org/articles/klamath_basin_project_1906_/.
25. Stene, "Klamath Project," 8.
26. "Brief History of Leaselands," US Bureau of Reclamation, 2008, www.usbr.gov/mp/kbao/programs/land-lease/1-bidding-program/2008/brief-history.pdf, 1.
27. "Brief History of Leaselands," 1.
28. Stan Turner, *The Years of Harvest: A History of the Tule Lake Basin,* 2nd ed. (49th Avenue Press, 1988), 159.
29. Turner, *Years of Harvest,* 176.
30. Orin Cassmore, "Gold Mine in the Sky: High Klamath Has a 'Land Rush in a Goldfish Bowl,' " *Reclamation Era,* February 1947, 25.
31. Cassmore, "Gold Mine in the Sky," 25.
32. "Brief History of Leaselands," 1.
33. In 1909 about fifty Czech families moved to the Klamath Basin. Lee Juillerat, "Malin's 100th Anniversary," Oregon TECH, www.oit.edu/shaw/exhibits/stories/malin-100th-anniversary. Although the ethnic origins of few of the Homestead winners are recorded, Philip Krizo, pictured (see fig. 4), is noted as the son of Czech immigrants. Cassmore, "Gold Mine in the Sky," 28. Residents still celebrate their heritage each year with a Czech dinner. See Lee Juillerat, "Preparing for 65th Annual Czech Dinner at Tulelake Fairgrounds," *Herald and News* (Klamath Falls, OR), March 11, 2025, www.heraldandnews.com/news/limelighter/preparing-for-65th-annual-czech-dinner-at-tulelake-fairgrounds/article_1c7495b8-febd-11ef-aa07-8b5d2b1a8808.html; and Turner, *Years of Harvest,* 182.
34. Wilson, "Landscapes of Promise."
35. Wilson, "Landscapes of Promise," 432.
36. Walker, *Conquest of Bread;* Pisani, *Water and American Government;* Don Mitchell, *The Lie of the Land: Migrant Workers and the California Landscape* (University of Minnesota Press, 1996); Worster, *Rivers of Empire.*
37. Wilson, "Landscapes of Promise," 428–29.
38. Editorial, *Klamath News* (Klamath Falls, OR), April 10, 1942, 4.
39. Editorial, 4.
40. Internment also served as a land grab. Many of those imprisoned had been landowners whose land was lost during this period and never returned.
41. Syracuse University Library image of the cover of *The Reclamation Era* (1946), featured in Wilson, "Landscapes of Promise," 436.

42. For more on the H-2A guest worker program, see David Bacon, *Dignity or Exploitation: What Future for Farmworker Families in the United States?,* Oakland Institute, 2021, https://www.oaklandinstitute.org/sites/default/files/files-archive/dignity-exploitation.pdf. The only remaining building on its original site is the camp prison, which can be toured by appointment with the National Park Service, which I did in November 2019.
43. For more on the history of migrant workers in creating California's landscape while seeming out of sight, see Mitchell, *Lie of the Land.*
44. Ingolf Vogeler, *The Myth of the Family Farm: Agribusiness Dominance of U.S. Agriculture* (CRC Press, 1981), 66. For a history of public water infrastructure's importance to the development of capitalist agriculture in California, see Walker, *Conquest of Bread.*
45. Doremus and Tarlock, *Water War.*
46. M. Kunkel and L. Juillerat, "The Thanks of a Grateful Nation: Veterans and Homesteading on the Klamath Federal Reclamation Project," *Journal of the Shaw Historical Society* 17 (2002): 147.
47. Holly D. Doremus and A. Dan Tarlock, "Fish, Farms, and the Clash of Cultures in the Klamath Basin," *Ecology Law Quarterly* 30 (2003): 279.
48. Michael Belchik, Dave Hillemeier, and Ronnie M. Pierce, *The Klamath River Fish Kill of 2002: Analysis of Contributing Factors,* Yurok Tribal Fisheries Program, February 2004, www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/california_waterfix/exhibits/docs/PCFFA&IGFR/part2/pcffa_155.pdf, 38.
49. Patrick Baur and Alastair Iles, "Replacing Humans with Machines: A Historical Look at Technology Politics in California Agriculture," *Agriculture and Human Values* 40 (2023): 113–40.
50. Austin Frerick, *Barons: Money, Power, and the Corruption of America's Food Industry* (Island Press, 2024), 43.
51. Frerick, *Barons,* 48; Jennifer Clapp, "The Rise of Big Food and Agriculture: Corporate Influence in the Food System," in *A Research Agenda for Food Systems,* ed. Colin L. Sage (Edward Elgar, 2022).
52. Frerick, *Barons,* 35–42.
53. Harriet Friedmann and Philip McMichael, "Agriculture and the State System: The Rise and Decline of National Agricultures, 1870 to the Present," *Sociologia Ruralis* 29 (1989): 93–117; Harriet Friedmann, "Distance and Durability: Shaky Foundations of the World Food Economy," *Third World Quarterly* 13 (1992): 371–83.
54. Friedmann and McMichael, "Agriculture and the State System."
55. Garrett Graddy-Lovelace and Adam Diamond, "From Supply Management to Agricultural Subsidies—and Back Again? The US Farm Bill and Agrarian (In)Viability," *Journal of Rural Studies* 50 (2017): 70–83.
56. Since the county began publishing crop reports in 1957, grain acreage has decreased from over 100,000 acres to under 20,000. Figure 12 was featured in the 2016 Siskiyou County Crop Report.
57. For examples across California of irrigation expansion, see Warren E. Johnston and Alex F. McCalla, *Whither California Agriculture: Up, Down, or Out? Some Thoughts About the Future,* Giannini Foundation Special Report 04-1, August 2004.

58. Kathryn Marie Dudley, *Debt and Dispossession: Farm Loss in America's Heartland* (University of Chicago Press, 2002), 99.
59. Nola Reinhardt and Peggy Barlett, "The Persistence of Family Farms in United States Agriculture," *Sociologia Ruralis* 29 (1989): 203–25.
60. "California Drought of 1976 and 1977—Extent, Damage, and Governmental Response," US Government Accountability Office, October 19, 1977, www.gao.gov/products/ced-77-137.
61. Friedmann and McMichael, "Agriculture and the State System."
62. Dudley, *Debt and Dispossession,* 34.
63. Dudley, *Debt and Dispossession,* 94.
64. Frerick, *Barons,* 2–3.
65. Marc Edelman, "Hollowed Out Heartland, USA: How Capital Sacrificed Communities and Paved the Way for Authoritarian Populism," *Journal of Rural Studies* 82 (2021): 505–17.
66. See Grace Olmstead, *Uprooted: Recovering the Legacy of the Places We've Left Behind* (Penguin Random House, 2021), for a vivid portrayal of the hollowing out of agricultural heartlands in Idaho, including the irony of dependence on supermarket chains that carry few local farm products. See Sonya Salamon, *Newcomers to Old Towns: Suburbanization of the Heartland* (University of Chicago Press, 2003), for another example of small town change and the fraying of traditional social supports and networks.
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69. See Geoff Mann, *Our Daily Bread: Wages, Workers, and the Political Economy of the American West* (University of North Carolina Press, 2007), for more on the timber industry in Siskiyou County, particularly the in-migration of Black timber workers in the 1920s.
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96. Bailey, "Convoys."
97. Clarren, "2001," para. 34.
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CHAPTER 4. WEATHERING CHANGE

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47. Ashwood, "Rural Conservatism or Anarchism?"; Edelman, "Hollowed Out Heartland."
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49. Belief in anthropogenic climate change may encourage some farmers to adapt more, earlier, or in different ways than their peers who deny climate change's anthropogenic origins, a comparison that would lend itself to further quantitative work. That said, it is important not to overstate the potential influence of belief on action, given that intention to adapt and actual adaptation are poorly correlated. See Meredith T. Niles, Margaret Brown, and Robyn Dynes, "Farmer's Intended and Actual Adoption of Climate Change Mitigation and Adaptation Strategies," *Climatic Change* 135 (2016):

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CHAPTER 5. DON'T TELL MY NEIGHBORS

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CHAPTER 6. RESHAPING RURALITY FROM THE MARGINS

1. It is important to note that nearly all interviewees in this study identified within a gender binary as either women or men. However, this should not be interpreted as erasing or ignoring the diversity of gender identities and expressions that exist in rural areas. Rural spaces are home to a variety of gender identities, including transgender and nonbinary individuals. See, e.g., Miriam Abelson, *Men in Place: Trans Masculinity, Race, and Sexuality in America* (University of Minnesota Press, 2019); and Mary Gray, Colin Johnson, and Brian Gilley, eds., *Queering the Countryside: New Frontiers in Rural Queer Studies* (New York University Press, 2016). Although this chapter focuses on the experiences of people who identified as women, future research should aim to capture the full spectrum of gender diversity in agricultural communities. See Carolyn Sachs, Mary Barbercheck, Kathryn Braiser, Nancy Ellen Kiernan, and Anna Rachel Terman, *The Rise of Women Farmers and Sustainable Agriculture* (University of Iowa Press, 2016); and Ryanne Pilgeram, Katherine Dentzman, Paul Lewin, and Kelsey Conley, "How the USDA Changed the Way Women Farmers Are Counted in the Census of Agriculture," *Choices* 35 (2020): 1–10.
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39. Adam Calo, "The Yeoman Myth: A Troubling Foundation of the Beginning Farmer Movement," *Gastronomica* 20 (2020): 12–29.
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Association of American Geographers 102 (2012): 828–46; Cristina Ortiz, " 'Now There's Just a Different Feel': Spatiotemporal Commitments and Commercial Racialization as Markers of Rural Belonging," *Social and Cultural Geography* 25 (2024): 1141–59.

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CHAPTER 7. CLIMATE CHANGE IN RURAL AMERICA

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4. Siri Eriksen, Andrea J. Nightingale, and Hallie Eakin, "Reframing Adaptation: The Political Nature of Climate Change Adaptation," *Global Environmental Change* 35 (2015): 523–33; Kasia Paprocki and Saleemul Huq, "Shrimp and Coastal Adaptation: On the Politics of Climate Justice," *Climate and Development* 10 (2018): 1–3.
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7. Debra J. Davidson, Curtis Rollins, Lianne Lefsrud, Sven Anders, and Andreas Hamann, "Just Don't Call It Climate Change: Climate-Skeptic Farmer Adoption of Climate-Mitigative Practices," *Environmental Research Letters* 14 (2019): 034015; Emily Pechar Diamond, Robert Bonnie, and Elizabeth Rowe, *Rural Attitudes on Climate Change—Lessons from National and Midwest Polling and Focus Groups,* Nicholas Institute for Environmental Policy Solutions, Duke University, 2020, https://nicholasinstitute.duke.edu/sites/default/files/publications/Rural-Attitudes-on-Climate-Change-Midwest_1.pdf.
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11. Kasia Paprocki and James McCarthy, "The Agrarian Question of Climate Change," *Progress in Human Geography* 48 (2024): 697.
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13. Sarah Bracking, "The Anti-Politics of Climate Finance: The Creation and Performativity of the Green Climate Fund," *Antipode* 47 (2015): 291.
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15. Jens Marquardt and Markus Lederer, "Politicizing Climate Change in Times of Populism: An Introduction," *Environmental Politics* 31 (2022): 736; Meredith Niles, Mark Lubell, and Van Haden, "Perceptions and Responses to Climate Policy Risks Among California Farmers," *Global Environmental Change* 23 (2013): 1752–60.
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21. Montenegro de Wit et al., "Agrarian Origins"; Garrett Graddy-Lovelace, "Farmer and Non-Farmer Responsibility to Each Other: Negotiating the Social Contracts and Public Good of Agriculture," Journal of Rural Studies 82 (2021): 531–41.
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Margiana Petersen-Rockney, photographs taken 2017–24: figs. 2–4, 6, 11, 13, 14, 16, 18–23. *Note:* All photos taken by the author are in Siskiyou County except for fig. 22, which is of a branding day in another county in California during the same period.

Fig. 1: Haley Segura, map created 2025.

Fig. 5: *Reclamation Era*, February 1947, courtesy University of Montana Mansfield Library (I 27.5).

Figs. 7, 8, 10: Central Photographic File of the War Relocation Authority of people imprisoned at the Tule Lake Relocation Center in Newell, CA.

Fig. 9: *Reclamation Era*, November 1947, courtesy University of Montana Mansfield Library (I 27.5).

Fig. 12: Friends of Siskiyou County Historical Museum.

Fig. 15: Anders Tomlinson.

Fig. 17 data sources: US Climate Divisional Database, National Oceanic and Atmospheric Administration, 2025; Gridded Historical Climatology Network, National Oceanic and Atmospheric Administration, 2025; David W. Pierce, Julie F. Kalansky, and Daniel R. Cayan, *Climate, Drought, and Sea Level Rise Scenarios for California's Fourth Climate Change Assessment,* California Energy Commission and California Natural Resources Agency, 2018,

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Index

Page numbers in italics indicate figures.