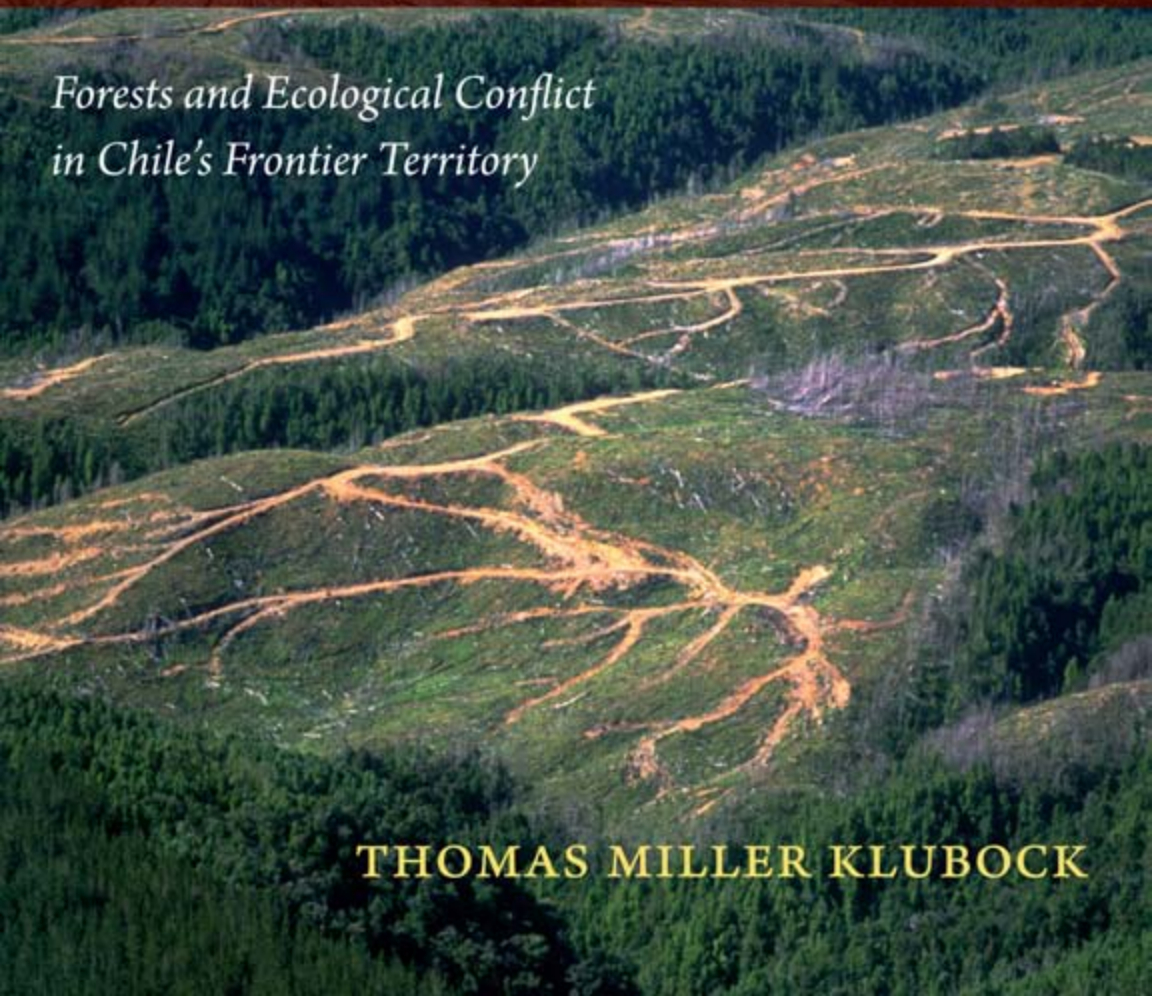




# LA FRONTERA

*Forests and Ecological Conflict  
in Chile's Frontier Territory*



THOMAS MILLER KLUBOCK

≡ LA FRONTERA

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*Forests and Ecological Conflict  
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Map 1. Chile



Map 2. Southern Chile



Map 3. Southern Chile (Araucanía)

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## Introduction

When you arrive in the southern Chilean city of Concepción by air, magnificent views of pine stands stretch out beneath you in evenly spaced rows, covering the undulating foothills of Chile's coastal cordillera and running down to the very edge of the Pacific Ocean. Although it is difficult to discern from the window of an airplane, Concepción's pine forests are really not forests at all. They are, rather, plantations of the North American conifer known as Monterey pine (radiata pine or, in Chile, *pino insigne*), with none of the life that characterizes a forest. They contain no underbrush, vines, or trees other than pine, none of the intermingling of tree and plant species that characterizes forest ecosystems. The pine plantations bear no traces of the native forests that held a multitude of species endemic to Chile, such as the ancient araucaria pine, and covered much of the coastal cordillera and its foothills just a century ago. They sustain as little diversity of fauna as they do flora. This is true in large part because of the exertions of the large forestry companies that own them. Systematic aerial spraying has purged the pine plantations of all competing insect, fungal, or vegetable species. Fences and forest guards keep out straying mammals that might feed on young saplings. They are there, too, to prevent any denizen of the countryside from entering the tree plantations to collect firewood or forest products or, perhaps, to fell a tree or two. These are forests without people, completely uninhabited.

Pine plantations now cover extensive stretches of eroded soil left by deforestation and intensive agriculture, replacing wheat and livestock on large estates, as well as the cereals and garden crops cultivated on small peasant plots, from the Bío Bío River south to the Valdivia River and Los Lagos (the Lake Region). They also occupy land where Chile's frontier forests, large expanses of undisturbed native forests characterized by biodiversity, once stood. A century ago, one might have found stands of araucaria pine and different types of Chilean beech—both deciduous varieties such as raulí and roble and perennial species such as coigüe—in mixed stands with a wide variety of trees native to Chile's temperate forests, intermingling with vines, underbrush, and wild bamboo in the Andes and the coastal cordilleras and their valleys. Farther south lay stretches of the broadleaf evergreens

of the Valdivian temperate rain forest; stands of the gigantic conifer alerce, a member of the cypress family, which rivals California's redwoods in age and size, along the coast; and raulí and coigüe forests in the Andes cordillera. Now uninterrupted waves of Monterey pine (about 85 percent of all tree plantations in Chile) and eucalyptus cover vast areas from Llanquihue and Valdivia provinces to Cautín, Malleco, Arauco, and Bío Bío provinces farther north. Chile's frontier forests, which still compose one-third of the world's intact stands of temperate forest, appear to have been swept away by a vast wave of monocultural pine plantations.<sup>1</sup> Today, Chile has the largest expanse of tree plantations in Latin America, and forestry exports are a significant source of foreign revenue for the Chilean economy, in third place behind mining and industry. For many boosters of Chile's dynamic forestry economy, plantations of Monterey pine are the signature success story of the country's recent free-market "miracle."<sup>2</sup>

During the 1990s, indigenous Mapuche communities throughout southern Chile initiated a series of land invasions of large estates covered with Monterey pine and owned by a handful of Chile's largest financial conglomerates. Mapuches couched their claims to land on forestry estates in terms of their historic occupation of frontier territory. Under the rows upon rows of pine trees, they argued, lay long histories of usurped land they had occupied "since time immemorial" or land stolen from communities with legal titles granted by the Chilean state at the beginning of the twentieth century. In addition, Mapuche communities wielded environmentalist arguments to challenge the prevailing triumphalist narrative of pine's miraculous transformation of the southern landscape. They underlined that pine plantations had a destructive effect on the ecology of southern Chile's forests and soil. They contended that rather than a "green" motor of development, literally and figuratively, pine produced soil acidification and dried up rivers and streams. The chemical sprays employed by the forestry companies poisoned wild game and Mapuche and non-Mapuche peasants' livestock, destroyed their crops, and made their children sick.

They also pointed out that forestry companies often substituted the native forests peasants relied on for firewood, game, and forest products with more profitable pine plantations. On large estates, pine replaced native forests, as well as resident estate laborers and seasonal workers, throwing increasing numbers of land-starved peasants, many of them Mapuches, into the swelling ranks of the rural unemployed. For the Mapuche communities that broke down the fences encircling pine plantations and disrupted forestry companies' logging operations, the spread of Monterey pine had led to a new moment of ecological degradation in southern Chile, uprooting increasing numbers of poor peasants from the countryside.<sup>3</sup>

This book brings together the social and environmental histories of the

southern frontier territory to examine the origins of Chile's recent forestry boom and uncover the roots of today's bitter conflict between forestry companies and Mapuche communities. The history of Monterey pine's movement from the United States Northwest down the Pacific coast to southern Chile is inextricably tied to the history of colonization and settlement in the region known as *la frontera* (the frontier), or the Araucanía, roughly the territory that lies between the Toltén and Bío Bío rivers. I examine the ecological crises produced by colonization in southern Chile's native forests from the late nineteenth century, when the military conquest of *la frontera* was completed and settlers set fire to forests to clear land for crops and livestock, until the late twentieth century, when pine plantations established their dominion over southern soil during the military dictatorship of Augusto Pinochet (1973–90) and the transition democratic governments of the center-left Concertación de Partidos por la Democracia (Coalition of Parties for Democracy, 1990–2010). My goal is to write this history of ecological change in southern Chile's temperate forests "from the bottom up," as it was experienced by the rural poor, members of Mapuche communities, Mapuche and non-Mapuche squatters (*ocupantes*), settlers (*colonos*), seasonal laborers (*peones* or *gañanes*), and full-time resident estate laborers (*inquilinos*)—roughly the broad population of laboring rural poor often referred to as peasants or campesinos. I combine social history's interest in rural land and labor relations with environmental history's focus on the ecological changes wrought by economic development, settlement, and colonization.<sup>4</sup>

I ask three basic questions about the environmental and social history of the frontier. First, what were the origins of today's forestry miracle? While the ecological triumph of Monterey pine has been interpreted by both boosters and critics as the product of the radical free-market reforms designed by students of Milton Friedman at the University of Chicago (*los Chicago boys* in Chile) and implemented at gunpoint by the Pinochet dictatorship, I demonstrate that the spread of the North American conifer throughout southern Chile was largely the result of state-directed development programs and forestry policy before 1973.<sup>5</sup> I show that in response to ecological crises provoked by deforestation, including drought, climatic changes, and soil erosion, during the early twentieth century, land and colonization officials imposed the authority of the state on the frontier's natural and social landscapes. They reined in the practices of both large landowners and campesinos, laying the foundation for a strong state role in ordering rural property relations and regulating the exploitation of natural resources. State officials looked to scientific forestry management to build an industrial forestry economy rooted in plantations of Monterey pine while establishing new conservationist restrictions on the destruction of



Chile's remaining native forests. My argument is that conservation, forestry, and forestry science served as tools for extending state governance into a frontier territory often referred to as Chile's "Wild West."

Second, I ask how forestry development remade southern Chile's social landscape. Most literature on forestry in Chile and the contemporary "Mapuche conflict" attributes struggles over forests and forestation to the free-market restructuring introduced by the Pinochet dictatorship after 1973. However, my research makes clear that neoliberal economic "shock therapy" exacerbated, rather than initiated, the social dislocations produced by several generations of government forestry policy in Chile. As early as the 1940s, state-fomented forestation with pine had led to poor peasants' exclusion from public forest reserves and to their eviction from privately held estates. Government officials charged with land and colonization in southern Chile came to believe that reorganizing the frontier's natural landscape around industrial forestry was essential to ordering both ecological and social relations. For the state, forestry replaced the often environmentally destructive practices of the large estate, or *hacienda*, transforming an unproductive property into a scientifically managed and ecologically sustainable modern business that would be the motor of frontier development. In addition, government officials believed industrial forestry would mold an often rebellious and itinerant population of landless rural laborers into a stable and settled workforce employed in forestry industries and logging. Forest and land officials defined the frontier's campesino population as both socially disruptive and ecologically destructive—a cause of deforestation, drought, and soil erosion—and sought to transform campesinos' relationship to nature by incorporating them into the forestry economy. Pine plantations offered a technocratic solution to southern Chile's chronic social and ecological crises. They provided both an alternative to reforming the frontier's unequal system of property ownership and a means of redressing the impact of indiscriminate logging in native forests. For land and colonization officials, scientifically directed commercial forestry would civilize the frontier's social and natural worlds, introducing the rational management of people and forests.

Third, I ask how southern campesinos confronted changing environmental and social conditions on the frontier, tracing their shifting relationship to the tree plantation economy and modern systems of forest management. Mapuche communities' recent struggles with forestry companies make up a chapter in a century-long history of protests by both Mapuche and non-Mapuche peasants of logging, modern forest management, and tree plantations. Campesinos in the frontier territory viewed logging and deforestation as belonging to a broader pattern of injustice rooted in profound land inequalities and their exclusion from the resources offered by

southern Chile's temperate forests during the first decades of colonization. They articulated a moral economy—or, in the words of historian Karl Jacoby, “moral ecology”—that defined the south's frontier forests as a commons to denounce the accumulation of land in the hands of large estates and the loss of forests on which they depended due to logging and fire.<sup>6</sup> As state officials imposed new forest regulations and promoted forestation with pine in response to the ecological catastrophes that beset the southern frontier only a generation after colonization had begun, campesinos confronted new restrictions on their customary uses of the forests. Forestry science and conservationist policies defined campesinos as a threat to the forest and restricted their access to the basic forest resources necessary to subsistence. For campesinos, both forestation with pine and conservationist regulations on exploiting native forests constituted forces leading to proletarianization, or their transformation into a landless labor force.

However, beginning in the 1960s, as the Chilean state initiated one of Latin America's most important agrarian reforms, campesinos appropriated conservationist ideology and made it their own to characterize large estates as irrationally exploitative of nature and to demand their expropriation. They questioned estate owners' property rights by underlining the ecological damage caused by logging and burning forests. Conservation and forestry science gave campesinos a language to make claims to frontier forests they believed to be public or theirs by rights conferred by generations of occupation. During the agrarian reform, state officials backed campesinos' claims and employed environmental laws to appropriate forestry estates they defined as failing to follow modern practices of forest management. By the 1980s, the Pinochet dictatorship had dismantled agrarian reform and introduced radical free-market economic restructuring, handing over extensive tracts of native forests, as well as tree plantations and paper and pulp plants developed with significant state investment, to a handful of financial conglomerates. Mapuche and non-Mapuche campesinos drew on environmentalist arguments to critique the industrial forestry economy and, by implication, the free-market economic model maintained by the governments of the Concertación. They drew on older understandings of the moral ecology attached to their use of the southern frontier forests, but phrased their claims to forestry estates in the language of modern environmentalism. Their goal, they contended, was to produce a more just social order rooted in the biodiversity of Chile's remaining temperate rain forests.<sup>7</sup>

Whether pine is an ecologically and socially sustainable crop that constitutes a green strategy of agricultural modernization animates heated debate today. On the one hand, Monterey pine is a pioneer species that evolved to invade open areas in conditions that are inhospitable to other

vegetation. It spreads efficiently on cleared land degraded by agriculture, logging, and ranching. Monterey pine therefore is well suited to reclaiming the eroded lands of southern Chile's central valley and coastal piedmont. The region's wet and temperate climate provides an ideal environment for Monterey pine, similar to its home along the coast of northern California. When cultivated in plantations along southern Chile's coast, Monterey pine trees can be harvested after only two decades, a fraction of the time it takes for commercially valuable native species such as the Chilean rauli beech to mature. Monterey pine has another advantage: it supplies the prime material for producing long-fiber cellulose, used in manufacturing paper. This means it is both a valuable agricultural commodity and linked to the profitable pulp and paper industries. In addition, pine plantations can take pressure off native forests, as many proponents of pine have long argued, by supplying to the timber industry an inexpensive, quick growing, easily managed substitute for native woods.<sup>8</sup>

On the other hand, critics point to a number of weaknesses in pine-fueled forestry development. Pine plantations, unlike forests, have short life spans, and because the trees are harvested after only twenty years, they do not regenerate naturally. While they do very well on already eroded soil, it remains unclear how many rotations of monocultural pine plantations forestry companies can cultivate and what the impact on soil and the wider environment will be. Pine plantations return few nutrients to the soil because they are harvested as they mature, and the plantations do not allow for the decomposition of vegetation, be it trees or underbrush. In addition, as Mapuche communities contend today, studies have demonstrated that pine plantations contribute to increased soil acidity, undermining the conditions for the regeneration of any native vegetation or agricultural crops in the regions they dominate. Pine's detrimental impact on soil is exacerbated by its absorption of water. Whereas southern Chile's dense native forests regulate and preserve rainfall, pine trees retain water in their needles, facilitating evaporation before water hits the soil. Pine plantations lack the low plants and bushes that grow in Chile's native forests and that help to conserve rainwater and humidity in the soil. In addition, the very concentrated nature of pine plantations, their biomass, means that they absorb several times the amount of water consumed by native forests. Lack of water, combined with diminished sunlight in densely planted plantations, also leads to a decline in the decomposition of organic material and prevents the formation of a layer of nutrient-rich humus. As opposed to native forests, which maintain a thick layer of humus filled with nutrients from decayed vegetation, the soil of pine forests stays dry even during rainy winter months.<sup>9</sup>

Critics of pine plantations also point out that, as with any monocul-

tural crop, genetic uniformity makes pine vulnerable to plagues and infestations. To combat possible competing species, such as underbrush, weeds, or animals that might find forage in pine saplings, as well as potential plagues, forestry companies employ an arsenal of chemical herbicides and pesticides. Chemicals sprayed aerially and indiscriminately poison estuaries, streams, and watersheds. Defoliants destroy agricultural crops on land that neighbors plantations and prevent the regeneration of native vegetation. Finally, environmentalist critics have noted that while pine plantations can, and sometimes do, take pressure off native forests, their promotion by the Chilean state over the years has often led to a process of substitution or conversion. Landowners and forestry companies have found it profitable to clear native forest, both old-growth frontier forests and second-growth forests, and plant pine to take advantage of market demand and state subsidies.<sup>10</sup>

Pine plantations have had social as well as ecological costs. The Mapuche land invasions of the 1990s made it clear that, while pine generates jobs in forestry and the paper and pulp industries, its most significant impact has been to expel campesinos from the countryside, swelling the ranks of southern Chile's underemployed and unemployed. Indeed, while Chilean governments from across the political spectrum have seen in pine an engine of economic development for the frontier, one of the major consequences of pine's expansion across the southern Chilean countryside has been campesinos' dispossession. During the second half of the twentieth century, campesinos—from the members of Mapuche communities to smallholders and resident estate laborers who historically have exchanged their labor for small plots within the borders of large landed properties—surrendered their land to pine plantations from the Valdivia River to the Bío Bío River farther north as large estates, backed by state subsidies and incentives, turned from cultivating cereals and pasturing livestock to planting trees. Campesinos' uprooting by pine was exacerbated by the ecological impact of the plantations. Surrounded by plantations, many were forced to sell their land and labor to forestry companies. Pine, like many commercial crops before it, has served as the wedge that separates rural people from their land and from the natural resources essential to their subsistence, turning them into a population of deracinated, landless laborers—an inexpensive labor reserve that often is employed by the forestry companies.<sup>11</sup>

While the appropriation of the small plots of campesino agriculturalists during the expansion of Chile's dynamic forestry economy was shaped by the particularities of Chile's environmental and social history, it is possible to view this process as part of a broader global history that began with the process of enclosure that emerged with the first forest laws and the development of modern forestry practices in Europe and its colonies and then

radiated out to other parts of the world with the expansion of the capitalist market.<sup>12</sup> Chile's history of forestry development belongs to a transnational history shaped by the circulation of forestry science and foresters trained in Europe and North America and the influence of international organizations such as the US Forest Service, the United Nations Food and Agriculture Organization, the International Monetary Fund (IMF), the World Bank, and the International Bank for Reconstruction and Development (IBRD), all of which participated in projects to promote forestry industrialization in Chile in response to growing global demand for paper pulp after the Second World War. In Chile, the imperative of modern forest management and forestry development based on the forestry science originating in Europe and the United States drove both the expansion of state authority over frontier territory and campesinos' exclusion from once public frontier land and forests.

Chilean campesinos' experience of the development of modern forestry during the twentieth century reproduced many of the contradictions that bedeviled rural people's earlier opposition to forestry and forest regulation. Proponents of pine-fueled forestry cast Mapuche campesinos who burn logging trucks or invade forestry estates as the opponents of environmentally sustainable strategies of development. Even as Mapuche organizations have increasingly adopted the mantle of environmentalism themselves, forestry companies and government officials have defined their opposition to pine plantations as antimodern or premodern and ecologically destructive. Today, Mapuches in southern Chile risk incurring the charge that they are irresponsible stewards of nature, an accusation leveled consistently by estate owners and state officials over the course of the twentieth century to justify the eviction of both Mapuche and non-Mapuche campesinos from the frontier's forests. In addition, the Chilean state has responded to peasants' protests of modern forestry practices with draconian measures. The democratically elected center-left coalition governments of the Concertación largely backed the forestry companies during the 1990s, applying national security and antiterrorism laws, some on the books since the 1930s and others handed down by the military dictatorship, to quell an increasingly militant Mapuche movement for land recuperation. As late as 2010, a number of Mapuche activists remained in jail, held under antiterrorism laws decried by international human rights organizations and the United Nations.<sup>13</sup>

The violence produced by forestry development in recent decades in Chile belongs to a long history of conflict between rural people and scientific forest management around the globe. For example, more than "acts of terror," a phrase frequently employed by both the Chilean state and forestry companies, Mapuches' attacks on logging trucks and pine plantations

echo the crimes of the eighteenth-century British peasants known as “the Blacks,” who intruded on forest preserves and parks to poach deer; collect firewood; cut down trees; and set fire to haystacks, barns, and houses to protest the enclosure of forest commons, or the actions of the nineteenth-century French male peasants known as the *demoiselles* of the Ariège, who invaded fenced-in forests and attacked forest guards to protest new regulations on the extraction of forest products.<sup>14</sup> Peasants’ confrontations with modern forest codes and forestry traveled from Europe with imperial expansion during the late nineteenth century. In the early twentieth century, for example, Himalayan peasants set fire to forests that were regulated, enclosed, and managed under the British Raj to promote both commercial forestry and forest conservation. Much like their Chilean counterparts today, they had seen their customary access to forests curtailed by scientific forestry and logging.<sup>15</sup> The Chilean state’s disproportionate response to minor acts of violence against property since the 1990s recalls the cruel legislation employed to punish violators of forests laws in eighteenth-century and nineteenth-century Europe.<sup>16</sup> During the late 1990s and early 2000s, much of forested southern Chile looked like occupied territory, with the massive presence of *carabineros* (uniformed police who compose one branch of the Chilean armed forces) protecting tree plantations and encircling Mapuche communities who found themselves under siege by both Monterey pine and the military.<sup>17</sup>

### *The Frontier in Chilean History*

For many centuries, the southern region of Chile dominated by temperate forests was known as *la frontera* (the frontier). The term designated a territory sandwiched between the Bío Bío and Toltén rivers on the north and south and the Pacific Ocean and Andes cordillera to the west and east, today the provinces of Arauco, Bío Bío, Malleco, and Cautín. Until the 1880s, the frontier region composed not an edge or a border but a space that split Chilean national territory. As frontier, the territory stood outside the reach of first the colonial and then the modern nation-state and was, instead, governed by independent Mapuche groups.<sup>18</sup> While the natural borders of two rivers, a mountain cordillera, and an ocean made a lot of sense, history and geography disrupted these natural, as well as political, demarcations. Both human and ecological movement made the frontier’s boundaries ever-shifting. During the late eighteenth century and early nineteenth century, the frontier region expanded both ecologically and socially. Mapuche groups extended their territorial reach south of the Toltén and across the Andes cordillera well into Argentina’s pampas, building extensive military and commercial networks that linked the frontier to Argentina and cen-

tral Chile; to the capital city, Santiago; to the port of Valparaíso; and even to Lima, Peru, where the products of Mapuches' livestock economy made their way on Chilean ships.<sup>19</sup> By the mid-nineteenth century, even territory south of the Toltén River, in the region around Valdivia and into Llanquihue Province—today known as the Lakes Region—still theoretically ruled by the Chilean state, was largely ungoverned territory where Mapuche groups maintained significant autonomy and large stretches of Valdivian rain forest proved an impenetrable barrier to settlement. While the region around the city of Valdivia had been settled and incorporated into the Chilean colony before the seventeenth century, by the mid-nineteenth century, as Benjamin Vicuña Mackenna, Valdivia's deputy in Congress, observed in 1868, the province's "civilized" population had diminished; abandoned settlements throughout the province had disappeared beneath "large stretches of new forests and second-growth forests."<sup>20</sup> The frontier and its forests, rather than receding, appeared to be extending their reach southward. The frontier discussed in this book was not a fixed space; through the twentieth century it was shaped by both ecological and human movement contained by neither natural nor political borders.

In the mid-nineteenth century, the southern frontier contained a wide diversity of ecological zones. Like central Chile, the territory south of the Bío Bío River is defined by the fertile and narrow level floor of the central valley walled in by the Andean cordillera to the east; it is lower than farther north, with altitudes that reach just over 3,000 meters, and the smaller coastal cordillera to the west, with altitudes that reach 2,000 meters at the thirty-eighth parallel and only 800 meters at the forty-second parallel. Because of the mountain barriers created by the Andes, the northern Atacama Desert, and the shift in climate north of the Bío Bío River, Chile's southern forests remained relatively isolated, a "biogeographic island" that contains numerous endemic plant and animal species, including some of the world's oldest conifers.<sup>21</sup> As in the North American northwest, the influence of the ocean produces both a temperate climate and frequent rainfall moving in from the west. In contrast to the relatively homogeneous temperate forests of the northern hemisphere, however, Chile's southern forests contain high levels of biodiversity due to the heterogeneity of the environments in which they grow. As Rodrigo Catalán Labarías and Ruperto Ramos Antiqueo note, over the millennia variations in temperature and climate at different latitudes and altitudes, as well as ecological disturbances caused by earthquakes, volcanic eruptions, and the movements of glaciers, made Chile's temperate forests a repository for an unusual quantity of indigenous flora and fauna.<sup>22</sup> Chile's southern frontier appeared to nineteenth-century travelers to possess a true anarchy of intermixed species of trees, underbrush, and ubiquitous creepers, vines, and wild bamboo.<sup>23</sup> As the German



botanist Rudolph Philippi wrote in the 1850s, "The vegetation of the jungles of Brazil cannot be more varied than those of the Valdivian forests."<sup>24</sup>

Although both travelers to the south and government officials frequently described these forests as uniformly dense and virgin, contributing to the myth of a pristine nature, Chile's temperate forests were shaped by a long history of human intervention and ecological change. In the south, the Spanish conquest did not provoke the destruction of the southern forests. Rather, the arrival of the Spanish created conditions for the forests' regeneration and expansion throughout certain southern zones. Before the conquest, indigenous groups had engaged in a variety of practices, ranging from hunting and gathering to sedentary agricultural cultivation, that made their mark in the forests.<sup>25</sup> The biodiversity of southern Chile's temperate forests provided abundant possibilities for collecting forest products, food, medicinal herbs and plants, and hunting birds and mammals.<sup>26</sup> In coastal areas, fishing and collecting shellfish were a staple of Mapuches' subsistence and regional trading networks. In addition, before the conquest, indigenous groups engaged in significant levels of agricultural production. Mapuches used a mobile slash-and-burn agriculture, or *swidden*, burning patches of forest to cultivate crops such as maize, squash, potatoes, and beans for two or three years, then moving on to another patch and letting the forest grow back over the cleared land so the soil could recover its fertility. Fire was a key agricultural method of capturing nutrients from vegetation and returning them to the soil. In some areas, Mapuches pastured domesticated animals, primarily alpacas and llamas, although the scale of their pastoral economy was limited. Before the Spanish conquest, plains, prairies, and clearings cultivated with crops in the central valley interrupted the expanse of dense forest that covered the coastal and Andes cordilleras.<sup>27</sup>

The protracted wars with the Spanish produced a catastrophic demographic decline among Mapuches in Chile. Chronic warfare, slavery, and forced labor—and, most important, the spread of European epidemics—caused the indigenous population of central and southern Chile to collapse in a century to about 10 percent of its preconquest size. While Mapuche groups in the south maintained their independence from the Spanish, recurrent military conflict and low population levels undermined their sedentary agricultural activities and reinforced a tendency to raise livestock and hunt and gather. Pastoralism was also strengthened by the introduction of European cattle and sheep, which quickly became the cornerstone of Mapuche groups' economic activities. The radical drop in the indigenous population and Mapuches' extensive pastoral economy allowed forests to reclaim cleared land.<sup>28</sup>

In southern Chile, the Andes cordillera, which separates Chile and Ar-



gentina, is lower than in central Chile, gradually descending as it moves south from the Bío Bío River. Mountain passes allow the movement of people from one side of the cordillera to the other. By the nineteenth century, the Mapuche had expanded their military and trading networks across the Andes cordillera to the Argentine pampas and to Buenos Aires Province, leading to an “Araucanization” of nomadic indigenous groups such as the Pehuenches in Argentina and the Chilean cordillera.<sup>29</sup> In addition, during the second half of the nineteenth century, many Mapuches, fleeing warfare or dispossessed of the fertile land of the central valley and coastal piedmont by large estates and colonization concessions, settled in the mountain valleys of the coastal and Andes cordilleras, where they found land they believed to be public, meadows to pasture their livestock, and forest resources such as the piñon (the seed of the araucaria pinecone) to provide for their subsistence. By the beginning of the twentieth century, they were often joined there by Chilean campesinos seeking public land to settle. The Andes cordillera constituted not so much a simple line or national border between the Chilean and Argentine states as a space inhabited by Mapuche and non-Mapuche campesinos, who moved back and forth from one country to the other in search of work, pasture, and forest products and as part of a booming trans-Andean livestock trade.

While many Mapuche groups maintained their sovereignty over frontier territory until the late nineteenth century, they efficiently absorbed European crops and livestock. This did not amount to simple “ecological imperialism,” in Alfred Crosby’s famous words.<sup>30</sup> Rather, Mapuche groups selectively adopted some crops and species while limiting their use of others. Independent Mapuche territory possessed hybrids of indigenous and European species and agricultural systems. Indeed, Mapuches maintained their pre-European patterns of limited cultivation, combined with hunting and gathering in the forests, but folded new commodities into these economies. Mapuches’ adoption of horses, cattle, and sheep facilitated their mobility throughout the frontier region south of the Bío Bío River, aiding their military capacity to confront the Spanish. However, pasturing livestock did not produce radical changes in indigenous groups’ economies. Raising livestock permitted Mapuches to take advantage of the southern forests’ biodiversity, pasturing their herds in different ecological zones in the mountains, with winter pasture in valleys at lower altitudes (*invernadas*) and summer pasture high up the cordilleras in high-altitude meadows (*veranadas*) and forests.<sup>31</sup> Mapuches supplemented livestock rearing with hunting and gathering. Nineteenth-century travelers’ accounts contained exhaustive lists of the extensive buffet provided by the southern forests. One early twentieth-century botanical study listed more than sixty products Mapuches gathered in the forests, including wild strawberries, the

fruit of the *copihue* (Chilean bellflower), berries of the *maqui*, an astonishing variety of mushrooms, several species of potato, other roots and tubers, and food from other farinaceous plants and legumes, including grains and edible oils. Mapuche groups made seasonal migrations into the Andes and coastal cordilleras to harvest piñones, which they made into nutritious flour.<sup>32</sup>

While Mapuche-Pehuenche groups in the Andes cordillera, which depended almost entirely on collecting piñones and pasturing livestock, engaged in almost no agricultural activity, more sedentary groups in the frontier's river valleys and around the shores of lakes cultivated indigenous crops such as squash, quinoa, potatoes, and beans, combined with European crops such as wheat, oats, and barley.<sup>33</sup> In the plains and valleys, Mapuches also cultivated orchards of apple trees, whose fruit could be made into *chicha*, a fruit liquor.<sup>34</sup> However, even in these more sedentary zones, seasonal migrations between microenvironments dictated the rhythms of Mapuches' economic life. While many Chileans viewed the Mapuches as a vagrant population of barbarian nomads with no fixed relationship to territory or land, their mobility was part of an extensive agricultural economy that reflected a dynamic engagement with southern Chile's ecological landscape. Movement from habitat to habitat and ecological zone to ecological zone allowed Mapuches to enjoy a certain degree of abundance, while minimizing both their labor and their impact on the land.<sup>35</sup>

Nonetheless, Mapuche agriculture and livestock rearing did make an imprint on the southern landscape. In addition to clearing land in the valleys to cultivate crops and maintaining patterns of slash-and-burn agriculture, Mapuches continued to use fire to manage southern Chile's environment. In low-altitude mountain valleys and on plains covered with native grasses, especially *coirón*, a perennial grass that grows in the frontier's mountain valleys, Mapuches burned over the meadows and pasture seasonally.<sup>36</sup> They employed fire in the mountains, where livestock were brought to pasture in the araucaria forests, as well. As the ethnobotanist David Aagesen argues, fire was used to burn the araucaria and araucaria beech forests' understory to facilitate the collection of piñones. However, these fires were largely low-level and controlled. In addition, because araucaria pines have a thick, fire-resistant bark, the fires would have inflicted more damage on the beech trees, which are more vulnerable to fire. One possibility is that by eliminating beeches, fires opened spaces for the hardier araucaria pines to spread. In this case, fire would have enabled both the regeneration and expansion of the araucaria forests.<sup>37</sup> Thus, despite the dense forests that covered the coastal and Andes cordilleras, at the end of the nineteenth century, the southern landscape had been marked by centuries of human management.

It is commonplace to view frontier spaces as on the edge of or outside both nation-states and global economies. But as Patricia Limerick has argued about the United States, frontier societies and economies historically have been integrated into, and dependent on, linkages to national and international webs of trade and investment, as well as political ties to nation-states.<sup>38</sup> In the case of Chile's southern frontier during the late eighteenth century and nineteenth century, Mapuche commerce in livestock, salt, and ponchos was incorporated into trade routes that carried these commodities to Santiago and Valparaíso and farther north to Lima. Mapuche groups established extensive trading networks both across the cordillera into the Argentine plains and across the Bío Bío River with Spaniards and Chileans during the late colonial and early republican periods. During the late eighteenth century and early nineteenth century, Mapuche groups met with Chilean traders at markets to exchange their cattle, ponchos, and salt for silver, clothing, tools, wine, and aguardiente.<sup>39</sup> Emblematically, even piñones, harvested by Mapuche groups in high-altitude araucaria forests, circulated in markets in Valparaíso and Lima during the late eighteenth century and early nineteenth century.<sup>40</sup> Trade among the coast, plains, and mountains, as well as with Spanish and then Chilean merchants, combined with seasonal migrations as a strategy for gaining access to the products of different ecological zones, producing significant prosperity for independent Mapuche groups. Nineteenth-century travelers to the frontier frequently wrote admiringly about the abundance produced by the Mapuches' extensive commercial, agricultural, and pastoral activities.<sup>41</sup>

### *Primitive Accumulation and the Conquest of the Frontier*

After the 1850s, the Chilean state initiated the incremental military conquest of the frontier, a process that slowly compressed independent Mapuche territory as lines of military forts pushed southward from the Bío Bío River, eventually integrating Chilean national territory during the intermittent military conflicts known as the "Pacification of the Araucanía." On the Argentine side of the border, a parallel military campaign during the 1870s, the "War of the Desert," pushed the frontier's eastern border back to the Andes cordillera. As the historian Consuelo Figueroa has argued, the southern frontier and its "pacification" have played a minimal role in Chile's national imaginary compared with the incorporation of the northern frontier provinces of Antofagasta and Tarapacá during the War of the Pacific (1879–83) with Peru and Bolivia. The heroic exploits of the Chilean soldiers and then of the nitrate miners in the north—embodied in the figure of the *roto chileno* (literally, "broken one," a derogatory term for lower-class Chileans)—came to symbolize Chile's distinctive historical trajec-

tory and national cohesion. The *roto* moved from a despised distillation of the supposed vices of Chile's vagrant rural laboring classes to an emblem of national strength and masculine virility memorialized in poems, songs, and monuments. As Figueroa notes, the violence defined as military glory that accompanied the conquest of the northern frontier and its arid but nitrate-rich deserts has been celebrated for more than a century in nationalist iconography, historical narratives, school textbooks, and a parade of monuments to the heroes of the war with Bolivia and Peru. The defeat of independent Mapuche groups and the colonization of the southern frontier, however, have never found similar representational power. Judging from the absence of monuments, museum exhibitions, and military histories, the Pacification of the Araucanía included few acts of heroism or national greatness.<sup>42</sup>

In this book, I argue that one of the reasons for the absence of commemorations of the Pacification of the Araucanía derives from the incomplete history of colonization in the southern frontier territory. Unlike in the resounding military victory over Bolivia and Peru, the Chilean state's hegemony over its southern frontier remained limited even after the conquest of Mapuche groups was completed in 1883. The state's weak presence in the south meant that it resorted to violence to exercise authority in more naked ways than in central Chile. Indeed, many of Chile's worst episodes of state-directed repression before the Pinochet dictatorship were located in the south, where countless acts of low-level violence against *campesinos*, including the infamous massacre of hundreds of rebellious rural laborers in 1934 in Ránquil, high up in the Andes near the headwaters of the Bío Bío River, marked the state's presence in frontier territory. Because of the state's restricted reach in the south, social conflict also took on a more violent cast. Whereas in central Chile, landowners, backed by the state, held the power of coercion and built paternalist social relations with *inquilino* resident estate laborers, on the frontier *campesinos* frequently challenged both landowners' and the state's authority in many local-level rebellions, land invasions, and protests. It is no accident of history that waves of land occupations by southern *campesinos* impelled the radicalization of Chile's agrarian reform between 1967 and 1973, and that some of the worst massacres after the military coup of 1973 occurred in the southern countryside. A common question asked of recent Chilean history is how a country famous for its exceptional political stability and multiparty democracy during most of the twentieth century could descend into the terrible state terror unleashed by Pinochet's military regime, one of the longest dictatorships in twentieth-century Latin America at almost seventeen years. Viewed from the southern frontier, the violence of the post-1973 period appears less surprising.

In this book, I build on the work of a number of recent histories of the frontier and Mapuche groups to argue that a view of Chilean history from the southern frontier provides a privileged lens onto the violence at the heart of state formation, as well as the violence involved in primitive accumulation, the dispossession of peasants from their land, the formation of modern property regimes, and the disciplining of workers to the necessities of wage labor.<sup>43</sup> While historians have focused most recently on the conflicts surrounding Mapuche communities' historic land claims, I demonstrate that the history of exclusion and violence they describe so well also included poor non-Mapuche settler (*colono*) and squatter (*ocupante*) smallholders, as well as landless laborers (*peones* or *gañanes*) and resident estate workers (*inquilinos*). Ethnicity, rooted in the fixed place of the indigenous community and articulated in distinct linguistic, cultural, and religious traditions, established separate social identities and potential tensions between Mapuche and non-Mapuche campesinos. However, common experiences of dispossession often laid the foundation for collective movements that included both Mapuche and non-Mapuche rural laborers who often toiled together on large estates, squatted as neighbors on both estate and public frontier land, followed the same routes of migration into the mountains to pasture livestock or across the cordillera to Argentina, and exchanged labor through sharecropping relationships.

In Chile's southern frontier territory, primitive accumulation took place through military campaigns to defeat independent Mapuche groups, Mapuches' settlement on constricted allotments of land termed *reducciones* (from the word "reduction," a term handed down by the Spanish empire), land auctions and colonization concessions that led to the lease and sale of Mapuche land now deemed "empty" and "public" (*terrenos baldíos* and *terrenos fiscales*), and the expulsion of Mapuche and non-Mapuche campesinos from the now public land acquired through military conquest. During the first decades of colonization, legal measures of appropriation of frontier land, accompanied by systematic fraud and violence that was often backed by local and national authorities, led to the accelerated formation of large estates and the dispossession of southern campesinos. This book places the story of the violent appropriation of campesinos' land on the frontier at the center of Chile's national history and the history of Chile's southern frontier forests.<sup>44</sup>

The frontier provides an especially privileged view of the role of the extraction of nature's wealth, or what some theorists have termed "ground" or "forest" rent in capital accumulation.<sup>45</sup> As David Harvey argues, frontiers have been places where the history of "accumulation by dispossession"—the forcible appropriation of land and natural resources as a condition for the constitution of private property regimes and the expansion of capitalist

markets—is replayed.<sup>46</sup> Central to this process has been the enclosure and appropriation of the natural resources found in frontier commons, often in the developing world, during the nineteenth and twentieth centuries. In southern Chile, settlers burned extensive stretches of native forest to clear land for pasture and crops. They also set massive forest fires, guided by the teachings of botanists and agronomists, to change southern Chile's climate and reduce the heavy rainfall that made cultivating cereal crops such as wheat a difficult proposition. Beginning in the mid-nineteenth century, landowners also ignited forest fires to fertilize their soil, an expansion and distortion of Mapuches' slash-and-burn agriculture now applied to vast extensions of forest, and denied any process of rotation that might allow the forests to regrow.

Southern Chile's temperate forests constituted an ecological safety valve; as central Chile's cereal-producing estates confronted chronic crises due to deforestation, soil erosion, and drought, settlers on the frontier extracted "forest rents" from their properties, extending their cultivations of cereals and pasture onto land fertilized with the ashes of frontier forests. In addition, incinerating forests raised land values quickly on cheaply, often fraudulently, acquired properties that could then be resold by land speculators. Just as the extraction of nitrates on Chile's northern frontier propelled nineteenth-century growth, the appropriation of nature's wealth through burning forests produced an economic boom as the southern frontier region became the country's leading producer of cereal crops and livestock at the end of the nineteenth century. Deforestation had a social dimension, as well; setting forest fires to clear soil, establish land claims, raise property values, and introduce climatic changes beneficial to cereal cultivation also shaped the formation of large estates on the frontier and the expulsion of campesinos from their land. Large estates required access to extensive stretches of forest to fertilize soil for cereals and pasture. In addition, by the first decade of the twentieth century, and continuing for decades in a downward spiral, soil erosion, flooding, and drought due to deforestation forced many campesinos to sell their land to large estates and to join a swelling population of chronically underemployed, landless rural laborers.

### *Forestry, Campesinos, and the Modern State on the Frontier*

Despite the long history of violence directed by estate owners at southern campesinos with the complicity of government officials, a history of exclusion is insufficient to explain the process of nation-state formation on the frontier. In this book, I argue that ecological disaster in the south drove Chilean governments' efforts to establish governance in frontier territory. During the first decades of the twentieth century, government colonization,

land, and forest policies established many of the institutions and attributes of the modern nation-state, in large part because of the frontier's status as public property. The initial bonanza harvests produced by burning forests during the first years of colonization gave way to drought and widespread soil erosion within a generation. For many officials in charge of the colonization of the frontier, loss of soil and forests represented a threat to both the regional economy and the interests of the state. By the first decade of the twentieth century, colonization officials had begun to assert their authority over both natural resources and property relations, elaborating forest regulations to stimulate the development of scientific forest management and commercial forestry. These restrictions on logging and burning native forests represented some of Chile's first state interventions to regulate the extraction of natural resources and limit the rights of property owners.

Officials in charge of colonizing the frontier hoped to employ forestry science to remake the southern Chilean landscape by developing plantations of exotic species such as Monterey pine and eucalyptus. For land officials, a scientifically managed timber industry would substitute for the stagnant monocultural wheat economy, combat the ecological degradation produced by deforestation during the first decades of colonization, and provide an important source of revenue for the state. Federico Albert, a German forester, was appointed head of the new Forest Department in 1910 and quickly became instrumental in designing forest regulations. Much like Gifford Pinchot in the United States, a similarly European-trained forester who was the first head of the US Forest Service between 1905 and 1910, Albert promoted the extension of central state authority over natural resources, particularly woodlands in frontier areas, designing forest codes and establishing forest reserves and national parks. Albert's conservationism was not shaped by a preservationist sensibility. Rather, he drew on the same European *dirigiste* tradition as Pinchot to argue that rational forest management based on both cultivated native forests and plantations of exotic species was essential to national strength and the interests of the state.<sup>47</sup> After 1930, a growing corps of foresters and agronomists following Albert worked to impose state regulation of logging and clearing forest for agriculture with fire (*roces*, as this action is called in Chile) in response to ecological crises caused by deforestation.

Endemic social unrest on the southern frontier also propelled the state to assert a strong role in regulating both forest exploitation and property relations. By the early twentieth century, land fraud had deprived the state of hundreds of thousands of hectares of valuable frontier forests, which were quickly organized in large estates, undermining programs to populate the frontier territory with foreign settlers. Colonization officials abandoned their fantasies of settling southern Chile with European immigrants



and turned to projects of “Chileanizing” the frontier by discouraging the continual migrations of Chilean laborers through mountain passes to Argentina and settling them on the Chilean side of the Andes cordillera. They argued that the frontier’s transient campesino population threatened the sovereignty of the state over national territory and damaged the regional economy. In addition, this itinerant labor force tended to be disobedient and rebellious. Estate owners faced the ever-present danger of land invasions by squatters, settlers, and members of Mapuche communities who claimed frontier land. For land and colonization officials, the ecological catastrophes produced by rapid deforestation belonged to a more general crisis on the frontier, where state officials held little sway and social relations approached, in the language of many government reports, the level of “anarchy” and violent “class conflict.”

From the beginning of the twentieth century, southern campesinos had organized militant movements to claim land. For campesinos, land on the frontier was public, and large estates’ claims to private property were illegitimate. Because the forests, lakes, streams, and pasture of southern Chile had only recently been incorporated into national territory and parceled into private property, they composed, for many campesinos, a collection of natural resources that belonged to the public domain. Mapuche and non-Mapuche campesinos’ views of this frontier commons did not always converge. Mapuches nourished an abiding sense of rights to land based on long histories of possession since “time immemorial.” In addition, Mapuches drew on the legal status of indigenous communities and indigenous ethnic identity to lay claim to frontier land. Non-Mapuche campesinos employed a different language of rights. They invoked the frontier’s status as public, drawing on land rights embedded in colonization laws. Despite these divergent conceptions of the frontier commons, campesinos’ shared sense that private property organized in large estates was illegitimate drove chronic conflicts with landowners. They couched their claims to frontier land in terms of a moral economy grounded in their belief that the forests represented a public resource, a commons usurped illegitimately by estate owners to which they enjoyed use rights because of years of occupancy and labor. Campesinos pointed to estate owners’ destruction of native forests to underline the illegitimacy of their property claims and to justify land invasions that spanned the spectrum from squatting to violent rebellion.

For the Chilean state, establishing authority over frontier territory required reducing the complex ecosystems of the native forests and the disorderly social order embedded in these apparently chaotic natural landscapes, to the scientifically managed landscape of tree plantations.<sup>48</sup> State colonization and land officials, following Albert, promoted forestation with Monterey pine as the solution to southern Chile’s environmental and



social woes. For government officials, Monterey pine constituted a valuable crop that could replace the frontier's dwindling harvests of wheat on soil degraded by overgrazing and monocultural cereal cultivation. Monterey pine also provided an excellent alternative to native forests, whose extraordinary heterogeneity rendered them difficult to log profitably. Monterey pine could be grown cheaply and quickly to supply expanding national and international markets for lumber and paper pulp. In addition, while little was known about the ecology of Chile's temperate forests, a great deal of forestry science was devoted to cultivating and managing pine plantations.<sup>49</sup> Pine held both the promise of development and the imprimatur of forestry science; in the context of unregulated deforestation in the frontier territory, it provided a new method of rational land use and forest exploitation.

Pine also offered a technocratic resolution to the tension between state efforts to exercise governance of frontier territory and large landowners' interest in extracting quick profits from the forests. The state's assertion of authority over forests and public land established a new logic for placing public interest over private property rights. However, rather than remake southern property relations or introduce sustained-yield timbering in native forests, colonization officials in Chile after 1930 focused on industrial forestry rooted in pine plantations on large estates and state-managed forest reserves to promote economic development while they looked to preserve frontier forests, primarily in inaccessible zones of the Andes cordilleras, in protected national parks.<sup>50</sup> Within government-administered reserves, foresters supervised leases to timber companies logging native forests and then assisted with their reforestation with Monterey pine. On privately held large estates, the Forest Department also oversaw logging in native forests and provided subsidies for reforestation with pine. Plantations of Monterey pine, rather than the managed exploitation of native forests, came to define sustainable logging both on estates and within public forest reserves. This forestry compromise benefited both landowners and timber companies for whom pine plantations held a series of benefits, including state incentives, as well as a means to recover soil degraded by agriculture, livestock, and logging. Monterey pine also operated to free landowners from the social and economic costs of unruly laborers, since pine required far fewer workers than agricultural crops such as wheat.

Modern forestry production regulated by the state did not, however, serve the interests of the south's large population of landless campesinos. State officials viewed campesinos as a threat to forestry development and sought to transform their relationship to the forests by turning them into trained and settled forestry workers. Governments dedicated to social reform, from the Popular Front coalitions of the 1940s to the Christian Dem-

ocratic government of Eduardo Frei (1964–70), looked to pine plantations and industrial forestry to settle southern Chile's itinerant rural laborers by transforming them into full-time forestry workers, in effect severing them from their access to a makeshift peasant existence and resolving their often violent movements to wrest land from estates and colonize public land.

Foresters' focus on reforestation with Monterey pine led them to favor large logging interests over campesinos, since, they believed, campesinos possessed neither the capital nor the cultural resources to cultivate and manage tree plantations. The state leased logging rights to native forests in public reserves to large timber companies on the condition that they reforest with Monterey pine, rejecting campesinos' frequent petitions for public land to colonize. In national parks, by contrast, land officials viewed campesinos as a threat to the preservation of remaining stands of old-growth temperate forests and expelled them from plots to which they hoped to win legal titles as colonos or, in the case of many Mapuche communities, land they had occupied for generations. In response to these conservationist restrictions, throughout the twentieth century campesinos often invaded and squatted on land within national parks and forest reserves. This nurtured the stereotypes wielded by estate owners and state officials that campesinos constituted a threat to both native forests and their programs to produce forestry development based on cultivating pine plantations. Chile's history of conservation was thus rooted in the often violent expulsion of campesinos from land covered with native forests and land designated for reforestation with pine.

Nonetheless, the state's efforts to establish its governance of frontier land and forests during the first half of the twentieth century set the stage for a sweeping agrarian reform throughout Chile between 1967 and 1973. Decades before the agrarian reform, colonization officials sought to take back public frontier land and settle it with colonos, either purchasing land from estates or, in some cases, using powers of expropriation encoded in colonization and forest laws. The agency established to oversee the colonization of the frontier, the Caja de Colonización Agrícola (Agricultural Colonization Fund), for example, would become the agrarian reform agency of the 1960s, the Corporación de la Reforma Agraria (Agrarian Reform Corporation). In addition, laws that established state control of forests in reserves and parks also established a basis for asserting public over private property rights. In southern Chile, the agrarian reform drew on forest laws that had been on the books since the 1930s in some cases to justify legally the expropriation of large estates and their incorporation into national parks or forest reserves. In other instances, the state established centralized centers of logging and forestry production directed by trained foresters on expropriated forestry estates with the goal of building a scientifically

directed, sustainable exploitation of the native forests based on cultivating tree plantations. Rather than rupture, the agrarian reform, even at its most revolutionary during the socialist government of Salvador Allende, represented basic continuities with state forest and land policies that dated back to Albert and the organization of the Forest Department.

The imperative of agrarian reform during the 1960s in southern Chile was driven by increasingly acute ecological crises. In the south, ecological degradation was a key component of the more general crisis of agricultural production that hampered Chilean economic development during the 1960s. Declining cereal yields were the result of estates' inefficient strategies of land use, but they were also caused by chronic soil erosion, flooding, and drought produced by the destruction of southern forests on campesinos' small plots. Over the course of the twentieth century, campesinos' subsistence came to depend increasingly on forest resources and often led to the degradation of the forests they inhabited. For many ocupantes and aspiring colonos, deprived of legal rights to land and pushed into mountain forests by the expansion of large estates, cutting wood from the forest was a vital source of subsistence. Likewise, reduced plots on marginal agricultural lands, uncertain land tenure, and the threat of appropriation at the hands of large estates pushed many Mapuche campesinos to exploit small patches of native forest to produce lumber, railroad ties, and firewood. This reinforced the opinion of foresters who worked with the agrarian reform agencies that campesinos could not be entrusted with the care of the forests.

A set of competing and contradictory imperatives shaped the agrarian reform in the south. The Frei and Allende governments sought to remedy ecological crises in southern Chile by investing in both pine plantations and cellulose plants. They also looked to address southern Chile's acute social inequalities by providing jobs for the large population of land-starved campesinos in new forestry industries. However, while both governments promoted forestation and forestry industrialization, they also worked to meet campesinos' demands for land. Land redistribution to meet a swelling campesino movement to take back frontier land from large estates frequently conflicted with state-directed programs to forest with pine and rationalize forestry production. Southern campesinos' resistance to proletarianization and their continuing struggles to maintain a peasant economy that relied, in part, on access to forest resources placed them in tension with agrarian reform organized around forestry industrialization. This was especially the case for Mapuche communities, which mobilized during the agrarian reform to recuperate land that had been usurped by large estates since the beginning of the century.

Nonetheless, many campesinos, Mapuche and non-Mapuche, embraced

forestry development during these years. With state support they forested their small, eroded plots with pine and worked in government forestation projects, laboring to turn expropriated estates into forestry cooperatives guided by foresters working in the agencies of the agrarian reform. Supplied with subsidies, secure land tenure, and basic infrastructure such as seeds, saplings, technical assistance, and markets, campesinos looked to forestation as a means to recuperate eroded soil. They viewed forestry as a viable component of mixed agriculture in which tree plantations shared land with customary garden crops, livestock, wheat, and oats. This was true especially in regions where native forests were fragmented or cleared and where soil erosion had advanced, such as the foothills of the coastal cordillera. The agrarian reform allowed a large measure of local control and expanded access to land, pasture, and forests, making it possible for campesinos to combine forestry and forestation with their more traditional agricultural and pastoral activities.

In addition, while conservationist ideology, wedded to forestry development policy, served as a tool for excluding campesinos from forests during the first half of the twentieth century, by the 1960s campesinos had begun to employ environmentalist arguments in their attacks on the southern frontier's landed estates. As campesinos went on strike, invaded estates, and demanded agrarian reform, landowners' unchecked destruction of the southern forests stood as evidence of their backward and "feudal" status as *latifundistas* and reflected the illegitimacy of their property claims. During the Popular Unity government, campesinos, allied with agrarian reform officials, turned to both environmentalism and the reigning forestry ideology to justify the expropriation of large estates. Landowners who failed to manage their forests sustainably were deemed the opponents of modernization, feudal landlords responsible for the underdevelopment and ecological degradation of Chile's rural sector. Campesinos drew on an older moral ecology, rearticulated in modern environmentalist language, to demand forestry estates' expropriation.

After 1973, the Pinochet dictatorship dismantled the agrarian reform, auctioning off forestry estates covered with pine plantations and pulp and paper plants, often developed with significant state inputs, to a small group of large financial conglomerates, following the free-market policies dictated by the Chicago boys. Southern campesinos experienced another moment of dislocation, often expelled at gunpoint from land they had recuperated during the agrarian reform. They also faced the realities of a countryside that was increasingly dominated by large estates owned by major forestry conglomerates and planted with pine, as forestry companies replaced land once devoted to crops and livestock or covered with native forest with monocultural tree plantations. In the context of the vi-

olent repression unleashed by Pinochet and the radical socioeconomic inequalities produced by his dictatorship's free-market policies, pine came to represent an alien commodity that was responsible for campesinos' loss of land and livelihood. The brief moment when Monterey pine and forestry held the promise of equitable development vanished, along with peasants' small plots, engulfed by a swelling sea of tree plantations held by the most powerful financial groups in Chile.

Over the course of the twentieth century, then, environmentalism's social meanings shifted. During the early decades of the twentieth century, conservation belonged to the realm of forestry science and agronomy and to the state officials who presided over the colonization of the frontier. It often served both the state and the landowners in their efforts to produce a modernized forestry economy and rationalized social and natural landscape. In the 1960s, however, modern environmentalism and forestry science offered campesinos a new language of rights and an important weapon in their arsenal to attack the dominance of large estates and logging companies. During the 1980s and 1990s, rural laborers and Mapuche communities began to cast their struggles to recuperate land as a defense of biodiversity and the remnants of southern Chile's frontier forests. In addition, they called attention to the ecological and social disequilibria in Chile's free-market industrial forestry economy, proposing instead a model of environmental management that allowed for both ecological and social sustainability rooted in local uses of native forests. They detached environmentalism from the industrial forestry ideology to which it had been wed for much of the twentieth century. After the end of the Pinochet dictatorship, Mapuche communities drew on generations of struggle to organize a powerful movement to recuperate land and forests usurped during the colonization of the frontier from the large forestry estates that dominated the southern countryside. In doing so, they proposed an alternative to free-market forestry development in which the viability of local campesino communities was linked to the sustainable use of southern Chile's temperate forests.

*La Frontera* charts the shifting social and ecological relationships that shaped over a century of frontier history. It draws on a wide variety of sources, many of them never before examined by historians. To trace government forest policy, I use a diverse group of government studies and reports that document changing and often contradictory colonization and forest policy from the Oficina Mensura de Tierras (Office of Land Measurement), Inspección General de Tierras y Colonización (General Inspectorate of Land and Colonization), and the offices of the Protectorado Indígena (Indigenous Protectorate), located in the Biblioteca del Congreso Nacional (BCN) and the Biblioteca Nacional (BN) in Santiago.

In addition, I supplement my review of these government records with extensive research in the largely uncatalogued and hitherto unexamined archives of the Ministerio de Tierras y Colonización (Ministry of Land and Colonization), housed in the Archivo Nacional de la Administración in Santiago (ARNAD), and the archives of the frontier's regional governments (intendancies) located in the Archivo Nacional in Santiago (AN) and the Archivo Regional de la Araucanía (ARA) in Temuco. The government records for indigenous communities and the uncatalogued records of the indigenous courts, Juzgados de Indios, located in the Archivo General de Asuntos Indígenas in the Archivo Regional de la Araucanía, are an important source of information about the history of the formation of indigenous reducciones and often provide documentation of the communities' struggles over land and forests.

The files of the Agrarian Reform Corporation (Corporación de la Reforma Agraria, CORA), located in the Servicio Agrícola y Ganadero (Agricultural and Livestock Service, SAG) in Santiago, and the Corporación de Fomento de la Producción de Chile (Chilean National Development Corporation-CORFO), located in the Archivo Nacional de la Administración, contain reports from surveyors, agronomists, and foresters working to implement agrarian reform during the 1960s and 1970s and, following the military coup, to reverse the agrarian reform, as well as petitions from landowners and campesinos. These records provide a lens onto the highly conflictive process of agrarian reform and counter-agrarian reform, as well as the process of forestry development from the 1960s through the 1980s, offering a picture of agrarian reform as a process shaped by ecological change and state environmental policy.

While the documents in government archives—from the records of regional governments to reports issued by ministries in Santiago—often reflect the point of view of state authorities, they also provide a wealth of information reflecting the complex texture of local histories. In these files, petitions from Mapuche communities, colonos, and ocupantes, as well as from estate owners, and reports from local officials in the land and colonization offices, paint a rich picture of local conflicts over land and labor throughout the frontier. In addition, the reports by local offices of central government agencies offer details about social and ecological processes on the ground. The reports written by surveyors, foresters, and indigenous protectors working for regional branches of state agencies or ministries provide an invaluable perspective on the intersection of state formation, ecological change, and social experience. While they were often the agents of central state authority, these government officials more often than not reflected back to the state local interests that were not always in line with the national-level policy makers in Santiago. Surveyors, foresters, agrono-

mists, and indigenous protectors, for example, labored to establish the authority of the state over both nature and society on the frontier and at times worked to further the interests of logging companies and large estates. But campesinos also frequently found allies in officials working to measure property boundaries, adjudicate land disputes, and regulate logging. In general terms, the archival data generated by these engineers of state formation reflect the social and environmental process of state building on the frontier. In addition, rather than depicting solely the top-down imposition of state policies, the work of these state officials who labored to untangle and resolve land disputes and adjudicate competing claims to natural resources help us to see state formation as a negotiated process. These archives provide both a view of the ways in which state forests and forestry policy were designed to remedy the frontier's ecological catastrophes and resolve the region's notorious social "anarchy" and provide insight into the local conflicts on the ground that helped shape the course of the frontier's social and environmental histories.

While there is a perhaps inevitable tension between the story these archives tell of state-directed forestry development, on the one hand, and the particular stories of local communities in southern Chile, on the other, we can read these state-generated archives "against the grain," in the famous words of the historian Ranajit Guha, to arrive at a sense of campesinos' actions and intentions as they disputed public land, land held by private estates, or forests they deemed theirs because of use rights grounded in custom.<sup>51</sup> Petitions and letters from workers on estates and in timbering enterprises and from ocupantes, colonos, and Mapuche communities fill the files of these government archives and allow us to trace the ways in which the frontier's laboring poor, often landless or land-starved campesinos, experienced industrial forestry development during the twentieth century and built their own ideas about the just uses of the forests. These records give us a clear sense of state formation as management of nature, but also of state formation as an incomplete process, negotiated on the ground by the state's agents with local campesino communities wielding their own understanding of nature and rights to natural resources.

The frontier's diversity of ecological zones and shifting social formations makes writing the history of the region a difficult business. Campesinos' social histories in the frontier are as complex and varied as the region's heterogeneous and ever-changing ecology, complicating the historian's work of discerning patterns and establishing a general narrative of a singular frontier history. Even within ecological zones, social histories often follow diverse trajectories, making simple reduction, or even correlation, of social to environmental history impossible. In one ecological zone, for example, a number of Mapuche communities might have widely varying histories of



relationships to local estates, the state, one another, and the ecology of the native forests, despite shared geographical location. A historical narrative of state formation on the frontier as centralization and simplification confronts, on the ground, an array of local ecological and social histories that defy reduction to a story of progress or declension (from whichever side you choose to approach it) toward the scientifically directed landscape of tree plantations and commercial forestry, a stable regime of private property, and ordered social relations produced by proletarianization. Despite the best efforts of state officials, from Federico Albert to the Chicago boys, to redraw southern Chile's social and natural landscape, local realities defied simple characterization. The tension between state projects for engineering society and nature and the diversity of local social and environmental histories define the history of frontier as multiple.

*La Frontera* is not an ethnography or case study of one community or even of a handful of communities.<sup>52</sup> I use oral history interviews with forestry workers, labor militants, foresters, and members of Mapuche communities. But the texture and depth of social and cultural experience that only a more ethnographically inclined community study can provide are largely sacrificed to a larger-scale examination of the social experience of the environmental changes produced by colonization and forestry development among a wide variety of campesino communities throughout the frontier's different ecological zones over the course of the century following the final defeat of the Mapuche in 1883. Between 2000 and 2012, I interviewed a number of forestry workers and union leaders, members of Mapuche communities and organizations, campesinos, and foresters. In Concepción, I interviewed directors of the union federations the Confederación de Trabajadores Forestales (CTF) and the Federación Liberación, as well as agronomists working with the Catholic Church's Departamento Campesino. In Valdivia, I interviewed former residents of the Neltume logging camp and foresters employed by the Corporación Nacional Forestal (National Forestry Corporation, CONAF) who also worked in the Complejo Maderero Panguipulli. In Panguipulli, I interviewed former and current workers from Neltume and the Complejo Maderero. Also in Panguipulli, I interviewed members of the Mapuche organization the Parlamento de Coz Coz. In Lonquimay, I interviewed members of the Mapuche-Pehuenche Bernardo Ñanco and Quinquén communities, as well as foresters involved in forestry education programs in the region. In Santiago, I interviewed a number of foresters employed by CONAF. While many of the people who agreed to be interviewed are cited by name, I have left others anonymous to protect their privacy and safety, identifying only their locations and more general affiliations.

The oral history interviews illustrate the broader patterns and local tex-