

# Wastelanding

LEGACIES OF URANIUM MINING IN  
NAVAJO COUNTRY

**Traci Brynne Voyles**

*University of Minnesota Press*

Minneapolis

London



CONTENTS

Portions of chapter 1 were previously published as "Intimate Cartographies: Navajo Ecological Citizenship, Soil Conservation, and Livestock Reduction," in *American Studies, Ecocriticism, and Citizenship: Thinking and Acting in the Local and Global Commons*, vol. 15, ed. Joni Adamson and Kimberly N. Ruffin, 50–63 (New York: Routledge, 2013).

Copyright 2015 by the Regents of the University of Minnesota

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without the prior written permission of the publisher.

Published by the University of Minnesota Press  
111 Third Avenue South, Suite 290  
Minneapolis, MN 55401-2520  
<http://www.upress.umn.edu>

Library of Congress Cataloging-in-Publication Data  
Voyles, Traci Brynne.

Wastelands : legacies of uranium mining in Navajo country / Traci Brynne Voyles.

Includes bibliographical references and index.

ISBN 978-0-8166-9264-4 (hc : alk. paper)

ISBN 978-0-8166-9267-5 (pb : alk. paper)

1. Navajo Indians—Government relations—History—20th century.
2. Navajo Indians—Health and hygiene—History—20th century. 3. Uranium mines and mining—Political aspects—Southwest, New—History—20th century. 4. Uranium mines and mining—Social aspects—Southwest, New—History—20th century. 5. Radiation—Health aspects—Southwest, New—History—20th century. 6. Navajo Indian Reservation—History—20th century. I. Title. II. Title. Legacies of uranium mining in Navajo country.

E99.N3V69 2015

979.1.004'9726—dc23

2014028049

Printed in the United States of America on acid-free paper

The University of Minnesota is an equal-opportunity educator and employer.

21 20 19 18 17 16 15 10 9 8 7 6 5 4 3 2 1

Preface: In Search of Treasure vii

Introduction: Sacrificial Land 1

1 Empty Except for Indians: Early Impressions of Navajo Rangeland 27

2 Prospecting for Magic Ore in America's New Frontier 55

3 Cowboys and Indians in Navajo Country 87

4 Hot Spots: Justice, Power, and Gender in the Radioactive Present 117

5 Monsters and Mountains: Competing Geographies of Uranium 151

6 The Big Hurt: Boom and Bust on Contested Ground 185

Conclusion: Zombie Mines 211

Acknowledgments 219

Notes 225

Index 273



## INTRODUCTION

# Sacrificial Land

The Colorado Plateau was one of the last areas in the United States to be developed economically. Before the 1880s it was virtually empty except for Indians.

—ROBERT DURRENBERGER, *ANNALS OF THE ASSOCIATION OF AMERICAN GEOGRAPHERS*, 1972

### **Empty Except for Indians: Wastelanding, Race, and Space**

Long before uranium was commonly known for its associations with both nuclear power and nuclear bombs, and long before atomic power took hold of the American public imagination as a fearsome signifier of new human relationships to technology, to the environment, and to each other, uranium was mostly considered waste. Miners came across it when they blasted apart carnotite, a composite rock that can often be recognized by characteristic streaks of red, black, and bright yellow, to get at the real prize: vanadium, which was used to strengthen steel alloys in a range of products, from automobile parts to gun barrels.<sup>1</sup> Vanadium alloys were integral to the design of the Ford Model T, Henry Ford claiming to have discovered vanadium's uses while sifting through the innards of a wrecked French race car.<sup>2</sup> The peak of vanadium's marketability came during World War II, when the federal government formed the Metals Reserve Company to encourage metal mining for war armaments. Vanadium, it turned out, was a highly sought-after ingredient of President Roosevelt's arsenal of democracy. In the vanadium mines scattered throughout Arizona, New Mexico, Utah, and Colorado, carnotite rock was blasted apart, the vanadium recovered, and the rest of the rock—uranium included—thrown into piles of waste



materials (more commonly called *tailings*). Sometimes the uranium from these mines was salvaged for use in glazes for dishes and glassware, which were manufactured and sold everywhere from Woolworth's to Tiffany's.<sup>3</sup> Uranium oxide glazes were responsible for the orange-red color of the popular Fiesta ware dishes. Uranium, like vanadium, could have been used to strengthen steel alloys but was much too costly. Manufacturers were hard pressed to find a use for uranium that was "of a sufficiently distinctive character to make it a commercial product."<sup>4</sup> In 1917, when the global market for radium hit its pre-World War II peak and uranium's radioactivity was discovered, a white trader to the Navajo Nation named John Wetherill hauled some uranium-bearing carnotite ore to Flagstaff, Arizona, to be sent to France for Marie Curie's radiological experiments.<sup>5</sup> By 1920, an Arizonan named John Wade was operating a company called Carrizo Uranium Company, which had forty claims in the eastern Carrizo Mountains, mining both vanadium and uranium.<sup>6</sup>

Mostly, though, the uranium was tossed.

That changed forever on October 9, 1941, when President Roosevelt held a secret meeting to deputize the Army Corps of Engineers to take on an atomic program. What came to be known as the Manhattan Project was charged with the development of an atomic bomb, using an element radioactive enough to render it "unsteady as a reeling drunk": uranium.<sup>7</sup> The Manhattan Project sought domestic supplies of uranium from the only source of which it was aware, the vanadium mines in and around the Navajo reservation. With that, uranium went from being a waste by-product of vanadium to the most sought-after ore of the twentieth century.

By 1945, when newspaper headlines blared declarations that unmasked the secret Manhattan Project, like that of the *Santa Fe New Mexican*—"Los Alamos Secret Disclosed by Truman: Atomic Bombs Dropped on Japan"—the government had acquired roughly 10,000 tons of fissionable uranium.<sup>8</sup> Most of that tonnage, however, had been shipped in from foreign sources, a process that was both expensive and fraught with potential security risks.<sup>9</sup> Only 15 percent of the ore had come from the continental United States, much of it secreted from the vanadium mines on and near the Navajo reservation and pulled from vanadium tailings piles.<sup>10</sup> Between 1943 and 1945, an estimated 44,000 pounds of uranium were secretly recovered from Vanadium Corporation of America (VCA) East Reservation Lease area—the site of John Wade's Carrizo Uranium Company claims in the Carrizo Mountains.<sup>11</sup> Monument Valley mines, also run by VCA, provided an additional 489 tons of ore.<sup>12</sup> Despite these sources, and despite stepping up its exploratory drilling on the Colorado Plateau to a rate of 200,000 feet per year, the AEC "continue[d] to receive most of its uranium from the

Belgian Congo and Canada."<sup>13</sup> "Our own country," the commission conceded in 1949, "has produced little uranium."<sup>14</sup>

Half a century later, Diné land hosts upward of 2,000 now-abandoned uranium mines, mills, and tailings piles, in which over 3,000 Navajo miners wrenched and blasted raw uranium ore from the ground and then processed it into yellowcake. Abandoned mines sit open, poorly covered, or insufficiently marked.<sup>15</sup> Radioactive tailings piles litter the Navajo landscape, leaching radon gas into the air and water and scattering radioactive debris throughout the ecosystem.<sup>16</sup> In addition to being radioactive, these piles are littered with other toxic contaminants, including arsenic, vanadium, and manganese. The combined environmental contamination of mines, mills, and tailings piles has caused dramatic problems for the water quality of a landscape where water is already in short supply. Expensive water pipelines have yet to be built to serve the estimated 30 percent of Diné people who live near and use unregulated water sources, many of which are contaminated with uranium or arsenic.<sup>17</sup> Homes have been built out of debris from mines, including chunks of rock blasted into neatly squared-off blocks, often at the encouragement of mine operators. These "hot homes" were occupied by multiple generations of families before someone thought to test them for radiation.<sup>18</sup> The U.S. Environmental Protection Agency (EPA) has identified nearly 800 structures and residential areas contaminated with uranium; fewer than forty of the structures had been demolished as of 2014, and only seventeen of those demolished had been rebuilt.<sup>19</sup> Whereas most of the mines were closed by the mid-1980s, when uranium was no longer profitable, a rise in uranium prices has led to a new uranium boom since 2005. The Navajo Nation, still grappling with environmental and human health disasters from its first three decades of experience with the uranium industry, responded by passing the Diné Natural Resources Protection Act (DNRPA) in 2005, which placed a moratorium on new mines in Navajo country. Companies seeking permits to mine in the uranium-rich eastern borderlands of the reservation have deemed that the land in question can be considered "Indian Country" despite being overwhelmingly populated by Navajos and being formally represented in the Navajo Nation government.<sup>20</sup>

Although there was ample evidence by the 1950s of the deadly nature of uranium mining, particularly because of the risk of lung cancer, miners were not informed of these health risks, nor were they provided adequate protection from them. High death rates among miners in the uranium-rich Erz Mountains on the border of Germany and the Czech Republic were reported as early as the mid-1500s. As the U.S. Public Health Service itself reported in 1952, "it has been known for centuries that the [Erz] miners



die in the prime of life with symptoms of damaged lungs.<sup>21</sup> From the late nineteenth century on, uranium was identified as the primary culprit in these high death rates, and by the 1930s Erz miners experienced a mortality rate of up to 70 percent, largely due to lung cancer.<sup>22</sup> Further suggesting the deadly nature of radiation exposure, Marie Curie herself died of radium poisoning in 1934.<sup>23</sup> By 1952, radon, a radioactive gas released in the uranium mining process, had been singled out as the primary culprit in these elevated lung cancer rates among miners, although other health problems, including silicosis, tuberculosis, pneumonia, and emphysema, also contributed to high death rates for miners.<sup>24</sup> These discoveries, however, did not lead to changes in mine safety for workers or for the people living near uranium districts.

Rates of lung cancer and respiratory disease have skyrocketed for the Diné, a population described as recently as the 1950s by public health experts as being "immune" to lung cancer.<sup>25</sup> By the mid-1980s, researchers found astronomical rates of cancer deaths among former uranium miners. Miners contracted lung cancer at rates 56 times higher than the national average, and had an average life expectancy of only 46 years.<sup>26</sup> Rates for stomach cancer were 82 times the national average. Miners were more than 200 times more likely to get liver cancer, almost 50 times more likely to get prostate cancer, and over 60 percent more likely to have cancers of the bladder or pancreas.<sup>27</sup> Nor were cancers the only health problems among former miners and their families: researchers also found increased incidents of tuberculosis, fibrosis, silicosis, and birth defects, all linked to exposure to uranium from mines and mills. Radiation-related diseases are now endemic to many parts of the Navajo Nation, claiming the health and lives of former miners to be sure but also those of Navajos who would never see the inside of a mine. Diné children have a rate of testicular and ovarian cancer fifteen times the national average, and a fatal neurological disease called Navajo neuropathy has been closely linked to ingesting uranium-contaminated water during pregnancy.<sup>28</sup> Studies have also found that uranium has genotoxic and mutagenic effects; that is, uranium poisoning can change the genetic material of a chronically exposed population, even further expanding uranium's influence on future populations in ways that are yet unknown.<sup>29</sup> While studies have long suggested a relationship between congenital defects and uranium exposure, a Navajo Birth Cohort Study seeks to measure outcomes for 1,500 Diné newborns in highly contaminated parts of the Navajo Nation.<sup>30</sup>

When uranium remains encased in carnotite rock and in underground ore bodies, it poses little threat to human health or to the environment. Clearly, once released its impacts have been catastrophic. Mar...

Limits of ore deposits are located by core drilling, which produces the characteristic pattern seen in photo at right. Cores removed are assayed to determine uranium content at various levels.

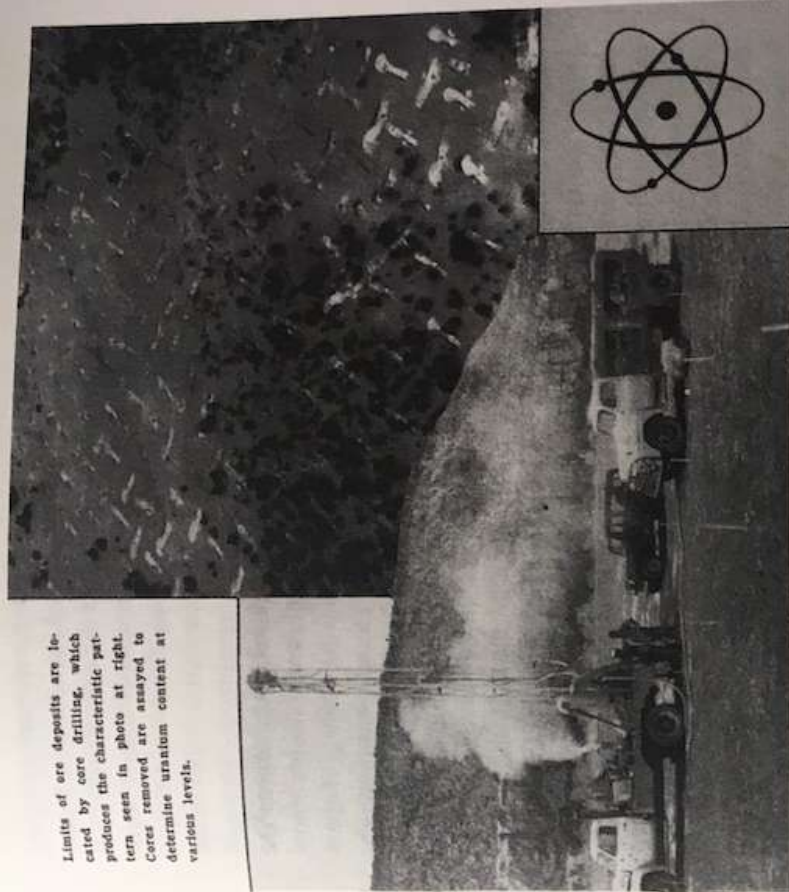


FIGURE 3. The aerial photograph at the top right shows the patterns created on the landscape as core drilling holes pockmark potential mine sites. The ore samples removed from these holes were then tested to determine their uranium content. The image at the bottom left shows a core drilling crew hard at work. Courtesy of The Albuquerque Museum Photoarchives—Albuquerque Progress Collection.

of the most problematic components of the struggle for justice over nuclearism has been that, except in extreme circumstances, the ill effects of radiation exposure take ten, fifteen, sometimes twenty years, and sometimes multiple generations, to manifest. This makes uranium mining in Diné Bikéyah a kind of "slow violence" or "delayed destruction" that emerges over time.<sup>31</sup> In uranium country, which, like so many mining industries, is governed by the rule (or lack of rules) of boom and bust, this has meant that by the time many miners got sick, the companies that employed them were long gone. Now, the responsibility for cleaning up mine and mill sites



has been taken on by the Navajo Nation itself. Of the six regions of the Navajo Nation that host the highest concentration of abandoned uranium mines, the Navajo and federal EPAs have prioritized the most heavily contaminated: the eastern borderlands, near the communities of Church Rock and Crownpoint, New Mexico; the area surrounding Cameron, Arizona, in the southwestern corner of the Navajo Nation; Monument Valley in the north; and the area surrounding Cove, Arizona, where mines are scattered across the Chuska Mountains and Red Valley. Now, three decades after the uranium market hit a precipitous decline in the Southwest and the last mines operating on the Navajo Nation were shuttered, life-saving cleanup of abandoned mine sites is only recently underway.<sup>32</sup> Before cleanup was even considered by federal agencies, Navajo families and the Navajo Nation spent decades seeking recognition of the very real connections between uranium mining and the environmental health impacts with which they lived.<sup>33</sup>

The state of environmental and human health problems in the Navajo Nation as a result of the uranium industry, and the fact that uranium was so disproportionately mined on and near Native land, makes this a clear-cut case of environmental racism, which occurs whenever communities of color are disproportionately exposed to or deliberately targeted for environmental harm.<sup>34</sup> Examples of environmental racism are diverse and varied: to name just a few, there are the petrochemical processing facilities that share fence lines with historically African American communities in Louisiana; the overwhelming tendency of toxic waste facilities to be located in and near African American, Latino, Asian American, and Native communities; and the "food deserts" in inner cities, where fresh produce cannot be found for miles.<sup>35</sup> The basic premise behind environmental justice as a social movement and as a field of academic inquiry is that our growing environmental problems—polluted air, water, soil, changing climate, accelerating industrialism, and so on—are disproportionately born by racially and economically marginalized communities both in the United States and globally and moreover that these marginalized communities are often targeted for environmental degradation.<sup>36</sup>

Feminist scholars hasten to add that even within these marginalized communities, environmental problems tend to be borne differently by women than men.<sup>37</sup> Women occupy the socially constructed role of caretakers; women are most likely to live in poverty, to experience hunger, and to bear the financial and care responsibilities for children and elderly or sick family members. Women are also often most likely to be in close contact with environmental resources: they haul water, grow and cook food, and wash clothes. By virtue of this close contact, women can be seen as "the first environment," not as essentialized Mother Earth but rather as occupants of

socially constructed roles in the home and family that often place them in a unique relationship to environmental ills.<sup>38</sup> Women's exposure to toxins in the domestic sphere, moreover, illustrates the unbounded ways in which toxins move between industry and home. In the case of uranium mining, women were exposed to radioactive and chemical toxins from the mines and mills when workers came home wearing contaminated clothes. Women also worked in the mines, lived in hot homes built with radioactive tailings, and bore severe economic hardship when their husbands were hospitalized and later died of radiation-related diseases. The widows of uranium workers became the first and often most effective activists against mining when the adverse health effects of the industry began to take shape, reflecting a larger pattern in environmental justice organizing in which women often make up the majority of participants in environmental justice struggle.<sup>39</sup>

Although scholars of environmental justice studies most often focus on contemporary (post-1982) examples of environmental injustice,<sup>40</sup> Native Americans are quick to note that the tendency of those in power to exert their power by manipulating resources and degrading the natural environment is something with which colonized people are all too familiar; in fact, "the most workable date for the founding of the Native [environmental justice] movement . . . is 1492."<sup>41</sup> This close relationship between environmental justice and Native Americans derives from the similarly close relationship between environmental racism and settler colonialism. Settler colonialism is a distinct form of colonial power, with a very particular relationship to resources and land. Whereas we might think of colonialism as tending to be mainly invested in the extraction of resources—labor, goods, or raw materials—for the benefit of a metropole, or colonizing home country, settler colonialism adds a layer of complexity: it is a form of colonial power that involves the settler making a home in a land that is already home to indigenous peoples. To quote Deborah Bird Rose, indigenous peoples "got in the way" of settler colonialism "just by staying at home," because *home* is precisely what the settler colonial state seeks to occupy and remake.<sup>42</sup> Remaking Native land as settler home involves the exploitation of environmental resources, to be sure, but it also involves a deeply complex construction of that land as either always already belonging to the settler—his manifest destiny—or as undesirable, unproductive, or unappealing; in short, as wasteland.

No one driving down the curvy switchbacks of Narbona Pass would be particularly inclined to think of Navajo country as wasteland—or even desert. Carving through the verdant Chuska Mountains just on the New Mexico side of the New Mexico-Arizona state line, Narbona Pass links the towns of Crystal, on the east side of the Chuskas, with Sheep Springs, on



the west. The Chuskas here are a rich palette of mauve and burgundy, sage and peridot green. The air is thick with the piney smell of evergreens, and the air is sharp and cool even in the summer months. The Chuskas are the heart of Diné forest resources, and Narbona Pass puts these resources on full display.<sup>43</sup> The rich woodlands of the pass speak neither to the long-standing image of Diné Bikéyah as austere desert country nor to the underlying conditions of drought, water shortage, and tree death (from foresting, global climate change, and invasive species) with which the Diné have been contending.<sup>44</sup> The realities of environmental conditions, and the complex relationships of the Diné to their environment, are made invisible in settler discourses that construct this land as unqualified desert country or claim that it is "empty except for Indians."

In this book, I argue that the history of the uranium industry on and near Diné Bikéyah demonstrates how landscapes of extraction are, to borrow from geographer Gillian Rose, forms of representation as well as empirical objects.<sup>45</sup> Notions of Navajo country as "uninhabited" wasteland create a representational criterion by which ideas about the land have been formed. When prospectors, mining companies, and the Atomic Energy Commission (AEC) identified the Four Corners area as what one newspaper called "the scenic topsoil of America's vast energy storehouse,"<sup>46</sup> extractive industrialism was naturalized as indigenous to the landscape itself, and indigenous inhabitants of the land were placed under erasure to be "always disappearing" in the face of settler colonialism's advance.<sup>47</sup> The land, occupied and claimed by tribes, with its own unique sets of ecological conditions and realities, ceased to be an empirical object—the material conditions of Narbona Pass, with its shimmering greens and crisp air, is forgotten in favor of an interpellation of Navajo country writ large as wasteland. This book is a history of contested representations of landscapes, representations that produce starkly urgent material conditions with high stakes for humans, animals, air, water, and earth. Following Valerie Kuletz, who argues that deserts are targeted for environmentally destructive industries because they are understood as worthless in a Euro-American worldview, I explore the mapping of Navajo land and, by extension, other kinds of lands rendered pollutable through discourses of race, gender, class, and/or sexual difference as "wasteland." The wasteland discourse, as Kuletz framed it, is a current in the American environmental imagination that sees deserts as threatening, marginal, and—revealing the distinctly gendered framework of this marginalization—"barren" places predisposed to what she calls deterritorialization.<sup>48</sup>

Environmental sociologists have outlined the ways in which environmental problems in the context of contemporary industrialism (the post-World

War II period of "late modernity") are imbricated in a treadmill of production, in which extraction of raw materials and dumping of material waste are expanding with markets, often exponentially.<sup>49</sup> The treadmill requires "wastelands" from which resources are increasingly extracted and where (often toxic) waste is increasingly dumped. Patterns of environmental racism tell us that race has become a primary way by which those landscapes of extraction and pollution are marked as racialized spaces excluded from or ignored by the regulatory protection of the state.<sup>50</sup> Because environmental inequality is an inherent feature of the way in which industrialism operates contemporarily—raw materials for products, after all, must come from somewhere, and toxic waste must go somewhere—the wasteland is the "other" through which the treadmill of production is constituted. In this way, just as civilization has been constituted on and through savagery, environmental privilege is made out of the discursive process of rendering a space marginal, worthless, and pollutable.<sup>51</sup> This produces a strong relationality between environmental injustice and environmental privilege as mutually constituted phenomena. For the energy industry in the United States, which has been disproportionately reliant on indigenous resources,<sup>52</sup> the extraction of energy's raw materials (uranium, coal, oil, natural gas, water, and, increasingly, wind and sunshine) has devastated Native lands while Native people often benefit the least in terms of economic development and cheap energy—a phenomenon that can be shorthanded as energy injustice.<sup>53</sup> Here, the treadmill of production can quite clearly be seen as being built on and through the degradation of Native land and life; as one Diné resident of Black Mesa noted, "Somewhere far away from us, people have no understanding that their demand for cheap electricity, air conditioning and lights twenty-four hours a day have contributed to the imbalance of this very delicate place."<sup>54</sup> To put it another way: if, as historian Ned Blackhawk has argued, the indigenous body in pain is the ultimate symbol of colonial progress and modernity, indigenous land laid waste is its territorial corollary.<sup>55</sup>

I call this process *wastelanding*.

Wastelanding, I argue, has been a key and underexplored component of environmental racism. The "wasteland" is a racial and a spatial signifier that renders an environment and the bodies that inhabit it pollutable.<sup>56</sup> The problem of land laid waste is complicated by the fact that environmental degradation is not only relegated to lands that Americans find aesthetically distasteful; quite to the contrary, while we find radioactive tailings piles in the desert, we also find leaking barrels of Agent Orange on Bahamian beaches, dioxin-releasing copper mines near the shores of the Great Lakes, and strip mines in the rainforests of South America.<sup>57</sup> Thus, it is not only a



manner of a Euro-American distaste for dusty arid locales that renders deserts "wastelands" but rather a condition in which even the most marvelously abundant of jungle-scapes can come to be seen as just so much waste of space. This book, therefore, argues that colonial epistemologies do not just look on deserts as wastelands but that wastelands of many kinds are constituted through racial and spatial politics that render certain bodies and landscapes pollutable. Wastelanding builds on Kuletz's "wasteland discourse" to explore how this convergence of discourse and space has been deployed in multiple contexts, including nondesert landscapes, and how environmental racism can be theorized at multiple scales.

Wastelanding takes two primary forms: the assumption that nonwhite lands are valueless, or valuable only for what can be mined from beneath them, and the subsequent devastation of those very environs by polluting industries. Hydroelectric dams in James Bay, Canada, for instance, would, according to the National Audubon Society, "make James Bay and some of Hudson's [sic] Bay uninhabitable for much of the wildlife dependent on it."<sup>58</sup> This very pollution results in the common designation of wastelanded spaces, including those of the uranium industry on Diné land, as "sacrifice" zones. As sacrificial lands, these landscapes of extraction allow industrial modernity to continue to grow and make profits. In scholarly parlance, these two forms of wastelanding can be termed *social construction and reification*: first, a culturally agreed-upon logic that derives from taken-for-granted categories of difference, which we then understand as natural and common sense, and second, the process of materializing, of making real, or of acting on those constructions.<sup>59</sup> Wastelanding reifies—it makes real, material, lived—what might otherwise be only discursive. Like race, which is a social construction made material by the embodied consequences of racism (threats and acts of violence, foreshortened life expectancy, incarceration, under and uncompensated labor, inequalities in wealth accrual, and so on), ideas about the value of environments are manifested by the material consequences of environmental destruction (or, in the inverse, by environmental protection<sup>60</sup>). Patterns of environmental racism make clear the connections between race and wastelanding. Race and space are connected through a social construction of difference that becomes spatialized through segregation and unequal distribution of resources. As Allan Pred puts it, through racism, "The socially barred become locationally removed from opportunity-yielding social, economic, and political networks." By a "feat of ontological magic," the "idea-logics of cultural racism are—abracadabra, hocus-pocus, simsalabim—concretized."<sup>61</sup> Wastelanding is a primary one of these "feat[s] of ontological magic," wherein racialized lands are made to seem uninhabited or unimportantly inhabited, represented as

worthless, and then—"abracadabra, hocus-pocus"—systematically stripped of their material and ideological worth.

Nuclearism makes a fitting site to study wastelanding because it is so clearly a multiscale problem. Radiation is spatially multiscale, with impacts that can be measured at the bodily, the ecosystemic, or the planetary level; it holds potential to change our very cells or affect the ways in which organs change over time. Its effects can be traced from the subatomic to the ecosystemic and everything in between (from cells and organs to sheep and corn). It can be as unimaginably small as the split nucleus or as nightmarishly large as the mushroom cloud. Likewise, nuclearism is temporally multiscale: its impacts range from the moment an explosion initiates a nuclear chain reaction, to the tedious process of a miner chipping away at an ore body, to the limits of the human temporal imagination (uranium 238, for example, uranium's most common isotope and the one that is used to produce plutonium, has a half-life of 4.46 billion years). Nuclearism's deadliness can manifest in the immediacy and violence of acute radiation exposure or, more commonly, in the slow growth of tumors in lungs and genetic mutations passed down through generations. And because its effects are not always felt immediately, because the causal relationship of radiation to health outcome is a moving and precarious target, and because is it impossible to see, feel, or taste your exposure to radiation, nuclearism triggers human anxiety to an almost incomparable extent. Nuclearism's affective multiscalearity has produced gut-wrenching fear in communities downwind of nuclear test shots, defiant rage in environmental activists, and apocalyptic bravado in the culprits behind the Cold War's mad doctrine of mutually assured destruction. These multiscale natures of nuclearism—of environmental, spatial, temporal, and affective—make it a particularly apt site for exploring wastelanding as a racial and spatial process of signification that makes extreme environmental degradation possible.

Wastelanding, too, is multiscale: in uranium country, destroying the environment through uranium mining does not just mean destroying the nonhuman world and ecosystems. It means to wasteland, to render pollutable, the lungs, the cells, and the respiratory tracts of everyone involved in the nuclear cycle. It also means to wasteland Navajo worldviews, epistemology, history, and cultural and religious practices. In order for uranium mining to occur on the level it did (and still does), indigenous ways of knowing landscapes and their worth must be themselves rendered pollutable, marginal, unimportant.<sup>62</sup> To borrow from poet Adrienne Rich, in wastelanding—rendering an environment pollutable in ways that are both ideational and material—"The words are purposes. / The words are maps."<sup>63</sup>



### The Words Are Purposes: The Wasteland as Floating Signifier

On July 4, 2008, I pulled into the town of Kayenta, Arizona, in the northern corner of the Navajo Nation, on an empty gas tank. I was less than thirty miles away from where I had stopped on the side of the road to gape open-mouthed at the 200-yard section of the Black Mesa coal conveyor belt visible from Highway 160—a highway, not incidentally, built to usher uranium ore out of Tsé bii' nízisgai (Monument Valley) and usher tourists in. The coal conveyor stretched forbiddingly across the highway, angling up to a leering tower on the east side of 160. To the west, it cut into the face of Black Mesa, stretching to the mesa's horizon in the oddly linear negative space of cleared trees. Four miles to the west, at the intersections of Indian Route 41, Peabody Coal Company Access Road, and Haulage Road (more inscriptions of resource extraction on the built environment of Navajo country), were the headquarters of the coal mining operation, which I could not see but knew was there from the crinkled topographic map spread out on my passenger seat. Making a sudden turn up a dirt road that sent my dog lurching onto the floorboards in the back of my Jeep, I wasted most of the quarter tank of gas I had left seeking a better angle from which to view this coal mining monolith.

Thirty miles later, I coasted into Kayenta on fumes to fill up my tank at the dusty gas station that presides over the town's single major intersection. Filling a tank with gas, during this particular summer, was an even more politically charged activity than usual, especially in the Navajo Nation, where people regularly drive large pickups long distances over hard roads to fill water tanks, get groceries, visit family, or attend to livestock located in remote parts of the country. During the summer months of 2008, the price for a tank of gas shot up to almost \$5 a gallon; oil companies raked in record profits, and a barrel of oil cost an unprecedented \$145 dollars. Global political-economic forces of resource extraction and transnational corporate capitalism occupied an elephantine presence in every gas station in the continental United States, and this particular 7-Eleven was no exception. That summer the *Navajo Times* was full of articles and editorials that had a central, driving focus: the incapacitating effects of gas prices on the Diné.

This part of Diné Bikéyah is not just home to coal mines but is also a major access point to the western reservation's uranium mine sites, which were abandoned after the climax of the uranium boom and left unreclaimed, with the radioactive guts of the mines exposed nakedly to the surrounding air, earth, water, animals, and human population. The mines in nearby Monument Valley were among the first to be exploited in the early years of the

Manhattan Project, and they left behind some of the most dangerous environmental legacies in the form of uncovered mine shafts, polluted water, and hot homes. During the early uranium booms, Diné workers arrived at these mine sites from across Diné Bikéyah, taking advantage of any opportunity for wage work during decades (the 1940s and the 1950s) when poverty gripped the reservation more than it had since the years after their removal to Bosque Redondo. Navajos tended to prefer jobs in the mines to other options—railroad work or venturing to California as farm laborers—because the mining jobs were close to home. Over the course of the 1940s, 1950s, and 1960s, uranium mining and milling in the western reaches of the reservation dramatically changed the geography of Monument Valley and the area surrounding Kayenta: new roadways were mapped and paved and new bridges built to sustain the traffic of heavy uranium haulers. Entire mesas in Monument Valley were blasted out of existence, and mills operated twenty-four hours a day to transform ore rock into yellowcake.

Not three hours north of Monument Valley, where I gazed at the familiar mesas and buttes with a sense that I had been there before—a symptom of my “imagined intimacy” with this postcard-ready landscape<sup>64</sup>—I arrived in a very different kind of southwestern desert town: Moab, Utah. Here, the gas was just as expensive, but the sheen of a thriving, well-developed tourist destination in the height of the summer season posed a stark contrast to Kayenta, despite the fact that both towns sit in equally striking landscapes, and each has intimate history with the uranium industry. In Moab during the uranium boom years, some of the largest and most famous uranium strikes made this town among the most famous of the Colorado Plateau’s “yellowcake towns.”<sup>65</sup> In total, three-quarters of all uranium miners during the booms of the 1950s to 1960s were non-Native and worked in mines in yellowcake towns like Moab: Grand Junction and Uravan, Colorado; Marysvale and Monticello, Utah; and so on.<sup>66</sup> Now, the legacy of uranium is remembered quite differently in these non-Native yellowcake towns than in Kayenta, a difference illustrated perhaps nowhere so clearly as in downtown Moab, where the Uranium Bike Shop hosts racks of high-end mountain bikes and a three-foot-tall graffiti-style mural of its name. Farther along Moab’s Main Street, an antique-looking sign on an office building reads matter-of-factly “Uranium Offices, 11 N. Main,” named thus during the height of the uranium frenzy and left unchanged, presumably, out of nostalgia for those boomtown days.

These two experiences of two very different towns, so closely juxtaposed, would eventually come to frame my own personal take on mine country, how uranium was inscribed on landscapes differently, and how the





FIGURE 4. The Uranium Bike Shop sits near downtown Moab, Utah, illustrating one of the many ways in which the legacy of uranium mining is inscribed on the built environments and political economies of former uranium boomtowns. In this image, the shop's name is painted in a three-foot-tall faux graffiti tag over the display windows. Photo by the author.

radioactive ore came, over time, to acquire very curious meanings. In Kayenta, and in the Navajo Nation in general, uranium is one of a litany of metals and minerals that have been extracted from the land to a devastating extent, leaving behind scarred earth and ongoing environmental health disasters. In Moab and former uranium boomtowns like it, such as Grand Junction, Colorado, mining has assumed an oddly nostalgic affect, a history that lends local flavor to ski areas, camping hot spots, and mountain biking destinations. In and around the Navajo Nation, mining is a very contemporary site of struggle over land, jobs, and sovereignty; in other parts of mine country, it is a colorful narrative of national history, its museums offering tourists an alternative activity on rainy days.

The contrast between Kayenta and Moab suggests that deserts have shifting meanings. These towns, less than 200 miles apart, have radically different histories with energy-extractive industrialism. This difference is, to a large extent, the very unnatural evolution of starkly different political-economic

histories of mining in different places. These different evolutions of pollution and geography in turn suggest that that wastelanding—a racial and spatial signifier that renders landscapes pollutable—is only *incidentally* about deserts. The wasteland, I argue, is a floating signifier in the Western environmental imagination: it does not always have a specific somatic or material referent, but rather it flexibly (floatingly) marks different objects, landscapes, and bodies. Deserts, thus, are not the reason for wastelanding. They are, rather, its frequent but not exclusive target. Just as race is a discursive technology with often deadly material effects, so too is wastelanding the process by which pollutability is materialized.

My explorations of the wasteland are thus very much about race, not only because environmental racism and wastelanding are conceptual intimates, but also because race is a discourse that is only incidentally a referent to different human body types. Just so, wastelanding is a discourse that is only incidentally a referent to different kinds of landscapes (including deserts). Race is quite deeply involved in wastelanding the environments that are deemed resource-rich for settler industrialism, just as certain human bodies are deemed productive reserves of labor (itself a resource) for settler industrialism and rendered exploitable via race. One might go so far as to say that racialized bodies are in many ways themselves wastelanded. Race intersects with the environmental imagination, even as it intersects with gender and sexuality, to produce wastelands: places that are marked, physically and ideologically, for exploitation, resource extraction, and national sacrifice. Just as race is embodied, often violently, despite being in essence strictly a discourse (as I tell my students, race is a *discourse* powerful enough to make *genocide* possible), “wastelanding” is a discourse-made-material through the degradations of targeted environments and their human and nonhuman denizens. It is through this process that even verdant landscapes—or nonlush places that are nonetheless aesthetically pleasing or otherwise fitting for American environmentalist affect—can be rendered pollutable, and desertsapes embraced as protectable. The referent of wastelanding is inconsistent; the outcome is not.

As scholars of ethnic and women’s studies have long pointed out, we can recognize categories of human difference as being socially constructed by the ways in which their meanings change over time, space, and culture. Race, for example, can be recognized as a social construct rather than an expression of essential, or inherent, human difference by the ways in which racial categories are constantly in flux: what it means to be white has changed dramatically over the course of just the twentieth century, often in response to negotiations between legal and cultural constructions of whiteness;<sup>67</sup> for



Mexicans in the Southwest in the aftermath of the Treaty of Guadalupe Hidalgo, legal race status was tied to citizenship and differed from cultural or "common sense" race status;<sup>68</sup> for African Americans in the Jim Crow South, race status could change by the simple act of crossing state borders; and so on. As these examples attest, race is not a reflection of essential or innate difference but a malleable structure of feeling and exclusion that organizes populations' life experiences and outcomes and access to resources. Feminist scholars have likewise demonstrated how gender and sex are social constructions, on the basis of their malleability over time, space, and culture.<sup>69</sup> The argument here is that social constructions are not always, or even *initially*, about bodies themselves. Race, gender, and sexuality are structures of exploitation that are only most spectacularly about organizing social resources according to types of human bodies. They are an intersecting web that renders exploitable, negligible, and marginal a range of symbolic, psychical, and physical entities—in other words, a multi-scalar range of materialities and symbols.<sup>70</sup> This is how scholars of race come to talk about the myriad things, bodies, ideas, and feelings that can become, as we say, *racialized*: they take on or seem to inhere raciality precisely because race is a discourse made material rather than a materiality made discursive. Bodies can be racialized; so too can voices, ideas, clothes, places, costs of labor, gestures, words, foods, jobs, sexualities, and so on.

If we extend this analysis of the relationship between social construction and materiality to spaces, we can see how wastelanding is not so much about the inherent value of wastelanded places as it is about the *meaning*—social, cultural, ecological, or juridical—that we make out of them. Consider the inner-city "ghetto" that becomes gentrified by upper-middle-class white settlement: the meaning of the space shifts through discursive and material meaning-making practices, as well as racialized and classed repertoires of dispossession and displacement. In that shift in meaning, the "ghetto" moves from being *pollutable* to being *protectable*—from urban wasteland to "Back Yard" (as in, Not in My Back Yard). There is nothing essential or inherent to the urban space itself that invites disdain; the material conditions of the place derive from the hegemonic meaning that is ascribed to it.

Just so, there is nothing about the desert itself that invites disdain, even white Western disdain with its clear cultural preferences for lush and verdant landscapes.<sup>71</sup> This is precisely because that preference is culturally and historically constituted and contingent on the particularities (and peculiarities) of how the white Western environmental imagination has evolved in the "New World." Environmental historians have pointed out how wilderness

areas, lush forests included, have in the past been understood as distinctly evil locales precisely because they were seemingly uncultivated—"wild"—the same quality that now marks out "wilderness" areas for environmental protection.<sup>72</sup> Those lush, verdant landscapes have likewise been themselves seen as "Deserts [*sic*]," in the sense of being uncultivated and vacant to the eye of a European settler.<sup>73</sup>

Deserts as we now understand them have been differentially interpellated as sacred or profane, as *constitutive* of the white masculine settler subject or as his demise. Particularly in the saga of nineteenth-century Western exploration, deserts constituted the geographic barrier to the mythical land of California; no matter what route overland travelers chose to get to California's storied gold mines, beautiful coasts, and rich agricultural lands, they had to first pass through deserts that threatened, and often took, their lives. Thus, deserts came to be imagined as an environmental specter threatening the white masculine settler and the larger project of settlement itself. When John C. Frémont, the Great Pathfinder, looked upon the deserts of the West, he saw them as "forbidding," "inhospitable," "desolate," "bleak," "sterile," "dreary," "savage," "barren," "dismal," "repulsive," and "revolting."<sup>74</sup> Environmental determinism coupled with biological theories of race meant that the desert tribes were particularly reviled by settlers, their desert lands seemingly evidence of a distinctly savage nature. Deserts as "environments of scarcity" led explorers and settlers to develop a view of desert tribes, in Frémont's words, as "the nearest approach to the mere animal creation."<sup>75</sup> Ironically, the fact that desert tribes survived—in fact flourished—in "environments of scarcity" in which white settlers so struggled could have been evidence, by the same racialist (il)logic, of the tribes' superiority rather than inferiority, an excellent example of the ways in which, when it comes to social constructions, "logic is in the eyes of the logician."<sup>76</sup>

As the desert came to be incorporated in the American environmental imagination, however, it came to acquire a range of cultural meanings, not all of them negative. When John Muir visited Arizona in 1905 and beheld what is now, thanks in large part to his advocacy, the Petrified Forest National Park, he included this desert-scape as part of the sacred "wilderness" that helped to constitute the Progressive-era American preservationist (what we now call environmentalist) movement. This category of protected wilderness had, until that point, largely revolved around mountainous, or at least *green*, landscapes that more closely fit American aesthetics of the wild places of the Western continent. With that, the American environmental imagination began to see deserts as protectable wilderness, too, a trend that grew as arid canyon country, particularly the Grand Canyon, became a centerpiece of environmental tourism and wilderness conservation legislation.



The Canyon, in particular, went in a very short space of time from "an 'unprofitable locale' to the 'sublimest thing on earth.'"<sup>77</sup>

The image of deserts changed most dramatically, perhaps, during the mid-twentieth century, as cultural representations of the "frontier" and "winning the west" centered on narratives that, quite often, took place in desert locales, thanks in large part to the rise of the Hollywood western.<sup>78</sup> Picture a pair of Old West gunslingers headed into a saloon, and your imagination will more than likely call up a dusty town scene in the middle of desert country, a place surrounded by sagebrush, piñon pines, and craggy mountain passes—a place, in short, "no more specific than 'the Southwest.'" If these narratives are part of what "America" now means, then we can rightly say that the settler state has grounded itself in the desert Southwest, making the desert central to how we understand our history and ourselves. During the uranium booms, in which uranium was closely conflated with nothing less than the very survival of the nation-state, the nation was, materially and ideologically, remaking itself through the resources of desert country.

In Monument Valley, just outside of Kayenta, the valorization and degradation of the desert occurred simultaneously in the 1940s and 1950s; even as film crews shot the westerns that would underscore white Americans' collective "imagined intimacy" with this part of Navajo country as the symbolic setting for their imagined community, uranium companies were busily blasting its famous red mesas into nonexistence for the uranium encased inside. This simultaneity of valorization and degradation is perhaps symbolized nowhere so well as in the story of Monument Valley's Cly family, told in the 2000 documentary film *The Return of Navajo Boy*. The Cly family was first captured on film in the 1950s by director Robert J. Kennedy, who depicted them herding sheep, weaving Navajo rugs, and cooking meals outside of their hogan. Kennedy's work, however, made no reference to the enormous changes under way for Monument Valley Diné in the 1950s, Cly included, coming from both the film and the uranium industries. Over the course of subsequent decades, the Cly family came to embody those changes: the family's matriarch, Happy Cly, once described as "the most-photographed woman in America" for the widely circulated postcards bearing her image,<sup>80</sup> died of lung disease in 1960, which her family attributed to nearby uranium mines.<sup>81</sup> Upon her death, her youngest grandchild was adopted away from his family in what the Clys thought would be temporary missionary foster care. The child was never returned, and his connection to his family serves as the primary emotional draw of the film. (His eventual return to them as an adult, moreover, gives the film its name.)

That youngest son bears an uncanny name: John Wayne Cly, a name given him by John Wayne himself while the actor was in the valley on one

of his several film shoots. John Wayne Cly grew up on and near the reservation, working, among other wage work, in uranium mines, before finally finding his family again in Monument Valley—a family much changed by the environmental health problems attendant with unregulated uranium mining.<sup>82</sup> The Clys were thus multiply marked by settler colonialism: they witnessed the death of family members from radiation-related diseases, were archived in photography and film as archetypal western "Indians," and lost a child—named after an American icon in an iconic American landscape—to the assimilative practice of adopting out Native children to white families. *The Return of Navajo Boy*, therefore, tells a story of the multiscalar implications of the uranium industry within a larger context of settler colonialism, reflecting the powerfully complex interweavings of the colonial, familial, bodily, and ecosystemic causes and consequences of resource extraction for nuclearism in desert country.

Deserts, clearly, are more complex than mere wastelands; they are home to both John Wayne and John Wayne Cly, home to Kayenta's unregulated mine sites and Moab's Uranium Bike Shop. Wastelands, in turn, are floating signifiers deeply joined to race, class, gender, sexuality, and coloniality in their demarcation of spaces as pollutable.

### The Words Are Maps: Colonial Cartographies, Borderlands, and the Production of Justice

In 1955, in the midst of a booming uranium rush in the northeastern part of the state, the New Mexico State Mapping Agency released its annual report. The cover bore an image of a plane hauling away a mountain and leaving behind a smooth, flat topographic map—in effect doing away with nature in favor of charts. The image serves as a powerful representation of the false universalism of modern colonial episteme, what Donna Haraway calls the "god trick of seeing everything from nowhere," and a reminder that maps are a powerful means by which states exert control over peripheral spaces, particularly those that are rich in resources.<sup>83</sup> In the mid-1950s, when the image was produced, mapping the uncharted domain of the state was a project of critical importance to the state as a whole; mapping projects, after all, were kindled by the desire to locate potentially minable ore deposits, and uranium occupied no small part of that imperative. By 1955, uranium was widely considered the state's golden ticket into the modern industrial age.

Cartographic practice in the mid-twentieth century was, of course, not a "view from nowhere"; it was a view from deeply embodied—and very specific—perspectives on space. In exploring the evolution of these wasteland discourses in the twentieth century, and how they connect to the



environmental degradations of the uranium industry, my central questions revolve around the subjectivity of dominant cartographic discourses and the construction of Diné Bikéyah as peripheral, distant, marginal, desert, or deserted: "empty except for Indians." Geography and notions about space have, of course, long been matters "of considerable imperial significance."<sup>84</sup> Colonized terrain has been representationally contained and restrained in maps, just as the practice of surveying and cartography, the productive labor of mapping, represents a *repertoire* of colonial action—a practice of power relations.<sup>85</sup> Central to the work of understanding settler colonialism, then, is the project of explicating the ways in which the production of knowledge about space is historical, social, and deeply laden with power.<sup>86</sup> Suffice to say: as Ann Laura Stoler calls historians to turn from "archive-as-source to archive-as-subject," so must those of us who are geographically inclined begin to read cartographic discourses as revelations of colonial ontology and technology, as *subjects* of our research and theory, rather than as objective representations of the natural, social, or political world.<sup>87</sup>

In the Southwest, cartographic discourses and articulations of territoriality are deeply complex. This region is in multiple senses spatially and ideologically liminal—in other words, it is a borderland. The history of uranium mining aptly illustrates this liminality: uranium country is simultaneously Navajo country, which, more often than not, is also claimed by Pueblo nations, by Nuevomexicano land grant communities, and by multiple state and federal agencies. Uranium mining, moreover, has existed at multiple kinds of ideological or affective borders. As such, each chapter of the book addresses spatiality and borderlands in a different way. In chapter 1, I explore how the pre-uranium mining history of federal relations to the Diné constituted a kind of economic borderland: during the period of livestock reduction in the 1930s, in which Diné herds were "reduced" (a euphemism, often, for slaughter) by tens of thousands, Navajo poverty was treated as a result of what was deemed irrational land use. The Navajos came to be seen as occupying the space between rational conservation practice and abject poverty during a time when both conservation and poverty were crucial concerns for Americans in general. During this period, the Navajo herd owner as a "social problem" constituted a grim counterpoint to the trope of the "ecological Indian," and Diné poverty was seen as the direct result of the tribe's failure to understand its land base and resources.

Chapter 2 explores the early years of the uranium boom, looking to the ways in which uranium in the Southwest seemed to constitute a *temporal* borderland between the anachronistic past and the technological (nuclear) future. As *Time* magazine so artfully put it in 1952, "For years, the parched, mountainous wastelands of the Colorado Plateau were known for their scattering of dinosaur bones and the ruined homes of prehistoric cliff-dwelling

Indians. But now the area is known for something far more important: uranium."<sup>88</sup> Crediting uranium with creating what the magazine called "the wasteland's glorious new reputation," this kind of rhetoric created a tension between the anachronistic space of "dinosaur bones" and "pre-historic cliff-dwelling Indians" and the "far more important" technological futurity promised by uranium.<sup>89</sup> Similarly, chapter 3 explores how the Diné and other southwestern tribes were placed, often through little or no action of their own, in a position of manning this temporal borderland between past and future—ushering in the uranium booms of the future and then quietly disappearing into the past. This chapter also traces the transmogrification of Diné country from "waterless, worthless waste" to spectacular tourist attraction and star of the Hollywood western, making it a kind of *affective* borderland between cowboy and Indian (self and other) in the U.S. popular imagination.

In chapter 4, I examine the ways in which the spatiality of risk in Diné Bikéyah shattered the imagined division between public and private in the uranium wage economy. Despite the fact that uranium companies and other industrialists touted the importance of wage work in assimilating Navajo workers (in large part because wage work was predicated on normative gender roles and binary gender spheres—men laborers in the uranium mines bringing wages home to wives and children), the impacts of uranium in the 1960s and 1970s increasingly obviated such a division between public and private spaces. The risks of radiation crossed the borders between industrial and domestic spheres, violating that public/private "fiction of gender."<sup>90</sup> By the late 1960s, when more than 200 Diné miners and millers had died of radiation-related diseases, women and children were also beginning to experience the adverse health effects of the industry; their appeals to industry and government for compensation, moreover, were largely denied or ignored because radiation risk was officially understood to end at the borders of the work site.<sup>91</sup> Thus women's activism for environmental justice has revolved in large part around counter-mapping, or using maps "to delineate and formalize claims to . . . territories and resources," in two senses: counter-mapping their claims to land taken over by the uranium industry, and counter-mapping the transboundary nature of radiation's risk.<sup>92</sup>

In chapters 5 and 6, I follow the general geographic trend that the uranium industry took beginning in the late 1960s: off of the reservation proper to the eastern reaches of Diné Bikéyah near Tsoodzil (Mount Taylor). Uranium activity in other parts of Diné Bikéyah slowly ground to a halt in the latter half of this decade; all mines in Monument Valley were closed by 1968. The East Reservation Lease mines in the Carrizo Mountains were closed by 1967. The Kerr McGee Shiprock mill shut down in 1968,



leaving behind a fearsome amount of radioactive tailings directly adjacent to the reservation's largest population center. The land of northwestern New Mexico, just to the east of the Navajo Nation border, was easily the largest producer of uranium in the United States. Despite being outside of the official boundaries of Navajo Nation, it is quite clearly Navajo country, home to multiple Navajo communities and central to Diné worldviews and history. Adding to its analytic and material complexity, this area is also claimed by multiple Pueblos, Nuevomexicano land grant communities, ranchers, and federal and state land management agencies.

In moving from west to east, the uranium industry, and by extension the narrative trajectory of this book, goes against the way that Navajos most often articulate geographical knowledge. Although each of the four cardinal directions are crucial to Diné geography (as represented by the four sacred mountains), "east is the direction Navajos emphasize."<sup>93</sup> Hogans, six- or eight-sided Navajo homes, have one eastern-facing door; and more often than not, Diné creation stories often begin in the east.<sup>94</sup> When Navajos list the four sacred mountains, they generally begin in the east with *Tsinaajinii* (Blanca Peak) and then move south, west, and end in the north. The uranium industry, perhaps fittingly given its deeply destructive relationship to the Diné, goes against this geographical grain, moving from the early mines in Monument Valley, to the Carrizo Mountains near the Arizona–New Mexico state line, to Shiprock, to the eastern reaches of Diné Bikéyah in the area surrounding *Tsoodzil*. Just as east to west is important, so too is below to above. While Diné geographies are generally oriented east, then south, then west and north, they also emphasize emerging into this world from worlds below. Here, too, the uranium industry has inverted Diné geographies: uranium deposits were, more often than not, discovered via aerial surveys of the land, and cartographic practice in the twentieth century in general relied heavily on views of the land from above, as did the New Mexico State Mapping Agency in its 1955 cover. This book is thus, in large part, a project of mapping out these conflicting perspectives on landscapes as they emerge in the history of uranium mining, all the while keeping a close eye on what is at stake when toxins meet tissues.

Mines that remain to be sufficiently cleaned up are called, poetically enough, "legacy mines." On the Navajo Nation, this designation gestures to the larger colonial imaginary in which the history of uranium mining is entrenched. The "legacy" of these mines comes to be tangled up with pollution, environmental decline, and the material and ideological depredations of race as it is constructed and practiced under conditions of ongoing settler colonialism. The "legacy" of mining in Navajo country and elsewhere might indeed stand in for what race scholars have called the

"sedimentation" of racism over time, which occurs when inequalities and privileges alike accrue over time in ways that compound, rather than alleviate, the effects of racism in social structures.<sup>95</sup> It is an appropriately material metaphor. As legacies and sedimentations do, mining has come to shape the affect of power relations between colonizer and colonized; it has shaped the experiences, bodily health, and life expectancy of the Diné long after the problem should have been rectified; and it has altered the very landscape, real and ideological, of Diné Bikéyah. The wasteland, desert or otherwise, becomes a place where pollution and environmental degradation collect, settle, and form sediment that makes a lasting impact on human and nonhuman bodies. Likewise, wasteland discourses collect and sediment to give shape to power relations between peoples and geographies, creating a highly spatialized set of power relations that invoke place as well as race.<sup>96</sup>

This book contends that settler colonialism is so deeply about resources that environmental injustices, whether on Native lands or lands of other others, must always be viewed through the lens of settler colonialism. While the connections between the two forms of power are various, the body is a good place to start—just as race and racial power are organized at the level of the body, so too are the functions of environmental violence.<sup>97</sup> Theorizing environmental justice at the level of settler colonialism, slavery, for example, can be seen as the degradation of the racialized environment of the body, the radical devaluation of the resource of black labor for colonial economies, and directly tied to contemporary manifestations of the ways in which blackness is racialized (for example, the structural and cultural ghettoization of urban communities, subjection of the black body to environmental violence and sanctioned state violence, as well as the more commonly cited cases of environmental racism, such as the disproportionate siting of toxic waste dumps or petrochemical plants in black communities). All of these manifestations derive from the bodily or material effects of racialization and speak to the ways in which "race" can be seen as an arbiter of resources, if resources are defined as ranging from access to clean air, water, and food to clean jobs, state services, community self-determination, or even what sociologist Avery Gordon calls complex personhood.<sup>98</sup> In the context of extreme and ongoing environmental violence, decolonization cannot be imagined outside of environmental justice, and vice versa. They are twinned projects. I argue in this book that, although uranium mining provides a powerful, and pulsing, explication of the twinned interests of environmental justice and decolonization, it is but one piece of a much larger system of power relations.

This is not such a radical leap. The study of environmental injustice is the study of race, resources, and power and their intersections with gender



and sexuality. Although the context for many studies of environmental justice cases is temporally and geographically local out of necessity, as these struggles are born of life-and-death urgency in local communities, most derive from a larger context of colonial power relations. While the degradation of the natural world has been a constitutive component of modern capitalist economies, race has been a central technology by which that degradation has occurred.<sup>99</sup> By the same token, race is and has often been performed through environmental degradation. The raciality of Natives in the "New World," for example, was marked precisely through the desire for resources and through the mythic degradation of the imagined Native body ("animallike," hyper- or asexualized, unclean, monstrous, "red").<sup>100</sup> What followed was actual degradation of real Native bodies: rape, mutilation (often sexualized), mass slaughter, military aggression, and so on. Native encounters with settler colonialism are so deeply entangled with environment and resources that even the phrase "environmental racism" can seem to lose all meaning in a tribal context, quite simply because "racism" has *always* meant environmental violence for Native peoples. The desire for indigenous resources is the primary way in which colonialism marks the indigeneity, whether the desired resources are the land of the North American continent, or uranium, oil, and natural gas, or more intangible resources like Native spiritual and cultural practices (here, think of "resources" as dream catchers, Blessing Way ceremonies, hippie beads, hipster headresses, and the myriad other ways in which non-Natives have sought to constitute whiteness through "playing Indian"<sup>101</sup>). In Patrick Wolfe's estimation, "Whatever settlers may say—and they generally have a lot to say—the primary motive for [genocide] is not race (or religion, ethnicity, grade of civilization, etc.) but access to territory." "Territoriality," he concludes, "is settler colonialism's specific, irreducible element."<sup>102</sup> As settler colonialism has progressed in the twentieth and twenty-first centuries, Wolfe's use of "territory" might helpfully be substituted with "resources," of which territory is one of many.

Wastelanding is thus a fully colonial project of rendering resources extractable and lands and bodies pollutable, rather than merely a problem of distribution of environmental "bads." Thanks in no small part to mainstream narratives that posit environmental justice cases as problems of unjust distribution that are best solved through the legal system, environmental justice activists and scholars have had to grapple with a purely juridical model of justice: the notion that, like lawyers in a grand class action lawsuit, scholars and activists offering overwhelming *evidence* of damage and disproportion will lead to the redress of environmental injustice.<sup>103</sup> This juridical model derives from the deeply liberal notion that justice is the

natural condition of modern political systems and that offering evidence of *injustice* will produce the requisite distributional changes. Andrea Smith calls this kind of reasoning "the liberal myth that the United States was founded on democratic principles . . . rather than a state built on the pillars of capitalism, colonialism, and white supremacy."<sup>104</sup> This liberal myth denies the reality that, as David Pellow puts it,

The production of social inequalities by race, class, gender, and nation is not an aberration or the result of market failures. Rather, it is evidence of the normal, routine functioning of capitalist economies. Modern market economies are *supposed* to produce social inequalities and environmental inequalities.<sup>105</sup>

Environmental justice activists, moreover, are presumed to be concerned merely with the presence of toxins rather than with the larger structures of power that produced these toxins and funneled them into wastelanded communities in the first place. Quite to the contrary, these activists are most often "*not simply* challenging the distribution of toxins within communities of color" but "also challenging the justice of oppressive . . . institutions *themselves*."<sup>106</sup> In the context of uranium mining, the disproportionate distribution of the uranium industry on Native land can be seen as a deadly component of the larger structures that organize Native relationships to the settler colonial state: heteronormativity, patriarchy, sexual violence, racism, land dispossession, and resource exploitation. Doing environmental justice work in this way calls into question not only the unjust distribution of environmental harm but also the capacity of the settler colonial state—"a state built on the pillars of capitalism, colonialism, and white supremacy"—to create and distribute more acceptable kinds of rights.<sup>107</sup>

The distributive model of justice operates from the kind of "theory of change" that imagines an impossible future: one *with* the environmental contamination built into the modern risk society distributed along "just" lines (to each according to their consumption).<sup>108</sup> This world is impossible because modern forms of capitalism, industrialism, and environmental contamination cannot exist without technologies of racial and colonial domination. Put simply, the treadmill of production relies on artificially cheapened resources and labor—artificially cheapened through the distribution of courses of race, class, gender, and coloniality.<sup>109</sup> Thus, the distribution of toxins is merely the *signifier* of the foundational, enabling modalities of modernity: "capitalism, colonialism, and white supremacy."<sup>110</sup> To ask for "just" distribution of industrial pollution, waste sites, mines, unsustainable and toxic labor, and so on, is not to ask for redistribution but rather to ask for modernity to throw up its hands and dismantle itself.<sup>111</sup> This kind of



rearticulation of the distributive model has been shorthanded by environmental justice activists as a move from the politics of NIMBY (Not In My Back Yard) to the politics of NOPE (Not On Planet Earth);<sup>12</sup> Winona LaDuke perhaps said it best: "we don't want a bigger piece of the pie. We want a different pie."

Approaching environmental justice at the level of settler colonialism rather than distribution changes the nature of what we mean by *justice* and *injustice*. If the injustice in question is primarily articulated as being about problems of distribution, "justice" is limited to the fictive notion that redistribution of environmental harm solves the problem of environmental racism. Quite to the contrary, a state that has structurally excluded populations of color, the queer, immigrants, and others is not compatible with meting out justice for those communities, precisely because it is constituted on and through their exclusion.<sup>13</sup> These others, as Charles Mills puts it, "mark the limits of the sovereign's full responsibilities"; in other words, they come to inhabit the sovereign's borderlands.<sup>14</sup> By extension, industrialized capitalism cannot function without designating landscapes pollutable. The exclusion of wastelanded geographies from state protection and the structural reliance on the treadmill of production combine to make the settler state a likewise unfavorable source of justice for nonhuman nature.

Environmental justice holds potential for helping us rethink and remap these questions of justice and injustice outside of the frame of rights discourse because of the transformative ways in which it theorizes *environment* as wherever humans "live, work, play, and pray" and *environmentalism* as a political practice deeply invested in class, race, and gender justice. This kind of analysis moves environmental justice studies, particularly studies of environmental injustice on Native land, to a more complex understanding of nature and justice in the past, present, and future of settler colonialism. It is precisely this more complex understanding of nature and justice that this book seeks to engage. In looking closely at the representations of the territory on which settler colonialism is grounded, we find, more often than not, wastelanding at work. Through wastelanding, the logic of settler colonialism denies that its "wastelands" could be sacred, could be claimed, could have a history, or could be thought of as home. Instead, to wasteland a space is to defend the notion that the land is, always has been, and always will be "empty except for Indians": to mark it and make it, ultimately, sacrificial land.

## CHAPTER ONE

# Empty Except for Indians

## Early Impressions of Navajo Rangeland

When four tectonic plates of liberation theory—those concerned with the oppressions of gender, race, class, and nature—finally come together, the resulting tremors could shake the conceptual structures of oppression to their foundations.

—VAL PLUMWOOD, *FEMINISM AND THE MASTERY OF NATURE*, 1993

### Obscenity and Science

In 1934, a federal biologist named Waldo Lee McAtee was sent to Diné Bikéyah to study the Navajo rangeland, with a focus on the problem of soil erosion. McAtee was a seasoned biologist, having started his career three years earlier with the Bureau of Biological Survey in the Department of Agriculture. McAtee spent three days trekking over an unspecified portion of the reservation, and then sat down to compose a report. It appears he was none too impressed with the state of Navajo country:

in three days' travel over the Reservation, I saw no quail, no meadow-larks, and only three mourning doves, ground-dwelling birds which should be common in the region. I saw no hawk, no burrowing owl, no coyote. . . . In fact, the region is largely devoid of terrestrial wild life.

"This," he concluded, "is not a normal case." Diné Bikéyah, in McAtee's estimation, compared unfavorably with Texan cattle country, where, according to his report, "not only the finest quality of cattle are produced by range feeding alone, but where the grass and other ground cover is not generally impaired."<sup>1</sup> This report helped hone an already-fulminating sense of urgency among agents of the Indian Service and the Department of the



Interior that the Navajo rangeland was desperately overgrazed by herds that ate the vegetation faster than it could grow, their hooves churning up the dry soil so that it blew in the wind and washed away with the rain.<sup>2</sup> The Navajos, from the federal point of view, were active participants in what amounted to the desertification of their land as they continued to increase their herds on their limited reservation land. The government's plan for solving the emerging "Navajo problem,"<sup>3</sup> as they called this simultaneously social and environmental issue of overgrazing, was a decade of forced sell-offs and mass slaughters of Diné sheep, goats, cows, and horses and an active program to assimilate Navajo land use. It was precisely this "Navajo problem" that McAtee was in Diné Bikéyah to observe and evaluate.

In narrating the cause of overgrazing in Navajo country as the combined result of social and environmental deficiencies of the Diné and of Diné Bikéyah, federal biologists were crafting a very particular kind of colonial story. In this story, land that had the potential to be rich in agricultural yield—even verdant, like McAtee's vision of Texan cattle country—with the proper kind of management, had instead been driven to utter ruin by a backward people who did not understand how to care for their land. This is a story, in short, of environmental decline "that blamed the indigenous peoples, especially herders" for destroying rangeland that could be "apparently highly fertile."<sup>4</sup> This declensionist environmental narrative, as Diana Davis argues in the case of French declensionist narratives in North Africa, has been used in multiple colonial contexts "to facilitate the appropriation of . . . resources, to transform subsistence production, and to effect social control" of a colonized people, which then facilitates "new laws and policies . . . to curtail and criminalize many of the traditional uses of the environment" by indigenous nations.<sup>5</sup> The notion that indigenous relationships to the land had driven it to ruin, in short, promoted colonial agendas of control, coercion, and assimilation. In the context of livestock reduction on Navajo land in the 1930s, this colonial declensionist narrative was compounded by the culture of conservationism in federal resource management, an efficiency-oriented approach to resources that was starkly juxtaposed against what was seen as an irrational Navajo land use that produced a landscape desperately in need of salvation. The Navajo problem, thus, was understood to be a problem of decline, from, as McAtee put it, "normal" rangeland to "a region devoid of terrestrial wild life" and much in need of rescue.

McAtee was brought in to consult on the Navajo problem because of his reputation as an influential member of the Biological Survey, having published papers on a wide spectrum of topics over the course of his career. Mac, as his friends and close colleagues called him, had full, almost jowly,

cheeks, heavy eyebrows, and a wide forehead, all of which added up to a very serious countenance. This serious countenance, however, hid what Mac called his "ribald" sense of humor—in evidence in 1945, when he quietly published *Nomina Abiteria*, a study of the wide range of "vulgar" animal and plant names and "dirty" toponyms given to major landmarks in the United States.<sup>6</sup> The "ribald geographic terms" documented in *Nomina Abiteria* range from "Mrs. Jackson's Hole" ("a particularly suggestive fissure in a smooth cliff face in Jackson's Hole just south of Yellowstone Park") and "Cunt Canyon" ("called Ladies' Canyon on the map") in Tahoe National Forest, to "Stiff Prick" mountain in Montana (which "suddenly became St. Patrick's Peak" whenever "a lady" asked its name) and "Colonel's Pecker Butte" in Arizona.<sup>7</sup> The list of terms also included a great many synonyms, deriving from at least four languages, for breasts. While many of these informal names are euphemized or changed on maps by what he calls "finicky auditors and observers," McAtee argued that "although [these] effete successors have done more or less to alter the record, those hardy enough to conquer the wilderness usually left upon it the impress of a rich vocabulary." The ubiquity and abidingness of these "dirty" monikers, in McAtee's estimation, reflected the "sense of humor that has helped pioneers, explorers, [and] soldiers . . . through many a struggle with the difficulties of life."<sup>8</sup>

McAtee's work in both Diné Bikéyah (the more formal of his labors) and in *Nomina Abiteria* (the "dirty" and unpublicized product of his less formal research) exemplifies much about the relationship of the United States to its western lands in the first half of the twentieth century. McAtee began his almost fifty-year career as a federal biologist in 1904 with the Biological Survey in the Department of Agriculture, which later became the Fish and Wildlife Service of the Department of Interior. During this time, McAtee's career coincided with significant developments in resource management and the conservationist federal relationship to its western territories and states. Through his work as a federal biologist, when scientific resource management was becoming the modus operandi for the federal government, and his more private fascination with the "dirty words" of Western exploration, settlement, and soldiering, McAtee's career offers a node from which to consider the complexities of what feminist geographer Ann McClintock has called the colonial "lay of the land" as it played out in the settling of the West and its resources.<sup>9</sup> His work reflected the cleavage of two approaches to land that are generally considered binary opposites: the public—scientific, rational, and institutional—and the private—ribald, hypersexual, dirty, and obscene. The informal work of pioneers, explorers, and soldiers to take hold of the landscape by means of "interesting geographical appellations" (many if not most of which referred



to women's body parts) that reflect a "relish for the vulgar" is not so far afield, we might conclude, from the highly formalized work of biologists, conservationists, and cartographers to chart the land and list its metal, mineral, vegetable, and animal contents.

By holding together these formal and informal ways of mapping landscapes, the scientific and the dirty, McAtee's unfavorable impression of Navajo (versus Texan) rangelands emerges in a different light. The Texan rangeland, McAtee suggests, reflects what the biologist perceives as a more normative ecosystem, managed by normative ecological practices, complete with the flora and fauna federal biologists are trained to observe and record. The Navajo rangeland, in contrast, comes off as ecologically aberrant and unable to support the kinds of wildlife "which should be common in the region." These discourses, ostensibly about land and resources, can be seen as being very deeply contingent on the politics of race, gender, sexuality, and reproduction. The Navajo range in this period was most often represented as barren, a deeply gendered stand-in for "wasteland" that feminized the land in a way that foreclosed traditionally valued feminine traits, particularly reproduction. In a manner of speaking, the "barren" rangeland was the inverse of the fecund image of a verdant Mother Earth; where the former is a monstrously infertile landscape, the latter represents fertility, care, and nurturance of her human and animal children. Just as the "hardy" pioneers of McAtee's *Nomina* were able to "impress" upon the conquered wilderness "a rich vocabulary" that constructed the land as a sexual object and explorers as penetrators—rendering the land, as Andrea Smith points out, "rapable"—these ways of talking and writing about Diné Bideyah as barren impressed themselves on the landscape over the period of U.S. exploration and examination of Navajo country through the intimacies and excesses of federal intervention.<sup>10</sup>

In this chapter, I explore stock reduction and soil conservation, looking to the ways in which declensionist federal discourses about the Diné and their land relied on formal and informal representations of the Diné and Diné Bideyah as troubling to hegemonic notions of normative ecological practice. The formal program of stock reduction, in short, was accompanied by a less formal representational project that constructed the Diné as nonnormative. As critical race theorist Patricia Williams artfully puts it, to explore these informal and formal discourses of race, gender, and colonial power is to seek out "her shape and his hand," to look at otherwise hard-nosed politics and policies (his hand) and find "the shape described by her absence."<sup>11</sup>

The Navajo problem is an instructive case for understanding the role of nonhuman nature in the interplay of formal and informal discourses of difference. As noted by Val Plumwood in the epigraph to this chapter, by uniting the "four tectonic plates of liberation theory—those concerned with

the oppressions of gender, race, class, and nature," scholars might more fully understand how these multiple manifestations of oppression are mutually constituted.<sup>12</sup> Representations of the nonhuman world, in short, matter, whether they are grounded in material reality (what geographer Edward Soja calls perceived space), or "entirely ideational" (conceptualized space) or some imbrication of the two.<sup>13</sup> The ways in which landscapes are imagined and represented are of course crucial to the construction of our "imagined communities."<sup>14</sup> This is perhaps never so true as in U.S. history, where the entire nation-building project of manifest destiny was built on the "frontier;" an ideational and material staging ground for the "home" of the nation and development of the racial, sexual, gender, and political-economic orders that defined what it meant to be an American and what promises manifest destiny held for a nascent colonial power.<sup>15</sup> The frontier meant settlement, agricultural cultivation, rugged masculine individualism, and racial violence; it meant an articulation of specifically white American gender, sexual, and familial orders. It also required a very particular relationship of heteropatriarchal subjects to the land: an extractive, proprietary relationship that assimilated land itself into a capitalist political economy and required that the land in question be, we might say, properly reproductive.

Native peoples have long been excluded from this proprietary relationship to the land, largely under the justification that theirs was a "natural" rather than a "civil" right to land ownership, as famously argued by Massachusetts governor John Winthrop in 1629: "As for the Natives," Winthrop decreed, "they inclose noe land, neither do they have any settled habitation, nor any tame cattle to improve the land by, and soe have no other but a natural right to those countries."<sup>16</sup> This sentiment built on an already long-standing tradition in European colonial discourse that rationalized colonial domination of land and its resources on the grounds of "proper" economic land and resource use. In his *Second Treatise on Civil Government*, John Locke outlined a modern European relationship to land that illustrated the ideological platform from which Natives were excluded from land rights in settler colonialism:

God gave the world to men in common; but it cannot be supposed he meant it to remain in common. . . . He gave it to the use of the industrious and rational, and labor was to be his title to it. . . . As much land as a man tills, plants, cultivates, and can use the product of, so much is his property. He by his labor does, as it were, inclose it from the common.

In the modern European social contract, proper (white heteropatriarchal) relationships to land were thus predicated on the exploitation of both labor and resources. This modern social contract, with its implications for



human-nature proprietary relationships, is inherently gendered: the labor that brings a man into the public sphere of political economy by virtue of his "industrious and rational" relationship to land is enabled by the private sphere labor of a feminized subject (a wife) in a heteropatriarchal household (again, her shape and his hand).<sup>17</sup> Gender and sexual roles and power relations, therefore, are built into the very foundations of the modern social contract—the same contract that denies indigenous peoples "civil rights" to property in the colonization of the Americas. This social contract and its implications for property ownership and ecological practice has direct relevance to the development of tribal rights and property in U.S. policy in the late nineteenth and early twentieth centuries. The General Allotment Act of 1887 (more colloquially known as the Dawes Act), for example, sought to assimilate tribes into these white heteropatriarchal relationships to land and resources through the process of allotting land to individual "heads of families" for agricultural development, with disastrous results for Native peoples.<sup>18</sup>

Colonization of indigenous nations has consistently entailed constructions of Native bodies, sexuality, gender norms, ecological practices, and family forms as aberrant or nonnormative and in need of "assimilation" or annihilation. In the early colonial period, constructions of Natives as having nonnormative "natural" rights to property (an implicitly gendered notion of property) were coupled with explicitly gendered ideas about the nonnormativity of Native bodies, relationships, and sexual practices.<sup>19</sup> While racism and racialization tend to take center stage in histories of colonization, Native feminists have done important work to highlight the importance of sexuality and gender, intersectional with race, in the exercise of colonial violence—from rape and other forms of sexual violence to discursive constructions of Native land as rapable, Native men as emasculated, and Native peoples in general as "wards" or children to the American national patriarch.<sup>20</sup> As Native studies and critical race scholars point out, "colonialism has always operated *through* gender."<sup>21</sup> Discursive constructions of Native women as "squaws," an epithet laden with sexual as well as racial meaning, was compounded by the cartographic repertoire of inscribing "squaw" on the landscape of the West (as evidenced by the litany of place-names that continue to use this epithet to mark the land. It is worth noting that while many of the "dirty" toponyms that McAtee lists in *Nomina Abiteria* have been replaced with more acceptable names, those that use "squaw" have often remained the same.)<sup>22</sup> All of these iterations of colonial violence gesture to the ways in which sexuality and gender, in addition to race, class, and citizenship, figure prominently in Native experiences of colonization. Likewise, they suggest the ways in which the very

"discovery" and subsequent settlement of the North American landmass, with attendant penetrations into Native lands, were framed as matters of sexual conquest.<sup>23</sup> Environmental historians and ecofeminists have concurred on this point, noting that the "lay" of "virgin" land was "an ideological weapon in the service of the white European conquest of the Americas."<sup>24</sup>

Absent the critique of colonial power relations between white settlers and the land of the West, McAtee in compiling his *Nomina Abiteria* might have agreed quite heartily with the notion that westward expansion offered the potential of a lay of feminine landmass. As the epigraph to *Nomina*, Mac provides a poem that might very well be his own composition (the poet and date of publication are identified simply as W. L. M., 1935). Titled "Cypripedia," the poem lovingly addresses the Western landscape as a thing of beauty, despite the "coarse names" given it by "plain folk"—names that did not reflect the fact that, as the poem put it, the land was "Fair as any flower to blow":

You do suggest a maiden,  
A dryad kneeling nude,  
Startled, with blushes laden,  
When by her lover woo'd.

The object of the poem, the land of the West itself, is a fantasy—albeit a lovely one—quite distinct from the landscapes of Navajo country McAtee found so disappointing. What endures is the recognition that the representational qualities inhered in lands hold quite clear material implications for people and animals who occupy them. His perception of Diné Bikéyah—"not a normal case" of Western rangelands and as distinct from "A dryad kneeling nude" as the barren wasteland is from the fecund Mother Earth—exemplified how the larger process of stock reduction, and subsequent federal treatment of Navajos and their resources, ensued.

### Scorched Earth

The stock reduction program was not the first time the federal government had decimated Navajo resources. By the time McAtee was comparing Navajo and Texas rangelands, the Diné had been busily reestablishing their herds, as well as their agricultural fields, for over six decades, fields and herds alike having been almost universally destroyed in the scorched earth campaigns of the 1860s. During that decade, the United States waged a war of domination over the Diné, attempting a military hegemony the Spanish and Mexicans had never achieved. The United States saw more success



than these colonial predecessors ever had, and it came primarily through the destruction of Diné resources. Forces led by Kit Carson waged a scorched earth campaign against peach trees and goats, horses and squash, largely starving out the Navajos who otherwise refused to leave their hogans, fields, herds, and grazing lands. The year 1864 was one of excessive violence against the Diné and their cultivated resources; all of the focus on attacking Diné food supplies that year was done for the stated purpose of coercing the Navajos to submit to U.S. authority and agree to be removed to Bosque Redondo. By 1867, nearly 8,000 Navajos—about half the total Navajo population—had undertaken the Long Walk to the Bosque. Whereas the intent of the scorched earth campaign was ostensibly to coerce the compliance of the Diné, much of the violence directed against Navajo resources seems to have been motivated by less clear-cut (we might say less formal) imperialist impulses, as evidenced, in part, by Captain John Thompson's wanton destruction of thousands of acres of Canyon de Chelly peach trees.

In contrast to their abundant resources in Diné Bikéyah, of both the hoofed and planted variety, the Diné found that the Bosque Redondo camp offered nothing but long years of frustration, sickness, and hunger. The soil proved too alkaline to support crops, the crops themselves infested with "army worms." The camp lacked adequate water sources and experienced intermittent flooding. Whereas many Navajo families owned a relative wealth of livestock in Diné Bikéyah prior to the Long Walk, the total census of domestic animals at Bosque Redondo in 1867 came out to a pitiful 550 horses, twenty mules, 940 sheep, and just over a thousand goats.<sup>25</sup> By comparison, in the previous decade, 70 percent of Diné families owned between fifty and several hundred head of sheep and goats.<sup>26</sup> The Diné and Mescalero Apache internees were forced to resort to surviving on rations, which were, in turn, insufficient in amount and notoriously plagued with insects. Hwéeldi, as the Diné called the camp, also had strongly gendered implications for the Diné; women were subject to sexual assault and gender-based violence, along with the starvation and disease rates experienced by all the internees.<sup>27</sup> Structural changes in Diné politics and economics likewise had a disproportionate impact on Navajo women. As Navajo women had historically been both property owners and respected political figures, the decimation of Navajo resources (including the livestock and crops owned by women), a government policy to radically reorganize Diné life into sedentary "pueblos," and an American insistence on recognizing the political leadership only of men, all went hand in hand to undermine the strong position of Navajo women in the tribe.

Whereas the stated reason for removing the Diné to Fort Sumner was their reputation for raiding nearby Nuevomexicano communities, the less

formal underlying reasons, like Carson's scorched earth campaign, revolved around resources. Commenting on the astronomical cost of keeping the Diné incarcerated at Hwéeldi, General Carleton rationalized, "when it is considered what a magnificent pastoral and mineral country they have surrendered to us—a country whose value can hardly be estimated—the mere pittance, in comparison, which must at once be given to support them, sinks into insignificance, as a price for their natural heritage." The Diné homeland, their "natural heritage," was assumed to be rich in minable resources, and politicians from the New Mexico and Arizona territories expected to profit significantly from mining once the Diné were removed.<sup>28</sup> During the period of their incarceration at Hwéeldi, however, the search for minable resources in Diné Bikéyah, with a heavy emphasis on gold, revealed no major prospects.

By early 1868, it was clear that Hwéeldi could not continue to house the Diné and Mescalero Apache who were surviving the camp's hellish conditions. Diné leaders had tirelessly negotiated with their captors to protest their incarceration, and local authorities were under pressure from their constituents because of the cost of keeping the camp open. General Sherman, who arrived at Hwéeldi in 1868 to negotiate the treaty that would close the camp, oversaw a roiling debate over the Navajos' fate.<sup>29</sup> Many still saw promise in the vast lands of Diné Bikéyah for prospecting mines, and thus advocated for marching the Navajos even farther east to Indian Territory, the area of present-day Oklahoma that already hosted the Five Civilized Tribes and several Plains Tribes that had likewise been removed from their homelands.<sup>30</sup> The Diné might well have had a very different story if they had not so persuasively negotiated against this option. It also helped that General Sherman "had convinced himself," on the basis of what others said, that the Navajo homeland was "utterly unfit for white civilization," despite the fact that just a handful of months earlier he had "doubt[ed] whether we can make them a location in their old boundaries . . . which will not, sooner or later, be interfered with by people from Colorado and New Mexico in search of treasure."<sup>31</sup> This waffling opinion of the worth of the arid Southwest was part of Sherman's general attitude toward the territories of New Mexico and Arizona: he was once reported to have quipped, "We had one war with Mexico to take Arizona, and we should have another to make her take it back."<sup>32</sup>

While Navajo land, as evidenced by hundreds of years of successful agriculture and herding, was certainly not the "waterless, worthless waste" Sherman reportedly imagined it to be, its potential productivity for supporting the returning Diné was critically impaired by the contingencies of how the boundaries of the new reservation were drawn—as well as by



the scorched earth destruction of long-cultivated orchards, fields, and herds. The new reservation covered a "woefully inadequate" four million acres, grouping the pastoral Diné in one confined area too small to support their population, their herds, and their agricultural needs.<sup>33</sup> The size of the reservation was inadequate despite the impassioned advocacy of Diné leader Barboncito, who impressed upon Sherman that, once returned to their homeland, the Diné should be allowed to spread out across Diné Bikéyah: "it would not do," Barboncito argued, "to put [the Diné] all together as they are here [at Hwéeldi], if separated they would be more industrious." "I do not think it right," he added, "to confine us to a certain part, we want to have the privilege of going outside the [boundary] line to hunt and trade."<sup>34</sup>

The selection of the 1868 reservation was by no means arbitrary. On the contrary, it was chosen for two primary reasons: first, it reserved some of the most coveted, and productive, rangeland in the eastern reaches of Diné Bikéyah for white and Nuevomexicano herders; and second, it would ostensibly keep the Diné safely north of the tracks of the railroad. Railroad land grants had already been made, parceling major portions of the Navajos' southern lands and creating a distinctive checkerboard pattern of land ownership. Thus, "there is little doubt that General Sherman, outspoken advocate of transcontinental railroads, knew precisely on 'his beloved maps' that the reservation lines were drawn to make room to the east and south for the railroad and its accompanying allotments of land. In his negotiations with Diné leaders, Sherman, whether purposely or not, exaggerated the amount of land the federal government was setting aside for the tribe. He told the Navajos that their reservation, "including the Canyon de Chelly, and part of the valley of the San Juan," was "about one hundred miles square," running "as far south as Canyon Bonito, and includes the Chusca Mountain."<sup>35</sup> Among other misleading elements of this description, the new reservation was a little more than half the "one hundred miles square" Sherman presented to the Diné. The land that was excluded from the reservation to make way for the railroad stretched from Tsoodzil, the sacred mountain of the south, to present-day Gallup, New Mexico, and was "the best of the Navajos' traditional winter range."<sup>36</sup> Excluding it from the treaty area for the benefit of the railroad and non-Native ranchers would have profound implications for the Diné who would come to settle in these eastern reaches of the traditional Diné homeland (and, as I explore in chapters 5 and 6, upon the discovery of major uranium deposits in this area, the checkerboard parcels of federal-, private-, and Navajo-owned land would greatly impact subsequent uranium booms and their effects on local Diné).

Getting down to the labor of rebuilding the resource wealth of their families and land, the Diné paid little attention to what the federal government and the Territory of New Mexico considered their new reservation boundaries, either because they simply honored their own notions of territoriality over their would-be colonizers' or because Sherman told the signers of the 1868 treaty "that their people would be allowed to use any off-reservation areas not occupied by white settlers."<sup>37</sup> Of these, many returned to the good wintering lands to the east of the reservation and west of Tsoodzil in the checkerboard area of New Mexico. From those reservation and off-reservation places, the Diné set about to reinhabit Diné Bikéyah, with herds and people alike; as Akinabh Burbank, a Navajo of the Red Streak Running Into the Water clan, remembered this time, the Navajos "scattered in different directions toward their old homes" and attempted to recover from the Long Walk.<sup>38</sup> The regrowth of their livestock herds was undertaken with the blessing and support of the 1868 treaty, which set aside money to purchase 14,000 sheep and 1,000 goats to distribute among the returning Diné.<sup>39</sup> Estimates of Navajo livestock between 1868 and 1890 show a remarkable increase in herd sizes. Though this growth was curtailed in the 1890s by a severe drought, in general this was remembered as a time when "peace and beauty came back to being" for the Diné, who "were enjoying the privilege of raising all the livestock they wanted."<sup>40</sup>

By the 1880s, more than half of all Diné were living outside of the reservation boundaries. In recognition of this, and in response to repeated calls for an expansion of the reservation by Navajos themselves, the federal government authorized a series of expansions, most enacted by executive order, which more accurately reflected Navajo land use than did the original treaty reservation (yet still failed to include any of the four sacred mountains). Expansions to the reservation happened relatively easily when New Mexico and Arizona were still territories of the United States, but came to a rather abrupt halt in the first decades of the twentieth century when, not coincidentally to the granting of New Mexico and Arizona statehood, pressure from non-Navajo stockmen began to increase dramatically in the reservation's eastern borderlands, pressure that only magnified when new drilling technologies allowed these stockmen to reach deep artesian wells in the lands just east of the reservation, making these lands "much more valuable to Anglo corporate herders and to potential homesteaders."<sup>41</sup> In fact, the early twentieth century saw a generally "increasing pressure," often violent, on the Diné and their herds in New Mexico.<sup>42</sup> By 1918, enlargements of the reservation had come to a halt.<sup>43</sup>



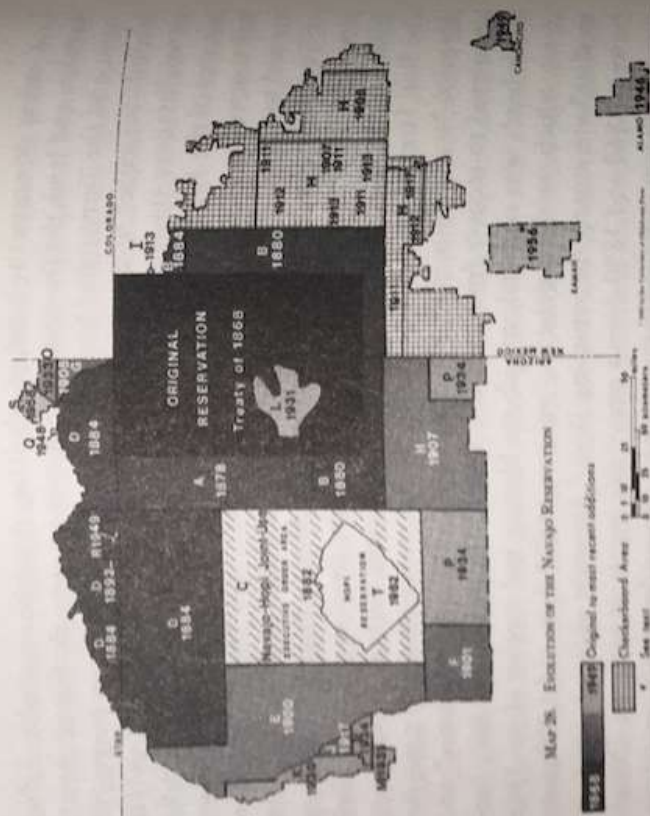


FIGURE 5. Successive additions were made to the reservation after the original reservation was created by treaty in 1868. Newer additions are lighter in color, while the area where landholdings were mixed among Navajo, private, state, and federal ownership is marked with a checkerboard. James Goodman, *The Navajo Atlas: Environments, Resources, People, and History of the Diné Bizeyah* (Norman: University of Oklahoma Press, 1982), 56.

The tendency of Navajos to live beyond their reservation borders created the persistent impression among federal agents that Navajos were constantly spilling over their designated land base, unable or unwilling to contain their own population in accordance with reservation boundaries. The federal reliance on maps and government-imposed boundaries rather than the Navajos' actual homeland visually indicated to federal observers that Navajo land use was too demanding. Maps as in Figure 5 created an impression that the government had to accommodate Navajos' inability to remain within their designated reservation, as opposed to the alternative view that the Navajos had to attempt to accommodate the government's irrational demands that they occupy only a fraction of their homeland. These perceptions of Navajo land-use patterns came to contextualize federal perceptions of the "Navajo problem" in the 1930s and into the early 1940s.

### Sheep, Maps, and Power

In November 1941, E. R. Fryer, the general superintendent of the Navajo Service, submitted a report to John Collier, the commissioner of Indian affairs, that succinctly sums up the federal position on the "Navajo problem." The problem, Fryer wrote, "is notoriously one of severe land deterioration and economic deprivation," producing a clear "maladjustment" between Navajos and their land. The "underlying causes" of this "maladjustment," moreover, derived directly from "overpopulation of the Navajo country," which led to the "correlative evils of excess numbers and poor distribution of livestock, severe overgrazing, unregulated forest and woodland use, inadequate farming system, . . . and deterioration of social interrelationships, Indian leadership, economics, and health."<sup>44</sup> The Navajo problem, this nexus of "correlative evils" on the reservation having to do with not only social but also ecological and economic challenges, became the central concern of federal policy toward Navajos during the 1930s and the early 1940s. Many observers went so far as to predict dire consequences, including the extinction of the Navajo people, if the so-called Navajo problem was not addressed by aggressively reducing Diné livestock, curtailing human population growth, and educating the Diné about federal ideas of "good" resource conservationism. These tactics were undertaken in lieu of accommodation of the Navajos' need for a larger land base to support their growing population and livestock herds.

The first strike against soil erosion, and for years the only weapon wielded by the federal government against it, was to reduce livestock herds, which, as the primary economic resource of many Diné families, were economically as well as culturally indispensable—livestock are built into the very origin stories of the Diné, and thus central to their history and worldview.<sup>45</sup> The single-pronged strategy adopted by the federal government to solve the Navajo problem was to reduce Navajo livestock from about 1,270,000 sheep or "sheep equivalents" to the federally determined "carrying capacity" of the land, which constituted a reduction of a devastating 56 percent of Navajos' total livestock. This reduction often involved egregious waste, and notoriously violent tactics.<sup>46</sup> During one particularly overzealous goat removal, "the government shipped the animals away, had them butchered and processed, then sent back to the Navajos as canned goat"—an excessive waste, given that the Diné "used practically everything but the goat's bleat."<sup>47</sup>

Throughout the period of stock reduction, Commissioner Collier, Superintendent Fryer, and other Indian Service personnel seemed unable or unwilling to understand differences in Diné and white conceptions of stock ownership. With each enhancement of the reduction policy, the service



treated a flock as property, ignoring the extraeconomic roles of sheep, goats, cows, and horses in Navajo life. Moreover, women rather than male heads of household owned large portions of the stock herds; as Marsha Weisger points out, Navajo women "controlled the means of their own production: livestock and land."<sup>48</sup> Because Navajo women owned many of the sheep and almost all of the goats, reduction severely curtailed Diné women's economic power and independence.<sup>49</sup> What was formally a stock reduction policy, in short, informally served to undercut Navajo gender egalitarianism. The government treated a flock as the property of the head of household (almost always male), rather than as collectively owned among a number of family members, including and especially women, extended family members, and children. Federal agents in charge of overseeing stock reduction, moreover, did not appear to recognize these gendered patterns in stock ownership, nor did they seem to appreciate that Navajos might derive more value from their stock than mere economic gain.

These kinds of elisions, and Diné attempts to rectify them in order to mitigate the violence of federal policies, emerged at the very outset of conversations about stock reduction. In a 1928 Tribal Council meeting in Leupp, Arizona, several years before large scale reduction was underway in Diné Bikéyah, the assistant commissioner on Indian affairs E. B. Meritt and the superintendent of the Santa Fe Indian School Chester Faris presented the Tribal Council with an early version of the stock reduction program.<sup>50</sup> This plan, they explained to the council, would require excess grazing fees for stock owners who had herds in excess of 1,000 head of sheep, goats, cows, and horses.<sup>51</sup> In the meeting, Meritt framed this proposal not only as a promotion of fairness and "justice" but also of economic and infrastructural development.<sup>52</sup> He argued that these efforts would "increase the quality of all [Navajo] sheep," a nod to the widespread opinion among non-Navajos that the Navajo breed of sheep, the churra, was "scrubby" and "degenerate" in contrast to the more marketable "fine blooded" American breed (the Rambouillet).<sup>53</sup> (In the 1930s, this concern about the churra would lead to a federal sheep-breeding program at the Fort Wingate Sheep Laboratory.<sup>54</sup>) The subsequent discussion about Meritt's proposal at the 1928 meeting illustrates the depth of white misunderstandings (deliberate or not) of Diné sheep ownership, gender egalitarianism, and family forms. These misunderstandings shaped the policy of the federal government for decades and exacerbated the unjustness of already unjust stock reduction policies. While Meritt continued to insist that each individual stock owner would be allowed 1,000 head of sheep, the Council members tried in vain to explain to him the more nuanced problem of multiple Navajo owners of one herd, including owners who were women and children. One exchange

in particular reveals the depth of this misunderstanding and how multiple attempts to explain Navajo family forms and ownership patterns fell on the deaf ears of the federal agent:

LITTLE SILVERSMITH, SOUTHERN NAVAJO AGENCY: I would like to run a little history about myself. I have two thousand head of sheep, and I have seven children. My wife and I, there are two of us, and then there are my children, nine of us all together; and then besides that I have three grandchildren, makes us twelve in the family. My daughter, the oldest one, is twenty-eight years old.

MR. MERITT: She would be entitled to one thousand sheep in her own name.

LITTLE SILVERSMITH: If these children and my grandchildren were allotted these sheep, they would get less than two hundred each. On this ground I figured that these other sheep men are in the same fix as I am. When you divide the sheep among your family there is not one thousand for each of them.

MR. KNEALE, SUPT. NORTHERN NAVAJO RESERVATION: Those sheep have marks of the whole family.

LITTLE SILVERSMITH, SOUTHERN NAVAJO AGENCY: Each child has his or her own earmark. I think I have about three hundred, maybe a little less than three hundred.

MR. MERITT: Then in that case you would not have to pay excess grazing fee.

LITTLE SILVERSMITH: I am speaking for my tribe. I think they are in the same fix as I am. You see a bunch of sheep, they don't belong to this one man. Now with the number of sheep I have, I have to eat and feed my children.

MR. MERITT: You would not be required to pay an excess grazing fee. . . . Each family, the husband and the wife and the minor children will be entitled to one thousand sheep without paying an excess grazing fee. If you have children who are grown, who are 21 years of age, and that child is living with you, that child would also be entitled to one thousand head of sheep. . . . Now that same rule would apply to every child above the age of twenty-one years, so you see that this proposed rule would apply to only the big sheep owners.<sup>55</sup>

In this exchange, Little Silversmith tries repeatedly and unsuccessfully to communicate to Meritt the issues that stock reduction would raise, emphasizing the fact that from a Navajo perspective a reduction policy in this proposed form was essentially meaningless, as no individual (male) "head of household" owned the entire herd—they simply "don't belong to this one man." This confusion over definitions of family and heads of household



was still going on more than ten years later. At a 1939 meeting between Tribal Council members and Superintendent Fryer, council member Roy Kinsel asked what Fryer meant by "family," commenting, "There are families that have sons-in-law and so on and we know they form a big family. Now you tell us that they can only retain ten head of horses per family." Fryer replied:

Usually we name the head of the family. If they live together and share things and operate as a family it is considered a family. They may have a son-in-law who does not own any sheep but has two or three horses. He is a part of that family group if he lives with his father-in-law and shares income. [If the son-in-law is married and living apart] that constitutes a separate family unit.

Here Fryer echoes the earlier exchange between Little Silversmith and Merritt by emphasizing that what Diné considered standard family forms—large multigenerational groups with women being important property owners—were considered exceptional by U.S. policy. Fryer seems unaware, alarmingly so given his position as the superintendent of the Navajo Service, that the Diné are historically matrilineal people and that sons-in-law often lived with their wife's family after marriage.

As Weisiger points out, "the fact that women really mattered in Diné society . . . never fully penetrated the consciousness" of the Indian Service.<sup>56</sup> This evidence is compounded by the fact that Merritt in 1928, and Fryer in 1939, were asking that the proposal be approved by all-male Tribal Councils; women were simply not consulted by the federal agents nor were they regarded as important political or economic actors. The details of Council meetings reveal the extent to which the federal government refused to recognize the implications of its stock reduction policy and, in particular, the relationship of Navajos to their stock herds and gendered egalitarian patterns of stock ownership. In the 1930s, stock reduction became a matter of great personal, political, and economic crisis for the Navajos, who tried to resist the mass slaughter of their sheep, goats, horses, and cows and looked on in horror as their stock were rounded up, sold off, shot, and sometimes burned.<sup>57</sup> Throughout, these foundational misunderstandings on the part of the Indian Service—this violent mistranslation of stock ownership and Navajo relationships to stock—remained engraved in federal policy.

In particular, federal discourses reduced the despair of Navajo women, witnessing the violent destruction of their herds, to "her" domestic concerns; in 1943, Office of Indian Affairs field representative F. W. LaRouche explained to Commissioner Collier, "under present conditions she fears the

loss of sheep because she does not know that other food can be acquired. She thinks that by taking the sheep, we are taking the food out of the mouths of her children."<sup>58</sup> LaRouche couched these words in an argument for replacing the Navajos' livestock economy, reduced to a ghost of its former self by the 1940s, with wage work. Drawing direct comparisons to the ideals of white heteronormative gender relations in wage-based economies, in a sense seeing Navajo women through "a mirror that reflected [his] own notions of separate spheres" and gender norms,<sup>59</sup> LaRouche wrote that if Navajo men were to have wage work, "The wife could always buy food for herself and her family; she could always be sure some money would be available for future needs."<sup>60</sup> In further explanation of the angst of women during and after stock reduction, LaRouche blamed the presumed economic impotency of Navajo men, rather than acknowledging a Navajo gender egalitarian system of stock ownership, writing that Diné women "would rather keep their sheep because they do not believe they can depend on the earnings of their men, and experience seems to justify skepticism."<sup>61</sup>

If these elisions of Navajo gender roles, particularly regarding stock ownership and property, played a significant role in stock reduction policy, the larger project of solving the Navajo problem would likewise involve violent elisions of domesticity, family forms, and reproduction. Thus, in the eyes of federal conservationists, it was not just livestock but Navajo people as well who were overpopulating Navajo land. In the 1930s, long-held federal impressions of Navajo overpopulation of their "inadequate" land base were folded into the discourses of the Navajo problem. An increase in the size of the reservation to accommodate Navajos and their herds seemed a political impossibility, due in no small part to a noisy campaign by the non-Native stockmen who ran their herds in the area east of the reservation proper.<sup>62</sup>

Thus, discourse around the Navajo problem privileged the "problem" of population, framing the Navajo as irrationally hyperreproductive given the "barrenness" of the land base. In a report for the Phelps-Stokes Fund published in 1939, the Navajos' growth in population from 1868 to 1938 is described as "a phenomenal increase in seventy years despite the poverty of their arid land."<sup>63</sup> John Collier himself described the Navajo problem as resulting from an "increase of population to a point at which extraordinary effort is necessary to sustain living" combined with a "lack of knowledge on the part of many of the Navajos as to the seriousness of their situation."<sup>64</sup> In short, federal discourse about the Navajo problem concluded that "Most of today's difficulties" with the Diné "result from the fact that Navajos are outgrowing their empire. Population is increasing



faster than economic development of the resources of the tribe.<sup>65</sup> Concern over the population growth of the Diné prefigured larger tendencies in U.S. conservationist and environmentalist discourse to link the growth of populations of color to environmental decline.<sup>66</sup> This focus on the problem of population growth in the twentieth century is painfully ironic, given that population *decimation* in the previous four centuries wreaked havoc on Native nations throughout the Americas, Diné included.

In their widely cited 1947 monograph *The Navaho*, anthropologist Clyde Kluckhohn and Indian Service physician Dorothea Leighton concurred with this impression that the Navajo land, "vast, but arid and unfriendly," was overcrowded, given its paucity of "high-quality" soil. They wrote, in a section titled "THE LAND IS CROWDED":

Navahos have long since swarmed beyond the boundaries of the original Reservation, which has been increased in area repeatedly. . . . The old southwestern saw, "Let's give the country back to the Indians," is no longer a pleasantry to many stockmen of the Navaho country. The People [the Diné] are taking the country back. Yet even this vast domain is not enough for The People.<sup>67</sup>

The use of rhetoric laden with racial meaning, such as the imagery of Diné "swarming" the boundaries of the reservation, serve to animalize Navajos in general and their reproduction in particular. Kluckhohn and Leighton go on to hazard a hypothesis about why Navajo birth rates might be higher than the U.S. average: "Perhaps," they ventured, the Navajos' "varied origins, so heterogeneous from both biological and cultural sources, have resulted in an outstanding manifestation of that phenomenon known to biologists as 'hybrid vigor.'"<sup>68</sup> In this way, the racialization of the Navajo constructed their racial difference as deriving from both biology and culture, and drew on the popular belief among white anthropologists that the Diné are "cultural borrowers and late arrivals in the Southwest," descended from multiple other indigenous nations rather than a people unto themselves—a belief that is roundly contradicted by Diné history and epistemology.<sup>69</sup> In keeping with this racialization of the Diné as "hybrids," the race difference of Navajos, in Kluckhohn and Leighton's estimation, had reproductive implications: according to the fuzzy racial pseudoscience of the early twentieth century, "hybrid vigor" was one hypothetical outcome of racial miscegenation.

While the general impression was that Navajo population growth had overtaxed the arid land, the specifics of Navajo domestic life were presented in federal discourse as being likewise unfavorable. As part of SCS and Indian Service attempts to map out the contours of the Navajo problem,

sociologists and social workers were deployed to the reservation to collect data on Navajo social life, including family life and domestic practices,<sup>70</sup> Social worker Ruby Tomlinson painted a gloomy portrait of Diné families and homes: "No homes were found to be sanitary and about 28 per cent were rated as fair in appearance for Navajo hogans." The Navajos, she lamented, "still cling to the typical windowless, one room hogan constructed of poles and mud."<sup>71</sup> Tomlinson went on to link these domestic conditions to larger social problems of "illicit" sexuality and disease, noting, "Court records show that arrests over a period of two years were predominantly for social disorders" including "giving venereal disease" and "adultery and illicit cohabitation." "There probably would have been more arrests," she noted, "if there had been more adequate law and order personnel." Again linking social and ecological conditions as the underpinnings of the Navajo problem, she bleakly concluded:

The study indicates widespread poverty and a high rate of illiteracy among the Navajos. The rangeland is over-grazed and rapidly eroding. Farmland is insufficient and there is a lack of water for much of the land that is farmed. At least 50 per cent of the families are burdened with extra dependents. Many of these families are large and poor. Homes are inadequate and unsanitary. The medicine man is still popular, diseases are widespread, and the death rate of children is high. Social problems are numerous and are on the increase.<sup>72</sup>

These kinds of damning domestic discourses were part of a larger national context of social and racial management through the private sphere, including far-reaching policies that sought to control domesticity and reproduction. To borrow Laura Briggs's assessment of this primacy of the domestic sphere, the "'inferiority'" of communities of color "is produced through knowledge about the bodies and behavior of . . . women."<sup>73</sup>

These policies of control through the domestic sphere, moreover, were qualitatively and thematically linked to the then-dominant brand of Progressive-era conservationism. As noted by Louis Warren, the twentieth century marked a time when "a consensus emerged, especially among the middle and upper classes, that both nature and society needed to be better managed."<sup>74</sup> Conservationism, with its emphasis on "good management" of resources, became institutionalized within the federal government as its primary framework for developing natural resources. The conservation movement was sparked in the first decade of the twentieth century by the work of Gifford Pinchot, the first chief forester of the U.S. Forest Service; conservationism grew in strength and capacity through the 1930s under the New Deal programs of President Franklin Delano Roosevelt.



Conservationism is often juxtaposed against the environmental preservationism promoted by Pinchot's contemporary, John Muir, who advocated the preservation of wilderness in what he presumed was its pure form: untouched by "man," including Natives, who, Muir argued, had "no right place in the wilderness."<sup>75</sup> "Wilderness," according to this view, is an imaginary state of nature "untouched by human culture," a discursive framework that forecloses the possibility of indigenous claims to territory and privileges the wilderness experiences of the "mythical 'first white men'" who encountered the virgin terrain of the wild New World.<sup>76</sup> This discourse materialized in policy when, as environmental historian William Cronon notes, Natives were removed by force from legally protected "wilderness" areas, such as Glacier National Park, as a direct result of preservationist-style environmentalism.<sup>77</sup> Pinchot's conservationism, in contrast, advocated vociferously for "the use of the earth for the good of man."<sup>78</sup> This "use of the earth" was manifested in subsequent conservationist policy through the application of new sciences, such as forestry and agronomy, for turning wilderness into something more resembling harvestable (albeit ideally sustainable) cropland. Conservationism was therefore seen as the culmination of scientific knowledge about ecology and land use, with important connections to the management of human populations. Moreover, with its emphasis on "seeing" landscapes and people "like a state," conservation became an important arbiter of good ecological citizenship.<sup>79</sup>

In this heady context of the rational management of resources through conservationism and populations through the domestic sphere, the Navajo reservation was marked as an ideal first test site for the practice of soil conservation, which in turn became a major part of federal land policy throughout the twentieth century. John Collier recounts in his memoir that the "near-impending doom" of the Navajo problem "launched . . . the soil conservation movement of the United States," which was "a movement to extend to every continent in the dawning realization that all mankind is facing the same crisis, growing from wastage of soil resource, that faced the Navajo tribe."<sup>80</sup> As a 1936 report from the U.S. Department of Agriculture explained, Navajo country was selected as "one of the original" Soil Conservation Service (SCS) sites "based on the fact that this area was outstanding in its need for proper land management" and "the Navajo tribe with a rapidly increasing population was dependent for its livelihood on the productivity" of land that was already "in an advanced stage of depletion."<sup>81</sup> What made the Navajo reservation even more attractive for these experiments in soil control was the nature of the colonial relationship between the Diné and the federal government; that is, in the view of the government, "the entire area was Federally controlled, which permitted the

establishment of a project through a working agreement between the Bureau of Indian Affairs and the Soil Conservation Service."<sup>82</sup> Historian Peter Iverson notes, "In the days of the Dust Bowl, federal employees looked to the checking of erosion in the Navajo area as a symbolic victory needed to impress the fruits of soil conservation upon the entire country."<sup>83</sup>

### Making Maps

In a 1935 annual report of its work in Navajo country, the SCS outlined what had already been accomplished on the reservation through the Navajo Erosion Control Project, and what had yet to be done. Those projects crossed off the list included the drawing of maps from aerial photographs, engineering maps, soil maps ("drafted in detail from field surveys"), range survey maps, an aerial survey of "Navajo Country," and the selection of twelve demonstration areas—all of which "have been mapped with sufficient accuracy to permit range, soil, and engineering surveys."<sup>84</sup> The SCS had also "leveled, fertilized, constructed, equipped, and planted" a five-acre nursery at the Mexican Springs demonstration area. As this list of industrious activity on the reservation indicated, the SCS was deeply invested in mapping the reservation as a matter of course in its work to conserve Navajo rangeland. However, the Service did not stop there. Its list of needed "fact finding" went on to argue that the SCS would need to "learn the manners, traditions, and customs of the Navajo and the environmental factors affecting them, with special reference to their economic needs." Emphasis was placed on "their adaptability to improved methods of livestock management and new occupations."<sup>85</sup> What was being undertaken, in short, was a large-scale study of Navajo environmental life and history—ironically, by the same Service that in fact created "the environmental factors affecting" the Navajo at that time, as the SCS had become the face of the near-universally despised livestock reduction program devastating Navajo herds. In other words, as the SCS focused on mapping lands and resources, it was nearly equally intent on mapping Navajos themselves, seeking out "intensive studies" on everything from range use, to agriculture, to Diné uses of trading posts, to the "domestic economy of household groups," to education, and so on.<sup>86</sup>

The report noted that extensive surveys of the reservation as a whole were needed in seven different categories: range, erosion, soils, forests, agriculture, fauna, and vegetation. During the stock reduction period, a veritable flood of federal experts, ranging from ecologists, conservationists, agronomists, and cartographers, to social workers, anthropologists, and economists, descended on the reservation. Eighteen Soil Conservation Districts were



parceled out of the larger reservation to study the effects of scientific range development practices, deployed in the interest of "understand[ing] thoroughly the conservation problem on range and pasture lands" and producing "a complete natural resource inventory" of the reservation.<sup>87</sup> Under the close scrutiny of federal experts in the land sciences, the very soil of Diné Bikéyah seemed improperly unruly and problematically unproductive—just as it did to Waldo McAtee in his visit to the reservation. Like McAtee, the SCS seemed to universally regard Diné Bikéyah as simply "not a normal case."

The process of mapping, charting, and inventorying was not limited to the land. Included in the SCS's mission was a goal to "learn the manners, traditions, and customs of the Navajo and the environmental factors affecting them, with special reference to their economic needs, and their adaptability to improved methods of livestock management."<sup>88</sup> By the end of 1935, it was clear that the SCS was operating under a quite ambitious mandate: assimilating the Navajos into a more "civilized" relationship with their land and its resources. Like the land, the Navajos themselves posed problems for the rational management of the reservation's soil. A 1935 report, for example, lamented the fact that white men were not brought in to do SCS work, which "would have immediately simplified the work on the Reservation"; however, the Service consoled itself that employing Navajos for its projects at least would begin the long process of the Navajos "adjusting themselves to standards of accuracy and precision which have no relation to the Navajo background."<sup>89</sup> Indeed, the SCS saw itself as facilitating a kind of benevolent assimilation into good conservatism—in other words, an assimilation into what the SCS considered good ecological citizenship.<sup>90</sup> Their project, as they saw it,

should be the building in as many Navajos as possible, men, women, and children, and certainly in every man on the payroll, be he Navajo or white, a sympathetic understanding of the approach to the land use problem. . . . It is a question of building in these people a new point of view. To what degree it can be built in a large number of people is a question. A question that the SCS must attempt to answer.<sup>91</sup>

To build this new relationship with the land, this new "point of view," and an understanding of the gravity of soil erosion, would be the Soil Conservation Service's larger, quite ambitious goal.

This goal was met, in part, through the edifying practices of conservationist education, and although lip service is paid in the above quotation to the need to educate whites as well as Diné, it is quite clear that the "Navajo problem" remained a Navajo problem. A school for Diné employees

of the SCS was opened up at Fort Wingate in 1934 to provide training in "topographical mapping, handling and laying out of construction work, and in developing in selected students an understanding of the Navajo land problem in general."<sup>92</sup> In its educational efforts, however, the SCS did not ignore the many Diné who were not in their employ. The Service dabbled in a number of educational programs for the larger Navajo public, including one that enrolled twelfth graders in a unit called "How to Restore and Keep the Land in Condition to Support the Navajo People," in which the students were required to do fieldwork and make speeches about soil erosion and good conservation practices. The SCS took its message to day schools and other reservation centers with an interactive exhibit mounted on "a small truck . . . equipped with an outfit for showing 16mm moving pictures," which "by its very nature and completeness [could] reach all types of people with its graphic portrayal of erosion unchecked and under control."<sup>93</sup> This truck was even equipped for sound projection, to achieve maximum effectiveness with its audience. In this way, the SCS undertook to assimilate the Navajo public into the federal "point of view"—a point of view that stipulated, first and foremost, that the Navajos had seriously mismanaged their livestock, irrigation, and agriculture.

The SCS was not alone in identifying stock reduction as an assimilative project, and stock reduction, subsequently, became a recurring theme in Indian Service policy regarding the Navajos. In 1940, for example, the Educational Division of Indian Affairs released a series of children's books written and illustrated by Diné artists. The *Little Herder* series, as it was titled, was designed to encourage bilingual literacy among Diné children. Simultaneously, however, the series sought to provide to young Navajos "a foundation for understanding modern concepts of special concern to Collier, such as the need for livestock reduction."<sup>94</sup> Indeed, the fourth book in the series, *Little Herder in Spring*, directly addressed the debate around stock reduction, in the voice of a young Navajo boy. "For a long time," he says, "there have been meetings of many men for many days"; "In the morning when my father leaves for meeting he says to us, 'When I come here again then I will know if it is best to have many sheep or few sheep' and whether 'to use the land or let it sleep.'"<sup>95</sup> Here, stock reduction was framed as an issue of debate among *Navajos*, rather than an imposed federal policy. Moreover, white gender norms were folded into the narrative itself: while the father attends meetings of "many men," the hogan is referred to as "my mother's hogan," and illustrations make it clear that the domestic environment is a space of feminized motherhood. The book, therefore, in addition to encouraging a more friendly view toward stock reduction, subtly incorporates white gender roles.



In subsequent decades, social norms and soil continued to be conflated in conservation policy on Native land. In a 1950 memo to "All Soil and Moisture Conservation Employees," Evan L. Flory, then chief of the Bureau of Indian Affairs (BIA) Branch of Soil Conservation, wrote a call to action under the subject "WANTED: Zeal and fire that will not falter or tire":

I cannot refrain from passing on to you the lift I got on my last field trip from an Indian farmer on a brushy, rocky, steep, small mountain farm. . . . His family had been raised and had left for homes of their own. During all this period he had struggled with the slopes, the rock, and the brush in producing meager crops for a precarious living. His pastures were weedy, brushy, and of low carrying capacity . . . and then, within the past two years, something happened. He was sparked by the zeal and enthusiasm of an understanding soil conservationist who has his hands in the earth. This Indian's eyes had a light in them that had never been there even as a youth because he was making a tired old farm live. He and the farm were being vitalized together.<sup>96</sup>

Here, Flory describes a pastoral utopia, brought about by the "zeal and fire" of committed federal soil conservationists. Notably, the politics of family life, and particularly the participation of women and children in a functional agricultural system, are absent. "Understanding soil conservationists" are the "something," the necessary catalyst, that brings the "struggling" Native out of the reproductive incapacity of his soil and his ineffective ecological practices into his new (individualist and ruggedly masculine) rural idyll. Thus, the modern promise of soil conservationism and agricultural science is one not merely of developing the land but of developing individual men the ideology and practice of rationalizing their own landscapes. To exist in the conservation-oriented present, the Native would necessarily become "an understanding soil conservationist who has his hands in the earth."

Flory goes on to describe further the benefits of this process for both Natives and whites:

The Indian lives closer to nature, understands more of her moods, and tries to accommodate his life and actions to her moods to a much greater extent than most other people. . . . Few realize that what he seeks in these chants and dances is to become a part of nature, rather than view it as something apart like most of the whites do. . . . Do we know the fundamental, scientific facts of plant and animal nutrition, plant physiology, and plant ecology? Are we close enough to the land ourselves, and are we endowed with the intelligence, human understanding, zeal, and fire to make our knowledge an effective tool in the

hands of the tiller of the soil, to use his hands in harmony with nature?<sup>97</sup>

Here, the confluence of two kinds of cultivation, of "Indians" as Native agriculturalists and of whites who are more "in harmony with nature," exemplify the ideological underpinnings of Collier-era Indian and conservation policies. Collier himself, an avowed liberal, felt he stood in opposition to prior federal Indian policies of forced assimilation into white language and culture, but the policies during his tenure merely translated into new forms of the old assimilationist ideology. Given this, Flory concludes the memo with a reminder about the particular mission of soil conservationists:

Remember, we are not succeeding in conservation until a folk knowledge, a behavior, or cultural pattern of conservation, is firmly fixed. When the Indians in your area practice conservation from habit, then they have attained full stature as farmers and citizens.<sup>98</sup>

Flory and the "liberal" assimilationist vein of conservation and Indian Service work, under the leadership of John Collier, differed strikingly from more conservative views of Indian policy. In a 1946 "Navajo Report," summarizing the past decade and a half of stock reduction and soil conservation efforts on the part of the federal government, Randolph C. Downes and Elizabeth Clark stake out the anti-Collier position of federal policymakers. They write:

In the winter of 1931-32 an event took place on the Navajo Reservation which may be called Nature's effort to solve the Navajo problem. . . . There had been a very dry summer and the Navajo stock were in pretty bad shape. Then came a long, hard winter and hundreds of thousands of Navajo stock—as well as Navajo Indians—were faced with starvation. Perhaps this was Nature's way of helping to "solve" the Navajo problem. If the "natural" course of events had been allowed to proceed several hundred thousand Navajo sheep, goats and horses would have died and many thousands of Navajo Indians forced to migrate or makeshift in some desperate way. The effect of such a process would have been harsh but it would have made the Navajos themselves conscious of the realities of the "Navajo situation," i.e. of the overstocked and over-populated condition of their country.<sup>99</sup>

Unlike Flory's understanding of the role of "Nature" for Natives, for Downes and Clark, "Nature" is decidedly not on the side of the "Indians." For Flory, "Nature" is part and parcel of Indianness itself, and the white man's burden is to help the Native marry "his" intrinsic affinity with the natural world to white strategies for economic progress.



What is clear is that, from the point of view of federal actors, the failure of stock reduction and of the soil conservation project in general seemed destined to be blamed on the Navajos themselves and on Diné land, which would never respond to the range development plans laid out by the conservationists. Writing at the tail end of the stock reduction program, Downes and Clark call the Navajos "America's Minority Problem No. 1," and the Navajo problem, for them, was summed up as the fault of the land itself, which they described as "a barren wasteland" and "so desolate that a handful of white men could use it . . . only for scattered and part-time grazing."<sup>100</sup> The report marked an important transition in the federal approach to the Navajo problem, duly noting that the average family income on the reservation more than doubled from 1940 to 1944 as a direct result of the role of wartime wage work in the Navajo economy. At that point, federal stock reduction programs had finally achieved the desired reduction of livestock: in 1946, thirteen years after the program's official inception, the Navajo range was home to 449,000 sheep—110,000 fewer than the original reduction goal. Without herds to tend to, and recovering from the memory of livestock slaughters and brutal treatment by federal employees, many Navajos had been forced into war work off the reservation. Out-migration during World War II took between ten and fifteen thousand Diné away from the reservation.<sup>101</sup> When uranium was discovered on and near Navajo land, mining jobs were seen as good work to have by Navajos in large part because they could remain close to home. Downes and Clark recommended escalation of oil and mineral surveys on the reservation, based on the precarious premise that "the Navajos know now that they will get a square deal if oil and minerals are discovered by white men and leased to them." These "honestly administered" leases "and their benefits to the Navajos are relieving the distrust they used to feel when strange surveyors invaded their country."<sup>102</sup>

By the time Downes and Clark recommended the escalation of these oil and mineral surveys, uranium mines in the Carrizo Mountains and Monument Valley had already made their first shipments of ore to Atomic Energy Commission buying facilities. These kinds of intimacies, of non-Navajos with Navajo land and resources and of the Diné with "strange surveyors" intent on mapping Diné Bikéyah, shaped the excesses of both stock reduction and subsequent mining booms. Notions of Diné land as unfit for the pastoral utopia imagined by Flory and other SCS employees underscored long-standing impressions of Navajo country as wasteland, as a land materially and ideologically suited for extractive industrialism. At the same time, land that had long sustained the Diné and their sheep was marked with remnants of SCS mapping projects, delimiting, as

cultural geographers note, "the socially coded areas of human habitation and trespass that are bordered, policed, and defended" by federal incursions into Diné life, land, and resource use.<sup>103</sup> In subsequent decades, this would increasingly become a central part of how prospectors, mine operators, and millers, in addition to "strange surveyors," "invaded" Diné Bikéyah. By 1955, less than a decade after the uranium procurement program was formalized by the Atomic Energy Commission, the *Grants Beacon* reported that the Navajo reservation had finally been comprehensively mapped. Under the headline "Reservation Mapped," the brief news item declared:

Uranium and oil combined to bring about publication by the US Geological Survey of the most detailed maps ever made of the western portions of the great Navajo Indian Reservation. The maps . . . have recently been released to the public. They were made in response to requests of uranium and oil hunters.<sup>104</sup>

The excesses of the uranium boom period had finally succeeded, it would seem, in making Diné Bikéyah, if not the Diné themselves, legible to the federal government, the uranium industry, and prospectors alike.



## Introduction

1. Richard Bishop Moore and Karl Ludwig Kithil, *A Preliminary Report on Uranium, Radium, and Vanadium* (Washington, D.C.: Government Printing Office, 1913), 57.
2. Other accounts of the Ford Company's discovery of vanadium's uses differ from this one, which Henry Ford recounted in his memoir *My Life and Work*. Christopher W. Wells, "The Road to the Model T: Culture, Road Conditions, and Innovation at the Dawn of the American Motor Age," *Technology and Culture* 48, no. 3 (2007): 518.
3. Donna Strahan, "Uranium in Glass, Glazes and Enamels: History, Identification and Handling," *Studies in Conservation* 46, no. 3 (2001): 181.
4. Moore and Kithil, *A Preliminary Report on Uranium, Radium, and Vanadium*, 58.
5. Duncan A. Holaday, Wilfred D. David, and Henry N. Doyle, *Interim Report of a Health Study of the Uranium Mines and Mills*, Federal Security Agency, U.S. Public Health Service, Division of Occupational Health, and the Colorado State Department of Public Health (May 1952). Export was a frequent fate for uranium ore prior to its use in atomic programs. In the early decades of the twentieth century, uranium deposits were "rapidly depleted for foreign exploitation." Moore and Kithil, *A Preliminary Report on Uranium, Radium, and Vanadium*, 8.
6. In 1942, the Vanadium Corporation of America (VCA) won a bid for leasing these mines to publicly mine vanadium and secretly recover uranium. Virginia T. McLemore and William L. Chenoweth, *Uranium Resources in New Mexico* (Socorro: New Mexico Bureau of Mines and Mineral Resources, 1989).
7. Judy Pasternak, *Yellow Dirt: An American Story of a Poisoned Land and a People Betrayed* (New York: Simon and Schuster, 2010), 30.
8. Holger Albrethsen Jr. and Frank E. McGinley, "Summary History of Domestic Uranium Procurement under U.S. Atomic Energy Commission Contracts, Final Report," Prepared for the U.S. Department of Energy, September 1982.
9. *Ibid.*
10. *Ibid.* Between 1943 and 1945, an estimated 44,000 pounds of uranium was secretly recovered from VCA East Reservation Lease mines for Manhattan Project engineers. Virginia T. McLemore, "Uranium Resources in New Mexico," Society for Mining and Exploration Annual Meeting (February 25–28, 2007), 1. Mines in Monument Valley, in the northwestern reaches of Diné land, provided an additional 489 tons of ore containing almost 14,000 pounds of vanadium and "some 3,271 pounds U308, much of which was recovered by the U.S. Army Corps of Engineers for the Manhattan Project." C. Clair Gregg, Charles S. Evensen, and William L. Chenoweth, *Maps of the Underground Workings, Monument No. 2 Mine, Apache County, Arizona* (Tucson, Ariz.: Arizona Geological Survey, 1989).
11. McLemore, "Uranium Resources in New Mexico," 1.

12. C. Clair Gregg, Charles S. Evensen, and William L. Chenoweth, *Maps of the Underground Workings, Monument No. 2 Mine, Apache County, Arizona* (Arizona Geological Survey, 1989).
13. AEC, "Fifth Semiannual Report to Congress," submitted January 31, 1949 (Washington, D.C.: U.S. Government Printing Office, 1949), 1.
14. *Ibid.*
15. *Ibid.*
16. Statement of Stephen Etsitty, "The Health and Environmental Impacts of Uranium Contamination in the Navajo Nation," Hearing before the Committee on Oversight and Government Reform (Washington, D.C.: U.S. Government Printing Office, 2008), 30–31.
17. U.S. EPA, "Addressing Uranium Contamination on the Navajo Nation: Contaminated Water Sources," [www.epa.gov/region9/superfund/navajo-nation.html](http://www.epa.gov/region9/superfund/navajo-nation.html).
18. Pasternak, *Yellow Dirt*, 123–25.
19. U.S. EPA, "Addressing Uranium Contamination on the Navajo Nation: Contaminated Structures," [www.epa.gov/region9/superfund/navajo-nation.html](http://www.epa.gov/region9/superfund/navajo-nation.html).
20. Letter from Katie Sweeny, Associate General Counsel to the National Mining Association, to David Albright, Groundwater Office Manager, U.S. Environmental Protection Agency, January 31, 2006, accessed at <http://www.epa.gov/region09/index.html>.
21. Holaday, David, and Doyle, *Interim Report*, 3.
22. Georgius Agricola (née Georg Bauer) wrote in 1556 of untimely deaths of miners in the Erz Mountains in *De Re Metallica*, which was later translated into English by none other than Herbert Hoover and his wife Lou Henry Hoover in 1912. Peter H. Eichstaedt, *If You Poison Us: Uranium and Native Americans* (Santa Fe, N.M.: Red Crane Books, 1994), 6–9. Holaday, David, and Doyle, *Interim Report*.
23. Eichstaedt, *If You Poison Us*, 8.
24. Brugge, Benally, Yazzie-Lewis, *Navajo People*, 33.
25. C. G. Salsbury, "Cancer Immunity in the Navajo," *Arizona Medicine* 13, no. 8 (1956): 309.
26. Leon S. Gottlieb and L. A. Husen, "Lung Cancer among Navajo Uranium Miners," *CHEST Journal* 81, no. 4 (1982): 451.
27. K. B. Mulloy, D. S. James, K. Mohs, and M. Kornfeld, "Lung Cancer in a Nonsmoking Underground Uranium Miner," *Environmental Health Perspectives* 109, no. 3 (2001); Doug Brugge and Virginia Buchner, "Health Effects of Uranium: New Research Findings," *Reviews on Environmental Health* 26, no. 4 (2011): 231–49; Doug Brugge, Jamie L. deLemos, and Beth Oldmixon, "Exposure Pathways and Health Effects Associated with Chemical and Radiological Toxicity of Natural Uranium: A Review," *Reviews on Environmental Health* 20, no. 3 (2005): 177–94; Chris Shuey, Jamie L. deLemos, and C. George, "Uranium Mining and Community Exposures on the Navajo Nation," Presentation at American Public Health Association Annual Meeting, Washington, D.C., November 3–7, 2007.



28. Lora Mangum Shields, W. H. Wiese, B. J. Skipper, B. Charley, and L. Banally, "Navajo Birth Outcomes in the Shiprock Uranium Mining Area," *Health Physics* 63, no. 5 (1992): 542-51; John F. Rosen and Paul Mushak, "Metal and Radiation-Induced Toxic Neuropathy (TN) in Two Navajo Sisters," *Pediatric Research* 45 (1999): 346.
29. Diane M. Stearns, Monica Yazzie, Andrew S. Bradley, Virginia H. Coryell, Jake T. Shelley, Adam Ashby, Craig S. Asplund, and R. Clark Lantz, "Uranium-Associated hprt Mutations and Uranium-DNA Adducts in Chinese Hamster Ovary EM9 Cells," *Mutagenesis* 20, no. 6 (2005): 417-23.
30. Lora Mangum Shields, W. H. Wiese, B. J. Skipper, B. Charley, and L. Banally, "Navajo Birth Outcomes in the Shiprock Uranium Mining Area," *Health Physics* 63, no. 5 (1992): 542-51.
31. Rob Nixon, *Slow Violence* (Cambridge, Mass.: Harvard University Press, 2011), 2.
32. U.S. EPA, "Addressing Uranium Contamination on the Navajo Nation: Abandoned Uranium Mines," [www.epa.gov/region9/superfund/navajo-nation.html](http://www.epa.gov/region9/superfund/navajo-nation.html).
33. Statement of Doug Brugge, "The Health and Environmental Impacts of Uranium Contamination in the Navajo Nation," Hearing before the Committee on Oversight and Government Reform (Washington, D.C.: U.S. Government Printing Office, 2008), 39.
34. The phrase came into circulation in the 1980s among activists, academics, and policymakers when a number of egregious cases of communities of color being targeted for environmental contaminants came to the forefront of national conversations over racial justice. The classic study of environmental racism, *Toxic Wastes and Race*, was originally published in 1987. United Church of Christ Commission for Racial Justice, *Toxic Wastes and Race in the United States: A National Report on the Racial and Socio-Economic Characteristics of Communities with Hazardous Waste Sites* (New York: United Church of Christ, 1987). The study was updated two decades later by Robert D. Bullard, Paul Mohai, Robin Saha, and Beverly Wright: "Toxic Wastes and Race at Twenty: Why Race Still Matters after All of These Years," *Environmental Law* 38 (2008): 371.
35. Robert Doyle Bullard, ed., *Confronting Environmental Racism: Voices from the Grassroots* (Cambridge, Mass.: South End Press, 1993); Julie Sze, *Noxious New York: The Racial Politics of Urban Health and Environmental Justice* (Cambridge, Mass.: MIT Press, 2007); Luke W. Cole and Sheila R. Foster, *From the Ground Up: Environmental Racism and the Rise of the Environmental Justice Movement* (New York: New York University Press, 2001).
36. David N. Pellow, *Resisting Global Toxics: Transnational Movements for Environmental Justice* (Cambridge, Mass.: MIT Press, 2007).
37. Rachel Stein, *New Perspectives on Environmental Justice: Gender, Sexuality, and Activism* (New Brunswick, N.J.: Rutgers University Press, 2004), 1-8.
38. Winona LaDuke, quoting Kassi Cook, *All Our Relations: Native Struggles for Land and Life* (Cambridge, Mass.: South End Press, 1999), 18.

39. Eichstaedt, *If You Poison Us*, 100-101; Brugge, Benally, Yazzie-Lewis, *Navajo People*, xvii-xviii, 71-73.
40. Washington (*Packing Them In*) provides an exception to this trend, arguing that environmental racism existed more than two hundred years before the phrase "environmental racism" was coined in the early 1980s (vii). The tendency of environmental historians to overlook the environmental experiences of marginalized people constitutes what she terms an "environmental veil." Sylvia Hood Washington, *Packing Them In: An Archeology of Environmental Racism in Chicago, 1865-1954* (Lanham, Md.: Lexington Books, 2005), 7.
41. Zoltan Grossman, quoted by Robin Lanette Turner and Diana Pei Wu, "Environmental Justice and Environmental Racism: An Annotated Bibliography with General Overview, Focusing on the US Literature, 1996-2002," Institute of International Studies, University of California, Berkeley (August 2002), 2.
42. Deborah Bird Rose, *Hidden Histories: Black Stories from Victoria River Downs, Humbert River, and Wave Hill Stations* (Canberra: Aboriginal Studies Press, 1991), 46. Patrick Wolfe, "Settler Colonialism and the Elimination of the Native," *Journal of Genocide Research* 8, no. 4 (2006): 388.
43. For more on the forest resources of Narbona Pass and the debates over logging these resources, see Sherry, *Land, Wind, and Hard Words*, 24-26.
44. *Ibid.*; deBuys, *A Great Aridness*, 41-42.
45. Gillian Rose, *Feminism and Geography* (Cambridge: Polity Press, 1993), 89.
46. "Energy—Power for America's Progress," *Grants Beacon*, Special Energy Edition, February 19, 1955.
47. Andrea Smith, "Heteropatriarchy and the Three Pillars of White Supremacy: Rethinking Women of Color Organizing," in *Color of Violence: The Incite! Anthology* (Cambridge, Mass.: South End Press, 2006) 68.
48. She defines "detritoriality" as "the loss of commitment by nation-states . . . to particular lands or regions"; as such, it is "a particularly dramatic form of embodiment." Valerie Kuletz, *The Tainted Desert: Environmental Ruin in the American West* (New York: Routledge, 1998), 6.
49. Kenneth A. Gould, David N. Pellow, and Allan Schnaiberg, "Interrogating the Treadmill of Production: Everything You Wanted to Know about the Treadmill but Were Afraid to Ask," *Organization & Environment* 17, no. 3 (2004): 296-316.
50. Luke W. Cole and Sheila R. Foster, *From the Ground Up: Environmental Racism and the Rise of the Environmental Justice Movement* (New York: New York University Press, 2001), 10-12.
51. Lisa Sun-Hee Park and David Naguib Pellow explore the relationality of environmental privilege and environmental racism in *Slums of Aspen: Immigrants versus the Environment in America's Eden* (New York: New York University Press, 2011), 1-7. Likewise, Julie Sze explores how the "benefits and burdens" of the energy industry "tend to be stratified unequally by race or class" in *Noxious New York*, 150.
52. As Tom Goldtooth has noted, "America's energy policy, which is the cornerstone of its industrial policy, is based upon indigenous resources, and we are



- paying a heavy price." See "Indigenous Nations: Summary of Sovereignty and Its Implications for Environmental Protection," in *Environmental Justice: Issues, Politics, and Solutions*, ed. Roger Bezdek (Washington, D.C.: Island Press, 1995), 143.
53. More than half of Navajos and Hopis, in fact, do not have electricity in their homes, despite the fact that a highly disproportionate amount of electricity in their western cities come from coal mines on Navajo and Hopi lands.
54. Nicole Horseherder, quoted by Sean Patrick Reilly, "Gathering Clouds," *Los Angeles Times*, June 6, 2004.
55. Blackhawk, *Violence over the Land*, 3–10.
56. Kuletz, *Tainted Desert*, 13–14.
57. Pellow, *Resisting Global Toxics*, 179–82; Al Gedicks, *The New Resource Wars: Native and Environmental Struggles Against Multinational Corporations* (Montreal, QC: Black Rose Books, 1994), 2–4; Al Gedicks, *Resources Rebels: Native Challenges to Mining and Oil Corporations* (Cambridge, Mass.: South End Press, 2001), 67–78.
58. Gedicks, *New Resource Wars*, 18.
59. Peter L. Berger and Thomas Luckmann, *The Social Construction of Reality: A Treatise in the Sociology of Knowledge* (Garden City, N.Y.: Doubleday, 1966).
60. Environmental protection has likewise been deeply vested in the politics of race, from the conflation of national parks with white masculinity, to the dispossession of tribes from "wilderness" areas, or even to the contemporary pseudo-environmentalist reclamation of border areas (such as the Organ Pipe Cactus National Monument) from the environmental "threat" of border crossers. Jake Kosek, "Purity and Pollution: Racial Degradation and Environmental Anxieties," in *Liberation Ecologies: Environment, Development, and Social Movements*, ed. Michael Peet and Richard Watts (New York: Routledge, 2004), 115–52; Mark David Spence, *Dispossessing the Wilderness: Indian Removal and the Making of the National Parks* (New York: Oxford University Press, 1999); Sarah Jaquette Ray, "Endangering the Desert: Immigration, the Environment, and Security in the Arizona–Mexico Borderland," *Interdisciplinary Studies in Literature and Environment* 17, no. 4 (2010): 709–34; Devon Peña, "Tierra y Vida: Chicano Environmental Justice Struggles in the Southwest," in *The Quest for Environmental Justice: Human Rights and the Politics of Pollution*, ed. Robert Bullard (San Francisco: Sierra Club, 2005), 188–208.
61. Allan Pred, *Even in Sweden: Racisms, Racialized Spaces, and the Popular Geographical Imagination* (Berkeley: University of California Press, 2000), 98–99.
62. My thanks to Sean Paul Begay for his undergraduate thesis at the University of California, San Diego, "Uranium Mining: Navajo Land Degradation, Health Effects and Cultural Genocide," which explored the ways in which uranium mining and milling destroyed Navajo ability to maintain cultural and religious practices.
63. Adrienne Rich, *Later Poems: Selected and New, 1971–2012* (New York: Norton, 2013), 15.

64. I borrow "imagined intimacy" from Adria Imada, *Aloha America: Hula Circuits through the U.S. Empire* (Durham, N.C.: Duke University Press 2012), 11.
65. Michael A. Amundson, *Yellowcake Towns: Uranium Mining Communities in the American West* (Boulder: University Press of Colorado, 2002).
66. *Ibid.*; Raye Ringholz, *Uranium Frenzy: Boom and Bust on the Colorado Plateau* (Albuquerque: University of New Mexico Press, 1989), 17.
67. See, for example, *U.S. v. Bhagat Singh Thind*, 1923, in which the U.S. Supreme Court found that Thind, an Indian Sikh, could not be naturalized as a U.S. citizen under the 1790 Naturalization Act because that Act limited naturalization to "free white persons." Other groups, such as Romanians, were allowed to naturalize despite the fact that their inclusion in the category of "white" was by no means settled. Matthew Fryc Jacobson, *Whiteness of a Different Color* (Cambridge, Mass.: Harvard University Press, 1998), 235–36.
68. David G. Gutiérrez, *Walls and Mirrors: Mexican Americans, Mexican Immigrants, and the Politics of Ethnicity* (Berkeley: University of California Press, 1995), 6.
69. The notion of gender as a social construct, articulated most famously by Simone de Beauvoir in 1949 ("one is not born, but rather one becomes a woman") has long been established in feminist scholarship. Scholars like Judith Butler likewise argue against the notion of sex, and particularly the male/female sex binary, as "prediscursive." Judith Butler, *Gender Trouble: Feminism and the Subversion of Identity* (New York: Routledge, 1990), 112.
70. For more on theorizing intersecting oppressions as a "web," see Val Plumwood, "Ecosocial Feminism as a General Theory of Oppression," *Key Concepts in Critical Theory: Ecology*, ed. Carolyn Merchant (Atlantic Highlands, N.J.: Humanities Press, 1994), 230–31.
71. Kuletz, *Tainted Desert*, 13–14.
72. William Cronon, "The Trouble with Wilderness: Or, Getting Back to the Wrong Nature," *Environmental History* 1, no. 1 (1996): 7–28.
73. Patricia Nelson Limerick, *Desert Passages: Encounters with the American West* (Albuquerque: University of New Mexico Press, 1985), 5.
74. *Ibid.*, 29.
75. *Ibid.*, 37.
76. This is a phrase borrowed from Gloria Steinem's classic essay "If Men Could Menstruate," *Ms. Magazine*, October 1978.
77. Stephen J. Pyne, *How the Canyon Became Grand: A Short History* (New York: Penguin, 1999), 101.
78. Richard Slotkin, *Gunfighter Nation: The Myth of the Frontier in Twentieth-Century America* (Norman: University of Oklahoma Press, 1992), 286–312.
79. *Ibid.*, 385.
80. Joyce Muench, "Happy Cly," *Westways* 53 (July 1961): 14–15.
81. Marsha Weisiger, "Happy Cly and the Unhappy History of Uranium Mining on the Navajo Reservation," *Environmental History* 17, no. 1 (2012): 148.



82. *Ibid.*

83. Donna Haraway, "Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective," *Feminist Studies* 14, no. 3 (1988): 575–99. Nancy Lee Peluso, "Whose Woods Are These? Counter-Mapping Forest Territories in Kalimantan, Indonesia," *Antipode* 27, no. 4 (1995): 383.

84. James Ryan, quoted by James Duncan, Nuala C. Johnson, and Richard H. Schein, *A Companion to Cultural Geography* (Chichester: Wiley, 2008), 474.

85. Diana Taylor, *The Archive and the Repertoire: Performing Cultural Memory in the Americas* (Durham, N.C.: Duke University Press, 2003).

86. As noted by Henri Lefebvre, "Space is produced . . . if there is a productive process, then we are dealing with *history*." *The Production of Space*, trans. Donald Nicholson-Smith (Cambridge, Mass.: Blackwell, 1991), 46. Michel Foucault made his now famous argument "on geography" that "to talk in terms of space, to trace the forms of implantation, delimitation and demarcation of objects, the modes of tabulation, the organization of domains meant the throwing into relief of processes—historical ones, needless to say—of power." See "Questions on Geography," in *Space, Knowledge and Power: Foucault and Geography*, ed. Jeremy W. Crampton and Stuart Elden (Aldershot: Ashgate, 2007): 173–84.

87. Ann Laura Stoler, "Colonial Archive and the Arts of Governance," *Archival Science* 2 (2002), 93.

88. "The Uranium Boom," *Time*, October 13, 1952.

89. *Ibid.*

90. For discussion of the spatial politics of the public/private binary, see Liz Bondi and Joyce Davidson, "Troubling the Place of Gender," in *Handbook of Cultural Geography*, ed. Kay Anderson, Mona Domosh, Steve Pile, and Nigel Thrift (London: Sage, 2002), 325–43.

91. Nancy C. Unger, *Beyond Nature's Housekeepers: American Women in Environmental History* (New York: Oxford University Press, 2012), 203.

92. "Counter-mapping" is most often used to describe mapping projects used by indigenous activists as a means of resisting incursions from colonial governments, largely for resources and/or territory. Peluso, "Whose Woods Are These?" 384. Denis Wood, *Re-Thinking the Power of Maps* (New York: Guilford Press, 2010), 111–12.

93. Klara B. Kelley and Francis Harris, *Navajo Sacred Places* (Bloomington: Indiana University Press, 2005), 83.

94. Hogan is sometimes spelled *hooghan*. I use the former spelling throughout the book. In general, spelling of Diné words is not always consistent across texts; in this book, I choose spelling based on what is most common across the literature, giving preference to spelling that is preferred by Diné authors.

95. Melvin Oliver and Thomas Shapiro, *Black Wealth, White Wealth* (New York: Routledge, 1995), 5; Laura Pulido, "Rethinking Environmental Racism: White Privilege and Urban Development in Southern California," *Annals of the Association of American Geographers* 90, no. 1 (2000): 16.

96. George Lipsitz, "The Racialization of Space and the Spatialization of Race: Theorizing the Hidden Architecture of Landscape," *Landscape Journal* 26, no. 1 (2007): 10–23; Sherene Razack, *Race, Space, and the Law: Unmapping a White Settler Society* (Toronto: Between the Lines, 2002).

97. As Val Plumwood points out, "racism, colonialism, and sexism have drawn their conceptual strength from casting sexual, racial, and ethnic difference as closer to the animal," and the othered body comes to be "a sphere of inferiority, as a lesser form of humanity lacking the full measure of rationality or culture." *Feminism and the Mastery of Nature* (New York: Routledge, 1993), 4.

98. Complex personhood means, "at the very least," "conferring the respect on others that comes from presuming that life and people's lives are simultaneously straightforward and full of enormously subtle meaning." Avery Gordon, *Ghostly Matters: Haunting and the Sociological Imagination* (Minneapolis, Minn.: University of Minnesota Press, 1997), 5.

99. Both environmental sociology and political science have given us frameworks for understanding how environmental degradation is and has been constitutive to modernity. Pellow, *Resisting Global Toxics*, 18–26. In a similar fashion, environmental historian Carolyn Merchant explores how the domination of nature and the domination of women were linked in the development of modern European political and economic thought and practice. Carolyn Merchant, *The Death of Nature: Women, Ecology, and the Scientific Revolution* (New York: Harper Collins, 1990). Critical race theorists have likewise shown how race and racial inequality are fundamental, not exceptional, components of modern economies and nation-states. Native studies scholars concur, noting in particular how the racialization of indigenous peoples has undergirded the production of colonial modernity, including the usurpation of land and resources. Sherene Razack, Malinda Smith, and Sunera Thobani, eds., *States of Race: Critical Race Feminism for the 21st Century* (Toronto: Between the Lines, 2010), 1–9.

100. Greta Gaard, "Toward a Queer Ecofeminism," *Hypatia* 12, no. 1 (1997): 114–37.

101. Philip Deloria, *Playing Indian* (New Haven, Conn.: Yale University Press, 1998).

102. Wolfe, "Settler Colonialism and the Elimination of the Native," 388.

103. Eve Tuck calls the juridical model of justice a theory of change that operates by "restifying to damage so that persecutors will be forced to be accountable." See "Suspending Damage: A Letter to Communities," *Harvard Educational Review* 79, no. 3 (2009): 414.

104. Smith, *Native Americans and the Christian Right: The Gendered Politics of Unlikely Alliances* (Durham, N.C.: Duke University Press, 2008), 256.

105. Pellow, *Resisting Global Toxics*, 17, emphasis in original.

106. Karen Warren, "Some Ecofeminist Worries about a Distributive Model," *Environmental Ethics* 21 (1999): 154, emphasis in original.



107. Smith, *Native Americans and the Christian Right*, 256.
108. Ulrich Beck, *Risk Society: Towards a New Modernity*, vol. 17. (New York: Sage, 1992).
109. This "cheapening" through race can be seen in a wide range of instances; factory operators seeking out "young, foreign, and female" workers because of their presumably submissive characteristics; below-market wages for undocumented workers through their status as "impossible subjects"; the importation of Filipino laborers to work in large-scale agriculture in the U.S. Southwest as a practice of "imported colonialism"; and so on. David N. Pellow and Lisa Sun-Hee Park, *The Silicon Valley of Dreams: Environmental Injustice, Immigrant Workers, and the High-Tech Global Economy* (New York: New York University Press, 2002); Mae M. Ngai, *Impossible Subjects: Illegal Aliens and the Making of Modern America* (Princeton, N.J.: Princeton University Press, 2004).
110. Smith, *Native Americans and the Christian Right*, 256.
111. I borrow this phrasing, and in part the line of thinking, from conversations around reparations for slavery; the demand for reparations is at heart a demand for the United States to bankrupt and "unsettle" itself and its land.
112. Pellow, *Resisting Global Toxics*, 126.
113. As Yen Le Espiritu might put it, it is constituted on their "differential inclusion" into the nation-state: included but only for the purpose of being marginalized or subordinated. *Home Bound: Filipino American Lives across Cultures, Communities, and Countries* (Berkeley: University of California Press, 2003), 47.
114. Charles Mills, "Black Trash," in *Faces of Environmental Racism: Confronting Issues of Global Justice*, ed. Laura Westra and Bill E. Lawson (Lanham, Md.: Rowman & Littlefield, 2001), 73–94.

### 1. Empty Except for Indians

1. W. L. McAtee, "Report on Inspection of Navajo Erosion Control Project," June 4–6, 1934, box 7, folder 4, U.S. SCS Region Eight Records, Center for Southwest Research (CSWR), University Libraries, University of New Mexico (UNM).
2. The Indian Service was renamed the Bureau of Indian Affairs (BIA) in 1947.
3. The language of the "Navajo problem" was tied directly to progressive-era discourse about the "Indian problem," which late nineteenth-century reformers took up as a call to address widespread poverty on reservations. This concern was popularized among whites by Elwell Otis's 1878 book, *Indian Question*, and Helen Hunt Jackson's 1881 *A Century of Dishonor*. Donald L. Fixico, *Indian Resilience and Rebuilding: Indigenous Nations in the Modern American West* (Tucson: University of Arizona Press, 2013), 5.
4. Diana K. Davis, *Resurrecting the Granary of Rome: Environmental History and French Colonial Expansion in North Africa* (Athens: Ohio University Press, 2007), 2.
5. *Ibid.*, 2, 6.

6. Waldo Lee McAtee, *Nomina Abitera* (Chicago: Privately printed, 1945), 1.
7. *Ibid.*, 3, 4.
8. *Ibid.*, 1.
9. Anne McClintock, *Imperial Leather: Race, Gender and Sexuality in the Colonial Contest* (New York: Routledge, 1995). McClintock's use of the phrase "lay of the land" to characterize colonial expansion is borrowed from Annette Kolodny's *The Lay of the Land: Metaphor As Experience and History In American Life and Letters* (Chapel Hill: University of North Carolina Press, 1984).
10. Andrea Smith, *Conquest: Sexual Violence and American Indian Genocide* (Cambridge, Mass.: South End, 2005).
11. Patricia Williams, *The Alchemy of Race and Rights* (Cambridge, Mass.: Harvard University Press, 1991), 19.
12. Val Plumwood, *Feminism and the Mastery of Nature* (New York: Routledge, 1993).
13. Edward Soja, *Thirdspace: Journeys to Los Angeles and Other Real and Imagined Places* (Malden, Mass.: Blackwell, 1996), 79.
14. Benedict Anderson, *Imagined Communities: Reflections on the Origin and Spread of Nationalism* (New York: Verso, 2006).
15. Frederick Jackson Turner, *The Significance of the Frontier in American History* (New York: Holt, Rinehart and Winston, 1962). "Conquest" of the west, as Patricia Limerick put it, "basically involved . . . the evolution of land from matter to property" and "the application of labor and capital to make property productive." Patricia Nelson Limerick, *The Legacy of Conquest: The Unbroken Past of the American West* (New York: Norton, 1987), 27.
16. Robert Charles Winthrop, *Life and Letters of John Winthrop* (Ann Arbor: University of Michigan, 1869), 312.
17. Carole Pateman, *The Sexual Contract* (Redwood City, Calif.: Stanford University Press, 1988), 1–18.
18. General Allotment Act, Section 2, February 8, 1887, quoted by Francis Paul Prucha, *Documents of United States Indian Policy* (Lincoln: University of Nebraska Press, 2000), 170–73.
19. Richard C. Trexler, *Sex and Conquest: Gendered Violence, Political Order, and the European Conquest of the Americas* (Ithaca, N.Y.: Cornell University Press, 1995), 1–2.
20. Smith, *Conquest*. Andrea Smith and J. Kehaulani Kauanui, eds., "Native Feminism Engage American Studies," *American Quarterly* 60, no. 2 (June 2008). Qwo-Li Driskill, Chris Finley, Brian Joseph Gilley, and Scott Lauria Morgensen, eds., *Queer Indigenous Studies: Critical Interventions in Theory, Politics, and Literature* (Tucson: University of Arizona Press, 2011).
21. Razaq, Smith, and Thobani, eds., *States of Race*, 2.
22. Richard King, "De/Scribing Squaw: Indigenous Women and Imperial Idioms in the United States," *American Indian Culture and Research Journal* 27, no. 2 (2003): 1–16.



23. McClintock, *Imperial Leather*.
24. Leo Marx, "The Idea of Nature in America," *Daedalus* 137, no. 2 (2008): 19.
25. Bernard Haile, *Tales of an Endishodi: Father Berard Haile and the Navajos, 1900-1961*, trans. and ed. Murray Bodo (Albuquerque: University of New Mexico Press, 1998), 164.
26. Lawrence David Weiss, *The Development of Capitalism in the Navajo Nation: A Political-Economic History* (Minneapolis, Minn.: Marxist Educational Press, 1984), 31.
27. Jennifer Nez Denetdale, "Chairmen, Presidents, and Princesses: The Navajo Nation, Gender, and the Politics of Tradition," *Wicazo Sa Review* 21, no. 1 (2006): 12.
28. Kessell, "General Sherman and the Navajo Treaty of 1868," 255.
29. The 1868 U.S.-Navajo Treaty would be one of the last treaties to be signed between the United States and Native nations during the nineteenth-century treaty period. Peter Iverson, ed. "For Our Navajo People": *Diné Letters, Speeches & Petitions, 1900-1960* (Albuquerque: University of New Mexico Press, 2002), 3.
30. Edmund J. Danziger Jr., "The Steck-Carleton Controversy in Civil War New Mexico," *Southwestern Historical Quarterly* 74, no. 2 (Oct. 1970): 198.
31. Kessell, "General Sherman and the Navajo Treaty of 1868," 257.
32. Dan L. Thrapp, *The Conquest of Apacheria* (Norman: University of Oklahoma Press, 1967), xii.
33. The Navajo population in 1868 has been estimated as being from 9,000 to 15,000. Robert S. McPherson, *The Northern Navajo Frontier 1860-1990: Expansion Through Adversity* (Albuquerque: University of New Mexico Press, 1988), 1.
34. Kessell, "General Sherman," 262.
35. Haile, *Tales*, 164.
36. *Ibid.*, 265.
37. Garrick Alan Bailey and Roberta Glenn Bailey, *A History of the Navajos* (Santa Fe, N.M.: School of American Research Press, 1986), 26.
38. Johnson, *Navajo Stories*, 133.
39. Haile, *Tales*, 164.
40. Bailey and Bailey, *History of the Navajos*, 42, 5. "Eli Gorman," Johnson, *Navajo Stories*, 209.
41. Weiss, *Development of Capitalism*, 93, 95.
42. Iverson, ed., "For Our Navajo People," 3. This pressure on the Diné included killing their sheep, threatening their families, and purchasing whole herds outright. The effects on Navajo herds in northwestern New Mexico were likewise dramatic: by 1938, only a quarter of the 160,000 sheep grazing in this part of the state were owned by Navajos. Weiss, *Development of Capitalism*, 93, 95.
43. Lawrence C. Kelly, *The Navajo Indians and Federal Indian Policy, 1900-1935* (Tucson: University of Arizona Press, 1968), 37.

44. Superintendent E. R. Fryer to John Collier, November 17, 1941, box 10, folder 5. William Zimmerman Jr. Papers, CSWR, University Libraries, UNM.
45. Weisiger, *Dreaming of Sheep*, 75-78.
46. Ruth Roessel and Broderick Johnson, *Navajo Livestock Reduction: A National Disgrace* (Chinle, Ariz.: Navajo Community College Press, 1979).
47. Will Evans, *Along Navajo Trails: Recollections of a Trader, 1898-1948*, ed. Susan Woods and Robert McPherson (Logan: Utah State University Press, 2005), 107.
48. Marsha Weisiger, "Gendered Injustice: Navajo Livestock Reduction in the New Deal Era," *Western Historical Quarterly* 35 (2007): 442.
49. Weisiger, *Dreaming of Sheep*, 80.
50. "Navajo Tribal Council Meeting Minutes, Leupp, AZ, November 1928," box 4, folder 28, Robert W. Young Papers, CSWR, University Libraries, UNM.
51. Goats and sheep counted for one head of stock; each cow or horse counted for four or five heads.
52. While in this speech Meritt repeatedly struck a populist chord, arguing for stock reduction especially for owners of big herds so that the smaller owners could have "justice," he was careful to praise these big herd owners as "shrewd business men," "leaders," and "good examples." No doubt this vacillation was partly due to the presence of the influential Chee Dodge, the biggest of big herd owners, with whom Meritt was disagreeing about the stock reduction policy.
53. Weisiger, *Dreaming of Sheep*, 192-94. The Navajo churra, as Weisiger explains, was in reality much better adapted to Navajo uses of sheep as well as to environmental conditions on the reservation; the Rambouillet "could not keep up with the long-legged, fast walking churras and goats, and Diné women found the fine, short-stapled wool, which was both greasy and kinky, unsuitable for spinning and hand-weaving." *Ibid.*, 193.
54. *Ibid.*, 193.
55. "Navajo Tribal Council Meeting Minutes—Leupp, AZ, November 1928," box 4, folder 28, p. 46, Robert W. Young Papers, CSWR, University Libraries, UNM.
56. Weisiger, *Dreaming of Sheep*, 441.
57. For Navajo accounts of this period, including Diné resistance to reduction, see Ruth Roessel and Broderick Johnson, *Navajo Livestock Reduction: A National Disgrace* (Chinle, Ariz.: Navajo Community College Press, 1979).
58. F. W. LaRouche, letter to John Collier, January 13, 1943, box 10, folder 11, William Zimmerman Jr. Papers, CSWR, University Libraries, UNM.
59. Weisiger, *Dreaming of Sheep*, 86.
60. F. W. LaRouche, letter to John Collier, January 13, 1943.
61. *Ibid.*
62. These stockmen helped defeat the Navajo-New Mexico Boundary Bill, which would have added critically needed acreage to the eastern portion of the reservation.



63. Thomas Jesse Jones, *The Navajo Indian Problem: An Inquiry Sponsored by the Phelps-Stokes Fund* (New York: The Phelps-Stokes Fund, 1939), vii.
64. Floyd Pollock, *A Navajo Confrontation and Crisis* (Tsaile, Ariz.: Navajo Community College Press, 1984), 61.
65. Orval Ricketts and John McPhee, "The Navajo Indians in a Changing World," 1941, box 2, folder 18, Robert W. Young Papers, CSWR, University Libraries, UNM.
66. Park and Pellow, *Slams of Aspen*.
67. Clyde Kluckhohn and Dorothea Leighton, *The Navaho* (Garden City, N.Y.: Doubleday, 1947).
68. *Ibid.*, 52.
69. Denetdale, *Reclaiming Diné History*, 7, 18.
70. This part of the project was described in one Soil Conservation Service report, under the heading "Fact Finding," as the need for "a study of human groups and institutions through their functions and interrelationships," including studies of the "domestic economy of household groups—housing, diet, clothing as a basis for intelligent handling of these basic problems affecting human welfare." Soil Conservation Service, "Annual report for the year ending June 30, 1935," box 7, folder 16, U.S. SCS Region Eight Records, CSWR, University Libraries, UNM.
71. Ruby Tomlinson, "A Study of the Social and Economic Status of One Hundred Navajo Families," Window Rock, Ariz.: Navajo Service, February 1944, box 10, folder 5, William Zimmerman, Jr. Papers, CSWR, University Libraries, UNM.
72. *Ibid.*
73. Laura Briggs, *Reproducing Empire: Race, Sex, Science and U.S. Imperialism in Puerto Rico* (Berkeley: University of California Press, 2002), 9.
74. Louis Warren, *American Environmental History*, vol. 12 (Malden, Mass.: Wiley-Blackwell, 2003), 180.
75. Jake Kosek, *Understories: The Political Life of Forests in Northern New Mexico* (Durham, N.C.: Duke University Press, 2006), 156.
76. Joni Adamson, *American Indian Literature, Environmental Justice, and Eco-criticism: The Middle Place* (Tucson: University of Arizona Press, 2001), 55.
77. William Cronon, "The Trouble with Wilderness: Or, Getting Back to the Wrong Nature," *Environmental History* 1, no. 1 (January 1996): 15.
78. Gifford Pinchot, *Breaking New Ground* (New York: Harcourt, Brace, 1947), 322.
79. Scott, *Seeing Like a State*, 1–3.
80. John Collier, *From Every Zenith: A Memoir* (Denver: Sage Books, 1963), 251.
81. Soil Conservation Service, "Annual report for the year ending June 30, 1936," box 7, folder 56, U.S. SCS Region Eight Records, CSWR, University Libraries, UNM.
82. *Ibid.*
83. Iverson, *The Navajo Nation*, 27.

84. U.S. Soil Conservation Service, "Annual report for the year ending June 30, 1935," box 7, folder 16, U.S. SCS Region Eight Records, CSWR, University Libraries, UNM.
85. *Ibid.*
86. *Ibid.*
87. Soil Conservation Service, "US SCS Report, 1938," box 12, folder 60, U.S. SCS Region Eight Records, CSWR, University Libraries, UNM.
88. "Annual report for the year ending June 30, 1935," box 7, folder 16, U.S. SCS Region Eight Records, CSWR, University Libraries, UNM.
89. *Ibid.*
90. Adamson and Ruffin, eds., *American Studies, Eco-criticism, and Citizenship*, 1–16.
91. "Annual report for the year ending June 30, 1935," box 7, folder 16, U.S. SCS Region Eight Records, CSWR, University Libraries, UNM.
92. *Ibid.*
93. *Ibid.*
94. Rebecca Benes, *Native American Picture Books of Change: The Art of Historic Children's Editions* (Santa Fe, N.M.: Museum of New Mexico Press, 2004), 66.
95. *Ibid.*, 68.
96. Evan L. Flory, "Memo to All Soil and Moisture Conservation Employees," box 2, folder 1, William Zimmerman Jr. Papers, CSWR, University Libraries, UNM.
97. *Ibid.*
98. *Ibid.*
99. Randolph C. Downes and Elizabeth Clark, "Navajo Report," 1946, box 2, folder 19, Robert W. Young Papers, CSWR, University Libraries, UNM.
100. *Ibid.*
101. Weiss, *The Development of Capitalism*, 122.
102. Randolph C. Downes and Elizabeth Clark, "Navajo Report," 1946, box 2, folder 19, Robert W. Young Papers, CSWR, University Libraries, UNM.
103. Tracey Banivanua-Mar and Penelope Edmonds, eds., *Making Settler Colonial Space: Perspectives on Race, Place and Identity* (New York: Palgrave Macmillan, 2010), 2.
104. "Reservation Mapped," *Grants Beacon*, Special Energy Edition, February 19, 1955.
- 2. Prospecting for Magic Ore in America's New Frontier**
1. *Grants Beacon*, Special Energy Edition, February 19, 1955.
  2. *Ibid.*
  3. "Lofly Quest for Uranium," *Grants Beacon*, August 13, 1953.
  4. *Grants Beacon*, Special Energy Edition.