

High Country News



FOOD JUSTICE

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Who really owns
the West?

Road noise in
national parks

Toxic emissions on
the Navajo Nation

HIGH COUNTRY NEWS

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Fracked oil is pumped to the Huerfano Station, just north of Huerfano Mountain in northern New Mexico. These lands are home to Navajo, Pueblo, Jicarilla Apache and other Indigenous peoples.

Beth Wald / HCN

Know the West.

High Country News is an independent, reader-supported nonprofit 501(c)(3) media organization that covers the important issues and stories that define the Western U.S. Our mission is to inform and inspire people to act on behalf of the West's diverse natural and human communities. High Country News (ISSN/0191/5657) publishes monthly, 12 issues per year, from 119 Grand Ave., Paonia, CO 81428. Periodicals, postage paid at Paonia, CO, and other post offices. POSTMASTER: Send address changes to High Country News, Box 1090, Paonia, CO 81428. All rights to publication of articles in this issue are reserved. See hcn.org for submission guidelines. Subscriptions to HCN are \$45 a year, \$47 for institutions: 800-905-1155, hcn.org. For editorial comments or questions, write High Country News, P.O. Box 1090, Paonia, CO 81428 or editor@hcn.org, or call 970-527-4898. For correspondence addressed to High Country News, HCN or to the editors, permission to publish will be considered implicit unless specifically stated otherwise.

Our collective good fortune

CARING FOR OTHERS is a theme in these editor's notes. For me, it's a way of thinking, with regard to others — I see you, respect you, recognize your right to live well, to do the best you can — and of living in such a way as to not impair quality of life for others. Some of us are more successful at this than others. If one could undertake an audit of the intentional and unintentional harm caused by the choices we make, would the world be a better place? Would the West?

If you've been reading this space, you know that in this magazine the "others" include wildlife, plant life, all life. Don't get me wrong: I have swatted the occasional (OK, more than occasional) mosquito. And though I don't mind sharing my house with spiders, I have dispatched some potentially harmful ones. I even hit a deer once while driving at dusk in Montana. (This is the first time I've actually admitted this, such was my shame.) Because of our size, our intellect, and the way we humans have adapted to our environment, we have incredible agency over the lives of others, including our own kind. Some of our acts are deplorable. But others are quite inspiring.

Marin Hambley was living in Chico, California, when the Camp Fire broke out. Instead of fleeing, as many did, Marin stayed to help those struggling with addiction remain safe during the disaster. Secadio Sanchez (Diné), a behavioral health therapist in Salt Lake City, combines traditional healing and modern mental health practices to help Indigenous clients work through intergenerational trauma from the boarding school era. Masra Clamoungou manages a four-acre Seattle-area farm that not only donates fresh vegetables, helping to address food insecurity in Seattle's Black community, but creates opportunities for new Black farmers to gain access to land and get started in agriculture. And Jesse Barber, a sensory ecologist at Boise State University, has been documenting the impacts of road noise on animals in order to alleviate its deleterious effects, which include inhibiting their ability to hunt for food and avoid predators.

Each of these folks has dedicated themselves to the well-being of others. Each has invested not in amassing fortune for themselves, but rather in increasing the good fortune of their community. You'll find stories about them all in this issue of *High Country News*. I hope you enjoy reading about, and are inspired by, their efforts.

Jennifer Sahn, editor-in-chief

Mark Armao (Diné) hails from the high desert in northern Arizona and is now based in California. His recent reporting has focused on environmental issues facing Indigenous communities.

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Jonathan Thompson is a contributing editor for *High Country News*. He is the author of *Sagebrush Empire: How a Remote Utah County Became the Battlefield of American Public Lands* and other titles. @Land_Desk

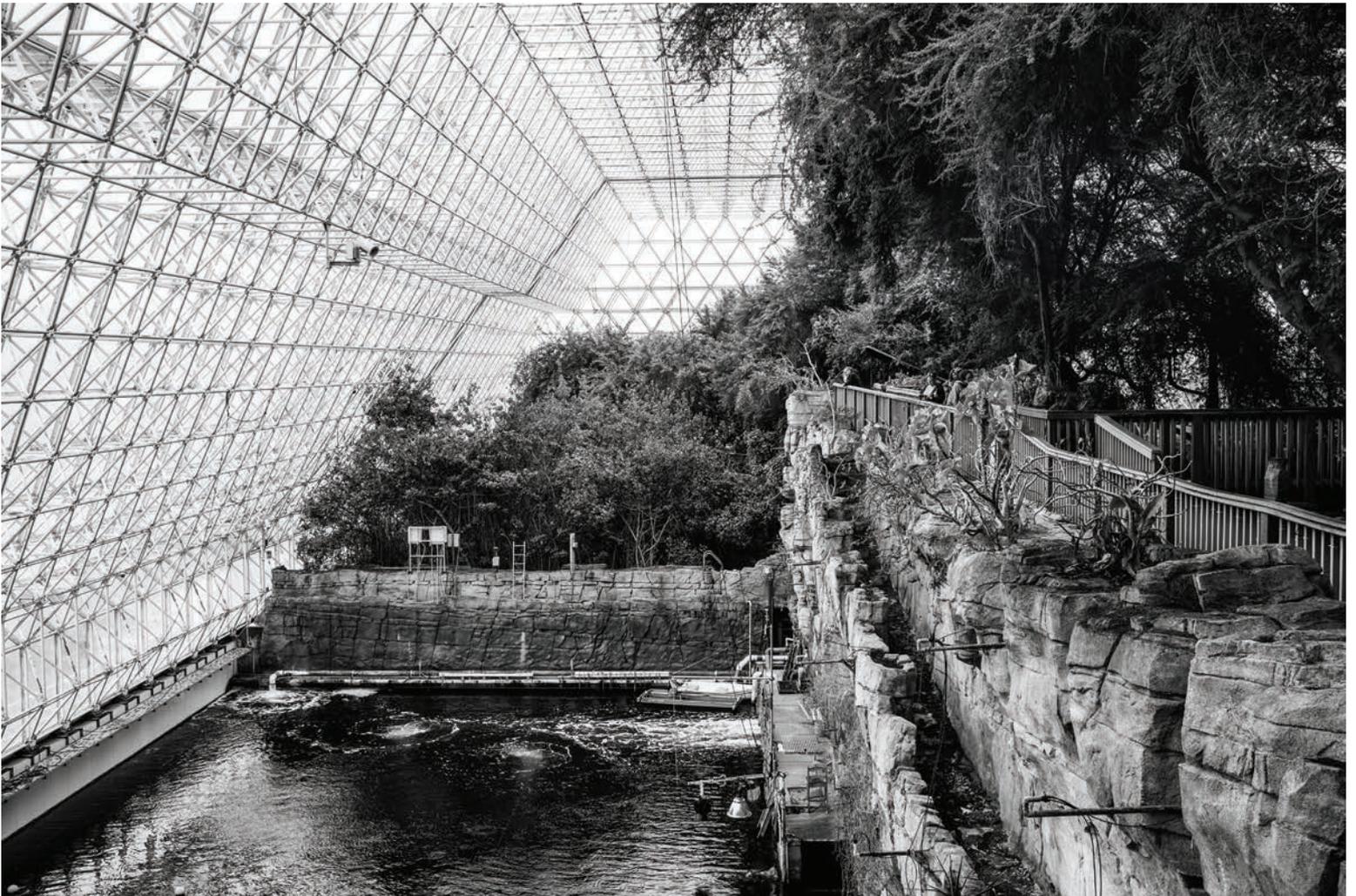
Syris Valentine is a Seattle-based writer, activist and entrepreneur. You can find them on Twitter and Instagram as @ShaperSyris.

ON THE COVER

Masra Clamoungou, farm manager of Small Axe Farm, walks through the four-acre farm located east of Seattle.

Meron Menghistab / HCN

Biosphere 2, near Oracle, Arizona, contains seven distinct biomes inside massive glass-covered structures. In this image, portions of the ocean biome (bottom left), and mangrove and savanna biomes are visible. **Roberto (Bear) Guerra**



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On Sept. 2, 1885, white coal miners in Rock Springs, Wyoming Territory, murdered at least 28 Chinese men and ran the rest of the Chinese out of town at gunpoint.

This artwork brings that history back to the present.

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Noise pollution from roads disrupts animals' lives everywhere, even in national parks.

BY BEN GOLDFARB | ILLUSTRATIONS BY KATE SAMWORTH

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Dzaki Sukarno, country music artist from Las Cruces, New Mexico.

BY AMANDA LOPEZ

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LETTERS

High Country News is dedicated to independent journalism, informed debate and discourse in the public interest. We welcome letters through digital media and the post. Send us a letter, find us on social media, or email us at editor@hcn.org.

IDAHO ISN'T OREGON

As a member of the legislative body, it makes me furious that the Idaho Legislature is wasting a second of time contemplating greater Idaho when we've got so many problems that we have to solve ("The Movement to Make Oregon Great Again," August 2023). We got elected to represent Idahoans, and to worry about Oregon and their problems is an abdication of our duty.

**Rep. Ned Burns, D, Idaho
District 26
Bellevue, Idaho
[@Ned4idaho](#) via Twitter**

LEGISLATIVE RELICS

As a reporter for the *Casper Star-Tribune* in the 1980s, I wrote many stories about the Mining Law of 1872, focusing on the law's negative econom-

ic and environmental consequences for Western states ("An antiquated law rules mining in the West," August 2023). Much of my reporting covered efforts to reform the law, which were led by the Mineral Policy Center (founded by former Interior Secretary Stewart Udall and Wyoming environmentalist Phil Hocker) and by a handful of progressive members of Congress, notably Rep. Nick Joe Rahall of West Virginia.

Although reform bills passed the House in the 1990s, they never went anywhere in the Senate, where they were blocked by a group of senators from the West, mostly Republicans, but with a few powerful Democrats (here's looking at you, Harry Reid) also in opposition. Although their states stood to gain economically from end-

ing the giveaway of the public's mineral estate, those Western senators were — and many still are — in thrall to the hardrock mining industry.

The Mining Law of 1872 is an anachronism that has survived far too long. But, like many other governmental anachronisms — the Electoral College, for example — it is likely to be with us for quite a while.

**Andrew O Melnykovych
Louisville, Kentucky**

GOLF AND WATER DON'T MIX

It is not OK that old water-usage habits are continued ("A putter's paradise with a water problem," August 2023)! That doesn't mean golf must go, it means the people who manage the landscape must learn new skills. Please do so, and brag about it, so that many land managers can learn to do better.

@ed_averill via Twitter

Absolute insanity, combined with denial and stupidity, gives you multiple golf courses in a desert ... during a megadrought.

Bill Watkins via Facebook

WOLF MILL?

I read "Smell matters" (August 2023) and found it disturbing. While I recognize the need for these pups to hopefully replenish the Mexican wolf packs, I was dismayed that there was no mention of the welfare of their birth mother at Brookfield Zoo.

I wondered: Was she just being used to produce pups, only to have them torn away from her? Were all of her pups taken, or was she allowed to mother some of them? This seems like a cruel practice; she might as well be in a puppy mill.

It is now known that animals mourn for the loss of their offspring, just like we do. I hope

that this has been taken into consideration during this experiment. The care of this mother at Brookfield should be just as important as the care of her puppies in the wild.

**Kris Cloud
Chicago, Illinois**

POETRY CONNECTS

I want to say thank you for the addition of poetry to your issues. I always appreciate your informative reporting, and I feel that the poetry selections add a layer of feeling and empathy that I find hard to express.

I live in Tucson, have a sibling in Albuquerque, and parents in Colorado, where I grew up. I just read "Sister Storms" by Jacqueline Balderrama, in the July issue, the morning after one of the most ferocious monsoon storms I have ever seen, following one of the longest heat waves. Jacqueline's poem left me with a mix of grief and anxiety, but also a deep sense of love and closeness with family, friends and strangers. It was a wrenching reminder that no matter how far apart, we are all connected, for better or for worse, by our changing world.

**Rachael Black
Tucson, Arizona**

TWISTED HISTORY

I just returned from Beatrice, Nebraska, after researching my great-grandfather's homestead there. I finally picked up the June issue and read "The Many Legacies of Letitia Carson" by Jaclyn Moyer. I was riveted. Turns out my great-grandfather was swindled by the same federal government that had swindled the Otoe Indians. I understood the twists and turns then of this piece. Excellent research and writing.

**Teresa Finn
Benicia, California**



REPORTAGE

The long tail of toxic emissions

Communities in the eastern reaches of the Navajo Nation contend with ongoing air quality issues tied to gas and oil wells.

BY MARK ARMAO
PHOTOS BY BETH WALD

IT WAS LATE February, and intermittent snow blew across the road. On the gray, high-desert horizon, a dark structure loomed above the piñon and juniper. “This is a new one!” Kendra Pinto said, pointing at the well site.

Pinto (Diné) grew up in this area, where sandstone mesas give way to shallow valleys and pale badlands of eggshell-colored clays. She watched the landscape

change with the influx of fracking activity that peaked around 2014. Now, nearly a decade later, she is among the community’s most prominent critics of the industry. In 2017, she began volunteering for Earthworks, an environmental nonprofit focused on oil, gas and mining pollution. Now, she works for it as a thermographer, documenting air emissions using a specialized infrared camera

designed to detect gas emissions.

Driving to another site in Counselor Chapter, a small community in the eastern reaches of the Navajo Nation where the political chapters are outside the reservation boundaries, she described the different types of equipment — flare stacks, storage tanks, gas compressors — from which she commonly sees emissions. Pinto said that most air emissions seem to come from operators intentionally flaring or venting excess gases that build up in the equipment, rather than unintentional emissions, such as from aging underground pipes. She and her colleagues refrain from calling any emissions “leaks,” though: While these systems were designed to emit gas, usually as a safety mechanism, the vapor trails she films are often caused by malfunctioning equipment.

“These little flares should be lit and combusting all the hydrocarbons, but when you put the camera on (a lit flare), a portion of those hydrocarbons are still venting out into the atmosphere

and along this horizon,” she said. “And that’s worrisome, because the air has no boundaries.”

The snow had ceased when Pinto trained the boxy, camcorder-like device on another well site. To the naked eye, the row of 20-foot-tall storage tanks did not appear to be emitting anything unnatural. Using the camera, though, she toggled between monochrome and technicolor image modes, revealing a plume of hydrocarbons rising from an unlit flare stack near the tanks.

Across the region, wells suck crude oil and natural gas from shale formations thousands of feet below the surface. Some of the gas escapes, despite regulations to limit “venting and flaring” by operators. (Flaring is supposed to burn off the escaping methane, converting it to

A sign along Highway 550, east of the Navajo Nation in New Mexico, near Lybrook Elementary School, alerts people to the presence of methane from the extensive network of fracking installations in the area.

carbon dioxide, a less potent greenhouse gas.) At every juncture — from the wells extracting the hydrocarbons to the storage tanks, compressors and pipelines that convey the material — the system is rife with holes.

Hydrogen sulfide, a byproduct of oil and gas wells that smells like rotten eggs, is a frequent odor in oilfields. Even at very low concentrations, the toxic gas can sting the nostrils and cause nausea, dizziness, bloody nose and other acute symptoms. Inhaling extremely high concentrations of hydrogen sulfide in an enclosed space can kill a human almost immediately. The hydrocarbon soup that comes up from the shale also contains volatile organic compounds (VOCs), such as benzene, which has been shown to increase the risk of blood cancers and pregnancy complications.

“If people were to be exposed to this air, they were also at risk of other non-cancer health outcomes, including respiratory, neurological and developmental

effects,” said Lisa McKenzie, an associate professor with the Colorado School of Public Health who has studied the health impacts of oil and gas production.

The off-gassing benzene is one of the many air toxics that can escape from oil and gas infrastructure. Along with other VOCs like xylene and formaldehyde, the emissions contribute to air pollution in the form of ozone, nitrogen oxides and fine particulate matter. A 2022 study in Pennsylvania showed that children born within two kilometers (about 1.25 miles) of a fracking site were two to three times more likely to develop leukemia. In Colorado, McKenzie led studies showing that children with the blood cancer, as well as congenital heart defects, are more likely to live near oil and gas sites. Older people are also at risk: A Harvard-led study of millions of people ages 65 and older showed that those living near fracking operations — particularly downwind — had a higher early mortality risk compared to elderly people

living in areas without wells.

In the mesa-lined valleys that surround Counselor, some wells pump petroleum within a few hundred feet of homes and traditional hogans; one well site lies less than 2,000 feet from a local school. The rural community’s exposure to VOCs and other air toxics has led to mounting concern among some residents about the potential health problems caused by the emissions.

PINTO, who captures footage at oil and gas sites in the area regularly, said she often has a headache “by mid-afternoon” in the field, and has also experienced eye and respiratory irritation that she attributes to exposure.

Given the enormous scale of the extraction activities and resulting air pollution in the Permian Basin — which straddles the New Mexico–Texas border — Pinto said the air-quality problems in her community are often overshadowed. “The problem for folks in this

area is that the Permian will get a lot more attention than the San Juan Basin,” she said, noting that cleaning up the industry in the Four Corners region would likely prove more beneficial to human health. An Earthworks analysis shows that in the San Juan Basin, nearly 80% of the population lives within a half-mile of active oil and gas operations.

Another area drawing more media coverage and political attention lies closer to Counselor Chapter: In recent years, the U.S. Department of the Interior’s plan to halt federal oil and gas leasing near Chaco Culture National Historical Park has led to division among the area’s predominantly Navajo communities. The 10-mile buffer zone, which went into effect in June, encompasses all public lands surrounding the thousand-year-old Pueblo complex. The action drew the ire of pro-fracking residents, and was eventually opposed by the Navajo Nation Council and President Buu Nygren.

Many of those who opposed the leasing stoppage are from families who benefit from wells drilled on “Indian allotments,” tracts that the federal government allocated to Navajo households, who could then lease their mineral rights to oil and gas companies and receive royalty payments that are split between the original allottees’ heirs. Under the signed order, Navajo allottees are not prohibited from leasing their mineral rights, but many argue that the buffer zone will make their land less desirable for development. Delora



Kendra Pinto (Diné) a local resident who lives near fracking installations in the Lybrook area east of the Navajo Nation in New Mexico, stands in front of a decommissioned well that has not had tanks and pipes removed and still poses a hazard to the community.

Hesuse, an outspoken allottee from Nageezi Chapter, said that Navajo communities should be free to benefit from the area's mineral resources, despite the potential exposure to pollutants.

"We do our homework," Hesuse said. "Those issues have already been spoken about within the families."

Pinto said she doesn't relish filming in communities that tend to support oil-and-gas extraction. People have lashed out publicly against her and others who voice concern about the industry's impact on the environment and community members. Disputes over mineral interests have, in some cases, led to physical violence.

After documenting the malfunctioning flare, she logged details about the well, which is operated by Enduring Resources. Some of the footage she's collected for Earthworks has been packaged as part of complaints the organization has filed with the New Mexico Environment Department.

A MAP OF the area reveals a complicated patchwork of land ownership, including federal, state, private and trust lands. Of the more than 21,000 active wells in the San Juan Basin, the majority were leased and permitted on public lands by the Bureau of Land Management. Oil and gas operators in the state are regulated by the New Mexico Oil Conservation Division (NMOCD), which, under the state's 2021 Methane Waste Rule, is tasked with limiting the amount of natural gas that is wasted by the industry. In theory, that rule prohibits most routine venting and flaring. However, the law includes nearly a dozen exceptions that allow venting and flaring during "an emergency or malfunction," as well as during

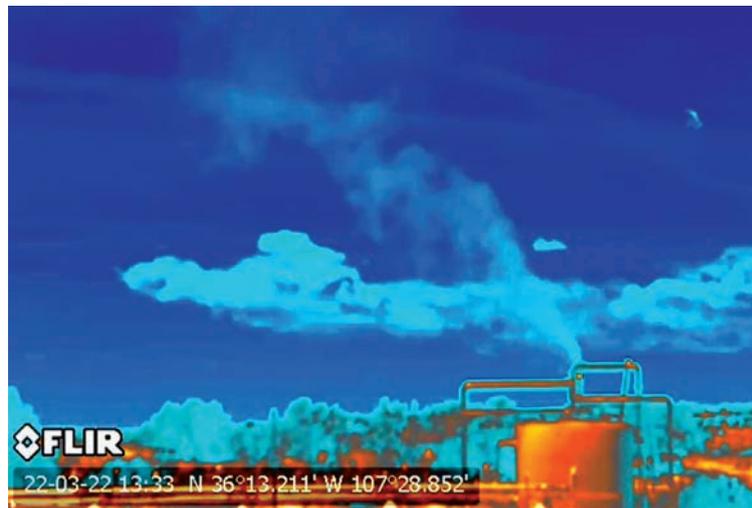
scheduled maintenance or the "normal operation of a storage tank."

Companies self-report their estimated emissions to the division, and are compelled to report any major flaring incidents, as in August of 2022, when more than 107 million cubic feet of gas were flared from a cluster of wells operated by DJR Energy near the community of Nageezi. And while substantial emissions are reported by companies, industry critics say those volumes are likely dwarfed by unreported and so-called fugitive emissions.

NMOCD director Dylan Fuge said equipment such as storage tanks may release gas "as a safety measure so the tanks don't explode," or for various other reasons during extraction, storage and transportation. Last year, operators in the northern part of the state reported venting of more than 197 million cubic feet. Fuge emphasized that operators are allowed to vent and flare under exceptions in state regulations, though he acknowledged the likelihood that "there are some" unreported emissions on the division's watch.

Based on aerial footage, Liz Kuehn, Air Quality Bureau chief with the state Environment Department, is confident that unreported emissions are occurring in the basin. "We absolutely know that malfunctions are not reported, that excess emissions are not reported and that there is noncompliance with regulations on a systematic, widespread basis," Kuehn told *High Country News*.

A new rule to limit the emission of "ozone precursors" from specific equipment should help curb VOC releases in the coming years, Kuehn added. Under the Oil Conservation Division's new Methane Waste Rule, operators will be required to capture 98%



of the methane they release by 2026. But environmental organizations say the agencies are letting the industry run roughshod over regulations intended to curb emissions. Earthworks has submitted more than 100 complaint videos to state Environment Department in the past five years, many of which were rejected based on technicalities, Pinto said.

To address some of the organization's complaints, the agency adopted a system of notifying operators and the public about alleged violations, Kuehn said. The department has undertaken at least four major enforcement actions against operators in the basin over the past five years, while NMOCD has assessed no penalties against operators for venting and flaring in the basin since 2020. The NMOCD currently employs five inspectors in the basin, and the Environment Department has five inspectors statewide.

"It is frustrating that as much as (the agencies) bemoan a lack of resources, a lack of staffing, and an inability to enforce all the time everywhere, that they're not taking small actions that could make things better in the meantime," said Jeremy Nichols, who until August was the climate and energy program director for WildEarth Guardians. "The

An infrared video still by Earthworks shows gas emitting from a site in Rio Arriba County, New Mexico.

Courtesy of Earthworks

industry needs to be given the message that this behavior, these releases, they won't be tolerated anymore."

The Navajo Nation EPA currently monitors air quality at two sites in New Mexico and Arizona, neither in the Counselor area, environment program supervisor Glenna Lee said, adding that the agency's air-monitoring capacity is constrained by the limited grant funding it receives from the U.S. EPA. After requests for an interview, an agency spokesperson said in a statement, "EPA will continue to investigate matters that concern air quality in at-risk communities and we will work with our state partners to ensure public health concerns are addressed adequately."

In recent years, the BLM has paused leasing throughout its Farmington Field Office area. A draft management plan for the region proposed in 2020 could allow for new drilling in the area. As of this year, that plan is still pending further review. Field manager Maureen Joe declined to address whether additional acreage may be opened in the future.

ON AUTUMN MORNINGS, school buses bounce along the rutted roads linking the rural communities, while children gather at makeshift bus stops in the morning chill. In 2022, a well near one of the stops gave off noxious odors that students had to endure for months, said Harry Domingo, who has driven routes in the area's predominantly Diné communities for many years.

"You can already smell it when you approach that stop; it gets stronger and stronger until we get right by the tank," he said. "It could just give you a headache right there." On other stretches of road, the odors coming from oil-and-gas infrastructure cause students riding the bus to hold their nose and say "Eww," he recalled.

Domingo is also the vice president of Counselor Chapter. In the past, he has shuttled K-8 students to Lybrook School, a sandstone-colored building overlooking Highway 550. The school used to be located several miles up the road, but was relocated after residents voiced health and safety concerns over a gas-processing plant across the street. In 2005, the school was reconstructed at its present location. A decade later, a drilling rig appeared across the street.

Five wells, now operated by Enduring Resources, were completed in 2015, at the tail end of a fracking boom in which hundreds of oil and gas wells were drilled in the region. The company reported venting at least 48,000 cubic feet of uncombusted gases across from the school in August 2022.

Near a shallow pass in the sandstone ridgeline, a few miles from Lybrook School, Marlene Thomas was cooking at home in the late afternoon. Outside her house, several dogs left tracks in the shallow snow that borders the driveway, which passes within 100 yards of an active well. For three decades, she worked as a community health representative for the Navajo Nation, a role that involved visiting homes throughout the area and consulting residents about their health. Now retired, Thomas said she suspects that the rash of oil and gas activity in the area has caused health problems in the community.

She was on a committee that conducted a community-driven Health Impact Assessment. Starting in 2016, the committee began speaking with residents who described experiencing sore throats, sinus problems, headaches and other symptoms often attributed to increased air pollution. In 2018, the committee conducted air monitoring that

showed elevated levels of particulate matter and formaldehyde, and the presence of other VOCs.

Since Thomas retired, she's continued to hear from community members about the perceived effects of the ongoing air quality issues. She spoke with one woman who said she'd noticed an increase in stillbirths in recent years. Talking about an elder who has since died from a "respiratory illness," Thomas said the woman noted that her coughing and throat irritation worsened when she would herd her sheep near a particular well site. "She noticed a difference between when she was near" the facility and when she took her sheep in a different direction, which the woman said made her "feel a lot better," Thomas recounted.

Sitting in his office a few miles away, former Chapter President Samuel Sage said he often smells the gas that collects in certain valleys. Sage, who has provided written testimony to Congress on the issue, said

officials with the BLM and the Bureau of Indian Affairs never discussed the dangers posed by fracking during oil-leasing negotiations with allotment owners. "The first thing that was mentioned was, 'If you sign this, you will get this much money,' and of course, there was no hesitation," he said.

While oil tankers tear up the dirt roads that branch off the highway, Sage said the industry's presence has frayed the fabric of the community, pitting locals who support oil and gas development against those who are opposed to the industry encroaching on the landscape. Undeterred by the controversy, Pinto plans to continue putting pressure on regulators and the industry by documenting emissions and raising awareness of their potential health impacts.

"It's not good for us, it's not good for wildlife, it's not good for plants," Pinto said. "Are people getting paid enough to bear all these negative impacts — is it worth it?" ☀



Gas infrastructure near Counselor Chapter's Lybrook Elementary School.



Secadio Sanchez (Diné) is a behavioral health therapist at Sacred Circle Healthcare in Salt Lake City.

REPORTAGE

Enter the healers

Finding appropriate and effective ways of treating the multigenerational trauma of boarding school survivors.

BY ALASTAIR LEE BITSÓÍ | PHOTOS BY RUSSEL ALBERT DANIELS

BLOOD MEMORY need not be rooted in violence. In the 2021 anthology, *New World Coming: Frontline Voices on Pandemics, Uprisings and Climate Crisis*, filmmaker and Indigenous rights and climate activist Jade Begay (Diné and Tesuque Pueblo) described blood memory as “an embodied remembrance passed down from generation to generation. ... Sometimes they are good and joyful, and sometimes they are traumatic and rooted in grief.”

For Native children growing up in the Intermountain West

in the wake of World War II, the link between trauma and blood memory is often tied to their experience in federally funded boarding schools. Children were rounded up, sometimes at gunpoint, and forced from their homelands to attend these schools, according to members of the Greyhound Generation, the Native elderly who can trace their ancestral blood memory of stories from the late 1800s to the present. The boarding school era, between 1819 and 1969, fractured families and communities. Unknown numbers of

children went missing, either dying on the school grounds or running off and never being found. Throughout this tragic period of assimilation, children experienced physical, emotional and sexual abuse at the hands of school staff.

Blood memory for many of the boarding school survivors known as the Greyhound Generation takes the form of being shuttled around on flatbed trailers and Greyhound buses from a boarding school in northern Arizona to one hundreds of miles away in southern Utah,

or riding in the back of a truck past the Hopi mesas to attend a Presbyterian school. It’s holding the stories passed on by elders from the early 1900s, who had their heads shaved bald at school. Children who were disciplined by non-Native school staff with a paddle later ended up using those same abusive methods on their own children, the Baby Boomers, who then passed it on to their Gen X and Millennial grandchildren of today.

These conditions — a byproduct of U.S. militarism, as America fought to expand its land holdings in the 19th and 20th centuries — left survivors with what is now known as complex post-traumatic stress disorder or PTSD. This complex PTSD, a violent version of blood memory, is rarely treated or even diagnosed, and so it is generally seen as the norm.

But it doesn’t have to be that way.

Secadio Sanchez (Diné) is a behavioral health therapist in Salt Lake City. Both through blood memory and his own lived experience, he has seen the dual benefits of traditional healing and behavioral health therapy. Members of his Diné clan, Tó’áhani (Near The Water People), are commonly known as healers across the Navajo Nation. Sanchez works at Sacred Circle Healthcare, which is owned and operated by the Confederated Tribes of the Goshute Reservation. Along with cultural support through various Indigenous healing methods, Sacred Circle Healthcare offers trauma-informed care for Salt Lake City’s urban Indigenous population.

He envisions more Native

American and Alaska Native community members healing themselves from their traumatic experiences, including the intergenerational trauma of boarding school survivors, by blending traditional healing with behavioral health therapy.

“Trauma — we know that it lives and exists in the body,” Sanchez said, explaining that it can be passed from one generation to another through blood memory. “Trauma is something that occurred; whether it happened in your generation or your parents’ generation or not, it is still there.”

His clients, who range in cultural identity from Diné (Navajo), Goshute and Paiute to Shoshone, Ute and many other tribes, often present symptoms of anxiety and depression. But few of them enter his office with a full understanding of how their past trauma affects their health and mental well-being, Sanchez said, and they lack the tools to process their own experiences. As a mental health provider, Sanchez has been able to trace some of the risk factors for PTSD-associated anxiety.

Blood memory and lingering trauma are widespread issues that have begun to receive more acknowledgment in recent years. In his 2014 book, *The Body Keeps the Score: Brain, Mind and Body in the Healing of Trauma*, Dr. Bessel van der Kolk wrote that unresolved trauma prevents people from living a full life, owing to the ways that fear and insecurity stemming from past events can impact a person’s present existence.

“Traumatized people chronically feel unsafe inside their bodies: The past is alive in the form of gnawing interior discomfort,” van der Kolk wrote. “Their bodies are constantly bombarded by visceral warning signs, and,

in an attempt to control these processes, they often become expert at ignoring their gut feelings and in numbing awareness of what is played out inside. They learn to hide from their selves.”

For Indigenous communities, much of this past trauma is tied at some level to the forces of colonization and the attempted genocide by the United States and European governments. The forced removal of tribes and pueblos from their homelands, accompanied by physical, sexual and domestic violence; assimilative adoption practices and the boarding school system — these all contribute to the ongoing emotional repression that van der Kolk outlined.

Anxiety, Sanchez said, is a common symptom among the Indigenous people he treats. According to the Substance Abuse and Mental Health Services Administration, anxiety and depression are the leading causes of mental health issues in Native communities. The Indian Health Service reports that American Indians and

Alaska Natives are 2.5 times more likely than the general population to experience psychological distress. Once his clients receive proper treatment and become able to understand and process their personal trauma, they can begin to do the heavy work of reprocessing their behavioral patterns and distinguishing between their past, present and future. This allows them to become more aware of how past trauma can impact daily living.

“We can provide interventions that are focused for Natives, that’s going to work for Natives, that bring familiarity to those who have experienced trauma,” Sanchez said. He added that most of the anxiety seen in clients stems from identity confusion, which comes with feelings of guilt, shame and betrayal — all rooted in the colonial structures that challenge Indigenous identities.

Some tribal leaders in the Intermountain West have called for an increase in mental health services. In 2022, Navajo Nation Council Delegate Carl Slater

told *High Country News* that the federal government needs to go beyond its Interior Department-led boarding-school review and start providing health resources for survivors. “You just can’t remove the bandage when you have not done enough to actually help heal the person and the people,” Slater said. “The (federal) report is just a report without action.”

The National Native American Boarding School Healing Coalition, which is providing technical assistance to the Department of the Interior in its ongoing Federal Indian Boarding School Initiative investigation, has a program dedicated to healing. Led by Sandy White Hawk (Sicangu Lakota), the program seeks to address the historical legacies of the federal boarding school era by offering workshops on coping with trauma, anxiety and depression. In 2022, the healing coalition held four in-person healing events in Oklahoma, Minnesota and Alaska, as well as seven virtual workshops. A total of 450



Dena Ned is a citizen of the Chickasaw Nation and a professor and social worker at the University of Utah.

people attended the in-person workshops. This year, the healing coalition sponsored virtual workshops; two were focused on traditional plant medicines and one on how trauma affects the brain.

The effectiveness of these workshops, White Hawk said, depends on the individual, so at this time the healing coalition cannot measure its impact. Most attendees enjoyed learning about traditional plant medicines, she said, adding that it is critical for mental health providers like Sanchez — as well as the federal government — to remember that their work is vital to achieving healthier outcomes in Indigenous communities. But they need to take a slow and gentle approach, remembering that the Indigenous elders of today endured years and years of bullying and trauma at boarding schools during their critical developmental years.

“I would like them to know and understand that what happened to them is not their fault,” White Hawk said, and that any contemporary struggle they may experience “is an outcome of that trauma in their behaviors that was not healthy.”

White Hawk emphasized the need for strong and gentle support for boarding school survivors as they consider what steps they want or need to take to address their trauma. She also wants the coalition to be thinking about how it can help those already on their healing journeys to continue their progress.

Honoring the legacy of the boarding school era survivors also requires the heavy process of understanding the historical context of colonization and its many facets, said Dena Ned, a citizen of the Chickasaw Nation. In her role as a professor and social worker at the University of

Utah, she examines how the U.S. government and society removed Indigenous peoples from their homes and landscapes, employing various assimilation tactics in cruel and annihilating ways. Ned pointed out that health-care providers often approach Indigenous patients with a view shaped by settler-colonialism, establishing harmful stereotypes about Native communities and leaving the true causes and impacts of trauma unknown — and untreated.

Beyond the Interior Department’s investigation and any mental health treatment options, Ned said that Native families need to engage in more open and transparent dialogue. This can help them process the ways that colonization might have shaped their family and community histories. The American health-care system currently focuses on immediate symptom relief and treatment through pharmaceuticals, disregarding the social determinants of health, a public health theory that looks at how non-medical factors influence a person’s overall health.

“You gotta go to a deeper level,” Ned says. “We need more support for our community members to become experts in these areas or trained as community practitioners.”

It’s part of the work that mental health providers like Sanchez, advocates like White Hawk and social workers like Ned all see as part of a holistic, community-centered response, one that can honor and uplift the relatives and ancestors who bore the brunt of federal termination and assimilation policies — one that can relieve the pain of the past in the name of building a healthier future.

“They survived and are here,” White Hawk said, “and for that we want to honor them.” ✨

POEM

Unsettling the Oregon Trail

By Kevin Craft

By the time we got to Boring,
I had renounced predestination.

Where else would the highway take us
suffering through some distracted god’s

radio silence? Logjam of logging trucks,
exit music of gas food lodging

everywhere the same. Sorrow depends
on repetition—like this rain laboring

over the river, the river’s involute meander
flooded to the cutbank brim. Sorrow deepens

the river’s rust in bends. How do you get
this far from first snow falling in the mountains

to fever felling a rush-hour continent
without addressing the problem

of omniscience—hare that scatters
before the avalanche trigger, the blink that instant

an insect hits your eye?
You feel what’s coming before you see it:

steam rising from the radiator vent.
Rage rising from the radio like a hole in the head.

All things being equal
to nothing we can return unscathed—

that edge the road drops over the canyon
Clear Creek carves into a thousand thous-

and rivulets. I saw myself turning before I turned,
I heard someone breathing inside the volcano

the maps call Middle Sister. It took generations
of amnesia to get me through Warm Springs,

so far drifted from my reputation as
clear cut mission mine.

WEB EXTRA Listen to Kevin Craft read his poem at hcn.org/oregon-trail

The twin crises of climate and addiction

Extreme temperatures and natural disasters push harm reduction workers to find new ways to keep communities safe.

BY ROBIN BULLER

MARIN HAMBLEY WAS WORKING as a groundskeeper in Chico, California, when the first plumes of what would become the deadliest fire in the state's history appeared on the horizon. It was Nov. 8, 2018.

Initially, all Hambley could see of the Camp Fire was a "little puff of cloud" — a sight not uncommon in the northeastern reaches of the Sacramento Valley, where summer temperatures routinely surpass 100 degrees Fahrenheit. But by midafternoon, "the sky was totally black and just dropping chunks of ash," said Hambley.

Many residents evacuated; Hambley chose to stay. This area had been heavily impacted by the opioid crisis, and Hambley's experience with harm reduction, a practice centered on minimizing the negative outcomes of drug use, made them acutely aware of the need to help people with substance abuse disorders. Additionally, their perspective as a queer and trans person led them to believe that they could be especially helpful to the marginalized populations that are often overlooked during disasters.

Since 2006, Butte County, where Paradise and Chico are located, has consistently been among the top three counties in

the state for hospitalizations from opioid-related overdoses, with an annual rate between 2.75 and 5 times the state's average.

In the hours after the plumes first appeared, Hambley heard about a pop-up encampment in an empty lot wedged between a busy thoroughway and the local Walmart. Hundreds of mostly low-income people had flocked there, fleeing the fire, and community organizers were distributing food, water and clothing. Meanwhile, those with means stayed in hotel rooms and Airbnbs or left the area entirely.

At the time, the county lacked official harm reduction infrastructure. Hambley and other organizers had to locate and distribute supplies on their own. Without the required certification, their activities weren't technically legal, but Hambley said that was a risk they were willing to take. While the group had received a grant for purchasing Narcan — the overdose-preventing nasal spray approved for over-the-counter use last March — they had to obtain syringes, needles, cotton swabs and fentanyl test strips from groups elsewhere in the state. "We were all kind of underground," Hambley said, noting that they smuggled backpacks stuffed with Narcan into Red Cross-operated shelters, where drug use was prohibited, though widely practiced.

At the Walmart encampment and other shelters, Hambley witnessed a disturbing rise in overdoses following the colossal Camp Fire, which ultimately killed at least 85 people and devoured nearly 240 square miles. A local paramedic noted that in the weeks following the fire, overdoses went from being a weekly occurrence to a daily one. And with a rate of 17 deaths per 100,000 residents, for the first time the Paradise area experienced a higher rate of opioid-related overdose deaths in 2018 than any other zip code in Butte County. Hambley said that's because disasters cause both acute stress and chronic uncertainty, which can lead to more reactive and less managed drug use. "The chaos around you often precedes more chaotic (drug) use," they said.

Across the Western U.S., climate disasters compound the devastation already caused by the deepening addiction crisis. Wildfires and floods breed anxiety, despair and isolation, all of which can exacerbate substance use. "Your house burns down, your community burns down, your school burns down — of course, you look for an escape,"

said Sarah Windels, a co-founder of Bridge, a California-based program that promotes access to substance-use disorder treatment.

Beyond that, climate disasters halt addiction treatment programs and derail critical medication supply chains — all factors that heighten the risk of overdose, including for people who legally use opioids. This is especially true in rural areas, where fewer health-care providers are available, and patients often need to travel substantial distances to receive care. After a massive fire or flood, when local pharmacies and clinics may be closed, a person who is prescribed opioids for chronic pain or who is undergoing medication-assisted treatment (MAT) to curb their addiction may be forced to acquire a substitute illegally. If that supply has a higher potency than they are used to or, as is increasingly common, is laced with fentanyl, that individual is at a high risk of overdosing.

The data suggests that the connection between climate-induced disasters and overdoses is neither occasional nor individual, but seasonal and increasingly predictable. For instance, overdose rates are increasing every year across the nation, but in California, at least, they peak at the height of fire season. According to the California Overdose Surveillance Dashboard, emergency department visits for opioid-related overdoses have topped out during the third quarter of every year since 2018. And in 2020, the counties most affected by the vast August Complex Fire saw a surge in overdose deaths while the wildfire burned.

From the foothills of the California Sierras, to the floodplains of New Mexico, to the high Rockies in Colorado, these events are also forcing harm reduction workers to adapt their approaches to match their specific surroundings.

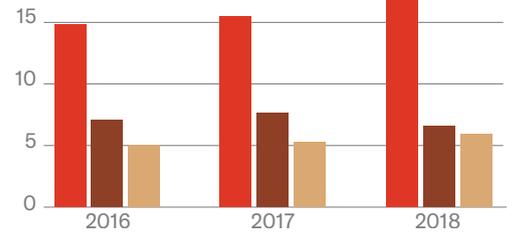
In Albuquerque, New Mexico, for example, extreme weather during the summer months accelerates overdose rates, said Ashley Charzuk, the executive director of the New Mexico Harm Reduction Collaborative, although the reasons differ from those in regions affected by wildfires. In Charzuk's experience, people who use intravenous drugs can find veins more easily when it's hot, owing to vasodilation, and this can lead to more frequent and potent use. What's more, those who use stimulants are at greater risk of overamping, which is different from



Marin Hambley in their pickup truck near the location of the encampment that popped up during the Camp Fire in Chico, California. Hambley and other organizers distributed syringes, needles, Narcan, cotton swabs and fentanyl test strips to residents of the temporary camp.
Andri Tambunan / HCN

DATA SOURCE: California Overdose Surveillance Dashboard

The rate of opioid-related overdose deaths per 100,000 residents in Paradise, California, jumped in 2018, the year of the Camp Fire. At the same time, the county-wide rate declined. In 2018, **Paradise** saw more overdose deaths than any other zip code in **Butte County**, at a rate almost triple the **state** average.



The vast majority of the counties with the highest rate of overdose deaths per 100,000 residents per year in California are in rural and in fire-prone areas.

 2016 90% rural counties	Inyo	22.9
	Humboldt	22.4
	Siskiyou	22.0
	Lassen	19.9
	Mendocino	17.3
	Calaveras	16.5
	Amador	15.6
	Trinity	13.4
	Lake	12.4
	Santa Cruz	12.3
 2017 90% rural counties	Modoc	23.6
	Humboldt	21.0
	Mendocino	19.3
	Lake	17.0
	Shasta	14.1
	Lassen	13.9
	Yuba	13.2
	Del Norte	12.6
	Siskiyou	10.0
	Ventura	9.8
 2018 70% rural counties	Lake	22.7
	Plumas	18.1
	Inyo	17.8
	San Francisco	15.0
	Mendocino	13.7
	Lassen	11.9
	Humboldt	11.2
	Ventura	11.1
	Kern	10.5
	Imperial	10.1
 2019 90% rural counties	Lake	32.5
	San Francisco	27.0
	Lassen	23.5
	Mariposa	23.4
	Mendocino	21.1
	Trinity	19.7
	Humboldt	19.1
	Colusa	15.7
	Inyo	14.5
	Sonoma	13.1
 2020 90% rural counties	San Francisco	44.5
	Nevada	34.1
	Lake	26.1
	Mendocino	25.8
	Kern	24.3
	Sonoma	23.7
	Inyo	22.0
	San Luis Obispo	20.6
	Siskiyou	19.4
	Imperial	19.1
 2021 90% rural counties	Mendocino	54.7
	Trinity	53.5
	Alpine	51.6
	Lake	49.8
	San Francisco	42.0
	Inyo	41.6
	Humboldt	36.5
Nevada	32.0	
Kern	31.0	
Shasta	30.9	



Ashley Charzuk, executive director of the New Mexico Harm Reduction Coalition in Albuquerque, New Mexico. The coalition offers supplies, overdose prevention, training and referrals to resources in the community.
Adria Malcolm / HCN

overdosing. “Your body temperature goes up when you’re using methamphetamine,” said Charzuk. When paired with high environmental temperatures, Charzuk said, overamping can lead to heart attack, stroke or other complications.

As heat waves get more extreme, Charzuk and her colleagues prioritize educating people about the risks of drug use when it’s hot out.

“We remind people ... that heat plays into so many different metabolic factors,” said Charzuk. “If you’ve been out in the heat all day

and you've been sweating, then you are going to be dehydrated, and anything that impacts your body like that is going to give you less of a defense."

In 2020, overdose-related emergency room visits in New Mexico peaked in July at 255, and in 2021, they peaked in June at 260.

As someone who uses drugs and has experienced homelessness in the past, Charzuk has "met some of the same challenges that (program) participants meet on a daily basis," she said.

Harm reduction workers are also at risk. In the summer of 2021, while handing out water in a local park, Charzuk was overcome by symptoms of heat stroke that kept her out of the field for days. "I feel like I learned a little bit more on how to take care of the people that are on my team as well as myself," she said.

For Hambley, such incidents speak to how important it is for harm reduction workers to think about their own physical and mental health during crises, "or else everyone will burn out," they said.

That tension came to a head for Arianna Campbell in the summer of 2021, when the Caldor Fire threatened to raze her community in Placerville, California, 90 miles southeast of Chico. As the flames approached, Campbell's husband, a retired firefighter, suggested Campbell pack a go box. It was the first time he had ever done so.

"He had some indications that this was going to be a very big one," said Campbell; in fact, the fire would go on to burn over 200,000 acres and more than 1,000 buildings.

But Campbell, a physician assistant, knew that she would be needed at the local hospital. Crises like wildfires strain emergency departments, Campbell explained, which are flooded by people with injuries, respiratory problems or other medical issues. This is especially likely for those who lack stable housing or have a substance use disorder. "If you're someone who uses drugs, you may not necessarily have a lot of options," Campbell said.

In Placerville, Campbell helped her hospital become one of the country's first rural sites to offer buprenorphine, a medication that helps curb opioid addiction. "If someone is being treated on buprenorphine and there is a lapse in treatment, they are at close to three times the risk of dying," she said, "because it puts them at such high risk

of return to use and overdose."

Maggie Seldeen, who describes herself as a practicing drug user, founded High Rockies Harm Reduction to address the dearth of safe injection supplies in the region surrounding Aspen, Colorado. Overdoses from opioids, most notably fentanyl, have skyrocketed in the state since the start of the pandemic. For Seldeen — who used cocaine and heroin intravenously for years, starting as a freshman in high school, and who has seen numerous friends contract hepatitis — practicing harm reduction through the use of clean needles and fresh syringes is critically important. But more frequent wildfires and landslides affected the area's already strained supply chain.

That puts the lives of people who use drugs at risk, she said. In 2020, for instance, the Grizzly Creek Fire meant that I-70 in Glenwood Canyon — 45 miles north of Aspen, and a critical juncture on the route from Aspen to Denver, more than a three-hour drive away — was closed for two weeks.

"It gets really scary," said Seldeen, who spoke about how the anxiety provoked by wildfires can push her and others to use substances as coping mechanisms.

Now, Seldeen always has a go bag in her car when she is in the field in the summer months. It holds important personal documents, water, Narcan and first aid supplies, in case she encounters people who need help using drugs safely or reversing an overdose during an evacuation. Her hope is to create a network of people in the Rockies who are

knowledgeable about — and prepared for — reducing the risks of drug use. Those connections, she says, will become increasingly important in a future that involves more climate events.

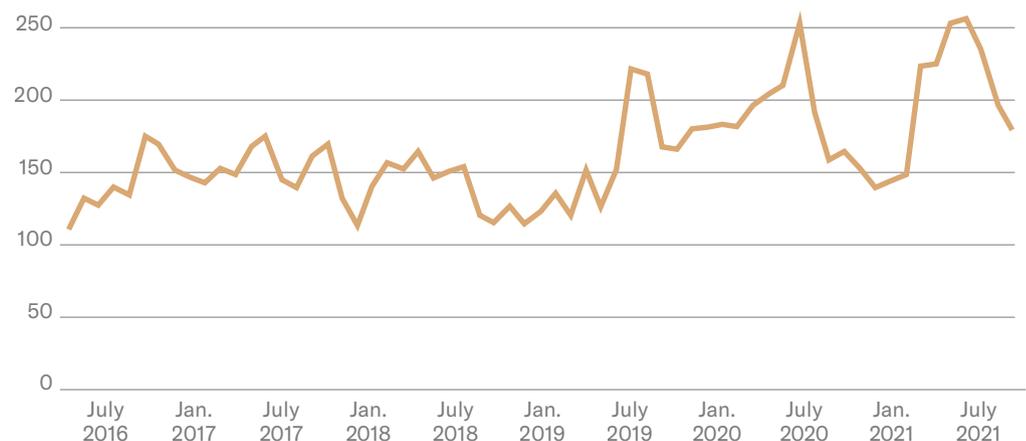
Seldeen isn't alone in seeing the importance of community in facing the dueling crises of addiction and climate change. Back in Chico, Hambley now chairs the Northern Valley Harm Reduction Coalition, which Hambley helped grow in the wake of the Camp Fire, determined to continue the collective approach to harm reduction that came out of that disaster. "This is a community response," they said. "The networks that we have are strong."

The embers of the Camp Fire had barely cooled in March 2020, when the Chico network had to mobilize once again to prevent overdoses during the statewide COVID-19 lockdown.

"This is a marathon," Hambley said, explaining how their queer identity and personal experience living on the margins have given them the tools to build a community that will rise to the challenge.

"A lot of people of color, a lot of queer and trans folks, a lot of poor folks already understand the ways the system fails them," Hambley said. "As a queer trans person, I've already learned how to create family and community and networks outside of my home. Those are skills I live with every day, so in moments of crisis, our skill sets actually become incredibly valuable." ✨

In recent years, overdose-related emergency room visits have spiked in New Mexico during the summer months



SOURCE: NMDOH Syndromic Surveillance ED Files



Rooted and rising

The Black Farmers Collective is working to build a Black food system in Seattle.

BY SYRIS VALENTINE | PHOTOS BY MERON MENGHISTAB

ON A DRIZZLY November day, Masra Clamoungou, the farm manager for Small Axe Farm, was getting ready for winter. Small Axe is part of a patchwork of farms east of Seattle, between the pine-filled Cascade foothills and the maple-lined banks of the Sammamish River. During the growing season, the area feels like an enormous produce aisle, striped with neat rows of kale, carrots, cabbage, peonies, blueberries, tomatoes and more.

Clamoungou stood at the end of a 100-foot-long crop bed studded by the wilting leaves and sagging stalks of the last remaining collards. Transparent tarps nailed to the ends of a half-finished greenhouse whipped in the wind behind him. With his arms spread wide, he dragged in lengths of a pliable black tube — drip tape, used for slow-release watering — that stretched the length of the row, twisting his torso as he doubled the tape over on itself. Next, he planned to mow down the still-standing plants before sowing rye and vetch, cover crops that would

hold the soil in place during the wet winter ahead and fix nitrogen and other nutrients in it, ready for the vegetables he'd seed the coming spring.

While the cover crops prepped the land, Clamoungou and his crew prepped themselves, along with the equipment, infrastructure and seedlings they'd need for a successful growing season. Even on a compact farm like Small Axe, which spans only four acres — the national average is 446 acres — there was much to be done: crop rotations to plan, greenhouse doors to finish, a new shed to build.

But, as part of the nonprofit Black Farmers Collective, Small Axe is more than just a place for growing food. It's also a place for growing Black-owned farm-based businesses and helping the collective to fulfill its mission: building a Black-led food system that heals and enlivens Seattle's Black community. The collective collaborates with Black-led markets and food banks, and brings people together to celebrate life and land, with its farms and farmers at the center of its efforts.

Prior to founding the collective, Ray Williams, its executive director, was involved in two small gardens in central and

south Seattle, one of which was tucked behind the Africatown Center for Education and Innovation. Then, in 2018, the Black Farmers Collective formed to establish Yes Farm on a 1.5-acre plot in central Seattle, where organizers host volunteer days, summer cookouts, and food and gardening classes.

In 2020, Williams learned that King County was looking to lease and reactivate fallow farmland in the Sammamish River Valley. Williams and Clamoungou inspected the weed-strewn land, talked about what they could do with it, applied for the lease, and Small Axe Farm was born.

SMALL AXE helps expand the work the collective began at Yes Farm: addressing the epidemic of food insecurity in Seattle's Black community. According to data published by Communities Count, a resource offered by Public Health-Seattle & King County, nearly a third of Black Seattleites over the age of 18 experience food insecurity. By partnering with local food banks, Black-led mutual aid networks and other community groups, the collective distributes the food it grows to those most in need.

"That's one of the things that first brought me into farming," Clamoungou said, "having a tangible result at the end of the work, something that literally feeds the body and feeds the souls of people."

Beyond that, Small Axe is a space where Black food entrepreneurs can grow their businesses and prepare to one day own their own land. Getting land into the hands of Black farmers is crucial to the collective's mission because of centuries of dispossession: Despite being the soul, spine and driving force of the early American

economy, formerly enslaved African Americans struggled to acquire and hold onto land post-Emancipation.

Black people never received any land-based reparations — the commonly quoted 40 acres and a mule. Still, W.E.B. Dubois estimated that in 1875, Black farmers owned 3 million acres, less than 1% of the total farmland recorded in the 1870 agricultural census. At the time, the population of the United States was 12.6% Black.

By 1910, Black ownership of farmland had risen to 16 million acres, or just under 2% of all farmland; that year, Black people accounted for more than 10% of the population. But just over a century later, by 2017 — the year of the most recent agricultural census — Black farmers had lost most of that slim gain, owning now just 0.5% of all farmland, even though Black people comprise over 14% of the population.

Black folks lost their land not because they lacked the facility to farm or the desire to do it, but because of wanton racial violence, predominantly in the South but also throughout the Lower 48. White mobs numbering in the hundreds and thousands dragged Black people through the streets and murdered them. White mobs hung Black people from trees, riddled Black bodies with bullets, raped Black women, burned Black men alive, drowned Black children, beat Black people to death, and cut Black bodies to bits for souvenirs. These domestic terrorists drove millions of Black folks to flee north and west in what became known as the Great Migration.

But escaping the South didn't mean escaping white supremacy. Across the country, white people weaponized the

Small Axe Farm manager Masra Clamoungou (with shovel) works with other Black Farmers Collective members in July.

economy against Black farmers in a strategic and systematic effort to force them off their land. In a 2022 study titled “Black land loss: 1920-1997,” University of Massachusetts Boston economist Dania Francis and her co-authors detail the tactics used against Black farmers and the lasting impacts. Many banks refused to loan money to Black farmers, making investments in infrastructure upgrades and maintenance all but impossible. When loans were granted, according to the study, “another common tactic was for a federal agent to delay a loan in order to cause a farmer to plant late, reap a smaller harvest, and end up in debt.” Black farmers were excluded from the federal payments and locally administered low-interest loans designed to support farmers during the Great Depression. And despite the passage of the 1964 Civil Rights Act, discrimination against Black farmers persists.

All told, Francis and her colleagues estimated the value of the land and wealth Black farmers lost between 1920 and 1997 at \$326 billion, adjusted for inflation — still just a sliver of the estimated \$10 trillion racial wealth gap.

THE BLACK FARMERS COLLECTIVE works to bridge a tiny portion of this chasm. That includes hiring local Black chefs to cater Yes Farm cookouts, participating in the South Seattle Community Food Hub in Seattle’s historically Black neighborhoods, teaching farmers new growing techniques, connecting them with markets and produce buyers, and setting aside plots for new farmers from the community.

This is an important boon for farmers who would otherwise struggle to access land around



Seattle. Nationwide, an average acre of farmland costs \$3,800. In King County, it’s \$35,000. And aspiring homeowners are on the hunt for parcels, too. “You’re competing with someone that wants to put a house on four acres and is willing to pay for it,” Williams said.

In such a cutthroat environment, one of the best ways for new, low-income farmers to access land is with support from

the county government. Since the 1980s, King County has acquired over 15,000 acres of agricultural land and redistributed it through its Farmland Leasing Program, which is how the Black Farmers Collective acquired Small Axe.

This year, along with the collective’s staff, Small Axe is home to four Black farmers who are growing hot peppers, cabbage, sweet potatoes, artichokes and other crops on their

own plots. Clamoungou and Williams were excited about the community sprouting alongside the crops at the farm, where growers can encourage each other and share lessons from successes and missteps alike. As Clamoungou put it, “That’s what we need: more farmers, not more software engineers.”

Another Small Axe grower chimed in: “No farmers, no life.” ✨



Members of the Black Farmers Collective photographed at Small Axe Farm in July (facing).

Yeawa Asabi is one of several farmers from the Seattle area learning farming techniques and gaining access to land as a member of the collective (left).

Black Farmers Collective members tend to the land at Small Axe Farm (below).

“That’s one of the things that first brought me into farming, having a tangible result at the end of the work, something that literally feeds the body and feeds the souls of people.”



FACTS & FIGURES

Who owns the West?

Increasingly, land is shifting into the hands of billionaires.

BY JONATHAN THOMPSON

EARLIER THIS YEAR, several Western states considered legislation that would ban or restrict foreign ownership of land, particularly agricultural parcels. While some proposed bills, including California's, involved blanket restrictions, most sought to curtail ownership by foreign "adversaries," mainly China, but also Iran, Venezuela and North Korea — even Saudi Arabia.

The reasoning behind this varies. Some lawmakers claim to be concerned about food security, while others are more candid about their fear of "foreigners" — especially Asian people — controlling the nation's land. Still others say they're worried about corporate consolidation of farmland.

Iowa Republican Sen. Chuck Grassley, meanwhile, worries that foreign investors will drive up the price of farmland, squeezing young Americans out of the market. That may be the most legitimate concern overall, though Chinese investors — who own just 62,000 acres of agricultural land in Western states — are less land-hungry than billionaires, not all of whom hail from other countries: Ohio-born Ted Turner, for example, owns almost 1.1 million acres in New Mexico, or nearly 3% of the state's private land.

This got us to wondering: Who really owns the West? 🌻

SOURCES: USDA's Farm Service Agency, *Land Report*, Bloomberg, San Miguel County Assessor, Elko County Assessor, Maricopa County Assessor, Salt Lake County Assessor, Weber County Assessor, Truth and Transparency, Widows Mite, Open Corporates, Turner Enterprises, Kroenke Ranches.

BILLIONAIRES ARE BUYING UP THE WEST

The nation's top private landowners with large Western holdings (nationwide acreage as of December 2021)

The **Reed family** (timber barons) owns 1.66 million acres, most of it forest land in California, Oregon, Washington and Montana managed by their Green Diamond Resource Company.

The **Stimson family** (552,000 acres) owns Stimson Lumber Company, with seven mills in Oregon and Idaho and large timber operations in Oregon, Idaho and Montana.

The **Ford family** — forest product scions — (600,000 acres) owns and manages timberland in southwestern Oregon.

The **Simplot family** (443,000 acres) — inventors of the world's first commercially viable frozen French fries — are also land barons whose phosphate mines, potato farms and cattle ranches dot Idaho and beyond.

Ted Turner

The **Emmerson family** (2.4 million acres) owns Sierra Pacific Industries and timberland in Northern California, Oregon and Washington.

Teledyne-founder **Henry Singleton and family** (1.1 million acres) bought the 81,000-acre San Cristobal Ranch near Santa Fe in 1986; then, according to the *Land Report*, Singleton "expanded his landholdings by acquiring numerous Spanish land grants, primarily in New Mexico, but also in California."

Cable television magnate, **Ted Turner** (2 million acres), owns the 560,000-acre Vermejo Park Ranch in northern New Mexico and other sprawling ranches in the state. His Turner Endangered Species Fund has helped restore the black-footed ferret to the wild.

D.R. Horton's homebuilding company, one of the nation's largest, has served up 1 million houses so far. Horton (508,410 acres) purchased the 177,000-acre Great Western Ranch in western New Mexico for \$59 million in 2014.

The **Wilks brothers** (675,000 acres) got rich advancing hydraulic fracturing technology for the oil fields, then went on a land-buying spree in Idaho, Montana and Oregon. They financially back LandTrust, a sort of Airbnb for private-land outdoor recreation, which matches hunters with wealthy landowners.

Professional sports franchise owner and real estate mogul **Stan Kroenke** (1.63 million acres) bought the Broken O Ranch in Montana for \$132.5 million back in 2012. He also owns ranches in Wyoming, Nevada and southern Arizona.

John Malone (2.2 million acres) — aka “the Cable Cowboy,” who made his fortune building and selling media companies — owns huge ranches in Walden, Colorado, and near Tucumcari, New Mexico.

THIS SAMPLING OF FOREIGN OWNERSHIP comes from Agricultural Foreign Investment Disclosure Act reporting for 2021. Companies or parcels may have changed hands since then. At the end of 2021, foreign entities or individuals held a “significant interest” in some 10.16 million acres, not counting lease-holdings, in the Western U.S.

Der Kowboys? Germany-affiliated Las Conchas Ranch Corp. owned 134,257 acres in San Miguel County, New Mexico, land of sprawling spreads, at the end of 2021, but does not appear as an owner on current county records.

Hong Kong-owned **NV Big Springs Inc.** holds an interest in 108,000 acres in Elko County, Nevada. Petan Company of Nevada, registered as a foreign business, owns almost 100,000 acres in the county, and the Ruby Land & Cattle Co., with an unknown partner, owns just over 180,000 acres.

Logging for Life Insurance: Companies affiliated with Canada-based John Hancock Life Insurance own more than 660,000 acres of forestland in Washington, Oregon and California, including a 97,492-acre parcel in King County, Washington, with an estimated value of \$197.7 million.

The United Kingdom-based **Hondo Company** owns 97,000 acres in New Mexico’s Lincoln County and another 87,000 acres in Chaves, Otero and Eddy counties.

Chino Mining, based in Japan, owns 90,953 acres of pasture in Grant County, New Mexico, plus 16,335 acres in neighboring Luna County and a total of 129,417 acres in Nevada.

Twenty Six Ranch Inc. (Virgin Islands-based) owns 79,199 acres in Elko County, Nevada, plus an additional 50,218 acres in other Nevada counties.

Canada-based **Barrick Goldstrike Mines Inc.** owns 72,440 acres, mostly classified as “other agricultural” land, in Nevada’s Elko County.

Paloma Investment Ltd. Partnership, based in Switzerland, owns 67,690 acres of “crop” and “other non-ag” land in Maricopa County, Arizona.

U.K.-based **Atlantic Richfield Company** and its subsidiary Arco Environmental Remediation own nearly 10,000 acres in New Mexico, Washington and California. This spring, it snagged another 1,000 acres of land in and around Rico, Colorado.

The Switzerland-based **Butte Rock Ranches** owns 5,879 acres in Montrose and Gunnison counties, Colorado.

LATTER-DAY LANDOWNERS

In 2021, a company called Farmland Reserve outbid another landholding company to purchase 18,000 acres of farmland in southeastern Washington for \$210 million. It might not have elicited much notice, except that Farmland Reserve is owned by the Church of Jesus Christ of Latter-day Saints, and billionaire Bill Gates made the losing bid.

Both Gates and the church have been amassing acreage lately. Gates usually makes top-landowners lists, but the church is way ahead in terms of how much it owns nationwide. In 2020, *Truth and Transparency* found that church-affiliated entities owned at least 1.7 million acres across the U.S.; more recent analyses peg the acreage at 2.3 million — making it the nation’s second-largest private landowner. This land includes the grounds of temples, stake houses and other institutional buildings, but also farm and ranch land and commercial properties, most of which are held by subsidiaries.

The church’s sizable farmland holdings in the Northwest are mostly operated by AgriNorthwest, a subsidiary of Farmland Reserve, which is a subsidiary of AgReserves. The Church’s Property Reserves, City Creek Reserves and Suburban Land Reserves together hold 167 parcels in Maricopa County, Arizona, and 187 parcels in Salt Lake County, Utah, including a big chunk of downtown Salt Lake City.

COUNTRIES WITH WESTERN HOLDINGS

CANADA: 1.66 MILLION ACRES.

Much of this is in the form of mining, oil and gas and timber properties.

UNITED KINGDOM: 908,615 ACRES.

That includes timber properties in the Northwest and Kennecott Utah Copper Corp’s 42,000 acres in Salt Lake County, Utah, and Moffat County, Colorado

NETHERLANDS: 571,417 ACRES,

including more than 100,000 acres in Washington, and 30,000 acres of sugar-growing land in Hawaii.

JAPAN: 436,907 ACRES,

including orchards in Oregon, coffee-growing acreage in Hawaii and properties in Colorado and Washington.

LUXEMBOURG: 359,000 ACRES.

Includes timberland in Oregon, Washington and California and resort property in Arizona and New Mexico.

MEXICO: 307,139 ACRES.

Gents Cattle Co. holds acreage in New Mexico and mining giant Asarco owns 42,370 acres in Montana, Idaho, Colorado and Arizona.

BELGIUM: 227,621 ACRES.

Belgium affiliated firms own more than 183,000 acres in Garfield, Rosebud and Big Horn Counties, Montana.

FRANCE: 120,000 ACRES,

scattered across the West, including vineyards in New Mexico, California and Oregon and energy related-holdings in California.

CHINA: 62,000 ACRES,

including 37,453 acres in Utah via Murphy Brown LLC — aka Smithfield Foods, the world’s largest pork processor — acquired by a China-based investment group in 2013.

EGYPT: 18,593 ACRES.

Companies include Arizona Apple Orchards Inc. and Hualapai Valley Farm, also in Arizona.

SAUDI ARABIA: 5,000 ACRES.

Fondomonte Arizona owns 147 acres in La Paz County, Arizona, where it grows alfalfa and ships the hay back to the Middle East to feed dairy cattle.

STATE OF PALESTINE: 11,420 ACRES.

Nordic Crystal Falls’ acreage is in Stevens County, Washington.

NEPAL: 5,289 ACRES.

This land is all held by Kamala Lama Sherpa in Sanders and Glacier counties, Montana.

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DEAR FRIENDS

HCN everywhere

I was a bit too hasty back in July when I asked for your watershed address — the map that tracks your nearest body of water through each successive stream, river, lake and marsh, all the way from its place of origin to its eventual terminus.

I made the mistake of assuming we'd all be meeting on the West Coast — a slip that exposed my own blind spot as a product of California. Fortunately, my question drew some interesting responses from readers.

David Clark and Linda Rosen of Shawnee, Colorado, for example, pointed out that part of *HCN's* coverage area also drains the other way.

"We live proudly under the Atlantic side of the Divide at 8,600 feet," they wrote, detailing a watershed address that begins in an "unnamed gully" that flows into the North Fork of the South Platte River and eventually meets the Mississippi River before draining into the Gulf of Mexico and then the North Atlantic Ocean.

"We'll finally see you at Cape Horn, that is, unless the Gulf Stream takes our water north," David and Linda wrote. "Then we'll meet in the Arctic Ocean."

And, of course, *HCN* has readers far beyond our coverage area, as Pete Ranere reminded me, when he traced his own watershed address from Haynes Creek in New Jersey through Delaware Bay to the Atlantic.

Hank Lee lives in the Great Basin, near Utah's Sevier River, which never reaches an ocean at all; its adventures are entirely restricted to Utah, and, for much of the last 150 years, its waters have been diverted before they reach the dry bed of Sevier Lake.

Next time, I'll think twice before putting *HCN* readers in a box, even one the size of the Pacific Ocean.

It turned out to be more complicated than I thought. Still, I think it's fascinating, so I encourage you to send me your own watershed address at dearfriends@hcn.org.

Michael Schrantz,
marketing communications manager



Reader Katherine Brown's watershed address includes Whitewater Draw, which flows through the Sulphur Springs Valley in southeast Arizona and into Mexico.

Hellos, goodbyes

In July, we welcomed yet another group of talented interns and fellows to *High Country News*.

Natalia Mesa (she/her) joined us from Seattle following a stint as a correspondent at *The Scientist* magazine. Natalia, who holds a Ph.D. in neuroscience from the University of Washington, has also contributed to *Hakai* and *Scientific American*, among other outlets.

Ollie Hancock (they/them) graduated from Cal Poly Humboldt, where they were the editor-in-chief of the student newspaper, the *Lumberjack*. Ollie recently relocated to Portland, and their work has been featured in *The New York Times*, *Them Magazine* and *Climbing Magazine*.

Brooke Larsen (she/her) is our new Virginia Spencer Davis fellow. Based in Salt Lake City, she's written extensively about climate justice and the environment for everyone from Torrey House Press to *Sierra Magazine*.

Shana Lombard (she/her) joined *HCN* after working as communications media specialist for the Shoalwater Bay Indian Tribe. Previously, she was a research assistant for the Native American Journalists Association. An enrolled member of the Cowlitz Indian Tribe, she lives in Grayland, Washington.

Every changing of the guard is accompanied by a farewell, which means it's time to say goodbye to interns and fellows who've done some incredible work for us: **Sarah Trent** and **Sam Shaw**. **Kylie Mohr**, whose feature story on wildfires and recreation appeared in our August issue, will remain in our orbit as a correspondent.

We've also had to say adieu to some longtime staffers. **Paige Blankenbuehler**, who has led coverage for our South Desk as a senior editor, recently joined *Vox* as climate editor after nearly eight years with *HCN*, starting as an intern in the Paonia office. She will be deeply missed, but we wish her all the best in her new position.

Hannah Stevens, a member of our fundraising team and the manager of our Sustainers' Club monthly giving program, has taken the reins of the Western Slope Conservation Center as its new executive director. It's a huge win for Paonia's local conservation organization, though we'll miss Hannah's skills and her dedication to growing *HCN's* donor base.

Nick Martin, the senior editor for our Indigenous Affairs desk, moved on to *National Geographic*. A multi-hyphenate himself, Nick broke ground for us in our coverage of Indigenous literature and culture and shepherded blockbuster investigations while at *HCN*. We're looking forward to seeing what he does next.



Clockwise from top left: Natalia Mesa, Ollie Hancock, Brooke Larsen and Shana Lombard.

Question of the month

New stickers are here! Thanks again for your suggestions. We have a lot more to choose from now. Write dearfriends@hcn.org with a memory of encountering *High Country News* in the wild — via a sticker, a conversation, a special event, etc. — and we'll send you some of our new designs.

Marissa Garcia / HCN



Rock Springs Riot Revisited

On Sept. 2, 1885, white coal miners in Rock Springs, Wyoming Territory, murdered at least 28 Chinese men and ran the rest of the Chinese out of town at gunpoint. These art works bring that history back to the present.

Photo illustrations by Niki Chan Wylie
Introduction and poems by Teow Lim Goh

The Rock Springs Massacre began with a fight between two Chinese and two white coal miners over the right to work a particularly desirable “room” in Mine No. 6. One of the Chinese men was stabbed in the skull. The white miners walked off the job, went home for their guns and knives, and hunted down the Chinese. Bodies tumbled into Bitter Creek, the wash that runs through the Wyoming town. Many Chinese fled into the sagebrush hills with little more than the clothes on their back. To ensure that the Chinese wouldn’t return, the rioters set fire to Chinatown. Any Chinese who had hidden in their cellars burned to death.

The labor struggle that led to the Rock Springs Massacre began years earlier, though. In November 1875, the Union Pacific Railroad, which owned the Rock Springs coal mines, brought Chinese laborers to Wyoming to break a strike. The white miners resented the Chinese as an alien race who took away white jobs and refused to assimilate.

As an immigrant living in the American West, I have long been fascinated by the wide-open landscapes and the stories they carry. The first time I drove through Rock

Springs, long before I knew about the Chinese Exclusion Act and its entrails, I felt that the place was haunted. There is a Chinese belief that if the dead are not given proper burial rites, their spirits roam the land in search of their lost home. Maybe I had encountered these ghosts. And I began to wonder what it was like for the Chinese miners, living in the thick of that violent xenophobia — a legacy that continues today.

The archives contain a lot of information about the Rock Springs Massacre, including the report from Union Pacific’s internal investigation, newspaper and eyewitness accounts, court and jail records, and correspondence between the company and Wyoming Territory officials. Notably absent is the Chinese perspective. In the poems on the pages that follow, from my project “Letters Home,” I conjure the persona of a Chinese miner who survived the massacre, speculating on what his perspective might have been. I drew on research as well as my knowledge of Chinese norms and beliefs to interrogate the fractures in the historical record.

— Teow Lim Goh



Thank You

Looters scouring the burnt remains of the Rock Springs Chinatown in 1885. I photographed joss paper at the site of the former Chinatown to honor the lost lives of those Chinese miners. Joss paper is burned to honor ancestors and relatives in the afterlife.



These images are an homage to my grandfather, Gung Gung, and to the Chinese miners of Rock Springs. Gung Gung, who humbly described himself as being “same as born in a restaurant,” was a brilliant, self-educated man — a poet, a photographer, a calligrapher, a community organizer, a businessperson and a family man.

My parents lived in Rock Springs briefly before I was born. When I was a child, we often visited Rock Springs and my grandparents’ trailer park. My dad’s family still lives there today. After two decades of absence, I returned to explore my family’s experiences and roots, as well as what it means to be biracial — both Chinese and white — in parts of the Intermountain West where diversity is scarce.

The Rock Springs Massacre of 1885 resonates in me today, with confusing feelings of where my biracial identity intersects — a liminal space, where I never quite feel like I fully fit in with either of my races.

This set of images works through the process of grief — rebuilding, peace and rebirth. I used historical images related to the event and overlaid them with family mementos, as well as with photos from my trips to Rock Springs. I intentionally left the images convoluted and dense to reflect my biracial identity and the human process of documenting history. The many layers represent how all the elements of ourselves — even the unwanted ones — work together to make us who we are.

—Niki Chan Wylie



Complexity 複雜

As I look closely,
clearly in the flame,
Concentration on pictures,
then they in the same.

幻境火中生
近看越分明
心懸往事
終見畫裏形

Resilient 彈力

**December 1873
San Francisco, California**

I don't know why it is so difficult.

The railroad was hard work, but it was work.
We knew they paid us less than the white men,
but what could we expect? Debts we must pay.
Our families depend so much on us
to send back money. Now the railroad is done,
and the banks crashed four months ago, I swear
there is no work. I don't know what to do.

Remember my old friend Ah Lum and all
the gold that he brought back from California,

the yellow silks he gave to his new wife,
the large brick home he built for his family?
Look at how well they eat, meat every day.
These days he hardly needs to work at all.

I want to build a paradise for us, too.

The railroad life is for young men. I thought
I could save up and go home, but there is never
enough. And I am not young anymore.

Dearest, I don't know what I'm doing wrong.

December 1875
Rock Springs, Wyoming Territory

It's a strange place out here. Not snowy
like the mountains
or stormy like the sea.

It's a desert of broken rock.

And it is cold.
We live in wooden huts.
Winds seep through the cracks.

The white men are hostile.

I don't know what happened, but soldiers
escorted us when we arrived.
Company guards protect us in the mines.

But I'm getting paid, finally.
Here's my first paycheck, as I promised.
I don't think I can stay here long, but the money is good.

I want to see you all again.

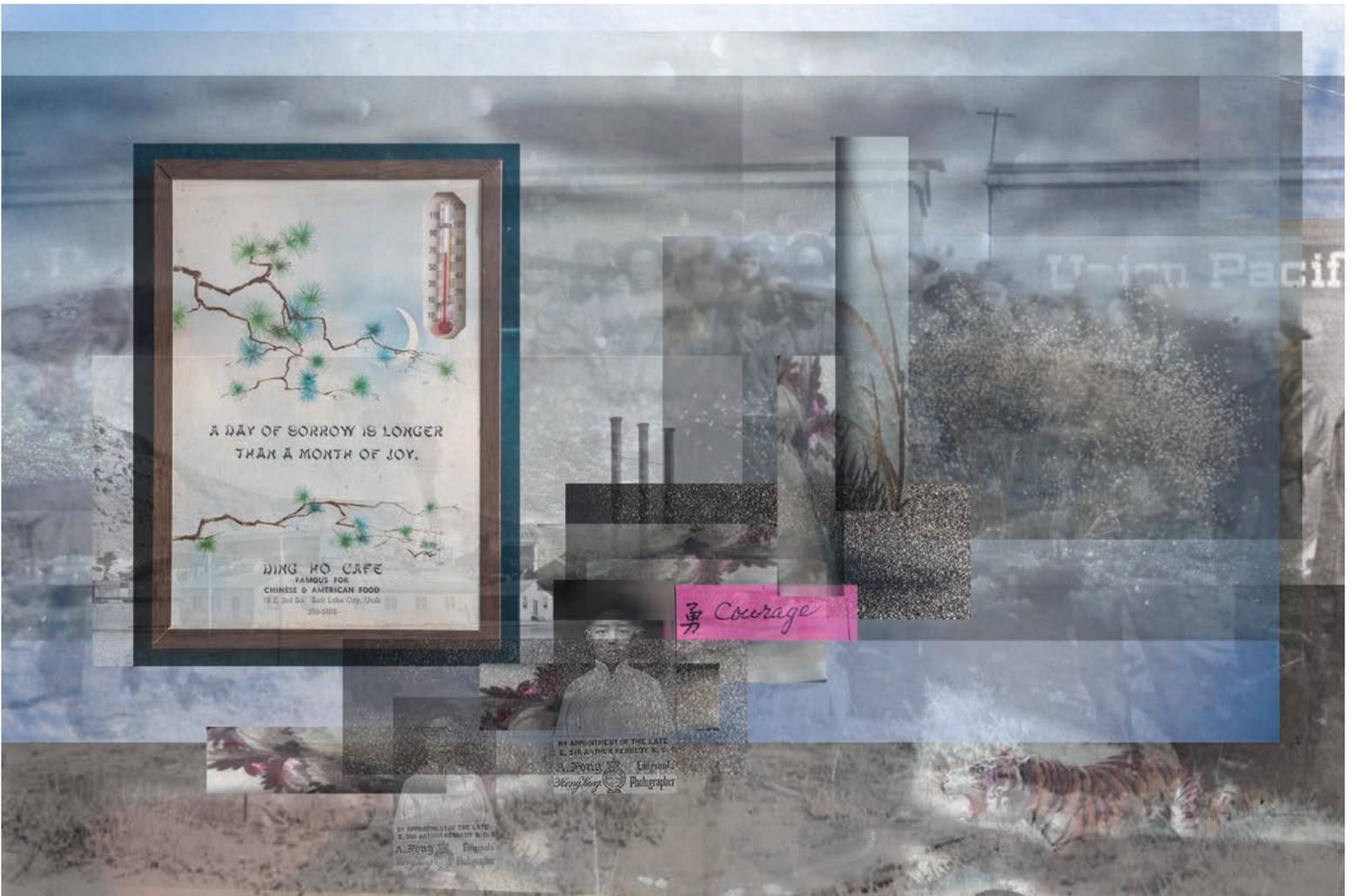
Complexity (facing)

An archival image shows the chaos of Chinese miners returning after the massacre. Gung Gung's words and my Aunt Joyce's stanza represent the unresolvable aspects of life and a biracial identity.

Endurance (below)

Gung Gung's poem about endurance overlays an image of the rebuilt Rock Spring's Chinatown in 1896.





Grief (above)

In the background, the Chinese miners return to Rock Springs after the massacre. Gung Gung was constantly learning vocabulary, and the calligraphy is his.

Rebirth (facing)

An image of train tracks in Green River, Wyoming, from 1871 collides with a recent image, along with my mom and brother's names and my own, written by Gung Gung.

Historical images courtesy of the Sweetwater County Historical Museum and Library of Congress.

**May 1882
Rock Springs, Wyoming Territory**

And it has come to pass. Exclusion's now
the law of this cursed land. At night I gaze

at the full moon and wonder when we can
share a pillow again. I thought that now

Mother is gone, you and the boys can join me
out here. But this barbaric law is aimed

at men like me. Laborers. Coolies. Slaves.
That's what they call us. Only diplomats

and merchants can bring in their families—
if Father hadn't died, if bandits hadn't

ambushed the countryside, I would still be
beside you. And I might have finished school

and become a scholar. But it is useless
to dwell on the past. This is my lot now.

January 1885
Rock Springs, Wyoming Territory

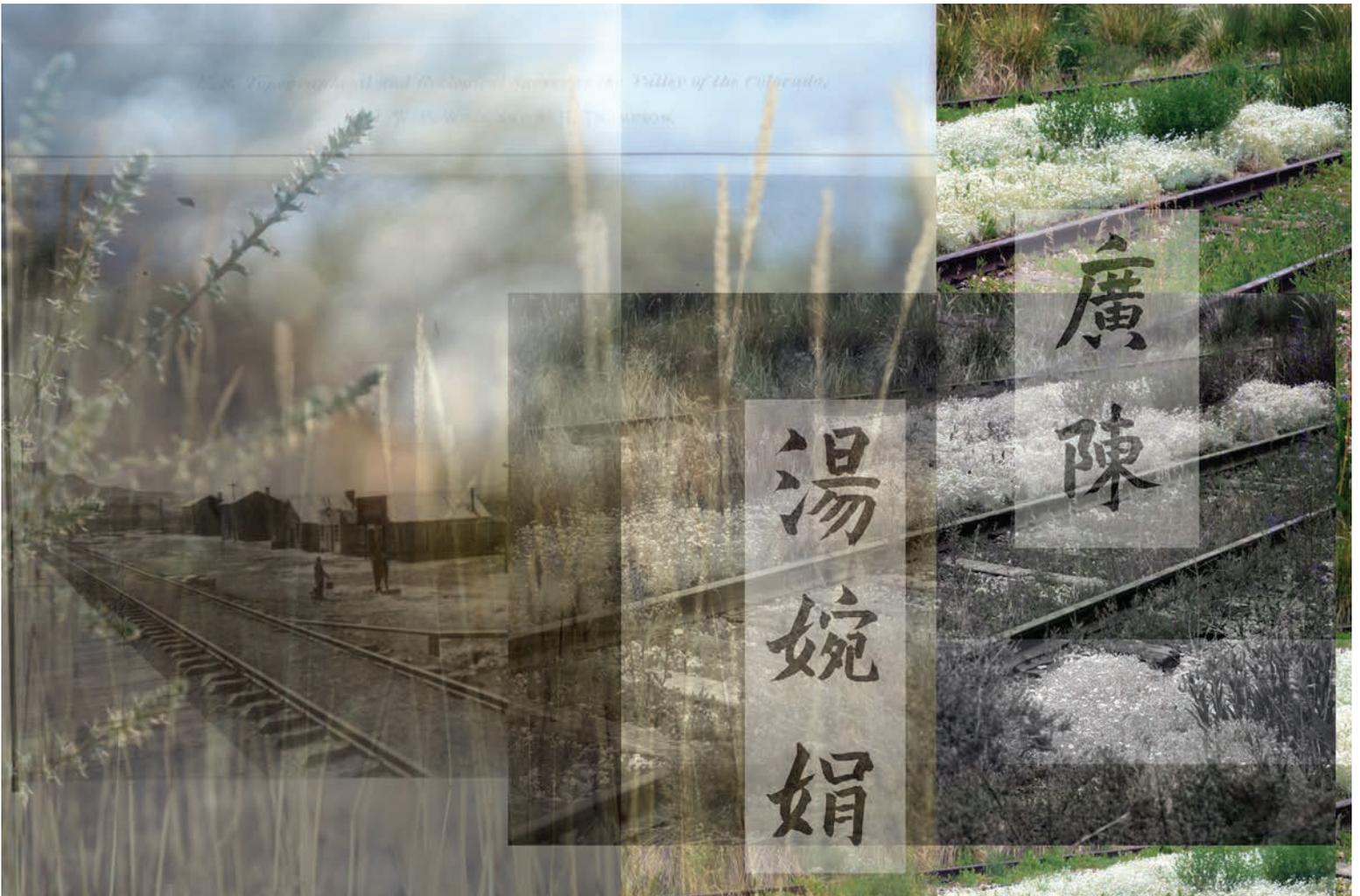
I don't want to make you worry, but I don't know who else I can tell. Last fall, the union in Denver called for a strike in the mines. Here

in Rock Springs, they set fire to the machine shop at Number One. In Carbon, the strikers were all dismissed. Now they block the mines,

their guns square at their hips, threatening anyone who would replace them. They're still out there in the biting cold of winter, demanding

the company dismiss us. They call us a foreign menace. They're full of themselves, but maybe it's time to go home. Yet I can't stop thinking

of that year we didn't even have rice to eat.



The Blab of the Pave

Noise pollution disrupts animals' lives everywhere, even in national parks.

By Ben Goldfarb | Illustrations by Kate Samworth

The essential insight of road ecology is this: Roads warp the earth in every way and at every scale, from the polluted soils that line their shoulders to the skies they besmog. They taint rivers, invite poachers, tweak genes. They manipulate life's fundamental processes: pollination, scavenging, sex, death.

Among all the road's ecological disasters, though, the most vexing may be noise pollution — the hiss of tires, the grumble of engines, the gasp of air brakes, the blare of horns. Noise bleeds into its surroundings, a toxic plume that drifts from its source like sewage. Unlike road-kill, it billows beyond pavement; unlike the severance of deer migrations, it has no obvious remedy. More than 80% of the United States lies within a kilometer (approximately 0.6 of a mile) of a road, a distance at which cars project 20 decibels and trucks and motorcycles around 40, the equivalent of a humming fridge.

Like most road impacts, noise is an ancient problem. The incessant rumble of Rome's wagons, gripped the poet Juvenal 2,000 years

ago, was "sufficient to wake the dead." To walk in 19th-century New York, Walt Whitman wrote in *Song of Myself*, was to experience the "blab of the pave," including the "tires of carts" and "the clank of the shod horses." As car traffic swelled in the 20th century, road noise became a public-health crisis, interrupting sleep, impairing cognition and triggering the release of stress hormones that lead to high blood pressure, diabetes, heart attacks and strokes. A 2019 report by one French advocacy group calculated that noise pollution shortens the average Parisian life span by 10 months. In the loudest neighborhoods, it truncates lives by more than *three years*.

To a road ecologist, noise is pernicious precisely because it isn't confined to cities. Road noise also afflicts national parks and other ostensibly protected areas, many of which have been gutted by roads to accommodate tourists. A vehicle inching along Going-to-the-Sun Road, the byway that wends through Glacier National Park, casts a sonic shadow nearly three miles

wide. "Once you notice noise, you can't ignore it," conservation biologist Rachel Buxton told me. "You're out in the wilderness to have this particular type of experience where you escape and relax, and noise ruins it. It totally ruins it."

And road noise isn't merely an irritant; it's also a form of habitat loss. In Glacier, the distant grind of gears startles mountain goats; in one Iranian wildlife refuge, a highway drives a 40-decibel wedge through a herd of Persian gazelles. The bedlam directly challenges the purpose of parks, places that exist in large part to safeguard the animals within them. Consider Devils Tower National Monument, the surreal Wyoming butte considered sacred by Plains tribes. Made famous by the movie *Close Encounters of the Third Kind*, it annually hosts a group of travelers even more disruptive than aliens: bikers from the nearby Sturgis Motorcycle Rally. The roaring fleet of Harleys and Yamahas, Buxton has found, pushes prairie dogs back into their burrows, drives off deer, and deters bats from





feeding near the monument for weeks. Had Spielberg's extraterrestrials arrived mid-Sturgis, Richard Dreyfuss would have missed their five-note musical greeting.

In hindsight, road noise in national parks was a predictable problem. Nearly from their inception, America's parks were "windshield wildernesses," in the historian David Louter's memorable phrase — road-trip destinations designed to be experienced from behind glass. In 2019, nearly 330 million people visited national parks, almost all in cars. That parks are being "loved to death" has become a truism, repeated as often as Wallace Stegner's claim that they were the nation's best idea. More visitation means more roadkill, more erosion along shoulders requisitioned as parking spaces, and, most of all, more noise. Nearly half the total area under the National Park Service's jurisdiction today suffers at least three decibels of sonic pollution.

To be sure, parks predated the automobile. Yellowstone National Park, America's first, was established in 1872, and Yosemite, Mount Rainier, Crater Lake and others followed. But most were seldom visited, and then only by wealthy travelers who could afford cross-country train tickets and guided horseback adventures. Early visitors to Yosemite Valley had to chain their cars to trees and surrender their keys. Allowing automobiles, one visitor opined, would be akin to the serpent "finding lodgment in Eden."

But the serpent was backed by powerful lobbyists, and pressure mounted to open parks to cars. Park infrastructure, though, was in no condition to accommodate them. Mount Rainier's main road was so treacherous in 1911 that President William Taft's aides worried that the commander-in-chief wouldn't survive his visit. (Taft experienced no graver harm than getting stuck in the mud; his car, and his own substantial bulk, had to be hauled out by mules.) A few years later, Stephen Mather, a gregarious millionaire who had made his fortune hawking borax, toured Sequoia and Yosemite. Mather was smitten by his surroundings, but not the amenities. "Scenery is a hollow enjoyment to a tourist who sets out in the morning after an indigestible breakfast and a fitful sleep in an impossible bed," he carped in a letter to the Interior Department. Came the reply: "Dear Steve, if you don't like the way the national parks are being run, come on down

to Washington and run them yourself.” And so, in 1917, Mather became the first director of the agency tasked with pulling America’s best-loved landscapes into a cohesive whole: the National Park Service.

Like its older sibling, the Forest Service, the Park Service had a murky mission. Its establishing legislation directed it to simultaneously conserve “wild life” and “provide for the enjoyment” of visitors but offered little guidance about how to reconcile those objectives. Mather made his priorities clear. Under his direction, the Park Service cranked out films, guidebooks and other propaganda; cozied up to the American Automobile Association; and finagled millions of dollars from Congress. By 1929, national parks were filigreed by 1,300 road miles, down which wheezed nearly 700,000 cars.

Mather’s ardor for auto-tourism was motivated by more than his desire for a hot breakfast and comfortable bed. His joviality concealed depression and perhaps bipolar disorder; for him, scenery offered better treatment than any sanitarium. Park roads, to Mather’s tumultuous mind, were egalitarian forces that permitted the old, young and infirm access to their scenic birthrights — a nationwide prescription for mental health.

Mather wasn’t entirely sanguine about his construction boom. A road through southeastern Yellowstone, he cautioned, “would mean the extinction of the moose”; today, that area is the farthest you can get from a road in the Lower 48, around 20 miles. Rather than building roads for their own sake, Mather believed in building the *right* roads, which to him meant monumental feats of engineering — Trail Ridge Road in Rocky Mountain National Park, Skyline Drive in Shenandoah, Generals Highway in Sequoia — that strove to harmonize with their spectacular surroundings. The epitome of his philosophy was Going-to-the-Sun Road, which the Park Service blasted from Glacier’s face with nearly a half-million pounds of explosives — a project so hubristic that three workers died during construction.

Mather’s grandiose roads showcased landscapes, but they trashed *sounds*scapes, a form of degradation whose consequences would take decades to discover. “They’re built to be scenic, they’re built to be part of the experience,” Kurt Fristrup, a former Park Service bioacoustician, told me of the agency’s roads. “Ironically, that also means they’re built to project noise about as far as it can possibly be projected.”

**Noise is
a human-
produced
pollutant,
and, like its
etymological
root,
nausea, it’s
unpleasant.**

Most laypeople treat the words *sound* and *noise* as synonymous. Yet they might more properly be considered antonyms. Sound is fundamentally natural, and tickles the ears in even the quietest places: the susur-rus of wind, the drone of a bee, the starched snap of a jay’s wings. Noise, by contrast, is a human-produced pollutant, and, like its etymological root, *nausea*, it’s unpleasant. In the serenest landscapes, even an airplane can seem a violation.

Noise is still harder on other species. Wild animals inhabit an aural milieu that is sensitive beyond our imagining. Human conversation occurs at around 60 decibels, and sounds that barely register to us — gentle breathing, the rustle of leaves — produce around 10 decibels. The most acute predators, meanwhile, can detect negative-20 decibels. Bats seize upon the crunch of insect feet; foxes triangulate snow-buried voles. Prey is equally perceptive. Scrubwren nestlings freeze at the footsteps of enemy birds. Tungara frogs duck at the flap of bats. While most animals sleep with their eyes closed, nearly all awaken at the snap of a twig.

Although organisms have always contended with loud environments, like blustery ridgelines and crashing waterfalls, cars have made cacophony more rule than exception. For animals that survive by the grace of their hearing, traffic’s “masking effect” can be fatal. Ambient road noise drowns out songbirds’ alarm calls and prevents owls from detecting rodents. A mere three-decibel increase in background noise halves the “listening area,” the space in which an animal can pick up a signal. By disturbing animals, noise also disrupts the ecological processes they catalyze, among them seed dispersal, pollination and pest control.

For all of its harms, the pave’s blab is difficult to study. In 2000, Richard Forman, road ecology’s paterfamilias, demonstrated that meadowlarks, bobolinks and other birds gave highways a wide berth, at least two football fields, and hypothesized that traffic noise was the “primary cause for avian community changes.” Yet roads were so transformative that it was hard to tease apart their perversions. Noise was likely repelling wildlife, yes — but perhaps animals also detested the sight of cars, or the abrupt forest clearing, or the impaired air quality. “People had been guessing that noise pollution was controlling animal distributions for a long time,” Jesse

Barber, a sensory ecologist at Boise State University, told me. “But we needed to do an experiment” — to strip out the road’s many variables and isolate its sonic impacts.

For the experiment’s site, Barber chose Lucky Peak, a green shoulder of land that rises above central Idaho’s sunburnt scrub. Every fall, rivers of southbound songbirds — lazuli buntings, hermit thrushes, golden-crowned kinglets — alight at Lucky Peak to refuel on berries and insects. The mountain is a superlative stopover owing partly to its paucity of roads; it’s an oasis in the desert of Boise-area sprawl. In 2012, Barber, a student named Heidi Ware Carlisle and some colleagues mounted 15 pairs of speakers and amps to tree trunks, wrapped the wires in garden hoses to deter chewing rodents, and shrouded them with shower curtains to keep off the rain. Then they blared a looped recording of traffic from 4:30 a.m. to 9:00 at night — a Phantom Road in a roadless wood.

The Phantom Road was so realistic it even fooled people. “We get hikers and mountain bikers and hunters through there all the time, and at least three times we ran into folks who were like, OK, I thought the highway was *south* of here, not east,” Carlisle told me. The birds were equally disoriented. On days when Carlisle played her recordings, bird counts plummeted. Some species, like cedar waxwings and yellow warblers, avoided the Phantom Road altogether.

And the Phantom Road didn’t merely drive off birds: It drained those who stayed. When Carlisle captured warblers and examined their tiny bodies, she found they were skinnier after they’d been near the Phantom Road. Songbirds survive by listening ceaselessly for the whirl of falcons, the rustle of martens, and the alarm calls of their neighbors: “the chipmunk next door that sees the goshawk before you do,” as Carlisle put it. When road noise drowns out sonic cues, birds must look for predators rather than listen for them. This “foraging-vigilance trade-off” gradually depletes them: Every moment you’re scanning for hawks is one you’re not gobbling beetles.

For the first time, researchers had shown that noise alone could impinge on animals’ lives. What made the experiment so compelling, though, wasn’t merely its ingenious design: It was where the Phantom Road’s noise came from. The traffic that played through Carlisle’s speakers hadn’t been recorded on an

“The best way to preserve quiet habitat for wildlife is to not build the damn road.”

interstate highway or an urban boulevard. Instead, it was from Going-to-the-Sun Road, Glacier National Park’s 50-mile byway.

Going-to-the-Sun was a strategically chosen source for the Phantom Road. If noise tainted even a sanctuary like Glacier, where could birds feel comfortable? America’s windshield wilderness had extended acoustic pollution into its best-protected places. A dusky grouse in Rocky Mountain National Park was safe from hunters and developers, yet vulnerable to the growl of Winnebagos and Harleys — a conundrum not lost on the Park Service itself. “If you went to a freeway and said, ‘Hey, these trucks need to go slower because of the birds,’ well, there’s just absolutely no way that would happen, right?” Barber told me. “The parks are the places where we might actually be able to get some action. They’re getting slammed with traffic, they’re getting slammed with people, and the managers are willing to try something.”

Yet parks weren’t easily hushed. When Barber convinced the overseers of Grand Teton to temporarily cut speed limits in 2016, traffic quieted by a couple of decibels and visitors heard more birds. But the birds themselves still avoided the road. A car dawdling along at 25 mph might be softer than one cruising at 45, but it took longer to pass — a less acute stressor, but a more drawn-out one. It wasn’t hard to make park roads quieter, but it was exceedingly difficult to make them quiet enough.

“I think all of our work is pointing towards this: The best way to preserve quiet habitat for wildlife is to not build the damn road,” Barber told me. “And once you do, you’re in big trouble.”

Electric vehicles should help to an extent. Unburdened by the rattling gadgetry of internal combustion, their motors are virtually silent. But EVs are no panacea. Above 35 mph, tires, not engines, produce most vehicle noise. (The interstate’s monotonous drone is a blend of “rhythmic percussion” from rubber on road and “pattern noise” generated by air pockets popping within tread.) The Grand Canyon parking lot will be more pleasant without grumbling RVs, but electrification won’t silence the Everglades’ main highway, where the speed limit is 55 mph. And while “quiet pavements” — pitted surfaces whose divots dampen tire noise — showed potential when they were trialed in Death Valley National Park, their benefits diminish as grit clogs their

pores. It's hard to envision the Park Service scouring its roads with the "giant vacuum-cleaner-like device" some European cities deploy to maintain quiet streets.

Technology, then, holds few answers. And the Park Service, bound to appease visitors, seems unlikely to overhaul its windshield-wilderness model. But the *number* of windshields — well, that's more malleable. In 2000, the agency banned private cars from much of Utah's Zion National Park and replaced them with public buses. Rangers saw more deer and again heard the burble of canyon wrens echoing off sandstone. Since Stephen Mather's day, the Park Service had bowed to cars, yet in several places it had cast out the serpent, or at least restricted its ingress. I decided to visit one such park myself — not Zion, but a wilder one, with a longer history of anti-car warfare.

The Denali Park Road epitomizes the tension that tugs at the Park Service's heart.

Its curvaceous 92-mile course is smudged with Stephen Mather's fingerprints: In 1924, soon after construction began, Mather's lieutenants urged builders to "avoid long straight lines" and showcase "the best possible views and vistas of the country." From the start, the Alaskan weather and "bottomless" mud frustrated road crews, who earned poverty wages and lived in tent villages. Even so, luxury auto-tourists showed up in droves. Caravans of Studebakers ferried sightseers, clad in suits and pearls, 13 miles down the road to Savage Camp, where they slept in wood-framed tents and waltzed on a polished floor.

For decades, the Park Service continued to genuflect to cars. In the 1950s, the agency launched Mission 66, a massive construction program, co-sponsored by the American Automobile Association, that, among many other projects, would have paved and widened the mostly dirt Denali road. The scheme outraged Adolph and Olaus Murie,

biologist brothers who argued that Denali was a place for deep thought, not cursory sightseeing. "The national park will not serve its purpose if we encourage the visitor to hurry as fast as possible for a mere glimpse of scenery from a car," Olaus admonished.

The brothers won the battle, and the Park Service kept the road primarily gravel and dirt. In 1972 the agency, having gradually come around to the Muries' way of thinking, announced an even more drastic policy. The unpaved portion of the road — 78 of its 92 miles — would remain off-limits to most private cars, forcing visitors to ride buses that crept along at 25 mph. The shift enraged the tourism industry, but the Park Service only piled on more restrictions. In 1986, it declared that just 10,000 or so vehicle trips would be permitted each year. Other parks were bursting at their seams, yet Denali had frozen its traffic.

"Today, we're within a thousand vehicles of



the number that went out onto the park road in 1986,” an ecologist named William Clark told me in 2019 when, after several hours of hitchhiking and walking on the Denali Park Road, I reached Denali headquarters. “I don’t know if there are many roads in the world that can say that.”

Along with his colleague Dave Schirokauer, leader of the park’s research team, Clark — whose scruffy beard could adorn a gold prospector — is responsible for upholding Denali’s Vehicle Management Plan. The plan is particularly concerned with Dall sheep, snowy-fleeced ruminants that, from the road, appear mostly as pale pinpricks against distant outcroppings. Nimble, farsighted and capable of surviving on lichen salad, they are exquisitely adapted for life among Denali’s promontories, where wolves can’t touch them. Each spring, though, sheep clamber down the talus to feast on grasses and wildflowers, a migration that the park road disrupts. In 1985, naturalists watched eight sheep inch cautiously downhill, “oriented toward the road, and displaying attention postures.” Over the next hour, the jittery animals advanced and retreated, ceding their progress every time a bus rumbled past, like sandpipers scuttling from a wave. Before long, wrote the naturalists, “the sheep had returned to the escape terrain,” their journey thwarted. Even minor increases in traffic, from 10 vehicles an hour to 20, can chase sheep from Denali’s roadside.

The park’s Vehicle Management Plan caters to sheep anxiety. It’s a quietly revolutionary document, permitting no more than 160 vehicles every 24 hours. Its most progressive provision is the “sheep gap,” a requirement that every hour, at several migration corridors, at least 10 minutes elapse without a single vehicle. “If there’s a band of sheep, or any wildlife, that are looking to make their move, they have their opportunity,” Clark said. “I describe it as a deep breath in traffic.”

Traffic, however, is inclined to hyperventilate. The near-universal goal of transportation officials is to fill service gaps, not create them. The sheep gap, Schirokauer acknowledged, is a “four-letter word” among many of the concessionaires who run Denali’s buses and hotels. “There’s incredible pressure on the park from the travel industry to allow more buses,” Schirokauer said. “Every time they add a wing to a lodge, there’s 80 new pillows. And

they’re like, OK, that means we need two more buses a day to accommodate these people. People get when a theater is full, but they don’t get why a park road would be full. Until they get to a wildlife viewing stop, and there are 10 buses, and all they can see is the back leg of a bear.” I thought of all those tourists resenting other tourists for contaminating their solitude and remembered the rush-hour cliché: You don’t get stuck in traffic. You *are* traffic.

When the Park Service instituted

the Denali shuttle in the 1970s, its goal wasn’t to cut noise pollution but to preserve the vague wilderness vibes that the Muries cherished. Yet the bus system has turned Denali into one of America’s finest soundscapes, a place that un.masks natural choirs rather than concealing them. In Denali’s symphony hall, nature plays strange, unrepeatable compositions — the song of warblers backdropped by a late-spring avalanche, say, like a percussion section pounding behind woodwinds.

One afternoon I drove the Denali road with Kate Orlofsky, a technician tasked with studying the bus system. We cruised through patchy forests that rolled toward scree. Cloud shadows scurried over the green-gold valley, a world without borders; a wolf could walk 600 miles from here without padding across another road. At Savage River, the end of the line for most cars, Orlofsky checked in with a ranger, who ticked a clipboard. We pressed on down dust and gravel, as the Muries had intended. A caribou browsed a gravel bar, swinging his velvety chandelier. “Sometimes I’ll have the windows down and listen to bird-song,” Orlofsky said, and I wondered where else that would be possible.

After a while, Orlofsky pulled over at a sheep-gap site and fished out a laptop. I scanned the mottled tundra: no sheep. We waited for buses to come so that Orlofsky could record their timing and confirm that the gap was being upheld. Soon, a dust plume rose in the distance, and a matte-green school bus chugged into view. Passengers gazed out the windows, fiddled with their cameras, or dozed, cheeks smushed against glass. Orlofsky tapped the laptop, and we got back in the car.

On the drive over, I’d asked Orlofsky about her past gigs trapping wolves, chasing pikas, and patrolling the Pacific Crest Trail. By comparison, I observed now, counting

buses seemed, well, kind of boring. Orlofsky laughed. “It’s not the sexiest work. It’s not the most active,” she admitted. “But I can watch wildlife. I can enjoy the breeze.” When she wasn’t monitoring sheep gaps, her job entailed riding the bus system herself, a mole among the visitors, covertly recording data — about ridership, rest stops, wildlife, traffic — that would inform future iterations of the park’s vehicle plan. She was, in other words, a professional tourist, a luxury she didn’t take for granted. “People come from all over the world to do what I get paid to do,” she said. Denali has become what social scientists describe as a “near-wilderness,” a place where most visitors peer into the wild without immersing themselves in it. But a near-wilderness can still evoke ecstasy. Even ptarmigan, the pudgy grouse that is Alaska’s state bird, gets tourist cameras whirring. “People get pretty excited about ptarmigan,” Orlofsky said. “As they should.”

Months later, back home, I reread my notes from Denali. As I did, the muttering of an arterial and, below it, the sibilance of the interstate washed over me like acid rain. We’re so surrounded by road noise that we’ve compensated by deafening ourselves. Paging through my notes, I was appalled by their shallowness. “Birds,” I’d written, unhelpfully. “Wind.”

Natural sound is as salubrious as noise pollution is harmful. The crash of waves calms heart-surgery patients; the trill of crickets boosts the cognition of test-takers. Road noise both degrades our bodies and overwhelms the sounds on which we, like songbirds, depend. This, then, is the value of parks: as sonic sancta for wildlife and humans. When I spoke to the bioacoustician Kurt Fristrup, he described wandering with a friend one night through Natural Bridges, a national monument in the Utah desert. The hush was absolute, unmarred by traffic, and after Fristrup sat down, he became aware of his heartbeat thumping softly in the darkness. As he relaxed into silence, he heard another sound, eerie and magical: the heartbeat of the friend sitting beside him, its slow rhythm syncopated with his own. ✨

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VICTORY FOR BEAVERS

This Oregon legislative session, WELC worked tirelessly amid many challenges to change state law to better protect beavers—and the climate.

As a result of our work with state Rep. Pam Marsh, the legislature passed the “Beaver Believer Bill” with bipartisan support, which Gov. Kotek signed into law this summer.

This new law ends Oregon’s era of unlimited, year-round beaver killing on private lands without permits, and promotes non-lethal removal where conflicts arise.

Beavers create habitat that is more resilient to wildfire and provides climate refuge for other animals. As “nature’s engineers,” their habitat also improves water security, sequesters carbon, and helps salmon thrive.

Now, the Oregon Department of Fish and Wildlife can begin to manage beavers on private land as it does for other wildlife.

We are thrilled about this breakthrough and grateful to Rep. Marsh and other bill supporters for helping bring beaver management in the Beaver State into the 21st century.

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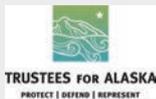
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PERSPECTIVE

We don't need utopias

What if Eden is chilling out in your neighborhood?

BY RUXANDRA GUIDI

I'VE VISITED Biosphere 2, the Earth science research facility in Oracle, Arizona, on two different occasions. I first went three years ago during the early days of the pandemic, when we still had no idea how the COVID-19 virus would behave. A lot of institutions had already closed their doors to the public.

Biosphere 2 offered self-guided tours through a phone app, though, so my family and I drove out on a hot August evening. We listened to a young woman's voice over our car speakers, narrating the story of each of the buildings as we drove by them. We saw the Biosphere 2 rainforest inside a giant terrarium in the shape of a glass dome; from a distance, we could see some big-leafed 80-foot-tall trees amid the kind of condensation you find only in the tropics, not here in the desert. The app described the ocean and savanna habitats, as well as Biosphere 2's notorious "lung," the two domes designed to equalize air pressure within the various environments. The 1.27-hectare compound at the foothills of the Catalina Mountains is the largest artificial and closed ecological system ever created.

Wanting to see it from the inside, we returned this past winter on a rainy day. As we approached the Epcot Center-like structures, we noticed a different kind of visitor on a dirt path on the campus: a bobcat and her three kittens, the little ones particularly curious, turning back and pausing to look back at us as their mom kept marching. This time, Biosphere 2 felt less seductive. In fact, it felt invasive — a cluster of structures plopped down in an existing ecosystem that was just as alive and important to the Earth as the carefully curated landscapes inside the domes. Above all, it felt outdated, a 1980s-style vision of what the future might look like: a blueprint for a big, sleek, see-through, self-sustaining colony on another planet. Why bother envisioning what we could grow on Biosphere 2 when we can't even nurture what's already here, on Biosphere 1?

The West is full of monuments to imaginary, aspirational futures. From the 28 temples built by the Church of Jesus Christ of Latter-day Saints in Utah to southern Colorado's Drop City, the "first rural hippie



The rainforest biome at Biosphere 2. **Roberto (Bear) Guerra**

commune,” these sites all share one thing in common: They are built-out, ambitious, human-centric. And they’re also exclusive, as in not meant for everyone, open only to Mormons or members of the 1960s counterculture movement.

The Arcosanti Project built in Arizona’s high-elevation desert is another experimental town designed to test out what Italian architect Paolo Soleri called “arcology.” Soleri believed that pairing architecture and ecology would limit urban sprawl and energy use and increase pedestrian-friendly designs. When you visit Arcosanti, though, none of this is obvious. The concrete 1970s buildings were supposed to demonstrate how we could live in harmony with the natural world. Yet all I saw were structures breaking down in the climate; water was getting into the staircases, and the vegetable gardens were insufficient to feed the estimated 70 people currently living there.

So who are all these aspirational futures for? I’m interested in something else: a nature-first vision that’s small in its

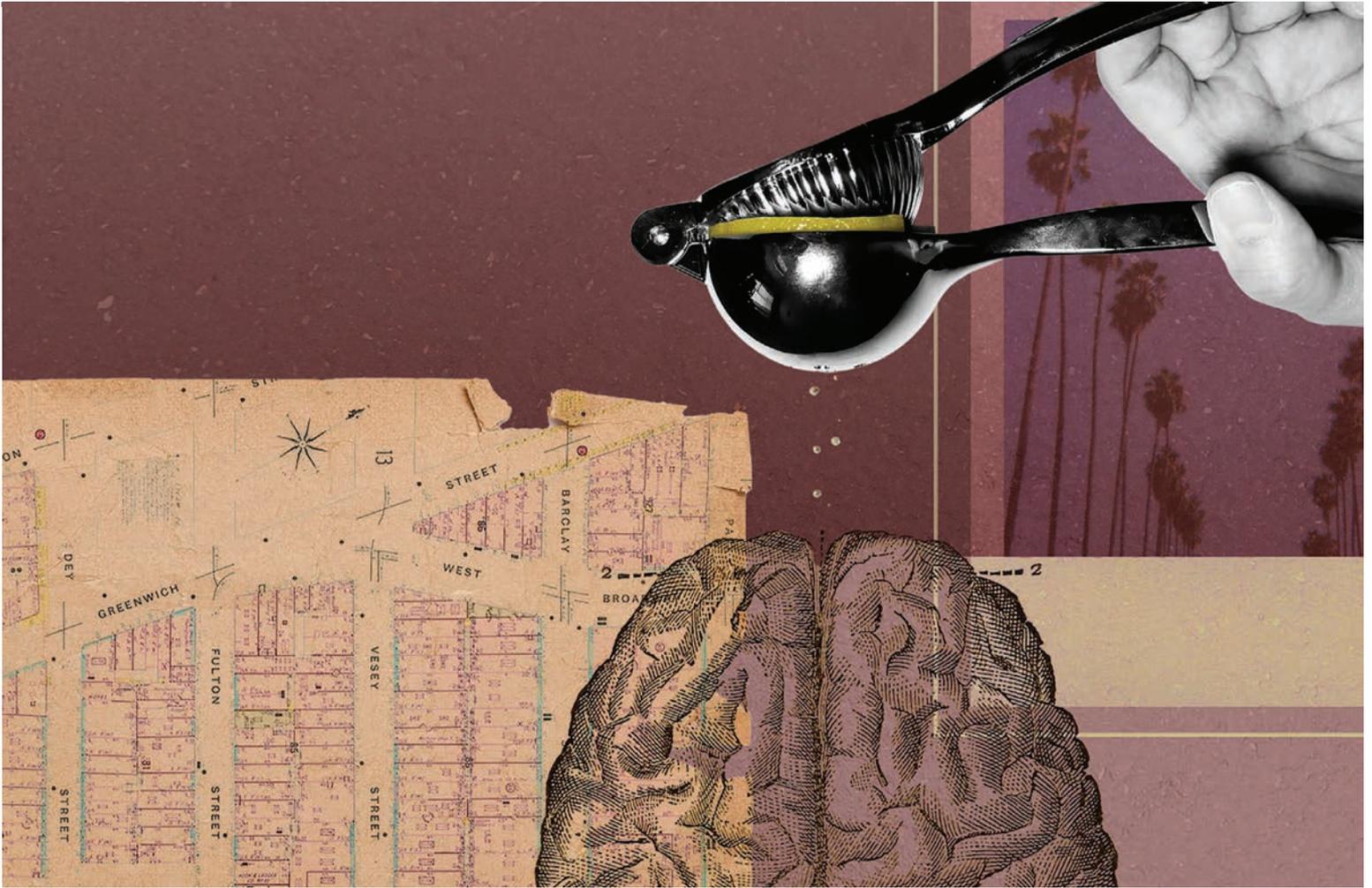
foundation yet leaves nobody out, including non-humans. By their very nature, utopias have always been a part of our human delusion, a product of our constant desire to dream big and win. But why do we need them? Maybe our dreams should consider our current reality instead of obsessing over building out some technologically dependent fantasy of the future.

A short ride away from where we live I found someone who’s on that path, working with what’s real now by recasting the past. His name is Drew Berryhill, and his project, a small nursery, is called Drutopia. After he faced eviction in 2020, Berryhill was approached about moving his homegrown nursery of cactus and succulents to an acre of land at the edge of a Black cultural center in Dunbar Spring, one of Tucson’s historically Black neighborhoods. (Many of these neighborhoods have rapidly gentrified over the past few decades.) With that acre, Berryhill was given the task of transforming a once-abandoned lot into a healthy botanical garden that can inspire others to reclaim more of

that land. Speaking to the local newspaper, Berryhill said, “We’re creating that oasis vibe, that Eden-like vibe where people can come hang out, appreciate, chill.”

He said that he hopes that his collection of gems and cactus can help bring this little corner of the city back to life, drawing people to the area. He’s drawing other species, too; he often posts on social media about the hummingbirds nesting in the trees and how the pocket of green is becoming a refuge for all kinds of species, including coyotes and javelinas at night. And the locals are coming to just hang out, too, without the pressure to buy anything.

I did just that recently and saw how his plants were taking over most of the available land. The palo verde trees were blooming, and a couple sat at a bench near me, just chatting. They weren’t there to shop; they were simply enjoying themselves. Maybe “utopia” can really be that simple, as Berryhill hopes — the kind of authentic, nature-first experience that starts small and inspires others to do the same in their own backyards. ☀



ESSAY

The lemon squeezer

A simple tool becomes a form of self-defense.

BY MARIE MYUNG-OK LEE

PHOTO ILLUSTRATION BY MARISSA GARCIA

THE SUMMER OF MY SON Jason's 16th year, we found ourselves driving west. We'd learned about a noninvasive brain treatment called transcranial magnetic stimulation that showed promise for children with autism. Our son's disability was so severe that he had screaming fits

and was often violent with himself and others. Experts recommended institutionalizing him; we decided instead to give TMS a try.

And so we drove across country, from our apartment in Manhattan to the Brain Treatment Center in Los Angeles. We spent almost a week in a car with

someone who couldn't communicate and was easily bored. Jason is a handsome boy who looks "normal" on the outside. But he had meltdowns during bathroom stops, and when my husband tried to calm him down, bystanders sometimes misconstrued his behavior as sexual or abusive. Jason has other medical issues, too; every square inch of our car is stuffed with his hypoallergenic food and medical essentials. I'd pared down everything in my own small backpack to make room for an implement that seemed at once ridiculously specialized and superfluous: my lemon squeezer.

Jason was diagnosed with autism at age 3, around the time we learned he had an autoimmune gut disease that required medication. Doctors, thinking that he'd never learn to swallow

pills, told us to open the capsules and stir the contents into a glass of water. The hydrochloric acid pills that helped his digestion were the worst; they smelled and tasted, not surprisingly, like vomit. How grateful I was when I learned that the pills could be replaced with lemon juice in water.

But squeezing a slippery, seedy lemon to get the juice out wasn't easy; it added another stressful extra step to an already fraught routine.

On an earlier road trip, pre-Jason, we'd stopped at my grandparents-in-law's house in Mexico, where I delighted in their sun-yellow citrus squeezer. Mexican food is not complete without a squeeze of lime, and it was fascinating to see how thoroughly the contraption separated the juice from the fruit.

In America, I thought of lemon squeezers as specialized equipment designed for bartenders. Most were the kind I'd seen in Mexico, made of painted plastic or aluminum — two substances our son needed to avoid. But eventually, after searching restaurant supply stores and online, I found one made entirely of stainless steel.

Squish!

Juice!

I never imagined how much glee an appliance could bring. When I was angry, I could squeeze out my frustrations. It also settled my immigrant-kid soul to know that I could extract every drop of that organic juice, wasting nothing. Once the novelty wore off, juicing settled into ritual; ironically, the appliance I bought to save time helped me learn to slow down. After I pressed the fruit, I got into the habit of pausing to put my nose to the rind, which released a fleeting whiff of lemon or lime bloom.

Aesthetically, the squeezer's sculptural curves felt good in my hand. Its clublike shape and heft made me feel like I could ward off a bear, Hugh-Glass-style, to protect my family if I needed to. Its fulcrum-and-lever hinge made me think about human ingenuity going back to Archimedes. Some things don't need to be "disrupted."

The design for my squeezer was patented in 1860. In the late 18th century, lemons and limes were found to cure scurvy, a mysterious ailment that had long cursed sailors at sea (as well as the pocketbooks of the shipping company investors). So inventors got busy, submitting more than 200 patents for devices that extracted medicinal lemon and lime juice. Now, like modern-day sailors warding off scurvy, my family would set sail across our country's interior, a bag of organic

lemons ready in the car's "hold."

As we drove across the vastness of Oklahoma and Texas, past oversized statues of pioneers and cowboys celebrating American empire and the erasure of Indigenous people, I occasionally felt beams of hostility directed at our multiracial, neurodiverse family. In Amarillo, a storeowner took one look at Jason and said to us — right in front of him — that he was sorry that "you'll have to be taking care of him for the rest of your life." I squeezed out my frustrations later. But I was mollified to discover that a barbeque joint near our Airbnb offered a beautifully smoky brisket seasoned only with salt and pepper — no allergens. The staff good-naturedly shrugged at us kooky out-of-towners, who returned repeatedly to procure pounds of plain meat for our son — no sides, not even BBQ sauce.

Our last overnight stay was in Lake Havasu, Arizona, where the party boats were crowded so closely together you could have walked across the lake without wetting a toe. Outside our Airbnb (whose sole reading material consisted of *American Rifleman* and *Diabetes Today*) the owner pointedly refused to return my hello. Yet later, in almost the exact spot, he readily engaged my white husband with a friendly, "Hey, man," and a brief chat.

At a gas station, as I pulled the car to a pump, a red-headed man in a pickup pulling a motorboat screamed at me so ferociously that my husband said to not make eye contact with him. It was so hot that both cars' windows were closed, so I couldn't really hear him. But having grown up Asian in a rural, all-white area, I recognized that look — a white person affronted by having an Asian person in his sightline, a man who believes the Americana of the red barns

belongs to him but not to me.

It reminded me that in 1871, shortly after my beloved lemon squeezer was invented, one of the nation's worst race-based massacres occurred in Los Angeles: 500 white people and a few Mexicans lynched 18 Chinese — 10% of the city's Chinese population at the time. Years ago, on a post-college road trip with my then-boyfriend, now my husband, the romance of the "wild West" curdled as my Asianness drew unwanted attention in places like Logan, Utah. When we stopped in Rock Springs, Wyoming, on that trip, we stumbled on an easily missed historical marker near our campsite. The weather-worn marker was difficult to read, but it documented the 1885 murder of 28 Chinese coal miners by white men who believed they were "stealing" their jobs.

Rattled by our Lake Havasu encounter, we were relieved to reach LA, to be in a city where being Asian didn't immediately make you stand out.

But the past is everywhere. Just minutes away from our rental in Venice, we passed a nine-foot black obelisk at the busy intersection of Lincoln and Venice boulevards. It looked strange enough that we returned to find out what it was. It turned out to mark the spot where more than a thousand Japanese Americans from addresses that now sound fancy — Venice, Malibu and Santa Monica — were lined up to be taken to internment camps in 1942.

Still, we'd made it; we'd reached a place of lemons so fresh they didn't need to be cleansed of the usual preservative wax coatings. Our LA Airbnb was in a walkway from which the thinnest scrim of sea was visible. We were on a different coast now, but we had the same trusty implement, same hopes for a better life for our son. *Squish.* ✨

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CONFETTI WESTERNS

A column that explores the queer natural and cultural histories of the American Southwest.



A naughty, queer little bird

What the gray jay taught me about authenticity and playfulness.

BY MILES W. GRIFFIS | ILLUSTRATION BY JORDAN STRANGER

I SPENT A SUMMER IN COLLEGE venturing deep into lupine-strewn alpine bowls in Colorado's Sawatch Range. As part of my duties as a hiking guide, I'd trek across the mountains alone, checking trails. During my lunch break, I'd sit on lawn chair-sized boulders overlooking the Eagle Valley. Most days, I was joined by a gray jay who alighted on a blue spruce branch like smoke from a struck match.

The first time *Perisoreus canadensis* appeared, the fluffy corvid crooned their unique "whisper song" from the canopy. It is a soft melody of clicks and mellow warbles, the sough of the Southwest's subalpine. Suddenly, the jay snatched a cracker from my lap, justifying one of their many nicknames, "camp robber."

I grew fond of the bird's playfulness, curiosity and mischief over that summer. Whenever I left the meadow, the jay would swoop from fir to fir, following me like a shadow. Our companionship developed at a time when I needed it most. Instead of embracing my queer identity after recently coming out, I had retreated into the lonely box canyon of self. On my days off, I tried to bolster my low self-worth by climbing dangerous peaks alone.

As with any new friend, I took the time to get to know the cheeky *borb*. It led me to discover that the gray jay's common nickname "Whisky Jack" comes from the *Wisakedjak* — there are many spelling variations — a shapeshifting spirit and culture hero in Cree storytelling. Artist Jordan Stranger — whose artwork appears alongside this essay — wrote that *Wisakedjak* is believed to be responsible for a great flood, as well as creating the moon. Niigaan James Sinclair, a professor of Indigenous Studies at the University of Manitoba, says that the Anishinaabe spirit *Nanabozho* once transformed into a gray jay, or *Gwiingwiishi*, to teach people lessons. "The gray jay is certainly queer," Sinclair said. "If the natural world teaches us anything, it's that it doesn't adhere to the binary."

Métis scholar June Scudeler says there are "differing views" of who *Wisakedjak* is. While she notes that the spirit has been gendered as an "elder brother," some contemporary artists and writers have interpreted

Wisakedjak as queer or two-spirit. In Tomson Highway's coming-of-age novel *The Kiss of the Fur Queen*, two Cree brothers are forced to attend a Catholic residential school in Winnipeg, Manitoba, in the 1950s. A drag queen-like character named The Fur Queen flies into their lives and offers the boys guidance as they grapple with their own identities as well as with sexually abusive clergymen. In one passage, Gabriel, one of the brothers, refers to the Fur Queen as "Weesageechak," a clown that bridges God and humanity. He contrasts the Catholic God, whom he believes causes suffering and guilt, with the benevolence and laughter of Weesageechak. "If Native languages have no gender, then why should we?" he asks. "And why, for that matter, should God?"

Like Highway, two-spirit Cree artist Kent Monkman depicts the legendary spirit as a femme in *Weesageechak Teaches Hermes How to Trick the Four-Leggeds* (2010). The painting displays Weesageechak as Monkman's alter ego, Miss Chief Eagle Testickle. She wears a thong and a pair of purple thigh-high boots, her eyes bearing the same brazen shimmer as a gray jay's. A naked Hermes, the wily Greek god, lingers behind holding a birkin. Highway's and Monkman's depictions of *Wisakedjak* invoke positive portrayals of sexual and gender fluidity while simultaneously flipping the bird to bigotry.

A teacher. A femme. And to some, a shapeshifting guardian angel: Both Indigenous and settler stories claim that gray jays have saved the lives of imperiled hunters, leading them to safety through dense forests with their songs.

On one of my last days off that summer, I made an attempt of Ripsaw Ridge, a long, challenging knife-edge traverse in Colorado's Nuchu Range. Looking back, I realize that every solo climb that summer became more perilous and remote than the last, putting myself in further danger. That traverse was no exception. I trekked up a loose talus field toward the ridge and felt indifferent about the risks ahead. I don't think I was suicidal, but with the benefit of hindsight, I believe the danger I put myself in was a cry for help. Queer climbers and surfers have told me they have also imperiled themselves with similar exploits while coming to terms with their identities.

I was behind schedule as a violent thunderstorm built behind the ridge. Still, I pushed up the peak's couloir, hoping the purple clouds would dissipate and the accomplishment of the traverse would compensate for my more feminine traits and earn the respect of my hypermasculine peers. But as I climbed the snowfield, I heard the whisper song beckoning me back to treeline. Its melancholic notes made my eyes well. Then it dawned on me: I didn't have to put myself in harm's way to respect myself. With this realization, I reversed course, abandoning the climb and shoe-skiing down the talus toward the music. There was a crack of thunder in the distance, and now the sound of the bird's song became jovial and uplifting, like the final chorus of a ballad. In the evergreens I found Whisky Jack, cocking their black-capped head as they chided me from the canopy.

I used to romanticize this story, describing how the gray jay, whom I like to imagine was my same lunchtime companion, saved me from a deadly lightning storm that was violently brewing like my own self-hatred, and taught me to walk through life with playfulness and authenticity. Now, I see that Whisky Jack simply tricked me into coming to terms with myself. ☀

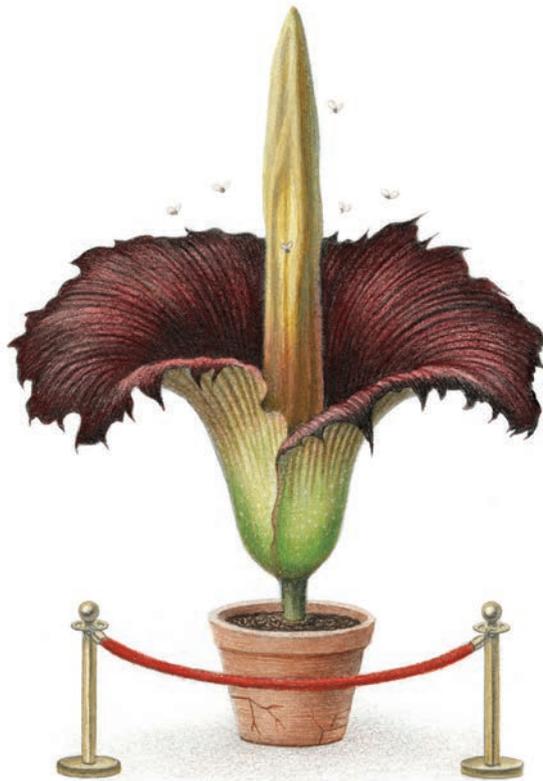
*"If Native languages
have no gender,
then why should we?
And why, for that
matter, should God?"*

WYOMING

It's one thing to get stuck between a rock and a hard place, but between a bathroom and a 2,000-pound bison? Now, that's a hairy situation. A visitor was trying to leave the restroom at Yellowstone National Park when he realized that a huge bison was blocking the way, the *Cowboy State Daily* reported. Unlike the other tourists we cover in this column, though, he reacted intelligently, waiting inside the bathroom until the coast was clear and periodically peeking out to check. Taylor Caropolo posted a video of the "awkward encounter" to the Facebook group "Yellowstone: Invasion of the Idiots." This time, however, the bison was the invader, and the human, for a change, resisted the temptation to take a selfie.

CALIFORNIA

If you thought the orca attacks off the coasts of Spain, Portugal and Scotland were surprising, this news will otterly amaze you. "Otter 841," a 5-year-old female, has been harassing locals in Santa Cruz, NPR reports — even stealing their surfboards. The otter's unusual behavior has wildlife officials officially baffled, although the California Department of Fish and Wildlife believes that 841, who was raised by humans at the Monterey Bay Aquarium, simply never developed a healthy wariness of people. While this might explain 841's lack of fear, it does not explain why she's turned to crime. Normally, we think of otters as cuddly and adorable, not as schoolyard bullies or perps in a game of *Grand Theft Surfboard*. Wildlife officials have been trying to capture the "outlaw" otter and re-home her in the interest of everyone's safety, including her own, but 841 has so far evaded them. Meanwhile, she's gained



Heard Around the West

Tips about Western oddities are appreciated and often shared in this column. Write heard@hcn.org.

BY TIFFANY MIDGE | ILLUSTRATION BY ARMANDO VEVE

a considerable following on Instagram. Several online petitions advocating for her freedom are circulating — one has over 50,000 signatures — and an Instagram page, @thesurfgotter, overflows with memes and parody images. One of them compares 841 to Batman from the 2008 film *The Dark Knight*, solemnly declaring: "She's the hero Santa Cruz deserves, but not the one it needs right now. So we'll hunt her. Because she can take it. Because she's not our hero. She's a silent guardian, a watchful protector. A dark knight." Whether 841 is actually

the superhero we need remains to be seen. But we must admit she looks pretty badass decked out in the Dark Knight's mask.

CALIFORNIA/WASHINGTON

There's no doubt that, as NPR reports, the legendary corpse flower is the "rockstar of the plant world." And we're in luck, because right now there are three — count 'em, THREE — blooming in California and Washington this summer. Horticulturalists are thrilled, because this very rare and elusive plant can go seven to 10 years between blooms. These particular alien-looking plants

can be found at San Francisco's Conservatory of Flowers, the San Diego Botanic Gardens, and the Amazon Spheres in Seattle. If you plan to visit — and ya better hustle, because the blossoming stage only lasts 24 to 48 hours — be sure and bring nose plugs. This hard-core Goth cousin of the calla lily — scientifically known as *Amorphophallus titanum*, or the titan arum — is impossible to miss; the flower can grow up to 8 feet tall, and it emits a distinctive fragrance, much like rotting meat. Ari Novy, president and CEO of the San Diego Botanic Garden, said it smells as if you put "your teenager's dirty laundry in a big black garbage bag" with "some hamburger meat, maybe some fish, a little garlic and some parmesan cheese. And you left that by the side of the road on a very hot desert day for about 24 hours." Sounds, um, delightful — perfect for Valentine's Day.

WASHINGTON/OREGON

If you're hiking along a trail in the woods and encounter a gigantic Nordic troll that seems to have wandered out of *The Lord of the Rings*, no need to pinch yourself; you're not dreaming. Plans are underway to install six of the whimsical sculptures within natural landscapes across the Pacific Northwest. The trolls, which range from 12 to 20 feet in height, are created by Danish artist and environmentalist Thomas Dambo and constructed with the help of volunteers (human, not Elvish), using recycled materials. Dambo has built 100 troll sculptures around the globe, though these will be the first in the Pacific Northwest, *Geek Wire* reports. The sculptures are meant to "tell a tale of protecting nature and honoring the land and waterways." Nice to know that not all trolls are on social media. ✨

Summer Reading with HIGH COUNTRY NEWS

THE SUMMER READING CHALLENGE IS UNDERWAY:
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COMMUNITY PICKS

Submit your last reads and vote for your favorite picks from other *HCN* readers at reading.hcn.org — we'll include top picks in a future issue.

Georgeanne Hanna of Prescott Valley, Arizona, is reading ***After Sappho*** by Selby Wynn Schwartz for Step 1: Read a book that queers a traditional narrative.

Karin Edwards of Estes Park, Colorado, is reading ***The Kitchen Front*** by Jennifer Ryan for Step 5: Read a book that includes at least two different genres.

Ziani Paiz of California is reading ***In the Land of the Grasshopper Song: Two Women in the Klamath River Indian Country in 1908-09*** by Mary Ellicott Arnold and Mabel Reed for Step 6: Read a book whose protagonist is a river.

UPCOMING EVENTS

Vauhini Vara,
This Is Salvaged
Noon MT Thursday,
September 28



Vauhini Vara — author of *The Immortal King Rao*, a finalist for the 2023 Pulitzer Prize in Fiction — explores the intricacies of relationships in her latest story collection: *This is Salvaged*. *HCN* Editor-in-Chief Jennifer Sahn and Contributing Editor for Books, Culture and Commentary Melissa Chadburn will host the live conversation.

Get event updates and notifications at reading.hcn.org.

THANK YOU FOR READING WITH US

Thank you for following along, submitting your book picks and voting for your favorites this summer. Send photos of your reading list, completed challenge path, collection of books acquired this summer, or most-satisfying reading spot from this summer to dearfriends@hcn.org for stickers and other prizes from *High Country News*.



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#IAM THE WEST

DZAKI SUKARNO
Country music artist
Las Cruces, New Mexico
(photographed in Nashville, TN)

It's definitely been very different, being an Asian country singer, because there's not many of us. But it's not going to deter me from pushing. I want to be able to sell out shows across the country, and also bring music to my hometown. There are a ton of underrepresented musicians in smaller communities who don't get to see the light of day, so if I can bring something back, that'd be one of my biggest dreams. I want people to know me for the good that I do in my life. I'm not an artist that is here to chase after the fame or the fortune. I want to bring back traditional country music, when it still had heart and soul and was honest and a way of life. And show others I'm not just an Asian country singer from Las Cruces, New Mexico; I am me.

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