The background of the cover is a photograph of a river. In the foreground, there are tall, thin reeds with some brown seed heads, partially submerged in the water. The water is a deep blue, reflecting the sky. In the distance, there is a line of trees and a clear blue sky. The overall mood is serene and natural.

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FEATURE (PEER REVIEW)

THE RETURN OF PA'ASHI: COLONIAL UNKNOWING AND CALIFORNIA'S TULARE LAKE

By Vivian Underhill

Editor's note: This feature article has been peer reviewed.

The early morning sun shone off the water. I parked at the “Flooding Ahead” sign and walked past deep gouges in the ground. The teeth marks of a bulldozer’s blade were still visible where it had dug in to strengthen the walls of an earthen berm along the edge of what was once a ditch and is now simply a slough meandering along a larger expanse of lake. My steps scared

two pairs of mallard ducks from the tall, bright green grasses. Swimming coots trailed Vs in the water; the lake’s surface vibrated as insects hit the surface. Tiny swallows flew in formation together, feeding on small mosquitoes, yellow in the light. All around was the smell of pond life: decaying grasses and rich sediments.



Pa'ashi in April 2023. Image courtesy of the author.

This is Pa'ashi, which means “big water” in the Yokuts language: a lake so expansive that it stretches to the horizon like the ocean. Tiny algae leaves grew on the water's surface along the shore, leaving in their swirling pattern the mark of the water's currents. Occasionally bubbles bubbled up from the brown, murky water along the edge. The water cast rippling reflections of light across the bottoms of signs and poles.

Pa'ashi, also called Tulare Lake, is located in California's San Joaquin Valley, and after decades of being dry, it resurged in 2023. When I first visited its shores in late April the lake was still growing, fed by snowmelt and heavy rains. [Atmospheric river](#) upon atmospheric river, floodwaters overran levees and berms, and the lake reclaimed its former territory. It is now the size of Lake Tahoe. Most mainstream media coverage—from *The New York Times* to the *Bakersfield Californian*—has focused on what the lake has flooded: farm equipment, crops, dairies, and homes. They frame this water as catastrophic flooding that has destroyed millions of dollars of crops and equipment. But these are not (only) floodwaters. This is a lake returning.

Even in April, the bird sounds were cacophonous. A flock of geese flew overhead, and above them a great white egret floated in the opposite direction. Two red-winged blackbirds making a nest on the top of a telephone pole trilled; a hawk watched them intently from its perch one pole over. Hundreds of wading birds—willetts, curlews, innumerable others—slowly stilted away from me on their backward-folding knees. A mourning dove somewhere within the drowning almond orchard to the right called out its song.

Pa'ashi once stretched up to 100 miles long and 30 miles wide, though, as local historian Frank Latta wrote in the 1930s, “it never stayed still long enough for us to know how big it really was.”[1] Along with the other lakes in the valley, it was drained by a series of water diversions, canals, and dams in the late 1800s and early 1900s.

Once the largest lake west of the Mississippi, Pa'ashi ran completely dry by 1898.

The Tachi Yokut, the original people of the lake, are now calling for the lake to remain. “I love this thing,” Kenny Barrios, a cultural liaison for the Tachi, told me in an interview:

I love the fact that it came back for us. I love the fact that it took over the land that was taken from us. I love the fact that it's resilient and it still keeps returning, even through the destruction, that they tried to take it away. The lake is just like us.

With the return of the lake have come fish, birds, even the old weather patterns: breezes at least ten degrees cooler and more humid. Now living on the Santa Rosa Rancheria, a few miles north of the lakeshore, the Tachi have been holding ceremonies on the shore once more, teaching their youth what the lake means and re-planting tule reeds, once a keystone plant of the lake ecology, and native sage.

1898 was the first time in settler recorded history that the lake went completely dry, but settlers' triumphant claims that the lake was gone were premature, and the lake refilled repeatedly. In 1906, for instance, Orlando Barton, an early California settler, detailed the progress of the Kern River meeting the growing lake, inundating thousands of acres of farmland in its wake.[2] He described what he called “tidal waves” from the motion of wind over water and the play of whitecaps as they broke over each other. A cool breeze flowed from the lake, he said, and stacks of hay and barley floated to shore along with the wreckage of fences and buildings. “Man has reclaimed nothing,” Barton wrote then, tongue in cheek; “Tulare Lake has reclaimed her own.”[3]

Now, this sentiment is as easily asserted in 2023 as 1906: Pa'ashi is once more materially reclaiming the land that was taken from the Yokuts in the late 1800s. “The lake is doing a lot of talking

without us,” Carlos Garcia Jr., a.k.a. Pops, also a cultural liaison for the tribe, told me.

The 1906 floodwaters stayed for five years until 1911. Settlers planted again, but the lake flooded again in 1916 and again in 1921–1922 when the water stayed for another two years. Each time it ran dry, the lake’s power was sufficiently forgotten that each time it flooded, the water flooded millions of dollars’ worth of crops—largely cotton and alfalfa—that had been planted in the lakebed. In 1937–1938, floods returned, and newspapers estimated a million-dollar crop loss of barley, hay, sugar beets, and cotton. That year, Frank

Latta, a local historian, made a boat trip along the lake and its tributaries—from Bakersfield to the San Francisco Bay—to remind residents of the watery nature of the valley floor.

Still, until Pa’ashi made its return this year, many people across the valley didn’t even know about it or its fellows: Buena Vista Lake, Goose Lake, and Kern Lake. Why this insistence on forgetting the lake and its power, its implacable ability to return? I believe it is an example of what Indigenous and anti-colonial scholars have called “colonial unknowing.”[4]



California Aqueduct being lifted over Wheeler Ridge and irrigated vineyards at the far south end of the San Joaquin Valley, 2019. Image courtesy of the author.

Draining Pa'ashi

Just a year ago, the land that is now underwater was arid cropland, irrigated by already-overdrawn groundwater and overallocated surface water. It was the center of the Central Valley's intensely profitable agribusiness industry, dominated by a few land barons like the [J.G. Boswell Company](#) and the Wonderful Company. Planting far more orchards and fields than the valley's natural hydrology could support, agribusiness also claimed large portions of water from the [California Aqueduct and the State Water Project](#). These major water infrastructure projects flooded the traditional lands of the Mountain Maidu, the Winnemem Wintu, and Pit River Tribe to create reservoirs in northern California, and then carry that water down to the Central Valley on its way to Los Angeles.[5]

Growers also increasingly overdraft groundwater within the megadroughts that have gripped the valley for decades. The most recent reports predict that groundwater will be gone within a few decades.[6] Now, some orchards in the far southern San Joaquin Valley are irrigated with wastewater from oil fields.[7] In the absence of sufficient water, "in dry years, boy, [oilfield wastewater] really does come in handy," the general manager of one of these water districts told *The New York Times* in 2014.[8]

But this dry ground was historically covered in a network of sloughs, wetlands, and lakes. Almost three centuries ago, the Spanish explorer Fages, upon cresting the ridge of the Tehachapi mountains, looked out across this valley and called it *una buena vista*, a beautiful view of shining marshes, wetlands, and tule reeds that rose over 12 feet high. Fages was standing just above what is now called the Grapevine, the particularly dangerous portion of I-5 that plunges down a steep canyon from the ridges of the Tehachapis to the valley floor. I always thought this name derived from the highway's twists and turns—but

in fact the Spaniards named it *la cañada de uvas*, canyon of the grapes, because wild grapes grew so thickly through it that they had to hack their way through them.[9]

The San Joaquin Valley receives very little annual rainfall—only about 4 inches a year—but rain was only ever a small part of its hydrology. Massive rivers like the Kern, the Kaweah, the Kings, and the San Joaquin once connected Sierra snowmelt to the flat valley below. With no natural outlet, the water pooled and filled the valley: Tulare Lake, Buena Vista Lake, Kern Lake, and Goose Lake; Fresno Slough, Fish Slough, Old Slough, Mussel Slough, and Dry Slough; Panama Slough, Buena Vista Slough, and more. Around the lakes grew tule reeds in dense thickets, native oak stands, and dense riparian vegetation.[10] Beyond that stretched an expanse of grasslands and scrub brush; an early white settler who arrived in 1885 described traveling the plains as setting off to sea, paths slowly deepening like spokes of a wheel between houses.[11] The Yokuts lived in dozens of villages along the San Joaquin Valley and stewarded this land for generations, traveling the waterways in tule boats, hunting, fishing, and harvesting.

However, after the U.S. annexed what was then Alta California from Mexico with the Treaty of Guadalupe Hidalgo, settler understandings of proper land use propelled the work of what was called, ironically, "reclamation:" draining the lakes to create farmland in former lakebeds and irrigating the crops planted there using canals, dams, reservoirs, and water diversions.[12] This work created levees, leveled, drained, or flooded land, and, for a time, filled some channels deep enough that steamships plied the waters of Pa'ashi, running a steady trade in farming equipment, cattle and hides, wheat, turtles, and fish.[13]

As the lakes were drained, the Yokuts were forced from their land. Settlers brought diseases like malaria and smallpox, cut down the native oaks that had provided acorns, and burned acres upon acres of tule reeds to make way for agriculture. Their hogs, cattle, and other livestock trampled the tule roots and flattened the mussel beds that grew along the shore. Both the U.S. Army and private militias, supported by state and federal officials and often funded by taxpayer dollars, tracked down and murdered the Yokuts.[14] Government officials and U.S. agents stole several different promised reservations out from under them.[15] Laws such as the 1850 Act for the Government and Protection of Indians legalized the enslavement of Indigenous children within white homes, and generations of children were sent to residential schools.[16] With bounties on their heads, returning to the lake became increasingly dangerous, and settler law prohibited passing down traditional songs and dances. Still, as oral histories and testimonies show, people repeatedly snuck back, continuing to live on the lakes and rivers for years even as survival became increasingly difficult.[17]

Orlando Barton, the chronicler of the 1906 flood, had lived in the area since 1865; he had watched as farmers and land speculators, driven by discourses of manifest destiny, drained the valley's inland lakes and levelled its rolling hills. His remark that "Tulare Lake is reclaiming her own" reflected the ironies of "reclamation" as a process and a logic: who (or what) is (and should be) reclaiming from whom?

Retrospectively, white settlement destroyed over 96 percent of the Central Valley's original four million wetland acres and destroyed over

90 percent of its riparian forests in less than 150 years.[18] Of the 800,000 acres of saltbush scrub that are thought to have originally stretched between Fresno and Bakersfield, fewer than four percent remain, and these numbers are outdated as of 2023. This destruction also entailed the extinction or near-extinction of the San Joaquin kit fox, the burrowing owl, and the Tipton kangaroo rat. Even the physical level of land has changed: in some places the land surface was once thirty feet higher but has sunk as its groundwater has been extracted.[19]

This history is a reminder of the many world-endings before this one, a reminder that, as Potawatomi scholar Kyle Whyte says, the original people of this continent have already endured centuries of ecological devastation and apocalypse. "We already inhabit what our ancestors would have understood as a dystopian future," Whyte writes, citing a conversation with Lee Sprague about the ongoingness of colonial environmental catastrophe.[20] This historical and present-day dystopia for Indigenous peoples contrasts with settler understandings of climate change as some new, unthinkable future apocalypse.[21]

Today, it sometimes feels like the valley floats in an interminable present with an impossible future, as if the arid irrigated flat expanses are simply a land that people from elsewhere hurry to drive through or fly over with no imagination that lakes once lived here. Most people who live here don't know its history, either. Instead, the constant questions are how to get more water when there's never enough, whether that water is contaminated, how to keep on surviving among the valley's various extractive economies.

Colonial Unknowing

The lakes exist everywhere: in place names like Old River Road, Panama, Venice, and Herring Road. They are well-documented in the archives of the San Joaquin Valley, pervade the records, songs, and stories of the Yokuts, and live on in the landscape itself—in the dry depressions and embankments scored across the land.[22] For the Tachi, the lake and its constant ebbs and flows are a core part of their original songs and stories: in their creation stories, they were made from the bottom of the lake. When it grew in flood years they moved further away, and then in dryer years, they moved closer again. But until this year, mainstream narratives of the valley almost entirely avoided the lakes, exemplifying what Chickasaw scholar Jodi Byrd described in a talk at the University of California Santa Cruz as colonial agnosia. As Byrd said, colonial agnosia

describes the failure “to comprehend the realities of colonialism by those people who might most benefit from these conditions.” [23]

Agnotology is the study of the production of uncertainty, ignorance, and doubt.[24] For example, ExxonMobil was aware of climate change since the 1980s but produced their own climatological research in opposition to delay mainstream acceptance of climate change.[25] Work on unknowns and unknowing has long been led by women of color and Indigenous feminist scholarship,[26] which analyzes unknowns as not only *absences* but as crucially productive of the colonial/imperial state.[27] For instance, Haitian anthropologist Michel-Rolph Trouillot elegantly showed in the case of archival unknowings that the question is not necessarily one of ignorance



Pa'ashi, flood of 1938. Frank Latta papers, courtesy of the Huntington Library.

or absence, but is one of producing histories as unknown or unthinkable.[28] As he describes European writers' inability to conceptualize the Haitian revolution even as it was happening, he also parses the many ways in which the interplay of presences *and* absences in a historical record creates these unknowings.[29] This is the thread that Byrd took up with the term "colonial agnosia" to describe the forms of incomprehension that, in a colonial context, are both common and normative.[30]

Further, the forms of knowledge that *are* produced can serve to disavow the colonial underpinnings of the current moment. In other words, forgetting is an active, productive part of memory rather than its absence. So, for example, public school fourth graders across California learn about the Spanish missions as a form of state pride, but not about the Indigenous people whose land they're on, the nature of that land, or the missions' violence against Indigenous peoples.[31] This state-wide public school project invites students to identify with the "civilizing" purpose of the missions' white settler superiority, rather than grappling with the missions' genocidal legacy.[32]

There has been relatively little work bridging environmental agnotology and colonial agnotology, but they have much to say to one another. Climate change *is* colonialism, just as Red River Métis scholar Max Liboiron asserts that "pollution is colonialism." [33] One of the reasons that the production of climate unknowing has been so successful is because oil—from whale oil to coal to crude petroleum—has always been the fuel of colonial projects.[34] And if a reliance on fossil fuels is central to the world that colonialism in its many forms built, then a refusal of its disastrous climate effects is central to its ongoing sense of survival. Thus, ExxonMobil can incorporate climate science into their Arctic drilling strategies (ensuring their ability to keep producing the "corpse juice"[35] of capitalism) while producing public unknowing about climate change more

broadly (assuaging fears about the survival of the world that colonialism built).

In California, the world that colonialism built, and every day rebuilds, is a flat, dry world covered by ag and oil fields. Today, even many hydrologists don't know about the lakes' presence. Once at a hydrology conference, a fisheries scientist working on salmon conservation began his talk by describing what he called the "ancestral lakes" that once characterized the region. Afterward, one person said they'd heard about the lakes once before and were glad to be reminded. No one else—at least no one who spoke—had ever heard about them, and they registered surprise and interest. As the conversation turned back to data management tools, the momentary presence (yet absence) of the lakes was one of many reminders of the inertia of unknowing in California's hydrologic knowledge. For a moment, the ancestral lakes might have opened a deeper set of questions about *why* the Valley is arid today and why there is such a push to imagine further water infrastructure projects at all. But the scientist didn't talk about why the lakes have since disappeared or about the dispossession and destruction that disappearance was a part of. While his description of the ancestral lakes may have produced a temporary disorientation—an imagination of a series of interconnected lakes shimmering above the dry San Joaquin Valley we know today—it ultimately left the lakes disconnected from the present and relegated to an inaccessible past.

But if the lakes are effectively written out of contemporary hydrologic knowledge of California, they were a central concern of the emergent field of hydraulic engineering in California at the turn of the century, part of the larger colonial making and unmaking of California environments.[36] Settlers engaged deeply with the lakes to drain them, and report after report was produced about their hydrology throughout the nineteenth and early twentieth centuries (think: Exxon's Arctic strategizing). In this profusion of writing and data, colonial unknowing pervades the ways that writers made sense of the lakes' disappearance.

Erasing the Lakes

1889: “When the first white settlers came to the Tulare Valley the lake was 60 miles long. It is now about 14 miles long. We do not know the cause, but we do know that the lake is shriveling, sinking and effacing itself from the map.”[37]

1898: “All that remains of the once big body of water is scarcely sufficient for a pollywog to bathe in. The bottom that has for years been a bed of sediment is baking under the heat of a summer sun, and the cracks that are opening will soon be big enough for a man to drop into.”[38]

I grew up in Colorado on the lands of the Arapahoe, Cheyenne, and Ute, saturated in a settler world. When I moved to California, I, too, thought the San Joaquin Valley had always been this way—until I heard about a project called the [“California Water Fix and Eco Restore”](#) and Indigenous resistance to it, such as the Winnemem Wintu’s [Run4Salmon](#) journey. This project proposed to build two tunnels, each four stories tall, that would travel under the Sacramento Delta, bypassing that rich delta area to bring more water from Northern California dams to Southern California agriculture.[39] The dimensions of this proposal were absurd in addition to its clear environmental injustices, and I wanted to understand the assumptions that undergirded any idea that its magnitude made sense. In other words, it was through growers’ claims that the valley needed more water that I learned about the water it once had.

Then, sitting in the air-conditioned reading room of the Huntington Library in Los Angeles, musty pages recorded the fleeing water snakes searching for a new home and the millions of decaying fish whose smell lingered for years.[40] I was there to search for early records of water infrastructure projects, linking them to nineteenth-century discourses of contamination and public health.

[41] But the materials also showed a deep sub-surface ambivalence in residents’ meaning-making around the lakes’ disappearance: the work of colonial unknowing in the contemporary moments of individual lives.

Even for those ideologically invested in draining the lakes, it was a disturbing sight. In a time when malaria was still thought to come from bad air (*mal aria* meaning bad air in Italian), the smell of death and decay was so strong that settlers within a six-mile radius of the lakes left for air thought to be better for their health. Newspapers described millions of decaying fish, turtles, and frogs lying in the vast expanse of mud where the lake had been.

For instance, an 1889 newspaper article which aims to celebrate the lake’s disappearance returns repeatedly to the birds and fish, dwelling on their dislocation. Though the writer describes the lake as “growing beautifully less,” he also goes on to write:

where the angular crane once fished for suckers among the tules, and the wild geese, ducks and the majestic swan dwelt in peace and plenty, the horny handed-wheat grower is sacking up 12 to 15 sacks of Sonora wheat to the acres...For the first time in recent history, the pelican, geese, ducks, snipes, mud hens, and other birds, as well as the finny fish, have found that there is no longer a home for them. (*Tulare County Weekly Times*, Thursday, June 9, 1889)

The writer’s attention is pulled back and forth: though there is a manifest-destiny kind of triumphalism here that centers the remarkable harvests of farming in lake-bottom sediment, the writer returns again and again to the cranes and wild geese, the pelicans, snipes, mud hens, and “finny fish.”

In the hands of a hydrologic expert of the time, this ambivalence translates into an unknowing that appears frankly illogical. Frank Soulé, a professor of civil engineering, was hired to write a sweeping report of irrigation from the San Joaquin River in a massive 1901 volume edited by Elwood Mead. “It is not without interest,” Soulé wrote, “to note in connection with this inquiry that Tulare Lake has for several years been dry, and that there has been no overflow from it into Fresno Swamp since about 1876.”[42] He attributed this dry lake not to diversion for agriculture, but to the fact that there hadn’t been a flood-stage year since 1861–62. He created a graph of the lake’s surface level over time, along with a record of yearly rainfall in San Francisco, and went on to assert: “the prime cause of the recedence [*sic*] of the lake is not the increased use of water for irrigation, but the long interval between seasons of excessive rainfall and the recent long sequence of seasons with precipitation barely normal, or less than normal.”[43]

This is a patently strange claim because draining the lakes had become the whole point of the canal systems. “Swamp and overflowed lands” was by now a legal category at work in a series of Swampland Reclamation Acts by which the State Legislature offered the ownership of wetlands to settlers in return for their drainage.[44]

Yet Soulé goes out of his way to assign the lake’s shrinking to dry weather rather than human intervention. In fact, he continues, the extreme nature of this long dry spell might even be considered to signal “a change of climate,” saying, “were it not that Indian tradition distinctly points to a still earlier period than that covered by the diagram showing fluctuations when the lake had all but disappeared.”[45]

This is the productivity of colonial unknowing: by assigning Pa’ashi’s draining to “natural causes”—dry weather and no floods—Soulé also naturalizes settler land practices and the new landscape they were creating. Further, by extending its history

to a longer, unnamed “Indian tradition” in which it was nearly dry, he relies on Indigeneity as the “ontological ground,” in Byrd’s language, on which to normalize settler practices and create a sense of settler emplacement. In so doing, he erases the full and functioning ecosystem that by nature ebbs and flows while giving no mention of any actual Indigenous peoples, whose ways of life were intimately entwined with these lakes and who were being slowly pushed—by settler violence as well as land loss—to ever-shrinking reserved lands.

Expert hydrologic knowledge functions uncannily similarly today—unsurprising given that, as Patrick Wolfe observed, settler colonialism is a structure, not an event.[46] The salmon scientist’s description also worked within the same logics of colonial unknowing that Frank Soulé’s report had over 100 years prior. So where does this inability to understand come from? Especially for hydrologists, then and now, whose work it is to produce expert knowledge about water, and who often hold a deep sense of connection to water?

If we consider colonial unknowing as not just a passive absence of knowledge, but in fact both produced *and* productive, then it becomes clearer. The field of hydrology in the U.S. west arose in tandem with political and economic interests in irrigating arid land and draining swamps.[47] Fields of knowledge have been developed, institutes founded, careers made, mortgages paid on the idea that California’s hydrology is all wrong and needs intervention to set it right.

For a field premised on the need to “improve” the land through reclamation, the imagination that it once was radically otherwise is destabilizing. For settler society, to grapple with an untenable future and a undefendable past requires more than knowledge disembodied from body and soul. It requires an entirely different way of being in the world.

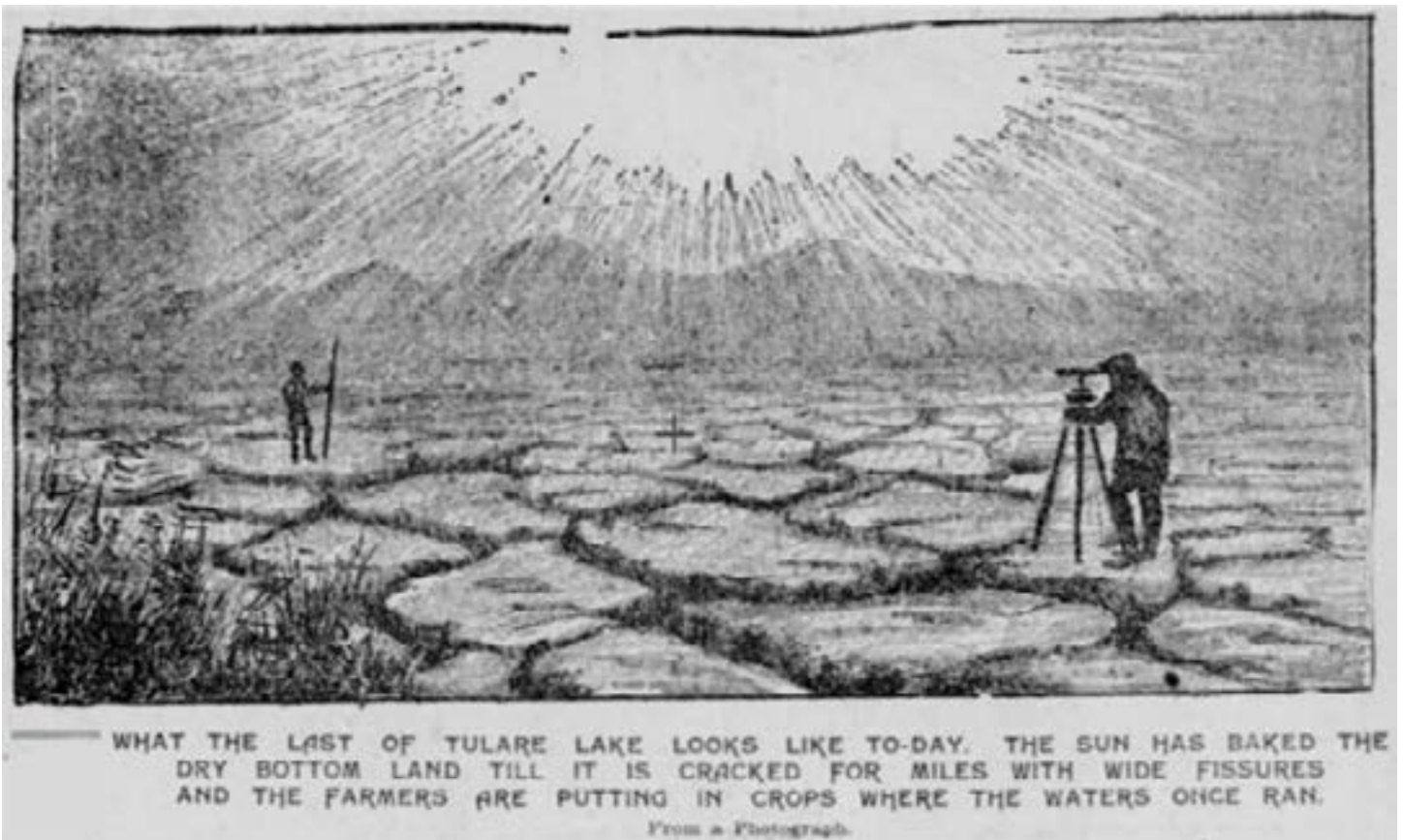
A Wall of Fish

There is one story that I can't get out of my head published in the *Tulare Daily Register* in 1889. For several years prior, no fresh water had run into the lake. This time, the unnamed writer is clear that it is because of irrigation diversions: "King's River, Cross Creek and Tule River had been tapped by irrigators for all they were worth in the previous dry years and the lake was low." [48]

As the lake shrank, the water became saltier and saltier. Fish had begun dying from the salt content long before the water was gone. In 1884, however, the rivers met the lakes once more in spring. As the writer described, "The fish met the fresh water in solid masses. Standing at the mouth of Kings River, one could see a wave come landward, a wave produced by the motion of a

mighty army of fish. The ditches of the Mussel Slough country were choked by them, and the country smelled like Egypt during the plagues." The writer is clearly describing fish who scented the incoming fresh water and were charging toward it for their survival.

That was the same year, however, that the first seine, a kind of fishing net, went into the lake. The seines were a thousand yards in length and about fourteen feet deep in the middle. Drawn in by horsepower, they could pull in as much as a ton of perch per seine per day. The spring is also when the perch spawn, leaving their eggs along lake edges as the water begins to warm, but the seines worked all year long, centering on the creek inlets, catching the fish where they were the most plentiful. Pa'ashi's perch would



Drawing of Pa'ashi from the San Francisco Call, Volume 84, number 75, August 14th 1898.

become extinct shortly afterward. The writer was horrified. “Catching them on her spawning grounds was not fishery—it was butchery—and the incessant dragging of the lead lines destroyed the spawn during incubation.” He emphasized that if the nets had only paused during the spring, the fish populations could have remained.

A month after this article was written, the uproar had caught the attention of authorities and the fish commission superintendent, Mr. Woodbury, visited the area in response. Yet, as the newspaper reported, “he attributes the cause to the stranding of the fish upon the shores when the waters are driven out upon the land by the wind.”[49]

The interactions between lake and wind were in fact one of the most beautiful things about the lake. It was large enough that, if the wind blew in one direction for a few days, the entire level of the lake would move in that direction, leaving a muddy shoreline for a few feet on one of its banks and heaving up on the other. If Mr. Woodbury was finding fish on the shores, it was likely because the actual lake surface was shrinking, or because they were already sickening and dying from the saline water. Yet he dismissed those deaths: “Those that are perishing in this manner, however, are of comparatively little value as a food fish.” The perch, in contrast, were “one of the finest fish in the state,” and he “emphatically state[d] that something must be done to check the present criminal destruction going on down there.”

All that Mr. Woodbury ultimately did, though, was bottle some of the lake water, “which will be taken to Professor Hilgard for analysis in order to ascertain the feasibility of planting other kinds of fish there.” The ecological disaster that the original writer described, in which salinity and lack of water created a wall of desperate fish, and in which overfishing during spawning led to a full extinction, was reduced upon Woodbury’s expert knowledge to a technical problem: what

kinds of fish could be replanted for the purposes of fishing, along with the vaguest of suggestions that “something must be done.” Of course, Pa’ashi would be dry within nine years, so all the replanting in the world would only lead to more dead fish on its banks. But the reduction of a full and functioning lake ecosystem to fishing interests epitomizes the extractive logics of settler colonialism.

Now, California’s hydrologic planning centers around groundwater, and a 2014 law will require all groundwater basins to come into sustainable use by 2040. But California’s groundwater, especially in the San Joaquin Valley, is critically overdrafted *now*. Further, the law explicitly does *not* override existing water rights, even though those rights are what brought us to our present groundwater crisis. In other words, the colonial unknowing that pervaded the draining of Pa’ashi and the overfishing of perch is also active in today’s groundwater management: because it doesn’t consider the massive hydraulic overhaul that created our contemporary conditions, it also propels California into an unsustainable future full of technical solutions and inequitable impacts.[50]

These “solutions” produce their own absurdities, their own unexpected impacts. Today, the valley is home to several “water banks,” which take surface water and store it underground. Yet many of them are now contaminated with 1,2,3 TCP, likely a byproduct of a pesticide that was manufactured by Dow Chemical and Shell Oil and used on farmland from the 1950s to the 1980s.[51] Taking fresh surface water, sending it into groundwater, and in the process contaminating aquifers with surface toxins, or building four-story tunnels under the Sacramento Delta, are demonstrations that colonial unknowing not only works to unknow a colonial past, but it keeps us locked in a colonial present. In the demented logics of capitalism, this is what comes to seem common sense without an understanding of the colonial logics that brought us here.[52]

The Return of Pa'ashi

He [an old 49er] says driftwood was found on the knoll where the Fresno mill stands, showing that where I street is, water was 10 or 12 feet deep. Near Visalia driftwood was in the trees 12 feet high. He thinks a flood may come any winter that will destroy a great deal of property and cause considerable loss of life. He advises having a boat handy in all that country that has been under water in the last 40 years.

- *Daily Evening Apositor*, Tuesday Oct 15, 1889

This water has desires, and this water has always wanted to go to the lakebed: “water memory,” as Lenape scholar Joanne Barker might say. [53] Canals, levees, and dams might defer that desire—might defer it even for generations—but they can’t stop the water’s movement entirely. After a powerful series of winter storms this year, levees across the Central Valley broke, and the valley was once more covered with what onlookers described as an inland sea, waves breaking over farms, houses, and highways. “When it came back,” Pops said, “and I heard, the first thing I was doing was, oh, I can’t wait to get out there and practice my ways...I get to take out my little brothers and cousins to go and fish and hunt this lake now.” The lake is filled with shad, their tiny silver sides flashing in the sun, catfish prowling the shallow waters, bass jumping for insects. There are crawdads, frogs, turtles, and he’s seen burrowing owls along the eastern shore. The breeze is cool and humid. He continued:

Everything is just flourishing. There are birds staying longer than they usually would—there’s so many species that I’ve seen come back way stronger. They’re more around than I’ve ever seen. And I’ve been fishing for 30 years now...it’s so hard to describe how happy it makes me feel to be out there with just my brothers or just even

just another tribal member and share that moment.

Yet even though the Tachi are the original people of the lake, their presence on the lake today is illegal under settler law. Amid “No Trespassing” and “Road Closed” signs, “we can’t even get a canoe out there to actually honor our ancestors,” Pops continued, “or get in a tule boat and just be out there. They can come whenever they want, tell us to get off, because it is not our property. But they can have their airboats and they can fly around it all they want.” In addition, under settler law, the Tachi don’t hold rights to this water—though they are working to regain these rights under the [Winters doctrine](#), which holds that tribes have prior rights to all water that originates on, borders, or crosses a reservation dating to the time the reservation was established.[54]

He and Barrios also repeatedly pointed out how the lake today is villainized through claims that the agricultural chemical inputs in the soil have dangerously contaminated the water, or discussion of the destruction that the lake caused. Indeed, more than half of California’s farmworkers live in the Central Valley and thousands lost work and wages to the floodwaters. Flooded housing added to weeks or months of lost wages for farmworkers and dairy workers. In the towns of Cutler and Oroshi, for instance, a canal broke on Road 124 and people were evacuated. More than 131 homes were flooded in mid-March after water breached a canal in eight places, leaving many homes uninhabitable. Many have blamed the lake and its waters for the destruction of these homes.

Barrios and Pops feel for those whose houses have flooded, they said, but for the large growers to use that as a rhetorical tool to drain the lake as soon as possible is simply disingenuous. “The real people who own that property, they don’t live here, they’re not doing any of this hard labor work,” as Pops said. “So when they’re talking like

that, I know they're not talking for themselves. They're talking about their pockets." Further, the destruction of housing, and the fact that Pa'ashi's waters most impacted black and brown immigrant communities, was a produced problem. As scholars have long shown, the greatest harm of a natural disaster rarely comes from the "natural" part but instead from the power-laden structuring of risk and exposure. Here, too, the greatest harms of the floodwaters are actually the result of a racial capitalist economic and water rights structure—not the lake itself.

The floodwaters, if allowed to follow their water memory, would have first filled the old lakebed, the lowest spot in the county. However, this land is owned by the J.G. Boswell Company, an agribusiness megacorporation. Founded by cotton brokers from Georgia, Boswell was largely responsible for the draining of Pa'ashi, planting an empire of cotton in its place. The company now owns about 132,000 acres on the old lakebed. [55] Over generations, Boswell has continued to erect levees and canals to keep floodwater off its land. "In my opinion, this was premeditated by Boswell," Phil Hansen, a fifth-generation farmer in the area, said at a special meeting of the Kings County Board of Supervisors as the floodwaters were rising on March 18.[56]

Though water managers repeatedly asked to flood the Boswell fields to relieve the flood pressure, Boswell repeatedly refused. One water

manager got multiple anonymous warnings saying, as he recalled, "We have papers drawn up and if you move the land plane or cut into the Homeland [canal], you'll immediately be arrested and thrown in jail." [57] At the height of the flooding, someone caused a breach in one stream in the middle of the night, causing the water there to rush directly toward the historically black community of Allensworth and protecting Boswell land. That same night, a "land plane"—a heavy piece of farm equipment—was placed on Boswell's Homeland Canal in order to prevent water managers from using it as flood relief. Allensworth was ultimately evacuated, as were surrounding farmworker communities like Alpaugh.

If not for these levees, Pa'ashi would have found the lowest point of its lakebed first, filling Boswell's land rather than these small communities. Boswell—the largest landholder in the valley who drained large parts of Pa'ashi—would now be holding the responsibility for its flood, rather than the farmworkers and residents who are now, slowly, piece by piece, cleaning the mud, silt, and water out of their homes. Instead, Boswell continued to plant new tomatoes this year while Allensworth, Alpaugh, Cutler, Orosi, and other communities were flooded because of the same infrastructures that drained the lake in the first place: canals, levees, and large agribusiness' ability to wield both political and extralegal tools.

Land or Lake?

Barrios and Pops say that, for them, the lake never died, it was just sleeping. It has never not been here; this is simple its re-awakening. As it returns, it also illuminates another face of colonial unknowing. In the flurry of news about the lakes this year, most coverage has framed them as catastrophically destructive floods. It emphasizes the crops destroyed and farm equipment lost, rather than the recurrence of the lakes

themselves. It registers a stubborn insistence on the lakebed as simply *land* rather than lake. Even as Pa'ashi is, by nature, changeable and shifting, colonial unknowing propagates in the characterization of the water as a flood, rather than a lake returning. Most coverage, too, has either ignored the presence of the Yokuts, or if it mentions them, doesn't address their ongoing presence and struggle for the lakes' survival.[58]

Mark Arax, for instance, one of the foremost chroniclers of water overuse in the San Joaquin Valley, wrote about the floods this year for *The New York Times*. “Amnesia,” he states, “is how we built agriculture across marsh and desert and houses in floodplains and canyons of fire.”[59] But then he himself re-makes that amnesia. Describing standing on the shore of a flood in 1997 that had begun to refill Pa’ashi’s basin, he mutters to himself, “this is cotton land,” both feet planted firmly in the circumscribed agricultural present rather than the unfurling past *and* future of the lake’s return. And, as he goes on to explain the lake’s history to the reader, he entirely un-self-consciously asserts: “the Indigenous people were long gone by the early 1920s,” when the Boswell company arrived—a point patently refuted by the ongoing work of the Tachi and the other Yokuts tribes in the present.

Even with the lake’s water lapping at levees and embankments now, settler writing is intent on continuing to normalize a drained valley, an irrigated expanse of fields, as the *true* nature of central California. Perhaps this inversion is part of the longer-term agnosia of colonialism: in order to see the settler colonial agricultural world as “normal,” this water has to be seen the temporary abnormal flooding. Rather than seeing this place as a *lake* that is sometimes dry, it has to be seen as *land* that is sometimes flooded.

Saying only “reclamation” without remembering the lakes, or looking out at Pa’ashi and stubbornly calling it “cotton land,” erases the water snakes who came swarming out of the reeds as the waters dried, looking for cool places to hide in the shade. To imagine the lake as permanently gone is to erase the fish—the perch, shad, trout, and others who crowded the meeting places of river and lake. To imagine that draining this water was “reclaiming” land erases the genocidal violence with which the U.S. Army and private militias

decimated the Yokuts and forced them from their villages to a series of shrinking and changing reservations. And it erases the resistance of those who snuck back to be near the lake once more.

Within this incomprehension, the dominant story can go on: the valley has always been like this, the “armpit of California,” as coastal Californians often call it. This colonial unknowing has profound impacts: in this narrative, the extreme levels of pesticides, fertilizers, and hydrocarbons in the valley’s air and water[60] are simply the unavoidable consequences of its extreme agricultural productivity. In this narrative, the valley’s radical change was not a profound act of destruction but rather a reclamation of the land from the evils of wilderness, a testament to American ingenuity and willpower working with a profoundly flawed landscape from the start. Water scholars and historians to this day still fall into this kind of logic.[61]

What happens, then, when we unknow the colonial history of *how* California became this way? Whole generations of people grow up thinking that the dry, flat land that they drive across is natural, normal, rather than the work of canals and a machine called the Fresno Scraper, invented to literally scrape the valley’s rolling topography into flatness. In a colonial world in which the toxic wastes of industry are a necessary evil, people might decide as they drive through that, yes, this barren, flat, dusty wasteland with its air pollution and smog is an acceptable sacrificial landscape. These are the fruits of unknowing: what reclamation produced is remembered as a land of deficits, and the horrors of the present become normalized.

Let the Lake Stay

By August, the lake had shrunk slightly thanks to evaporation and efforts on the part of the state and private corporations to re-drain it. I drove with Barrios and Pops in their white truck from the Santa Rosa Rancheria, past a “road closed” sign, and out onto the aptly named Levee Road. The pavement was now a peninsula, disappearing under the waves a quarter mile out. Mud flats, still with the linear scoring of old furrows, stretched out long before we reached the water. Still, there were egrets and great blue herons hunting for fish trapped on the shoreline with careful steps through the mud and shallow water.

Pops dipped his hand in the water and pulled out a tiny shad. The waves lapped quietly at the shoreline under a light breeze. Even in late August the temperature was only in the mid-80s, unheard-of for the Valley. Together we stood and watched a group of faintly iridescent brown birds with long bills land together on a low ridge of sediment within the lake. Hundreds of shad teemed through a small break in the ridge following a wind-driven current. We watched the birds wade out together as one, fill the break, and then feed on the shad swimming frantically between their legs.



Pa'ashi in late August 2023. Image courtesy of the author.

“What kind of birds are those?” I whispered.

“Hungry birds,” Kenny replied. Pops said, “Happy birds.”

I laughed—too loudly—and the whole flock lifted up and away, frightened by my voice.

Kenny and Pops ribbed me for my noise: “Here we are trying to be all quiet,” they said, “and then *you* come out with that laugh! *Ha!*” they mimicked me.

Even as lake water is already being pumped out, it will take years, and the Tachi are not going to let the lake go without a fight. They are also working toward dam removal on all the tributaries that used to fill Pa’ashi every year: the Kings, Kaweah, San Joaquin, and Kern Rivers. And they continue to practice their ceremonies and practices on the lake, teaching their youth about the lake and its importance. “I could get in trouble,” Pops said. “But I’m willing to risk that to practice my ways and to honor the lake and be able to say that I did that. When it was here, I got to do that.”

As the Tachi call for the lake to remain, others agree. Several recent studies have investigated the potential of future flooding in California’s Central Valley. Over the past million years, a megaflood at least as severe as California’s historic flood of 1862 happens in California every 100–200 years. On the scale of megafloods, 2023 doesn’t even register, while warming temperatures increase the likelihood of 1862-scale flooding by three times.[62]

In addition, the Central Valley might run out of groundwater in the next ten years if not sooner. The large growers know this, but they can also afford to drill the deepest wells. Already their wells are causing communities’ wells to go dry. Some of these companies have been growing in the Valley since their fields were only bumper crops in between lake floods and have always been able to coast through droughts with groundwater. [63] But groundwater overdraft is not a drought.

Groundwater is effectively a non-renewable resource given how long its regeneration rate is, and settler agriculture has now effectively drained this ancient gift of stored water.

Fish biologists and water scientists also argue that the lake should be restored as habitat and as part of a growing movement toward Indigenous management.[64] Recognizing Pa’ashi as central to this landscape’s ecosystem would remake mainstream senses of the valley: no longer the productive agricultural region that feeds the nation (at a steep premium). Letting Pa’ashi remain could heal the Central Valley’s relationship with water, serving as water storage, flood protection, and a profound new turn in ecological restoration.

“We’re at a point,” Barrios said, “when we’re about to lose all of our water. More years of growing food isn’t going to help. You know, it’s going to kill us, but it’s only going to benefit them. What are they going to do when the fifty years are up and there’s no more water? They’re going to sell their land and they’re going to leave.” Others might move away, he said, but they can’t. They will remain right here.

Re-draining the lake and rebuilding in its lakebed guarantees future agricultural losses and would be a profound reinstatement of colonial violence. And, as the Tachi emphasize, it would be profoundly detrimental to everyone living here in the Central Valley. “It’s not just our lake,” Barrios said. “It probably means way more to us than it does to everybody else, but we’re all going to benefit from it.”

On the other side of the road, Pops showed me a dried frog that perhaps lost the water’s edge as it receded too quickly. He found a catfish skull, too, with its tiny razor teeth and the roots of its antennae still intact. The deep sucking mud was tightly crisscrossed with thousands of bird feet prints. They told me about being out here at night, bullfrogging, and being startled by the signature *crack!* sound of a beaver’s tail. Perhaps it was

out there making quick work of the drowning nut trees, turning plantation orchards into homes.

To consider, again, the Valley as filled with lakes rather than arid and dry would mean revisiting the project of land reclamation and hydrologic engineering—an edifice built on the idea that some lands are inferior and require intervention. What these interventions produced is a series of deaths, and they are part of a larger worldview and economic system that is slowly making our entire climate unlivable: all of us, now, are—or soon will be—the frogs in a drying pond, the water snakes searching for cool shade, the perch rushing the inlets.

In a time when scientists are chaining themselves to buildings to call attention to climate change;^[65] when wildfires have grown so large in the absence of Indigenous firekeeping that they create their own weather patterns;^[66] when groundwater levels have dropped so low that families who have lived here for generations are forced away because their wells have gone dry;^[67] when agricultural corporations can afford to drill deeper and deeper, all the while bottling water from the island of Fiji^[68] and selling it at \$4 a bottle in plastic produced from fossil fuels fracked from an anonymous “somewhere” that could just as well be right here; in this time, restoring the lakes is necessary political work.

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References

Ahuja, Neel. “Race, Human Security, and the Climate Refugee.” *English Language Notes* 54, no. 2 (2016): 25–32.

And still the lakes keep calling the people back. The Yokuts have long said that the lakes are tripni, roughly translated as magical, with songs that call people to them.^[69] Like they call the rivers that charge past flood-control protections to find the lakes again. Like they call the birds every year on their annual migrations, who keep coming back, who somehow find the slices of land scattered across the Valley where they can rest, no matter the dwindling water, no matter its salinity, its warmth, no matter the chemicals within it. The birds come back year after year because they need the lakes; they can’t do otherwise. And neither can we.

“I want people to understand that we are for everybody,” Barrios emphasized. We’re not just for ourselves. We all have our own plans in this life. Some plans destroy things—well, our plans are to fix. We want to mend things.”

When we returned to the west side of the road peninsula, the ibises were feeding again. *Don’t laugh!*, they whispered to me, and I pantomimed complete silence. Instead, we watched them quietly together, nothing but the quiet slap of waves, the light wind with the smell of decay and lake life, the silver sides of the shad glinting in the birds’ beaks.

Alarcón-Jiménez, Ana María, Raquel Jiménez Pasalodos, and Margarita Díaz-Andreu. "Mapping with/in: Hearing Power in Yokuts Landscapes at the Beginning of the Twentieth Century." *Ethnomusicology Forum* 30, no. 3 (September 2, 2021): 379–96. <https://doi.org/10.1080/17411912.2021.1953392>.

Alexander, M. Jacqui. *Pedagogies of Crossing: Meditations on Feminism, Sexual Politics, Memory, and the Sacred*. First Edition. Durham N.C.: Duke University Press Books, 2006.

Arax, Mark. "My State Is 1,000 Miles Long, and Not Everyone Living in It Hates the Rain." *The New York Times*, January 23, 2023. <https://www.nytimes.com/2023/01/23/opinion/california-drought-flooding.html>.

Arax, Mark. *The Dreamt Land: Chasing Water and Dust Across California*. Illustrated Edition. New York: Knopf, 2019.

Arax, Mark, and Rick Wartzman. *The King of California: J.G. Boswell and the Making of a Secret American Empire*. Revised edition. New York: PublicAffairs, 2005.

Barad, Karen. *Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning*. Second Printing edition. Durham, NC: Duke University Press Books, 2007.

Barker, Joanne. "Confluence: Water as an Analytic of Indigenous Feminisms." *American Indian Culture and Research Journal* 43, no. 3 (August 1, 2019): 1–40. <https://doi.org/10.17953/aicrj.43.3.barker>.

Beaumont, Hilary. "'Healing Process': Indigenous People Welcome Tulare Lake Return." *Al Jazeera*, July 19, 2023. <https://www.aljazeera.com/news/2023/7/19/healing-process-indigenous-people-welcome-tulare-lake-return>.

Brend, Yvette. "Fire Experts Say It's Time to Rekindle Old Indigenous Knowledge to Calm Wildfires." *CBC News*, June 29, 2022. <https://www.cbc.ca/news/canada/british-columbia/fire-indigenous-cultural-burning-prescribed-burning-wild-fires-bc-fires-climate-change-solutions-1.6503543>.

Bruyneel, Kevin. "Codename Geronimo: Settler Memory and the Production of American Statism." *Settler Colonial Studies* 6, no. 4 (October 1, 2016): 349–64. <https://doi.org/10.1080/2201473X.2015.1090528>.

Burow, Karen R., Jennifer L. Shelton, and Neil M. Dubrovsky. "Regional Nitrate and Pesticide Trends in Ground Water in the Eastern San Joaquin Valley, California." *Journal of Environmental Quality* 37, no. S5 (2008): S-249–S-263.

Byrd, Jodi. "Eyes That Can Never Close: Colonial Agnosia and the Mnemonics of Refusal." Vine Deloria Jr. Lecture at the University of California, Santa Cruz, October 26, 2015.

———. *The Transit of Empire: Indigenous Critiques of Colonialism*. Minneapolis: University of Minnesota Press, 2011.

Curley, Andrew. "'Our Winters' Rights': Challenging Colonial Water Laws." *Global Environmental Politics* 19, no. 3 (August 1, 2019): 57–76. https://doi.org/10.1162/glep_a_00515.

Daggett, Cara. "Petro-Masculinity: Fossil Fuels and Authoritarian Desire." *Millennium* 47, no. 1 (September 1, 2018): 25–44. <https://doi.org/10.1177/0305829818775817>.

Deloria, Philip J. *Indians in Unexpected Places*. Illustrated Edition. Lawrence, KS: University Press of Kansas, 2004.

Dillon, Grace, ed. *Walking the Clouds: An Anthology of Indigenous Science Fiction*. Tucson, AZ: University of Arizona Press, 2012.

Dogan, Mustafa S., Ian Buck, Josue Medellin-Azuara, and Jay R. Lund. "Statewide Effects of Ending Long-Term Groundwater Overdraft in California." *Journal of Water Resources Planning and Management* 145, no. 9 (September 1, 2019): 04019035. [https://doi.org/10.1061/\(ASCE\)WR.1943-5452.0001096](https://doi.org/10.1061/(ASCE)WR.1943-5452.0001096).

Frank, Gelya, and Carole Goldberg. *Defying the Odds: The Tule River Tribe's Struggle for Sovereignty in Three Centuries*. New Haven, CT: Yale University Press, 2011.

Galloway, Devin, and Frances Riley. "San Joaquin Valley, California: Largest Human Alteration of the Earth's Surface." U.S. Geological Survey Circular 1182. Land Subsidence in the United States. Menlo Park, CA: U.S. Geological Survey, 1999. Retrieved from: <http://pubs.usgs.gov/circ/circ1182/>.

Garfield, Ryan. "Testimony of Ryan Garfield on Behalf of the Tule River Tribe of California in Support of S. 789, the Tule River Tribe Water Development Act." Sacramento, CA, July 23, 2009. http://www.narf.org/nill/documents/NARF_water_settlements/Tule/20090723Garfield_testimony.pdf.

Garoupa White, Catherine. "Do You See What I See? Advocates' and Authorities' Social Constructions of Air Pollution in California's San Joaquin Valley." Ph.D. Dissertation, University of California, Davis, 2016.

Gilbreath, Aaron. *The Heart of California: Exploring the San Joaquin Valley*. Illustrated edition. Lincoln, NE: Bison Books, 2020.

Gross, Dr Lawrence W. *Anishinaabe Ways of Knowing and Being*. 1st edition. Farnham, UK: Ashgate, 2014.

Harkinson, Josh. "Meet the California Couple Who Uses More Water than Every Home in Los Angeles Combined." *Mother Jones*, August 9, 2016. <https://www.motherjones.com/environment/2016/08/lynda-stewart-resnick-california-water/>.

Hartman, Saidiya. "Venus in Two Acts." *Small Axe: A Caribbean Journal of Criticism* 12, no. 2 (June 1, 2008): 1–14. <https://doi.org/10.1215/-12-2-1>.

Harvey, Chelsea. "Scientists Risk Arrest to Demand Climate Action." *Scientific American*, April 11, 2022. <https://www.scientificamerican.com/article/scientists-risk-arrest-to-demand-climate-action/>.

Henry, Lois. "Flooding out Other Farmers Was 'Premeditated' by the Powerful J.G. Boswell Company, One Farmer Asserts." *The Bakersfield Californian*, March 27, 2023. https://www.bakersfield.com/columnists/lois-henry-flooding-out-other-farmers-was-premeditated-by-the-powerful-j-g-boswell-company/article_oddd760e-ccd9-11ed-87fd-b790e59dc9bd.html.

———. "Massive Dollars' Needed to Clean Tainted Groundwater from Kern County's Banking Projects." *The Bakersfield Californian*, February 25, 2022. https://www.bakersfield.com/columnists/lois-henry/lois-henry-massive-dollars-needed-to-clean-tainted-groundwater-from-kern-county-s-banking-projects/article_28804a3a-9667-11ec-995c-9ff292275053.html.

Huang, Ganlin, and Jonathan K. London. "Cumulative Environmental Vulnerability and Environmental Justice in California's San Joaquin Valley." *International Journal of Environmental Research and Public Health* 9, no. 5 (2012): 1593–1608.

Hurtado, Albert L. *Indian Survival on the California Frontier*. New edition. New Haven, CT: Yale University Press, 1990.

Igler, David. *Industrial Cowboys: Miller & Lux and the Transformation of the Far West, 1850-1920*. First Edition. Berkeley: University of California Press, 2005.

James, Ian. "'This Water Needs to Be Protected': California Tribe Calls for Preservation of Tulare Lake." *Los Angeles Times*, June 27, 2023. <https://www.latimes.com/environment/story/2023-06-27/a-california-tribe-wants-to-keep-water-in-tulare-lake>.

Keenan, Harper. "The Mission Project: Teaching History and Avoiding the Past in California Elementary Schools." *Harvard Educational Review* 91, no. 1 (April 20, 2021): 109–32. <https://doi.org/10.17763/1943-5045-91.1.109>.

Kelley, Robert. *Battling the Inland Sea: Floods, Public Policy, and the Sacramento Valley*, Berkeley: University of California Press, 1998.

Kondash, Andrew J., Jennifer Hoponick Redmon, Elisabetta Lambertini, Laura Feinstein, Erika Weinthal, Luis Cabrales, and Avner Vengosh. "The Impact of Using Low-Saline Oilfield Produced Water for Irrigation on Water and Soil Quality in California." *Science of The Total Environment* 733 (September 1, 2020): 139392. <https://doi.org/10.1016/j.scitotenv.2020.139392>.

Latta, Frank F. Collection: Skyfarming. San Marino, CA: The Huntington Library.

Latta, Frank Forrest. *Handbook of Yokuts Indians*. Oildale, CA: Bear State Books, 1949. <https://ehrafworldcultures.yale.edu/document?id=ns29-003>.

Liboiron, Max. *Pollution Is Colonialism*. Durham, NC: Duke University Press Books, 2021.

Littlefield, Douglas. *Ruling the Waters: California's Kern River, the Environment, and the Making of Western Water Law*. Norman: University of Oklahoma Press, 2020.

Madley, Benjamin. *An American Genocide: The United States and the California Indian Catastrophe, 1846-1873*. New Haven, CT: Yale University Press, 2016.

Middleton-Manning, Beth Rose, Morning Star Gali, and Darcie Houck. "Holding the Headwaters: Northern California Indian Resistance to State and Corporate Water Development." *Decolonization: Indigeneity, Education & Society* 7, no. 1 (September 1, 2018): 174–98. <https://jps.library.utoronto.ca/index.php/des/article/view/30399>.

Miranda, Carolina. "The Huntington Library Has a History of Inequity. Can It Pivot toward Inclusivity?" *Los Angeles Times*, April 1, 2021. <https://www.latimes.com/entertainment-arts/story/2021-04-01/reckoning-with-history-and-equity-at-the-huntington-museum>.

Molle, Francois, Peter Mollinga, and Philippus Wester. "Hydraulic Bureaucracies and the Hydraulic Mission: Flows of Water, Flows of Power." *Water Alternatives* 2, no. 3 (2009): 328–49.

Moreno, Cecilia. "Native American Resilience: The Tachi Yokut Tribe and the Preservation of Tribal History and Tradition." *The Undergraduate Historical Journal at UC Merced* 4, no. 2 (2018). <https://doi.org/10.5070/H342038975>.

Morgan, Wallace Melvin. *History of Kern County, California, with Biographical Sketches of the Leading Men and Women of the County Who Have Been Identified with Its Growth and Development from the Early Days to the Present*. Los Angeles: Historic Record Company, 1914.

Nash, Linda. *Inescapable Ecologies: A History of Environment, Disease, and Knowledge*. First Edition. Berkeley: University of California Press, 2007.

Onishi, Norimitsu. "A California Oil Field Yields Another Prized Commodity." *New York Times*, July 7, 2014. <https://www.nytimes.com/2014/07/08/us/california-drought-chevron-oil-field-water-irrigation.html>.

Proctor, Robert. "Agnotology: A Missing Term to Describe the Cultural Production of Ignorance (and Its Study)." In *Agnotology: The Making and Unmaking of Ignorance*, edited by Londa L. Schiebinger and Robert Proctor, 1–37. Stanford, CA: Stanford University Press, 2008.

Rifkin, Mark. *Beyond Settler Time: Temporal Sovereignty and Indigenous Self-Determination*. Durham, NC: Duke University Press Books, 2017.

Scott, Conrad. "(Indigenous) Place and Time as Formal Strategy." *Extrapolation* 57, no. 1–2 (January 1, 2016): 73–94. <https://doi.org/10.3828/extr.2016.6>.

Sepulveda, Charles. "Our Sacred Waters: Theorizing Kuuyam as a Decolonial Possibility." *Decolonization: Indigeneity, Education & Society* 7, no. 1 (August 30, 2018): 40–58.

Soulé, Frank. "Irrigation from the San Joaquin River." In *Irrigation Investigations in California, Bulletin No. 100*, edited

by Elwood Mead. Washington, DC: Government Printing Office, 1901. <https://catalog.hathitrust.org/Record/009262065>.

Stein, Sharon, Dallas Hunt, Rene Suša, and Vanessa de Oliveira Andreotti. "The Educational Challenge of Unraveling the Fantasies of Ontological Security." *Diaspora, Indigenous, and Minority Education* 11, no. 2 (April 3, 2017): 69–79. <https://doi.org/10.1080/15595692.2017.1291501>.

Stoler, Ann Laura. "Colonial Aphasia: Race and Disabled Histories in France." *Public Culture* 23, no. 1 (January 1, 2011): 121–56. <https://doi.org/10.1215/08992363-2010-018>.

Swain, Daniel L., Baird Langenbrunner, J. David Neelin, and Alex Hall. "Increasing Precipitation Volatility in Twenty-First-Century California." *Nature Climate Change* 8, no. 5 (May 2018): 427–33. <https://doi.org/10.1038/s41558-018-0140-y>.

Sze, Julie, Jonathan London, Fraser Shilling, Gerardo Gambirazzio, Trina Filan, and Mary Cadenasso. "Defining and Contesting Environmental Justice: Socio-Natures and the Politics of Scale in the Delta." *Antipode* 41, no. 4 (2009): 807–43. <https://doi.org/10.1111/j.1467-8330.2009.00698.x>.

Teisch, Jessica B. *Engineering Nature: Water, Development, and the Global Spread of American Environmental Expertise*. Illustrated edition. Chapel Hill: University of North Carolina Press, 2011.

Trouillot, Michel-Rolph. *Silencing the Past: Power and the Production of History*. Boston, MA: Beacon Press, 1995.

Underhill, Vivian. "From Kern Island to the Streets of Bakersfield: Logics of Contamination, Embodied Empiricisms, and the Afterlives of Reclamation." *Catalyst: Feminism, Theory, Technoscience* 8, no. 2 (November 7, 2022). <https://doi.org/10.28968/cftt.v8i2.36623>.

Underhill, Vivian, Sheeva Sabati, and Linnea Beckett. "Against Settler Sustainability: California's Groundwater as a Vertical Frontier." *Environment and Planning E: Nature and Space*, July 7, 2022, 25148486221110434. <https://doi.org/10.1177/25148486221110434>.

Union of Concerned Scientists. "Smoke, Mirrors & Hot Air | Union of Concerned Scientists." Cambridge, MA: Union of Concerned Scientists, July 16, 2007. https://www.ucsusa.org/sites/default/files/2019-09/exxon_report.pdf.

Vimalassery, Manu, Juliana Hu Pegues, and Alyosha Goldstein. "Colonial Unknowing and Relations of Study." *Theory & Event* 20, no. 4 (2017): 1042–54.

———. "Introduction: On Colonial Unknowing." *Theory & Event* 19, no. 4 (October 12, 2016). <https://muse.jhu.edu/article/633283>.

Voyles, Traci Brynne. *The Settler Sea: California's Salton Sea and the Consequences of Colonialism*. Lincoln, NE: University of Nebraska Press, 2021.

Whitman, Elizabeth. "Exxon Arctic Drilling Benefitting From Global Warming: Oil Company Denied Climate Change Science While Factoring It Into Arctic Operations, Report Shows." *International Business Times*, October 10, 2015, sec. Business. <https://www.ibtimes.com/exxon-arctic-drilling-benefitting-global-warming-oil-company-denied-climate-change-2136118>.

Whyte, Kyle P. "Indigenous Science (Fiction) for the Anthropocene: Ancestral Dystopias and Fantasies of Climate Change Crises." *Environment and Planning E: Nature and Space* 1, no. 1–2 (March 1, 2018): 224–42. <https://doi.org/10.1080/17513757.2018.1481111>.

Wolfe, Patrick. "Settler Colonialism and the Elimination of the Native." *Journal of Genocide Research* 8, no. 4 (December 1, 2006): 387–409. <https://doi.org/10.1080/14623520601056240>.

Worster, Donald. *Rivers of Empire: Water, Aridity, and the Growth of the American West*. Oxford: Oxford University Press, 1985.

Yazzie, Melanie K. "Unlimited Limitations: The Navajos' Winters Rights Deemed Worthless in the 2012 Navajo–Hopi Little Colorado River Settlement." *Wicazo Sa Review* 28, no. 1 (2013): 26–37.

Zablan, Zeslie. "Tribal Rights to Groundwater: The Case of Agua Caliente." *Environmental Law* 48, no. 3 (2018): 617–40.

Footnotes

[1] Frank F. Latta, Collection: Skyfarming.

[2] *Visalia Daily Times* June 6th, 1906, Frank F. Latta, Collection: Skyfarming, Box 101 folder 1, Huntington Library, San Marino, CA.

[3] *Visalia Daily Times* July 11, 1906, Frank F. Latta, Collection: Skyfarming, Box 101 folder 6, Huntington Library, San Marino, CA.

[4] Vimalassery, Pegues, and Goldstein, "Introduction."

[5] Middleton-Manning, Gali, and Houck, "Holding the Headwaters."

[6] Dogan et al., "Statewide Effects of Ending Long-Term Groundwater Overdraft in California."

[7] Kondash et al., "The Impact of Using Low-Saline Oilfield Produced Water for Irrigation on Water and Soil Quality in California."

[8] Onishi, "A California Oil Field Yields Another Prized Commodity."

[9] Gilbreath, *The Heart of California*.

[10] The Yokuts now form the Tule River Tribe, Tejon Tribe, Chukchansi Tribe, Table Mountain Tribe, and the Tachi Yokut Tribe, each of whom continue to fight for access to their waters and lands in different ways.

[11] Fragment of manuscript of Frank M. Chappell. Box 54 Folder 21. Frank F. Latta, Collection: Skyfarming, Huntington Library, San Marino, CA.

[12] Worster, *Rivers of Empire*.

[13] Iglar, *Industrial Cowboys*.

[14] Madley, *An American Genocide*.

[15] Garfield, "Testimony of Ryan Garfield on Behalf of the Tule River Tribe of California in Support of S. 789, the Tule River Tribe Water Development Act"; Moreno, "Native American Resilience"; Frank and Goldberg, *Defying the Odds*.

[16] Hurtado, *Indian Survival on the California Frontier*; Frank and Goldberg, *Defying the Odds*.

[17] Frank and Goldberg, *Defying the Odds*; Latta, *Handbook of Yokuts Indians*.

[18] Gilbreath, *The Heart of California*.

[19] Galloway and Riley, "San Joaquin Valley, California: Largest Human Alteration of the Earth's Surface."

[20] Whyte, "Indigenous Science (Fiction) for the Anthropocene."

[21] Scott, "(Indigenous) Place and Time as Formal Strategy"; Dillon, *Walking the Clouds: An Anthology of Indigenous Science Fiction*; Gross, *Anishinaabe Ways of Knowing and Being*.

[22] Alarcón-Jiménez, Pasalodos, and Díaz-Andreu, "Mapping with/In"; Latta, *Handbook of Yokuts Indians*.

[23] Byrd, "Eyes That Can Never Close: Colonial Agnosia and the Mnemonics of Refusal."

[24] Proctor, "Agnotology: A Missing Term to Describe the Cultural Production of Ignorance (and Its Study)."

[25] Union of Concerned Scientists, "Smoke, Mirrors & Hot Air"; Whitman, "Exxon Arctic Drilling Benefitting From Global Warming."

[26] This work includes, for instance, addressing the epistemological impossibilities and archival absences of the Middle Passage, or the fundamental uncertainties and indeterminacies involved in all forms of objectivity. Hartman, "Venus in Two Acts"; Alexander, *Pedagogies of Crossing*; Barad, *Meeting the Universe Halfway*; Vimalassery, Pegues, and Goldstein, "Colonial Unknowing and Relations of Study."

[27] These approaches, together, describe the structured sublimation and active forgetting of settler colonialism and slavery as the conditions of possibility through which freedom and equality emerge within liberalism. Stoler, "Colonial Aphasia"; Vimalassery, Pegues, and Goldstein, "Colonial Unknowing and Relations of Study"; Bruyneel, "Codename Geronimo"; Vimalassery, Pegues, and Goldstein, "Introduction."

[28] Trouillot, *Silencing the Past: Power and the Production of History*.

[29] Anne Stoler ("Colonial Aphasia") similarly discusses what she calls colonial aphasia in the case of French colonial histories, arguing that the facts and histories are there—they have not been forgotten per se. Instead, she focuses on the profound dissociation between colonial histories and state-produced histories, such that colonial histories become unspeakable.

[30] Byrd, "Eyes That Can Never Close: Colonial Agnosia and the Mnemonics of Refusal." Disability studies scholars have since rightly pointed to the ableist valences of "aphasia" and "agnosia," arguing against the conflation of these diagnoses and colonial cultural forms.

[31] Keenan, "The Mission Project."

[32] Sepulveda, "Our Sacred Waters."

[33] Liboiron, *Pollution Is Colonialism*.

[34] Daggett, "Petro-Masculinity."

[35] Ahuja, "Race, Human Security, and the Climate Refugee."

[36] Voyles, *The Settler Sea*; Nash, *Inescapable Ecologies*; Sepulveda, "Our Sacred Waters."

[37] *Tulare County Weekly Times*, Thursday, June 9, 1889.

[38] *Tulare County Weekly Times*, Thursday August 4, 1898.

[39] Sze et al., "Defining and Contesting Environmental Justice."

[40] The irony was not lost on me that, in order to learn about these historic lakes, I sat in the center of the wealth of Henry Huntington, a railroad baron and real estate mogul who busted unions and exploited Mexican labor. The Huntington Library remains a bastion of white exclusivity, having maintained an all-white senior staff until 2021. According to the *LA Times*, nearly half of their total staff are BIPOC, but if you take out the facilities workers, only 17% of the knowledge workers are BIPOC (Miranda, “The Huntington Library Has a History of Inequity. Can It Pivot toward Inclusivity?”).

[41] Underhill, “From Kern Island to the Streets of Bakersfield.”

[42] Soulé, “Irrigation from the San Joaquin River,” 265.

[43] Soulé, 265.

[44] Morgan, *History of Kern County, California, with Biographical Sketches of the Leading Men and Women of the County Who Have Been Identified with Its Growth and Development from the Early Days to the Present*.

[45] Soulé, “Irrigation from the San Joaquin River,” 265.

[46] Wolfe, “Settler Colonialism and the Elimination of the Native.”

[47] Molle, Mollinga, and Wester, “Hydraulic Bureaucracies and the Hydraulic Mission: Flows of Water, Flows of Power”; Teisch, *Engineering Nature*.

[48] “Piscatorial Plundering.” *Tulare Daily Register*: Tulare City, CA. Tuesday, Jan 29, 1889. Quoting in part from the *Stockton Express*. Frank Latta, Collection: Skyfarming, Huntington Library, San Marino, CA. Interestingly, one of the things this writer is most upset by is that the perch harvest was primarily processed and consumed by the Chinese community in the San Joaquin Valley, rather than by white residents.

[49] “Investigating Tulare Fish.” *Tulare Daily Register*, Tulare City, California. Friday, February 8, 1889. Frank F. Latta, Collection: Skyfarming, Huntington Library, San Marino, CA.

[50] Underhill, Sabati, and Beckett, “Against Settler Sustainability.”

[51] Henry, “Massive dollars’ needed to clean tainted groundwater from Kern County’s banking projects.”

[52] Some water banks have stopped storing groundwater. The Metropolitan Water District, for instance, has stopped storing water in the Arvin-Edison Water Bank since 2020. Others continue to inject water for storage (Henry, “Massive dollars”).

[53] Barker, “Confluence.”

[54] Though these rights often remain on paper only, they offer one potentially powerful avenue for Indigenous reclamation of water rights. Indigenous nations across North America are using *Winters* to regain rights to water—including, recently, the Agua Caliente Band of Coahuilla Indians’ major win against the Coachella Valley Water District in protecting groundwater from agricultural contamination. Yazzie, “Unlimited Limitations”; Curley, “Our Winters’ Rights”; Zablan, “Tribal Rights to Groundwater.”

[55] Arax and Wartzman, *The King Of California*.

[56] Henry, “Flooding out Other Farmers Was ‘Premeditated’ by the Powerful J.G. Boswell Company, One Farmer Asserts.”

[57] Henry, “Flooding out Other Farmers.”

[58] Some notable exceptions are: Beaumont, “‘Healing Process’”; James, “‘This Water Needs to Be Protected.’”

[59] Arax, “My State is 1,000 Miles Long, and Not Everyone Living in It Hates the Rain.”

[60] Burow, Shelton, and Dubrovsky, “Regional Nitrate and Pesticide Trends in Ground Water in the Eastern San Joaquin Valley, California”; Garoupa White, “Do You See What I See?”; Huang and London, “Cumulative Environmental Vulnerability and Environmental Justice in California’s San Joaquin Valley.”

[61] For example, Littlefield, *Ruling the Waters*; Kelley, *Battling the Inland Sea*.

[62] Swain et al., “Increasing Precipitation Volatility in Twenty-First-Century California.”

[63] Arax and Wartzman, *The King Of California*.

[64] Beaumont, “Healing Process.”

[65] Harvey, “Scientists Risk Arrest to Demand Climate Action.”

[66] Brend, “Fire Experts Say It’s Time to Rekindle Old Indigenous Knowledge to Calm Wildfires.”

[67] Arax, *The Dreamt Land*.

[68] Harkinson, “Meet the California Couple Who Uses More Water than Every Home in Los Angeles Combined.”

[69] Alarcón-Jiménez, Pasalodos, and Díaz-Andreu, “Mapping with/In”; Latta, *Handbook of Yokuts Indians*.

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About the Author

Vivian Underhill is of Irish and English settler descent and was raised in Colorado, the ancestral lands traversed and stewarded by Indigenous nations including the Arapahoe, Cheyenne, Ute, Apache, Comanche, Kiowa, Sioux, Shoshone, and Pawnee. Her book manuscript in progress, entitled *Drained: Water, Oil, and Environmental Justice in Colonial California*, is based on seven years’ ethnographic and community-based research on the environmental justice impacts of oil and gas extraction in California’s San Joaquin Valley, grounded in California’s longer history of colonial land transformation. She holds a Ph.D. in feminist studies from the University of California, Santa Cruz and is currently a postdoctoral scholar at Northeastern University’s Social Science Environmental Health Research Institute.