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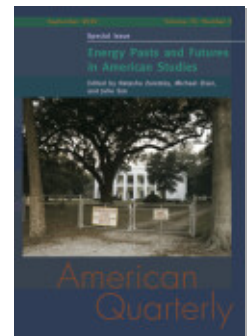
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# Intimacies of the Atom: On Rocks and Decolonization in the Work of Leslie Marmon Silko

*Isabel Lockhart*

In an effort to promote domestic uranium extraction in the late 1940s, the United States Atomic Energy Commission (AEC) made public its “ore-buying schedule” and successfully incentivized aggressive prospecting in the sandstone-rich lands of the Southwest.<sup>1</sup> In 1951 the Anaconda Mining Company identified a huge uranium deposit underneath the Laguna Pueblo village of Paguate in New Mexico.<sup>2</sup> By 1958 Anaconda’s Jackpile mine had grown to become the largest open-pit uranium mine in the United States, supplying much of the raw material for a period of great nuclear exuberance. On the one hand, the AEC was rushing to build up a national armory in the early years of the Cold War; on the other, following President Dwight D. Eisenhower’s 1953 “Atoms for Peace” speech, the commission sought to quell anxieties around the bomb with an optimistic vision for the civilian uses of nuclear science. At a radiotoxic site of extraction like Jackpile, however, this implied distinction between weaponry and energy appears especially subtle or even nonpertinent. Indeed, sites of extraction are situated many translations in the nuclear supply chain away from uranium enrichment, which itself reveals that the distinction between energy and weaponry is one primarily of degree. Exploiting an uncontrolled rendition of the nuclear fission that produces nuclear power in a reactor, the atomic bomb *is* an energy technology, and, in both its military and its nonmilitary guises, nuclearity is fundamentally about the extraction and intensification of energy from ore rock.<sup>3</sup>

To study the extractive disposition toward subsurface minerals as latent energy, we might attend to literatures that mediate nuclear processes and legacies. One such archive emerges from Indigenous perspectives on the atomic age. Across the settler colonies of the United States, Canada, and Australia, Indigenous peoples have been disproportionately impacted by the nuclear industry at all stages of production—as forcibly removed communities, as downwinders and downstreamers to “tests” and tailings waste, and as cheapened labor in

mines and mills. During the peak years of extraction, Jackpile mine was one among thousands of uranium mines in the Colorado Plateau, and in the US Southwest alone the industry has variously affected the Navajo, the Zuni, the Mescalero Apache, the Western Shoshone, the Southern Paiute, and numerous of the Pueblo nations. This, in the Southwest and elsewhere, has led to a large body of work by Indigenous authors, much of which pays particular attention to the ore-bearing rock, its severance from a local ecology, and the deathly ways it has been energized by the settler colony.

For example, in her 2002 play *Burning Vision*, the Métis playwright Marie Clements confronts the history of uranium extraction on Dene land at Great Bear Lake in the Northwest Territories of Canada. Over the course of the play, Clements personifies pitchblende as a “beautiful Native boy” named Little Boy (after the bomb), charting his transit from Great Bear Lake to the Manhattan Project’s Trinity Site for military testing.<sup>4</sup> Similarly, in *A Blanket of Butterflies*, the Dogrib graphic novelist Richard Van Camp grapples with the bombing of Hiroshima and Nagasaki via the memories of a Dene grandmother, as she recalls Dene and white laborers “taking black eggs out of the earth and putting them into the bellies of these birds” that “dropped two eggs on people who look just like us.”<sup>5</sup> Against the immateriality of nuclear exposure, these two texts make recourse to ore rock as a way to map and make visible a triangular relation between the point of extraction (Great Bear Lake), production (the US Southwest), and detonation (Hiroshima and Nagasaki).<sup>6</sup> Although radioactivity resonates with what Elizabeth DeLoughrey, following Gayatri Spivak, names “planetarity”—an uncanny phenomenon that is entirely resistant to capture or visualization—it does not preclude a practice of reckoning with what *is* visible and material.<sup>7</sup> This is not radiation itself but its most charged objects.

The material current running through this Indigenous archive on the atomic age serves as a reminder that energy resources in the Americas are colonized earth matter: energy resources have been removed from particular places and meanings, and settler colonial extractivism is, as Heather Davis and Zoe Todd (Métis) put it, a “severing of relations between humans and the soil, between plants and animals, between minerals and our bones.”<sup>8</sup> In this essay, I make the case that reading Indigenous nuclear literatures for their material dynamics might help disclose *decolonial* potentials as much as colonial histories—that is, ways to relate to rocks outside or against settler resource logics. I turn to the Laguna Pueblo author Leslie Marmon Silko—in the US Southwest corner of Clements’s and Van Camp’s radiotoxic triangle—to show how settlement figures as a structure of not just dispossessing Indigenous peoples of their land and

expropriating resources but producing matter *as a resource* in the first place to rationalize its extraction away from complex, ecological relations. Against this extractive materiality, I read Silko for the many ways in which she attends to the rocks that have been made to cause so much harm to her Laguna Pueblo homelands and elsewhere. In fact, I argue that Silko's decolonial practice is above all a mode of relating this local site of extraction to its interconnected "elsewheres," as she maps out extensive yet deeply intimate networks of shared injury, resistance, and revolution across settler borders.

There are two key types of interrelation at play in Silko's work: one shaped by uranium's toxic legacies and settler acts of violence, and the other modeling a way of thinking across geographies that precedes and proleptically postdates settler colonialism, as well as exhibits meaningful relations to rocks outside the evaluative, categorical gaze of extractivism. As such, Silko practices a counteractive energy ethic routed through radioactive matter, ending both her first and second novels—*Ceremony* and *Almanac of the Dead*, respectively—on a curiously positive note.<sup>9</sup> This positivity is especially counterintuitive, since it occurs, in both instances, at the toxified location of an abandoned uranium mine.

However, I am less concerned with the efficacy or inefficacy of such affects (as fuel for political action beyond the text) than with the particular features of Silko's decolonialism and anti-extractivism in practice.<sup>10</sup> In *Almanac of the Dead* especially, an encounter with uranium ore seems to make a hemispheric trans-Indigenous revolution finally legible to Silko's Laguna character Sterling, as much as the encounter itself revives Laguna presence on, and kinship with, the devastated environment occupied by the mine. Following how Silko makes these scalar leaps, I ask: what is the energetic life of uranium beyond an extractive logic? Posing this question reorients energy humanities and environmental justice scholarship away from what the Métis science historian Michelle Murphy names "damage-based research" at the juncture of Indigenous sovereignty and energy regimes, and toward the kinds of "decolonial possibilities" that arise from sites seemingly beyond repair.<sup>11</sup> Silko also helps us to approach materially grounded methods for doing "from below," translocal nuclear studies research within and beyond the US Southwest, delinked from the conceptual binds of the nation-state. As the Diné scholar Lou Cornum cautions in "The Irradiated International," the "weapon of mass destruction is the nation . . . the very notion of nation itself," suggesting that to think outside the nation-state is imperative to a truly denuclearizing and decolonizing nuclear research paradigm.<sup>12</sup> Perhaps we all, as Cornum writes, "have something to learn from radiation about being uncontainable."<sup>13</sup>

## Wastelanding

*Ceremony* is set in the late 1940s, when young veterans like the novel's protagonist Tayo have just returned to Laguna Pueblo after serving in the Pacific Theater of World War II. *Almanac of the Dead*, meanwhile, points to the events and culture of the 1980s, most explicitly the Central American refugee crisis and free market Reaganomics. Together, the novels straddle the thirty years of the New Mexico uranium boom along the Grants Mineral Belt, roughly marked by the activity of Jackpile mine from 1953 to 1982. Popular lore has it that Paddy Martinez, a Navajo shepherd and prospector, "discovered" the ore in New Mexico in 1950, but, as the Acoma Pueblo writer Simon Ortiz explains, this was the culmination of "any number of explorations for uranium since the 1940's."<sup>14</sup> The New Mexico deposit was just what the United States needed, allowing for domestic uranium extraction after dependence on the Northwest Territories of Canada and the Belgian Congo during the Manhattan Project. Prospectors rushed to the Southwest emboldened by Cold War paranoia, and boomtowns began to flourish along the belt.

Both novels deal with the aftermath of a specific mining venture—the "aftermath" being integral to, and anticipated to follow, the boom. As mining companies typically leave behind industrial externalities—like the ruins of infrastructure, unfilled pits, and toxic tailings—the prospect of abandonment with impunity permits the boom to happen with the speed, violence, and carelessness that it does. More than other toxic legacies, a *radiotoxic* aftermath stretches the term to an impossibly distant future. If uranium-238 has a half-life of 4.5 billion years, then the deep-future temporality of radiotoxic waste confounds any hope of total cleanup, eradication, or reversal. Waste can be resituated or divided or buried, but it cannot be disappeared.

In her 2015 study on the impact of uranium mining on the Navajo, Traci Brynne Voyles proposes the concept of wastelanding to describe the settler production of, and dependence on, sacrificial land for the nuclear industry.<sup>15</sup> Wastelanding has interlinked material and discursive components, as the naming of a particular area as a wasteland better justifies its abandonment to toxic conditions. Settler capital discursively strips an earmarked zone of its ecology in order to *actually* do so with industry. Like the "legal fictions" of *terra nullius*, wastelanding is a mode of racialization that determinedly un-sees the intricate human and more-than-human social worlds living in a land that has been deemed useful for capital, flexibly marking "different objects, landscapes, and bodies" as pollutable and disposable.<sup>16</sup>

In *Ceremony*, Laguna Pueblo lands are regarded as the “natural” location for a uranium mine because there “was nothing there the people could use anyway, no silver or gold,” and the “drought had killed off most of the cattle by then, so it really didn’t matter if a square mile of land around the mine area was off limits” (243). This naturalization of the land as waste, and the subsequent naturalization of colonial ownership, obscures the prior, and very recent, history of settlement that itself produced such desert-like conditions: “Ever since the New Mexico territorial government took the northeast half of the grant, there had not been enough land to feed the cattle anyway,” leading to overgrazing and desertification (243). To put wastelanding in Rob Nixon’s terms, the Laguna in New Mexico have been subjected to a form of “displacement without moving” via multiple layers of settler expropriation and environmental engineering.<sup>17</sup>

As Joseph Masco states at the start of his project on the “nuclear borderlands,” New Mexico is where the “nuclear age began in earnest.”<sup>18</sup> Given, however, that nuclear weapons “became the one true sign of ‘superpower’ status,” the registers of wastelanding are not simply a matter of abjection.<sup>19</sup> The state attitude toward the Southwest reveals nuclear wastelanding’s incoherence: to rationalize land expropriations and anticipated waste dumping, the desert sacrifice zone must be figured as eternally blighted; on the other hand, potential developers need to be compelled to invest in its ample subsoil wealth and technoscientific promise. Wastelanding bifurcates into two temporally informed representations of space: the retrogressive and infertile, justifying toxicity; and the futuristic and abundant, heralding national advancement. A “uranium landscape,” Voyles asserts, is where “future and past . . . seem to collide.”<sup>20</sup> In this figuration, the “Indian,” like Martinez, might assist in the romantic narrative of discovery, but Indigenous peoples’ assumed lack of technological expertise, their “unproductive” relationship toward the land, consigns them to the “past tense” aspect of wastelanding. What has been named “nuclear colonialism” is not just an expression of environmental racism in its distributive sense but concurrently furthers a racial production of Indigenous peoples as features of a primitive landscape, as antithetical to the atomic imaginary of the future.<sup>21</sup>

In 2002 the Indigenous Environmental Network released an antinuclear statement on behalf of two hundred “Indigenous organizations, traditional societies, and communities across North America.”<sup>22</sup> This statement protests the designation of Yucca Mountain in Nevada—sacred to the Western Shoshone and Paiute—as “the country’s official repository for highly radioactive nuclear waste.”<sup>23</sup> The authors of the statement refer to a “cycle of abuse” and “unde-

clared war” by the nuclear industry against “our communities worldwide.”<sup>24</sup> To be sure, the nuclear colonialism inflicted on the Indigenous peoples of the Southwest has resounding echoes elsewhere. The United States conducted sixty-seven atom and hydrogen bomb tests in the Pacific Marshall Islands from 1946 to 1958, while the French tested extensively in French Polynesia.<sup>25</sup> In Australia, the British tested bombs at the Monte Bello Islands, Emu Field, Kiritimati (Christmas) Island, and Maralinga between 1952 and 1957, and then again carried out “minor trials” at Maralinga until 1963, necessitating the forcible removal of the Maralinga Tjarutja from their lands. This was done with disregard for the Nuclear Test Ban Treaty, and released “at least twenty kilograms of plutonium which spread over wide areas in the form of fine dust.”<sup>26</sup> In Canada it was the US demand for uranium during World War II that prompted the uranium boom on Sahtu Dene land at Great Bear Lake.

By drawing attention to Silko’s surprising encounter with toxic spaces, I do not mean to understate or glamorize the severe and (immeasurably) long-term ecological, somatic, and social damage caused by nuclear colonialism. Rather, Silko’s work can be conceived as an attempt to deal with the legacy of uranium extraction in a way that neither minimizes the devastating harm inflicted on her community *nor* forecloses the possibility of life within and beyond desecrated environments.<sup>27</sup> I think of the Nehiyaw scholar Erica Violet Lee’s assertion that “folks from the wastelands learn to think in the midst of fire,” becoming “philosophers on our feet.”<sup>28</sup> Through the flourishing of multiscalar and multi-agential forms of relationality, Silko represents her abandoned mines as infinitely attached to other meanings, other social worlds, and other futures. This is not wishful thinking or rose-tinted sentimentalism, or even a program for political action, but instead an ethic of engaging with matter’s multiplicity that opposes the monomaniacal view of extraction. In the section that follows, I read both *Ceremony* and *Almanac of the Dead* as novels that repurpose the planetary transit of radioactive materials as foundational to new forms of social relation, and transgressive of the settler nation-state.

## Atomic Intimacies

*Ceremony* is a novel concerned with healing on multiple fronts, most especially of its protagonist, Tayo. Returning to Laguna Pueblo at the end of World War II, Tayo consults a Navajo medicine man, Betonie, to help him recover from the “white people’s war” (36). Tayo knows that he did not kill anyone *directly*, but involvement in “killing across great distances without knowing who or how many had died” unleashes an all-consuming sense of guilt (36). Betonie

designs a new ceremony for Tayo, explaining that “after the white people came, elements in this world began to shift; and it became necessary to create new ceremonies” (126). If the atomic bomb is the consummate expression of distance killing, then Betonie’s ceremony, as a form of inoculation, incorporates something of this white technology and its “shifted” elements.

Finding himself at the ruins of the uranium mine at the end of the novel, Tayo realizes at last that this must be the place of the ceremony’s conclusion. He sits on the edge of a trough of contaminated water and looks across at the “dark mine shaft” and the uranium tailings “like fresh graves” (244–45). Here it is possible to read Betonie’s ceremony as enabling a moment of illumination. Situated at the uranium mine, Tayo is afforded a new perspective on the two principal dimensions of his trauma—the fear of complicity in distance killing and the blurring of Laguna and Japanese voices—and begins to read the lands of his people in the story of the bomb. The spatial coordinates of uranium production map onto an Indigenous geography, and Tayo finally sees something that had been known and felt by his body for a long time, realizing that he “had been so close to it, caught up in it for so long that its simplicity struck him deep inside his chest” (245). His relationship to distance killing is more profound than he had imagined.

At the mine, Tayo finds himself on one point of a triangle: with Los Alamos laboratory “only a hundred miles northeast of him now,” and the Trinity testing site “only three hundred miles to the southeast,” these three conditions of possibility for the atomic bomb bear the dispossessive and debilitating structure of settler colonialism (245–46). Colonialism is ambivalently marked and refused by Tayo as he describes the electric fences still surrounding Los Alamos in the same breath as the “ponderosa pine and tawny sandrock of the Jemez mountain canyon where the shrine of the twin mountain lions had always been” (246). The electric fence functions as a synecdoche for the borders and boundaries installed by the settler state, but with the “always” Tayo imputes a temporariness to settlement, set against a land that indexes much deeper pasts and futures. The knowledge of deeper pasts and futures is also something that, ironically, is complemented by Tayo’s sudden awareness of the excessive and interconnective materiality of nuclear matter. Tayo affirms that there is “no end to it; it knew no boundaries; and he had arrived at a point of convergence where the fate of all living things, and even the earth, had been laid” (246). This “it,” this “witchery” perfected by the bomb, is borderless and boundaryless, yet it has its source at a specific point of convergence—namely, the mine and the uranium.

The point of convergence at the mine provides Tayo with an anchor from which he can read across vast distances and separations, and also read and



rationalize a particular facet of his psychosis. Uranium becomes a foundation for healing, and he now understands why the “Japanese voices had merged with Laguna voices, with Josiah’s voice and Rocky’s voice; the lines of cultures and worlds were drawn in flat dark lines on fine light sand, converging in the middle of witchery’s final ceremonial sand painting” (246). Where he had once been horrified and perplexed that he was confusing the enemy with members of his family, the realization that the Japanese and the Laguna have both been victims at either end of the nuclear industry makes sudden sense of his hallucinations. The enemy status of the Japanese is troubled, as is Tayo’s status as a war veteran for a settler-cum-imperial state. Betonie’s ceremony repurposes the planetary entanglements laid by the atomic bomb as avenues for translocal feeling, as the key to working through Tayo’s trauma, and as an antidote to the apocalyptic ceremony designed by witchery.

From this deathly intimacy with the Japanese, Tayo jumps to the bolder assertion that from “that time on, human beings were one clan again, united by the fate the destroyers planned for them all, for all living things; united by a circle of death” (246). In doing so, Tayo registers the universalism that seems to ineluctably attach to nuclear discourse.<sup>29</sup> Yet he is at pains to root these sentiments to the bomb’s territorial conditions of possibility, identifying the racialized and uneven distribution of injury and exposing how the firepower for an ongoing empire is “made from the stolen land” (*Ceremony*, 169). Crucially, Tayo’s conception of interrelationality is only made possible through a located encounter with the mine, the tailings, and the uranium. This provides him with the knowledge, finally, of the fatal ways that “the delicate colors of the rocks” have been animated (to connect the Laguna and the Japanese) and the ways that the toxic animacy of radioactive material exceeds human mastery (to unite the planet, albeit in a “circle of death” [246]).

Tayo’s quickening of a relational consciousness at a site of extraction is reminiscent of the play and graphic novel I mentioned briefly at the beginning of this essay—Clements’s *Burning Vision* and Van Camp’s *A Blanket of Butterflies*. A key intertext for both these texts is Peter Blow’s documentary *A Village of Widows*, in which the Dene community from Great Bear Lake demonstrates how the networks of the atomic age can bring about what David Eng has theorized as a form of reparations predicated on a “common vulnerability.”<sup>30</sup> When the Dene learn that the uranium mined from their land is not only responsible for a cancer epidemic in their community but also intimately connected to the bombing of Hiroshima and Nagasaki, they send a delegation of Dene elders to Japan to apologize to the *hibakusha*, the survivors, of the bomb. I use terms of intimacy here to signal how the relationship between

geographically distant groups is made intimately legible through situated, embodied experiences. As a model of connection, intimacy is not about similarity so much as interrelationship across difference or incommensurability. Building on Lisa Lowe's theorizing of intimacy, atomic intimacy describes a kind of vernacular planetary sensibility that resonates with Lowe's dedication to the "implied but less visible forms of alliance, affinity, and society" among peoples implicated under the same colonial or imperial power.<sup>31</sup> In a Lowian structure of relation, Indigenous peoples in the Americas have been brought into intimate, atomic proximity with Japanese victims of the bomb, and the toxic entanglements of twentieth-century US imperialism coarticulate two temporalities of violence—the "event" of detonation with the slower violences of extraction.<sup>32</sup> Intimacy is also a method for reading, demanding that we pay attention to the way that literary texts hold relationships across histories that typically are not studied together.

In a slightly different rendering of atomic intimacy to that in *Ceremony*, the uranium mine at the end of *Almanac of the Dead* provides the foundation for an incipient trans-Indigenism, as extraction enlivens hemispheric solidarities. Moving beyond the terms of recognition and healing in *Ceremony*, atomic intimacy in *Almanac of the Dead* forms the basis for revolution—showing how, in Lou Cornum's words, the "irradiated international" comprises potential "revolutionary subjects" or "containers of energy."<sup>33</sup> Across about seventy characters, five hundred years, and two continents, *Almanac* overflows with revolutionary fervor. Written during the 1980s and published in 1991, the novel's subaltern geographies mediate late twentieth-century articulations of Indigenous internationalism across Indigenous-identified collectives *and* in solidarity with otherwise colonized peoples and their liberation movements.<sup>34</sup> Most of all, the novel seeks to honor and reproduce long histories of alliance, relation, and collaboration between the Indigenous peoples of the Americas. Given that a number of her revolutionary spokespeople identify as Maya, Silko also uncannily anticipates the 1994 Zapatista uprising in Chiapas, southern Mexico, and the trans-Indigenous waves it generated.<sup>35</sup> In *Almanac of the Dead*, however, trans-Indigenism can be realized only via deeply grounded material experiences of settler colonialism, not through political discourse alone.<sup>36</sup> At the end of the novel, Sterling—the closest character to a protagonist in *Almanac*—is jolted from his general malaise into a political awakening only when he finally pays a visit to the uranium mine and fully comprehends its larger significance as a symptom of settler colonialism. Sterling's exposure to the political perspectives of his employers, Lecha and Zeta, provides the interpretive framework for comprehension, but it lingers as "too much" overwhelming discourse until the

abandoned mine provides the necessary grounding and embodiment (754). Nor is the mine incidental, as something about *extraction* in particular is at the core of Silko's hemispheric imaginary.

Silko explores interconnections across the Americas, and the permeability of nation-state borders, in several ways. Of most relevance to Sterling at the mine, however, is the suggestion that environmental violence awakens a geologic bridge, and a corollary decolonial mobilization, across the continents. This sentiment comes to its fullest expression at the International Holistic Healers Convention in Tucson that opens the novel's sixth and final part—"One World, Many Tribes." In his keynote, the Barefoot Hopi (a prophetic radical and passionate authority on Indigenous internationalism) warns that "all the riches ripped from the heart of the earth will be reclaimed by the oceans and mountains," and "earthquakes and volcanic eruptions of enormous magnitude will devastate the accumulated wealth of the Pacific Rim," and the "west coast of the Americas will be swept clean from Alaska to Chile in tidal waves and landslides" (734–35). The Barefoot Hopi cannot suppress the tone of jubilation that inflects these imagined scenes of apocalypse. The planet, in wreaking its revenge, proceeds on a mission of reclamation, and the Barefoot Hopi depicts a scenario where the nation-states erected on top of the Americas are dissolved to reunite the continents from "Alaska to Chile." Although this is a prospect of total ruin that, however destructive of settlement, is surely not desirable, the Barefoot Hopi goes on to describe revolutionary momentum in terms of environmental and spiritual upheaval, implying that geologic disturbance carries some mobilizing energy that is available for repurposing. The people "out of the south" are "like a great river flowing restless with the spirits of the dead who have been reborn again and again all over Africa and the Americas" (735). In the Hopi's decolonial schema, earth animacy is spirit animacy, and the revolutionary northern migration is likewise conceived as "instinctive" and "inevitable" and "unstoppable" (735–36). While there is an obvious dehumanizing danger to metaphorizing what is essentially a refugee crisis as a great river that seems to operate unconsciously, this metaphor nonetheless enables Silko to suggest that the death-producing system of settler colonialism also produces forms of pan-hemispheric liveliness and interconnection beyond its control.

Sterling echoes the Barefoot Hopi's conception of an interconnected earth when he approaches the mine in the novel's final chapter. Prior to this, the uranium mine had been a cause of personal grievance for Sterling, but had signified nothing beyond that. At the beginning of *Almanac of the Dead*, we learn that Sterling has been exiled by the Laguna Pueblo Tribal Council for failing to prevent a serious act of sacrilege: on his watch, a film crew document-

ing the abandoned mine at Paguate Village had *also* filmed a giant sandstone snake at the foot of the mine tailings—a mysterious earth formation that the village elders identify as Maahastryu, the Laguna ancient snake spirit associated with water protection. Having left Laguna Pueblo resenting the mine and the snake for his exile, Sterling now returns to understand what the Laguna elders had been referring to when they predicted trouble for the community and the planet on account of uranium extraction. This time around, Sterling is “reminded of the stub left after amputation” when he looks at “the shattered, scarred sandstone that remained; the mine had devoured entire mesas” (759). This amputation metaphor recalls the idea of a unified earth-body so central to the Barefoot Hopi’s trans-Indigenous vision for decolonization, speaking to an integrated system in which a loss at one location is felt and has repercussions elsewhere.

Fittingly, Sterling now reads the sandstone snake in a new light as well, as the spiritual messenger of an Indigenous revolution flowing up from the south, looking “in the direction from which the twin brothers and the people would come” (763).<sup>37</sup> Appropriate to this theme of Indigenous coalition, Maahastryu is both a Laguna-specific and trans-Indigenous spirit being for its resonance with the Mesoamerican snake Quetzalcoatl and the African snake Damballah who have also, as the Barefoot Hopi asserts, “returned to the people” (735).<sup>38</sup> The mine and the snake, respectively, materialize for Sterling what had otherwise been abstract concepts—the deathly work of settler extraction and the revolutionary energy it unwittingly sets in motion, reconstituting the trans-Indigenous relations obstructed by arbitrary settler borders. Although Silko marks who experiences the border as militarized, violent, and impenetrable—and indeed who, or what, can move between the settler states of the Americas with privilege and impunity—*Almanac of the Dead* is also ecstatically borderless, putting on show the traffic of decolonial sympathies and spirit energy between the Indigenous peoples of the north and the south.

For the nuclear studies scholar Jessica Hurley, *Almanac of the Dead*’s final scene is infused with so much revolutionary energy because the “longue durée” of radioactive decay means that uranium waste undermines settler timescales presuming the eternity of the nation-state, despite the toxicity that would seem to further the settler project of Indigenous elimination.<sup>39</sup> The temporality of radiotoxic waste, in other words, points to a future that will surely outlive the settler state that created it and therefore materializes the decolonial promise of something beyond, and beyond the control of, settler occupation. If settler colonialism differentiates from other forms of colonialism on the basis of permanence—and the mastery of the earth that secures such permanence—then

nuclear waste challenges these two durable features of settler ideology at once. Even as nuclear waste is the deathly legacy of the energy extractivism intended to reproduce settler life, it nonetheless harmonizes with all the prophecies in *Almanac of the Dead* that predict the inevitable dissolution of Euro-American dominance in the Americas at some unspecified point in the future.

As Masco reminds us, “Nuclear materials not only disrupt the experience of nation-time (confounding notions of both the present and the future), they also upset the concept of nation-space, in that they demonstrate the permeability, even irrelevance, of national borders to nuclear technologies (to intercontinental missiles and radioactive fallout, for example).”<sup>40</sup> In *Ceremony*, an experience at a uranium mine prompts Tayo’s capacity to illuminate the transpacific intimacies of the nuclear age, and in *Almanac of the Dead* the uranium mine and tailings incite Sterling’s hemispheric trans-Indigenous awakening. The transgressive toxicity of uranium, intimately linking peoples across distances in both these cases, serves as a material riposte to the logics of the settler nation-state. In *Almanac of the Dead* especially, Silko develops a countereconomy of energetics to describe how settler extractivism fuels the revolutionary fervor that will be its own undoing. In a similar style, the Oceti Sakowin historian Nick Estes explains that, alongside the accumulation of slow extractive violence, “there is another kind of accumulation, one that is not always spectacular, nor instantaneous, but that nevertheless makes the endgame of elimination an impossibility: the tradition of Indigenous resistance . . . [that] endures the long game of colonial occupation.”<sup>41</sup> Setting up her characters to repurpose the uranium mine and tailings at the end of both novels, Silko models one way to decolonize the extractive wasteland, as the radiotoxic material itself propels the energetic intimacies that confound the borders and timescales of the nation-state.

In the next section of this essay, I put pressure on two implications of the above analysis. First, the implication that the aftermath-environment brings about an empowered decolonial consciousness, thereby suggesting that material experience in Silko easily leads to knowledge, political awakening, and agency. And second, the implication that transpacific or trans-Indigenous intimacies are wholly dependent on or reducible to interrelated structures of settler colonial violence across geographies. Counter to this, I draw out other forms of rocky decolonialism in *Almanac of the Dead*, arguing that Silko both practices a mode of relating to more-than-human matter that qualifies an optimistic investment in empowered human agency, and maps out energetic geographies independent of those determined by settler extraction.

## Particular Rocks

*Almanac of the Dead* is a text that Silko herself acknowledges might make for a “toxic” reading experience.<sup>42</sup> It is full of horrors, several of which are inextricable from the extraction of raw materials and human capital from the Americas. The novel is replete with characters who seem to harden the association between extraction and death. Far from serving as the reproductive engine of the settler state, resource extraction, in Silko’s formulation, only hastens settlerdom’s demise. A German mining geologist and engineer, for example, dies sitting in a chair in a hotel room, as “shriveled as a cactus blown down in a drought” (123). His mother-in-law, Yoeme, diagnoses his ailment as one “common among those who had gone into caverns of fissures in the lava formations” (121). Having spent his life surveying deposits of silver, iron, and copper, the geologist literally dries up. Where once the geology of the mountains had excited him, he develops the “look of an exhausted man performing a chore” as he describes “highly technical rock conglomerates” without actually looking at them (124). The geologic work of organizing the earth into categories engenders a kind of detachment or indifference or failure of looking that makes even his job as a geologist impossible in the end.

As a counterpoint to the geologic gaze, Silko’s Yaqui character Calabazas promotes another way to engage with earth matter that helps him navigate the desert as a drug and arms smuggler across the US–Mexico border. “I get mad when I hear the word *identical*,” Calabazas expounds to his protégés Mosca and Root, continuing:

There is no such thing. Nowhere. At no time. All you have to do is stop and think. Stop and take a look . . . Look at it for what it is. That’s all. This big rock is like it is. Look. Now, come on. Over here. This one is about as big, but not quite. And the rock broke out a chunk like a horse head, but see, this one over here broke out a piece that’s more like a washtub. (201–2)

Root rubs the rocks with his hand and “feel[s] the differences along the fractures” even though the rocks seem to all consist of the same “dull gray basalt” (202). To the geologist, the “dull gray basalt” would surely be read as the surface symptom of mineral wealth, or knowable ore. To Calabazas, on the other hand, rocks exist as radically particular singularities that refuse any kind of categorical pressure. As he breaks into similetic mode—one rock is “like” a horse head, another is “like” a washtub—he ascribes likenesses to emphasize how different each rock is from another. “Likeness,” moreover, is provisional, tentative, and far from an absolute determination of properties. Counterintui-

tively, Calabazas's intimate recognition of particularity opens up processes of meaning making that are distinct from the containing designations of geology. Meanwhile, the geologic work of sweeping, sorting, and arranging according to type is bound to detached misrecognition, missing how matter exceeds its mineralogical ascription or might be of significance to a local ecology outside an extractive valuation. Calabazas's imperatives to "stop" and "look" at this moment "now" also capture how rocks, although seeming static, are constantly changing through time; their particular differences are not fixed, and the rocks are in fluid, entangled relation with the mobile world around them. According to Silko's energetic economy, the attempt to exact energy from rocks is a form of nonreciprocity that produces stasis (as *Almanac's* geologist so fatally reveals). Everything about Calabazas's relationship to the rocks, on the other hand, suggests responsive liveliness.

The geologic perspective that enervates Silko's geologist is at once a process of attachment as much as severance. By flattening complex ecosystems into a singular, known "resource," extractive epistemologies approach earth matter as naturally attachable to category, yet severable from its local human and more-than-human relationships. With what Macarena Gómez-Barris calls a "monocultural imperative," geology as a discipline upholds "state and corporate logics that map territories as commodities rather than perceive the proliferation of life and activities that make up the human and nonhuman planetary."<sup>43</sup> Likewise, in *A Billion Black Anthropocenes or None*, Kathryn Yusoff theorizes geology as a "naming of property and properties" that "enacts the removal of matter from its constitutive relations as both subject and mineral embedded in sociological and ecological fields."<sup>44</sup> In their division of human and inhuman, and active and inert, the organizing "grammars of geology" are complicit with racial taxonomies, and, as Yusoff argues, the severance of inhuman matter from the land also rationalizes the severance or dispossession of humans from the land and their own humanity, a "geometry of power that executed dispossession and displacement under the rubric of extraction."<sup>45</sup> To Yusoff, Gómez-Barris, and Silko, the discipline of geology developed in consort with, and remains inextricable from, the extractive industries and settler colonialism's dispossessive and racializing functions.

To return to Sterling at the abandoned uranium mine, Calabazas's counter-geologic rock philosophy is instructive. While Sterling seems to undergo a political awakening at the mine, how does he enact decolonial relations with the "uranium" rocks in this final scene? And how might such a material ethic interrupt any conclusion that celebrates agential, human primacy in the form of revolution? According to my prior reading of *Almanac of the Dead*, a trans-

Indigenous politics would seem to depend on an accumulation of various types of situated knowledge—of settler colonialism as a structure, of revolutionary histories in the Americas, and of Indigenous cosmologies across continents. In other words, Silko’s extrication from the violences contained in *Almanac of the Dead* to point to a decolonized future—based on a reimagined relationship between humans and the planet—is contingent on the dispersal of such knowledge in the production of politically awakened subjects like Sterling. Thanks to this accumulation of knowledge—a synthesis of the discursive and the material, the global and the local—Sterling, like Tayo, achieves a moment of revelation at the site of the mine. Yet the implications of agency, action, and futurity that extend from this optimistic conclusion are severely frustrated by the repeated suggestions throughout the novel of human “insignificance” next to the animacy of the earth and its “spirit beings” (762).

When he had first heard about the sandstone snake at the foot of the tailings, Sterling dismissed it as “only” an “odd outcropping of sandstone” (761). Such a dismissal unwittingly complies with an extractive, geologic perspective in two ways: first, Sterling’s “only” echoes the undifferentiating categorical view that Calabazas identifies, the view that plagues the German geologist; and second, Sterling’s naming of the snake as “sandstone” flags it as the ore-bearing rock that prospectors would be hunting down in the Grants Mineral Belt.<sup>46</sup> In contrast to this dismissive attitude, Sterling’s embodied experience in the presence of the “snake shrine” speaks of total submission (761). This time, when he first catches sight of its snake with its head “raised dramatically” and its jaws “open wide,” Sterling feels his “heart pound and the palms of his hands sweat” (761). In his efforts to interpret the meaning of the stone snake, Sterling lists all the ways that it, as a spirit being, does not care:

The snake didn’t care if people were believers or not; the work of the spirits and prophecies went on regardless. Spirit beings might appear anywhere, even near open-pit mines. The snake didn’t care about the uranium tailings; humans had desecrated only themselves with the mine, not the earth. Burned and radioactive, with all humans dead, the earth would still be sacred. Man was too insignificant to desecrate her. (762)

Here the stone snake is represented as an animate and agential spiritual/material being whose sacredness, like the earth as a whole, outlives humanity and its toxic legacies. Reading this scene in light of Calabazas, Sterling’s moment of recognition is as much material as it is spiritual. As Sterling finally recognizes the great snake as the Laguna snake spirit Maahastryu, he finally recognizes the rock formation in its particularity and excessiveness beyond the category of sandstone—beyond in fact all human activity, about which the snake em-



phatically “does not care.” Yet, even though the snake does not “care” about the mine, it is indubitably bound to it and contaminated by the toxic tailings. It is both defiant of and embedded in toxicity. This dual character of the snake—as at once toxified earth matter *and* survivor of extraction—materially enacts a program of defiance in a way that levels, yet paradoxically energizes, the human decolonial movements that the novel heralds. The snake is not just a symbol for decolonization, or merely the messenger of its imminence, but, in its material excess to extractive categories and legacies, embodies the ecological relations that persist despite attempted severance. The great stone snake possesses an animacy that literally leaps from the scene of the aftermath and materializes as much as figures the fact that settlement is never totalizing.

Rather than interpret the wastelanded aftermath-environment as the provocation for an empowered decolonial consciousness, I therefore read the final scene as modeling a form of decolonization with distributed human and more-than-human actants, variously engaged in practices of relationality that counter the isolating cuts and injuries of extraction.<sup>47</sup> This is perhaps why the Barefoot Hopi reads the revolutionary refugee movement *as* itself a force of nature—not to dehumanize the refugees specifically but to “dehumanize” and humble any project for transformative change that too confidently stages the human as ultimate protagonist, as to do so would surely risk reprising the anthropocentric conceits of colonialism and extractivism. While Silko, on the one hand, affirms the hemispheric Indigenous revolution to come, she also subverts the seductions of revolutionary subjectivity and suggests that Sterling’s quiet interaction with the great stone snake is a kind of micro-level, revolutionary, decolonizing moment as well.

Calabazas’s materialist philosophy of rocks likewise offers another way to read the horizontal interconnections between Indigenous peoples in *Almanac of the Dead*. In contrast to the dominant form of trans-Indigeneity in the novel, which seems to arise wholly from the shared experience of settler colonial violence against lives and lands, Calabazas’s countervailing model depends on long traditions of reading the land for navigational purposes—traditions that predate and persist through settler colonialism and that provide strategies for eluding it. This, to Calabazas, is how noticing the particular differences between rocks cultivates a survival toolbox: “Survival had depended on differences. Not just the differences in the terrain that gave the desert traveler critical information about traces of water or grass for his animals, but the sheer varieties of plants and bugs and animals” (202). As such, Calabazas’s land-reading practices assert a multiplicity of other, nonextractive meanings available for desert rocks and their human and more-than-human attachments. These are

land-reading practices that also, crucially, allude to histories of trans-Indigenous negotiation and exchange throughout the mapped and deeply lived land of the desert. In another lesson for Root, Calabazas tells him, “We don’t believe in boundaries. Borders. Nothing like that. . . . We have always moved freely. North-south. East-west. We pay no attention to what isn’t real. Imaginary lines” (216). Calabazas, as a smuggler, lives as best he can with disregard for settler borders, and his capacity to do so is anchored by the particular features of the desertscape—a desert that, to the extractive view, is uniformly valuable for its mineral wealth, and otherwise, apparently, devoid of human relations.

It is apposite, then, that Sterling’s reading of the giant snake at the end of the novel is bound to this theme of desert navigation and mobility. The novel’s concluding line affirms the rocky spirit being as a prophetic landmark, “looking south, in the direction from which the twin brothers and the people would come” (763). Its message is not an axiom or an order but a signpost to the decolonial movement flowing up from southern Mexico. By ending this way, Silko suggestively links Maahastryu to Calabazas’s conception of the desert as a richly populated space of particular materialities that, in their navigational as much as their spiritual significances, are inextricable from trans-Indigenous relations across the continents. This is a technology of mapping the desert tied to Indigenous survival and resistance, and one based around an entirely different disposition toward earth matter to that of the surveying, extractive eye of geology.

To notice how Silko promotes a Laguna relationship to earth matter outside an extractive valuation also opens up a different perspective on *Ceremony*’s narrative of healing. In her memoir *The Turquoise Ledge*, Silko writes of another nonextractive use for the rock among the Laguna community: “In times past the medicine people used to send their patients to soak in the spring water because it cured certain maladies. In their natural undisturbed state, the uranium-bearing minerals in the earth beneath Paguate village were healing mediums, not killers.”<sup>48</sup> While the extraction and enrichment of uranium produces a commodity and waste products of high radiotoxicity, ore-bearing rock is only minorly radiotoxic, and a natural “healing medium.” So the incorporation of uranium as essential to Tayo’s healing ceremony harks back to the therapeutic function of ore rock to the Laguna. Both texts therefore advance a different form of decoloniality alongside the “repurposing” kind I theorized in the first half of this essay, staging a reciprocal relationship to rocks that exists independent of, rather than responds to, resource extraction. In particular, this latter decoloniality resonates with Nick Estes’s reminder that “ancestors of Indigenous resistance didn’t merely fight *against* settler colonialism; they

fought *for* Indigenous life.”<sup>49</sup> Asking what “proliferates in the absence of empire,” Indigenous resistance thus defines freedom not just as “the absence of settler colonialism” but as “the amplified presence of Indigenous life and just relations with human and nonhuman relatives, and with the earth.”<sup>50</sup>

## Endings

In the essay “Fifth World,” Silko relates the structuring power of endings, and the interpretive damage that endings can do, to both death and the commodity form. She warns how Laguna Pueblo stories, especially the story of the great stone snake, have been made into “dead” objects of extractable value: “There have been attempts,” she writes, “to confine the meaning of the snake to an official story suitable for general consumption,” but the “Laguna Pueblos go on producing their own rich and continuously developing body of oral and occasionally written stories that reject any decisive conclusion in favor of ever-increasing possibilities.”<sup>51</sup> Silko’s tone here suggests that such “attempts” have been frustrated and that the story of the snake is hostile to capitalism, as stories without “decisive conclusions” make themselves less available for consumption. Yet even the most “decisive” of endings is not totally closed-off, shut-down, or inert, and Silko’s meditation on endings is as much a prescription for a way of reading as it is a meditation on literary form.

Accordingly, Silko’s novelistic forms provide a kind of literary resistance to extraction in particular by introducing imagined readers to collaborative projects of continuance. Like ceremonies in *Ceremony*, almanacs in *Almanac* are figured as community use-objects embedded in multiply networked past and future processes of transformation, in this way deflecting an extractive logic motivated by removal and finality. And in their capacity as social and material objects, almanacs are subject to ineluctable change. Change, in other words, is less something that is allowed or disallowed by human actors than something represented by Silko as a condition of material entanglement. Lecha, for example, surmises that a “great deal of what had accumulated with the almanac fragments had been debris gathered here and there by aged keepers of the almanac after they had gone crazy” (*Almanac*, 569). Silko’s almanac is represented as a use-object in the world that references, in its material traces, an embodied relation with its human keepers and surrounding environment as much as, if not more than, the inscrutable prophecies hidden within its code. Indeed, Lecha cannot determine or “trust” what is the “original” almanac code, and what is forgery or wine splash. The almanac is, rather, the whole material inheritance—a record of accumulation and relational interaction across time and geographies.

*Almanac of the Dead*'s fragmented, cumulative, encyclopedic spirit formally mirrors Lecha's diegetic almanac and refuses to decisively "end" at its final scene. As such, Silko adopts a form that puts on display the theme of material continuance against the literary extractive view that demands tidy objects with "decisive conclusions."<sup>52</sup> Even if Sterling's story has come full circle and he has returned to Laguna Pueblo to finally decipher the message of the sandstone snake, that message is one of movement and futurity—pointing to "the direction from which . . . the people would come" (*Almanac*, 763). The plot and the form of *Almanac of the Dead* therefore "spill" across its borders in a style consistent with the leaping great stone snake, both objects relationally and materially intertwined with their respective worlds in ways that disturb the premises of extraction. This is all the more significant in a novel that ends at a location seemingly ruined and toxified by *uranium* extraction—a chemical element so indissociable from death, endings, and negation. Through diverse material engagements with the earth matter categorized as "uranium," and through formal refusal of closure and containment, Silko resists narratives that reproduce an impression of Indigenous homelands as toxically, tragically doomed, and that perpetuate the colonial tethering of Indigenous peoples to extinction.

For this present moment of "invigorated focus" on "fossilized ruins" or "anthropogenic sediment" to disclose histories of human impact, Silko, in both *Ceremony* and *Almanac of the Dead*, offers another kind of geologic attention.<sup>53</sup> This is what Yusoff might call a "poetry of rocks that tells a different story of rocks."<sup>54</sup> As the spread of radionuclides across the earth's substrata plays into a notion of a homogeneous anthropocenic subject—the undifferentiated agent and victim of planetary change—Silko's mediation of waste and ore begins with the experiences of the colonized and racialized in locations of concentrated radiotoxicity. From these sites of particular impact, Silko's texts spill outward to register new and enlivened networks of relation for the atomic age, pushing against nuclear studies paradigms that are either sweepingly universal or bound to the form of the nation-state. For both Tayo and Sterling, it is the rock itself that makes these scalar proliferations and intimate geographies possible, suggesting another kind of energetic economy deriving from subsurface matter. This energetic economy is inherently decolonial, as it breaches the nation-state borders that have only served to debilitate Indigenous livelihoods.

It begins, however, with the Laguna Pueblo and with the rock. In her first and second novels, Silko urges us to remember that energy-producing rocks in the Southwest and elsewhere have been colonized by the settler nuclear complex, and that decolonization is in part a micro-scale practice of reviving

Indigenous relations to matter. In a rephrasing of Dene political scientist Glen Coulthard's concept of "grounded normativity," Jodi Byrd (Chickasaw) and others propose "grounded relationality" to describe the way in which the land "activates, fosters, and nourishes" relationships across struggles and places.<sup>55</sup> In Silko's work, practices for asserting Indigenous sovereignty over territory are acts not of exclusive ethnocentrism but of flourishing solidarity mobilized by the land itself. Centering a counteractive decolonial ethic, Silko shows how Laguna relations to the "uranium" rocks as kin not only emphasize Laguna presence and governance over the land-made-waste but also generate horizontal intimacies between Indigenous and Indigenous, and between Indigenous and non-Indigenous peoples, as well as open up other nonextractivist pasts and futures that cut settler colonialism, and its geologic assumptions, radically down to size.

#### Notes

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1. Lowell Hilpert, *Uranium Resources of Northwestern New Mexico* (Washington, DC: US Government Printing Office, 1969), 5.
2. The Pueblo Tribal Council "consented" to prospecting and, eventually, mining near Paguate Village. The cancerous risks of radiotoxicity (that by the early 1950s were well known to scientists) were not fully revealed to the council as they assessed the pros and cons of a uranium mine, and the promise of jobs was no doubt a powerful incentive. Initially, Anaconda tried to persuade the Laguna Pueblo to relocate, but the tribe refused and "the mining companies . . . simply sank shafts under the village" instead. See Leslie Marmon Silko, "Fifth World: The Return of Ma ah shra true ee, the Giant Serpent," in *Yellow Woman and the Beauty of the Spirit: Essays on Native American Life Today* (New York: Simon and Schuster, 1996), 128.
3. As Matthew Flisfeder explains, "This tension between energy and weaponry is inherent to the history of nuclear technology. In nuclear fission, the nucleus of a particle splits into smaller parts, producing free neutrons or photons and releasing large amounts of energy. In bombs, the fissile material must be capable of sustaining nuclear chain reactions. In nuclear reactors, however, the rate of the chain reaction is controlled by rods of material that absorb the neutrons and slow the fission. Commercial reactors contain only a small percentage of fissile material, bombs approximately 90 percent." See Flisfeder, "Nuclear 1," in *Fueling Culture: 101 Words for Energy and Environment*, ed. Imre Szeman, Jennifer Wenzel, and Patricia Yaeger (New York: Fordham University Press, 2017), 243.
4. Marie Clements, *Burning Vision* (Vancouver: Talon Books, 2003), 1.
5. Richard Van Camp, *A Blanket of Butterflies*, illus. Scott B. Henderson (Winnipeg: Highwater, 2015), 24.
6. The point of production in this formulation is, of course, also a point of extraction and detonation. As Silko attests, "It is clear the U.S. Government managed to nuke this country more completely than the USSR ever dreamed" (*The Turquoise Ledge: A Memoir* [London: Penguin, 2011], 69).

7. DeLoughrey explains that if “globalization is characterized by visibility and illumination, planetarity provides a means to think through that which is rendered invisible. Planetarity, in Spivak’s definition, is the figure for alterity, generally read in terms such as the divine and nonhuman nature.” See Elizabeth M. DeLoughrey, *Allegories of the Anthropocene* (Durham, NC: Duke University Press, 2019), 74.
8. Heather Davis and Zoe Todd, “On the Importance of a Date, or Decolonizing the Anthropocene,” *ACME: An International Journal for Critical Geographers* 16.4 (2017): 770.
9. Leslie Marmon Silko, *Ceremony* (London: Penguin, 1986); Silko, *Almanac of the Dead* (London: Penguin Books, 1992). Hereafter cited in the text by page number (and title, *Ceremony* or *Almanac*, if necessary).
10. For an analysis of the ways that *Almanac*’s anxious affects might be thought to overwhelm its ending, and stymie political action, see Heather Houser, *Ecosickness in Contemporary U.S. Fiction: Environment and Affect* (New York: Columbia University Press, 2014).
11. Michelle Murphy, “Alterlife and Decolonial Chemical Relations,” *Cultural Anthropology* 32.4 (2017), [journal.culanth.org/index.php/ca/article/view/ca32.4.02/184](http://journal.culanth.org/index.php/ca/article/view/ca32.4.02/184).
12. Lou Cornum, “The Irradiated International,” “Future Perfect” conference, Data & Society Research Institute, June 7–8, 2018, [datasociety.net/wp-content/uploads/2018/06/ii-web.pdf](https://datasociety.net/wp-content/uploads/2018/06/ii-web.pdf).
13. Cornum.
14. Simon J. Ortiz, *Fight Back: For the Sake of the People, For the Sake of the Land* (Albuquerque: Institute for Native American Development, 1980), 64. Silko dates the mine in *Ceremony* to 1943, and it is likely based on the kinds of small-scale, exploratory projects in the Southwest that Ortiz alludes to here. The mine in *Almanac* is much more explicitly based on Jackpile.
15. Traci Brynne Voyles, *Wastelanding: Legacies of Uranium Mining in Navajo Country* (Minneapolis: University of Minnesota Press, 2015).
16. Sven Lindqvist, *Terra Nullius: A Journey through No One’s Land*, trans. Sarah Death (London: Granta, 2007), 4; Voyles, *Wastelanding*, 15.
17. Rob Nixon, *Slow Violence and the Environmentalism of the Poor* (Cambridge, MA: Harvard University Press, 2011), 19. Displacement without moving is especially pertinent here, as the many Pueblo nations in New Mexico have maintained their ancestral lands through the Spanish, Mexican, and American national projects and have never been removed to a reservation.
18. Joseph Masco, *The Nuclear Borderlands: The Manhattan Project in Post-Cold War New Mexico* (Princeton, NJ: Princeton University Press, 2006), 1.
19. Masco, *Nuclear Borderlands*, 8.
20. Voyles, *Wastelanding*, 69.
21. Valerie Kuletz, “Invisible Spaces, Violent Places: Cold War Nuclear and Militarized Landscapes,” in *Violent Environments*, ed. Nancy Lee Peluso and Michael Watts (Ithaca, NY: Cornell University Press, 2001), 237–60.
22. Indigenous Environmental Network (IEN), “Indigenous Anti-Nuclear Statement: Yucca Mountain and Private Fuel Storage at Skull Valley,” *IEN*, April 2002, [www.ienearth.org/indigenous-anti-nuclear-statement-yucca-mountain-and-private-fuel-storage-at-skull-valley/](http://www.ienearth.org/indigenous-anti-nuclear-statement-yucca-mountain-and-private-fuel-storage-at-skull-valley/).
23. IEN.
24. IEN.
25. “Testing” sanitizes the reality of testing, which is bombing. The Marshallese poet Kathy Jetñil-Kijiner’s video-poem, “Anointed,” addresses the legacy of nuclear bombing in the Pacific. See Kathy Jetñil-Kijiner and Dan Lin, “Anointed,” accessed February 15, 2020, [www.kathyjetnikijiner.com/videos-featuring-kathy/](http://www.kathyjetnikijiner.com/videos-featuring-kathy/).
26. Lindqvist, *Terra Nullius*, 222.
27. It is unsurprising that Silko was considering the past, present, and future of the mine while she was writing *Almanac* in the 1980s; during this time, the Laguna were in negotiations with Anaconda about procedures for reclaiming the mine after its closure. Anaconda abnegated all responsibility, and the Laguna decided to reclaim the mine themselves. For more information on this and ongoing problems associated with the mine, see work by the Laguna/Diné scholar June Lorenzo, who is from Paguate Village: “The Pueblo of Laguna and Uranium Mining, 1953–1982, and Resistance to Renewed Efforts to Mine Uranium,” *TEBTEBBA*, August 2011, [tebtebba.org/index.php/all-resources/category/95-presentations?start=20](http://tebtebba.org/index.php/all-resources/category/95-presentations?start=20).
28. Erica Violet Lee, “In Defence of the Wastelands: A Survival Guide,” *Guts*, November 2016, [gutmaga-zine.ca/wastelands/](http://gutmaga-zine.ca/wastelands/).

29. Following Lisa Yoneyama, DeLoughrey describes the “nuclear universalism” of the antinuclear movement as a “homogenizing one-worldism” responsive to, but grossly simplifying, the fact that “by the 1960s every person on the planet was . . . globally connected due to the bodily absorption of the radioactive fallout from hydrogen weapons detonated in the Pacific” (*Allegories of the Anthropocene*, 89, 76).
30. Peter Blow, *Village of Widows: The Story of the Sahtu Dene and the Atomic Bomb*, dir. Peter Blow (Toronto: Lindum Films, 1999), DVD; David Eng, “Reparations and the Human,” *Profession*, March 2014, [profession.mla.org/reparations-and-the-human/](http://profession.mla.org/reparations-and-the-human/).
31. Lisa Lowe, *The Intimacies of Four Continents* (Durham, NC: Duke University Press, 2015), 19.
32. Nixon, *Slow Violence*.
33. Cornum, “Irradiated International.”
34. For an account of Indigenous internationalism in the twentieth and twenty-first centuries, refer to Nick Estes, *Our History Is the Future: Standing Rock versus the Dakota Access Pipeline, and the Long Tradition of Indigenous Resistance* (London: Verso, 2019), 201–45.
35. On Silko’s prescience about the Zapatista uprising, see Joni Adamson, “‘¡Todos Somos Indios!’ Revolutionary Imagination, Alternative Modernity, and Transnational Organizing in the Work of Silko, Tamez, and Anzaldúa,” *Journal of Transnational American Studies* 4.1 (2012), [escholarship.org/uc/item/2mj3c2p3](http://escholarship.org/uc/item/2mj3c2p3).
36. For a genealogy of trans-Indigenous studies within Native American and Indigenous studies, see Jodi A. Byrd, “American Indian Transnationalisms,” in *The Cambridge Companion to Transnational American Literature*, ed. Yogita Goyal (Cambridge: Cambridge University Press, 2017), 174–89. The key resource for trans-Indigenous literary studies is Chadwick Allen, *Trans-Indigenes: Methodologies for Global Native Literary Studies* (Minneapolis: University of Minnesota Press, 2012).
37. The “twin brothers” are the Maya twins Wacah and El Feo, who are leading the revolutionary refugee movement to the north.
38. Although Silko’s continental invocation of “Africa” throughout *Almanac* rarely gets more specific, it nonetheless marks another vector of solidarity with formerly enslaved Black peoples and the remaking of spirit traditions in the Americas.
39. Jessica Hurley, “Impossible Futures: Fictions of Risk in the *Longue Durée*,” *American Literature* 89.4 (2017): 761–89.
40. Masco, *Nuclear Borderlands*, 11–12.
41. Estes, *Our History Is the Future*, 167.
42. Leslie Marmon Silko, quoted in Rebecca Tillett, “Almanac Contextualized,” in *Howling for Justice: New Perspectives on Leslie Marmon Silko’s Almanac of the Dead*, ed. Rebecca Tillett (Tucson: University of Arizona Press, 2014), 5.
43. Macarena Gómez-Barris, *The Extractive Zone: Social Ecologies and Decolonial Perspectives* (Durham, NC: Duke University Press, 2017), xvi, 133.
44. Kathryn Yusoff, *A Billion Black Anthropocenes or None* (Minneapolis: University of Minnesota Press, 2018), 7, 4.
45. Yusoff, xii, 67.
46. Hilpert, *Uranium Resources*, 70, 74.
47. Given my interest in the agency of the more-than-human, it is worth pointing to a few Indigenous critiques of what has been termed the “ontological turn”: Kim TallBear, “Why Interspecies Thinking Needs Indigenous Standpoints,” *Fieldsights*, November 18, 2011, [culanth.org/fieldsights/why-interspecies-thinking-needs-indigenous-standpoints](http://culanth.org/fieldsights/why-interspecies-thinking-needs-indigenous-standpoints); and Zoe Todd, “An Indigenous Feminist’s Take on the Ontological Turn: ‘Ontology’ Is Just Another Word for Colonialism,” *Journal of Historical Sociology* 29.1 (2016): 4–22.
48. Silko, *Turquoise Ledge*, 74.
49. Estes, *Our History Is the Future*, 248.
50. Estes, 248.
51. Silko, “Fifth World,” 132–33.
52. Silko, 133.
53. DeLoughrey, *Allegories of the Anthropocene*, 134.
54. Yusoff, *Billion Black Anthropocenes*, 93.
55. Jodi A. Byrd, Alyosha Goldstein, Jodi Melamed, and Chandan Reddy, “Predatory Value: Economies of Dispossession and Disturbed Relationalities,” *Social Text*, no. 135 (2018): 14.