High Country News

In the Wake of the Floods

The inequity of extreme heat

Child care for all in New Mexico

Ways that the tundra provides

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Barbara Cruz reads to Maya Garduno and Emmit Ruhl in a pre-K class at the First Presbyterian Church of Santa Fe's Child Development Center in Santa Fe, New Mexico. **Adria Malcolm / 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.

Do over

I RECENTLY TOURED a site containing aging oil infrastructure. Atop a peaceful coastal California bluff draped in late-day golden sun stood two oil-storage tanks and one smaller emergency water tank, plus a network of pipes. This is the Ellwood Marine Terminal. For decades, oil drilled from an offshore platform was piped to an onshore facility a couple of miles away, cleaned and processed, then piped to one of these tanks. From here, it was sent back offshore, to be retrieved, 55,000 barrels at a time, by a barge headed to either San Francisco or Long Beach.

It hasn't been in use since 2012, and the oil platform that served it is being decommissioned, so the 19-acre site is about to be deindustrialized and converted to recreational space. By the time you read this, the tanks should already be gone. By September, the onshore pipes will be removed. Then a team from the University of California, Santa Barbara's Cheadle Center for Biodiversity and Ecological Restoration will restore the area for native species and public use, as they have recently done at an adjacent former golf course. With the ocean at their backs, Cheadle Center staff asked for input from the public, including members of the Chumash Tribe, on creating trails, overlooks and interpretive signage. The full restoration is expected to take five years.

It's inspiring to see something like the Ellwood Marine Terminal dismantled and repurposed as open space. But some sites are harder to deindustrialize than others. This summer, *High Country News* staff writer B. "Toastie" Oaster joined a tour of the notorious Hanford Site on the Columbia River in Washington, where plutonium was manufactured during World War II and the Cold War. Given Hanford's size and the radioactivity of some of its waste, cleanup, remediation and "risk reduction" activities will be ongoing for decades. So far, 680 tons of contaminants have been removed from groundwater and 953 facilities have been demolished. But much more remains. Oaster's story *(see p. 7)* describes just how much, as well as how the region's tribes became involved in the cleanup, approaching it as a multigenerational endeavor.

Having Indigenous tribes play a lead role in determining how to heal retired industrial sites ought to be compulsory. Such sites are often located on ancestral lands, so there's a justice imperative. But also, tribal input on the future of these places will likely benefit the process more than what the colonizer cultures that built such sites can offer. The work that tribes do at places like Hanford can help build a better future for everyone.

Jennifer Sahn, editor-in-chief

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Arthur Sze's latest book, *The Glass Constellation: New and Collected Poems* (Copper Canyon Press, 2021) received a 2024 National Book Foundation Science + Literature Award.

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A mural in Salinas, California, shows farmworkers harvesting vegetables.
Erik Castro / HCN

ON THE COVER
Picoso Farm in Gilroy, California, is still trying to recover from a series of devastating floods.
Erik Castro / HCN

FEATURES

REPORTAGE

BOOKS, CULTURE & COMMENTARY

OTHER MATTER

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GOLDENDALE: YES OR NO?

To solve the climate crisis, we need facilities like the Goldendale pumped storage project that allow us to store intermittent renewable energy for later use. As a longtime resident of Goldendale, Washington, and lifelong renewable energy advocate, I was disappointed that your recent article left out critical information ("The consultation trap," July 2024).

The site in question has been heavily disturbed for decades. It includes areas that are contaminated but will be remediated as part of the project. It is also privately owned ceded land, requiring anyone to contact the landowner to access it.

I very much hope that the Federal Energy Regulatory Commission awards this site a license in the coming months to move our town and the Pacific Northwest forward.

Dana Peck
Goldendale, Washington

Thanks for your in-depth reporting and article in *HCN* about the Yakama Nation and its struggle against the Federal Energy Regulatory Commission's approval of the Goldendale project. The entire situation smacks of subtle racism. So degrading, so demeaning, so unnecessary. Just keep up the great work!

Lynne Waltke
Tucson, Arizona

BIRDS OF A FEATHER

Thank you for the insightful article on how a tiny shorebird might save the Great Salt Lake ("The Tiny Bird that Could Save an Ecosystem," July 2024). I was glad to see that Terry Tempest Williams lent her prestige to the effort. The Great Salt Lake is a Hemispheric Reserve in the Western Hemisphere Shorebird Reserve Network, which is a critical environment for not only phalaropes, but also about 15 other long-distance migrants. I'm afraid that the only thing that will force ranchers in the upper Bear River drainage to cut back on alfalfa irrigation for their cattle and sheep will be when people in Salt Lake City start dying from inhaling toxic saline dust.

Chuck Trost
Pocatello, Idaho

Kudos to Caroline Tracey for her article. She drew together people from Utah, Argentina and Spanish-speaking high schoolers in California with the biology and history of this tiny bird. Likely the best-written article I have read in your publication.

@pdxbluespruce via Instagram

GOOD DOG

I love, love, love Nina McConigley's essay, "Prairie dog," in the July 2024 issue.

Linda Paul
Boise, Idaho

DATA CENTER DOOMSVILLE

I'd like to add an interesting twist to the article "Data centers could set back climate progress" (June 27, 2024). Very few people work inside these enormous buildings. I was an engineer at Hewlett Packard and visited a data center in northern Virginia about 15 years ago. During visits to solve technical problems, there would be just three — 3! — people in the huge multi-acre buildings, not including myself and a co-worker. Everything is monitored remotely.

The local employment opportunities are nil. This is the dirty secret about data centers and huge processing facilities. Few or no residents of the local area will benefit.

David Lobato
Baltimore, Maryland

Excellent article! I learned a lot, and it definitely moved my understanding of how renewables actually play in the power picture — basically handling the growth, not the base. And we must change the base to address the climate impacts. Great work, *HCN*!

Scott Smith
Depoe Bay, Oregon

UNALAKLEET OR BUST

What a great piece of writing Laureli Ivanoff did there about her all-girl seal-hunting crew ("All-lady seal-hunting crew," May 2024). I have lived in Unalakleet and really got there in her writing. More. More. More.

John Tetpon
Anchorage, Alaska

DON'T FENCE ME IN, OR OUT

The picture accompanying the article "Pronghorn among the panels" (June 2024) begs a question: Why erect a high fence around a solar installation? Indeed, why a fence at all? Why not allow wildlife to move freely through it? I'm sure there are reasons, but I'll bet they are not very good reasons.

Jim Joseph
Brethren, Michigan

REPATRIATION AT LAST

Thank you for the article you wrote many years ago about illegal excavations in our homelands on BLM property ("A whistleblower speaks out over excavation of Native sites," December 2020). I'm happy to report that, due to this article and lots of collaboration with BLM staff archaeologists, we have finally repatriated the human remains and funeral objects.

This was the longest NAGPRA, Cal-NAGPRA case I've ever been a part of, and how much cover-up was implemented was eye-opening.

Waylon Coats
Vice chairman and tribal archaeologist, Southern Sierra Miwuk Tribe

CORRECTION

Our photograph of birds flocking on the Great Salt Lake on page 27 in "The Tiny Bird that Could Save an Ecosystem" (July 2024) did not show Wilson's phalaropes but rather a flock of dowitchers. To see a photo of a murmuration of phalaropes, visit **hcn.org/phalaropes**. We regret the error.

Boats carry Hanford Journey attendees down the Columbia River in Washington toward Hanford reactors, one that's cocooned and another that's decommissioned but still standing.

REPORTAGE

Lalíik

Yakama people gather to remember what the land was like before the Hanford Site.

BY B. 'TOASTIE' OASTER
PHOTOS BY EVAN BENALLY ATWOOD

A MOTHER DOE, flanked by a fawn still in spots, bounds through belly-deep sage at the foot of Lalíik, colonially known as Rattlesnake Mountain. At 3,600 feet, Lalíik is the tallest treeless mountain in the Lower 48. For thousands of years, it's been a place of ceremony and sustenance for families now enrolled with the Nez Perce Tribe, the Wanapum Band of Priest Rapids, the Confederated Tribes and Bands of the Yakama Nation and the Confederated Tribes of the Umatilla Indian Reservation. "For whatever reason, people try to shorten our time in this land," said Emily Washines (Yakama), board president of the environmental nonprofit Columbia Riverkeeper. "They say, 'Well, you weren't here when the Missoula floods happened.' And we know that we were here because that's the mountain that we went to when there was water." *Lalíik* means "land above the water" in Ichishkíin.

The mountain presides over an elbow of the mid-Columbia River in Washington, where today the basin's largest remaining population of fall chinook salmon spawn. The landscape is largely intact and sheltered from development — but not because of environmental laws, conservation groups or Indigenous management. It has been closed off since 1943, when the occupying government seized 580 square miles and, in a matter of months, built experimental war machines that poisoned the ground so badly it's now the most contaminated nuclear site in the Western Hemisphere. This is the Hanford site.

Today, the Lalíik area is home to pygmy rabbits, burrowing owls and many other species — "the largest natural animal and plant community in the arid and semi-arid shrub-steppe region of North America," according to the Department of Energy (DOE), which oversees the site. But underground, it's a different story. Beneath the scattered buildings, nuclear waste seeps into the soil and groundwater in catastrophic doses. An online tracking tool reveals underground plumes of 10 different toxic chemicals and radioactive isotopes, ranging from fewer than 100 acres of subterranean uranium contamination to over 14,000 acres of tritium. Many plumes overlap, and some contaminants appear in multiple locations. Once they soak into the groundwater, they spread even faster, migrating to the Columbia River. In 2010, the DOE

Emily Washines, Yakama Nation tribal member and Columbia Riverkeeper board president.

discovered that, underneath one building, the cesium and strontium levels in the soil were "high enough that direct contact from a human would not be survivable." The DOE has to handle demolition carefully to avoid kicking up radioactive dust. This is also a hazard with wildfires, like the June blaze that burned 570 acres of the Hanford Reach, a buffer zone around the site that includes Lalíik. President Bill Clinton designated the Reach as a national monument in 2000.

During World War II, American scientists planned to use piles of graphite and uranium to mass-produce plutonium for nuclear weapons. They needed a remote site with access to electricity — which Hanford offered, via the Bonneville and Grand Coulee dams — and plenty of cold water to cool plutonium-producing reactors. Yakama elder Russell Jim summed it up: The United States determined that "the area was an isolated wasteland and the people were expendable." The U.S. government evicted the towns of White Bluffs and Hanford, giving farmers just 30 days' notice to abandon their ripening crops. The U.S. hastily built the world's first industrial-scale nuclear reactor — the B Reactor — along with racially segregated barracks and trailer camps for 48,000 workers and facilities that supplied them with 30,000 donuts and 16,000 cigarette packs a day. Not all workers knew exactly what they were working on, and even the scientists were unsure whether the huge reactor would work. They raced to outpace the Germans, with no thought for future cleanup. It took about 4,000 pounds of uranium from the Democratic Republic of the Congo to produce a single pound of plutonium; anything left over became toxic, radioactive waste. It's been poisoning the soil and groundwater ever since and will do so for years to come.

The plutonium went to Los Alamos, New Mexico, where Americans put 14 pounds of it into a bomb code-named "Fat Man," which they dropped on Nagasaki even though government officials knew the Japanese planned to surrender. At its peak, Hanford's nine reactors manufactured plutonium around the clock. By 1987, when the last reactor was decommissioned, Hanford had produced 74 tons of plutonium — about the weight of a fin whale, and enough for over 10,000 American bombs. Test detonations of Hanford-fueled bombs damaged ecosystems and communities in the Marshall Islands' Bikini Atoll and in Nevada.

Today, the 580-square-mile Hanford Site holds 56 million gallons of nuclear waste, much of it radioactive sludge stored in 177 sometimes-leaky tanks. The DOE has dismantled some reactors down to their cores, cocooned them in concrete and metal, and left them to decay for the next 75 years, when the federal government will re-evaluate whether full demolition is possible.

Since decommissioning the reactors, the DOE has entered into "cooperative agreements" with the Umatilla, Yakama and Nez Perce governments and consulted with the federally unrecognized Wanapum Band. Tribal involvement is mostly limited to commenting on federal cleanup efforts. But for years, tribal nations have fought for greater influence over the process, testifying before lawmakers and conducting research that corrects federal work. Tribal leaders say they have many questions about cleanup, and few answers from the agency.

An agency spokesperson told *HCN* that the DOE takes its trust responsibilities seriously and provides funding for tribal input about cleanup and land access. "Representatives from multiple levels of the Department meet and communicate with the tribes on a frequent and ongoing basis," the spokesperson said in an email. "Discussions range from formal government-to-government consultation between Tribal and Departmental representatives to staff-level discussions to enhance awareness and strengthen relationships."

This past June, for the fourth year, the Yakama Nation and Columbia Riverkeeper hosted Hanford Journey at Hanford Reach. "Oftentimes, when we talk about the river, or protecting the river, we're not around the river," said Washines. Hanford Journey is a cultural event designed to get people out on the land, reminding them it's more than just a radioactive wasteland. The two-day event includes a guided boat tour of the Reach and educational presentations about the clean-up. It continues the work of Jim, who helped found the tribal nation's Environmental Restoration Waste Management program, which labors to influence decisions about the cleanup process. Over the decades, Jim secured federal funding and testified before the U.S. Congress about the harms of Hanford's nuclear waste. The Yakama Nation and Columbia Riverkeeper have sent tribal youth to Los Alamos to learn more about their complicated inheritance. "It's going to be a big burden on all of us," said Jim in a 2013 talk at the University of Washington in Seattle. "You younger generation have to realize what you're going to be faced with, and perhaps your children and grandchildren also."

The boat tour starts on a Hanford Reach riverbank with a distant view of Lalíik, across a swath of sagebrush where Indigenous people once set up winter camps. Here they fished in the clear meandering bends of the Big River, made hunting equipment, climbed Lalíik for ceremony and gathered foods and medicines, some of which only grow at this site.

Around a riverbend, a few buildings came into view: reactors with their high cooling towers and the water intake for a pump that once funneled 75,000 gallons of water a minute through the reactors. Dan Serres, advocacy director at Columbia Riverkeeper, described the contaminants in the soil and water. Serres, a former member of the Hanford Advisory Board, which communicates community perspectives to agencies,

explained that contaminants include 387 acres of strontium-90, a radioactive isotope that, if ingested, becomes part of human bones like calcium, except that it causes bone cancer. There are also 4,083 acres of hexavalent chromium — "the *Erin Brockovich* chemical. Super, super dangerous." Cleanup is complicated by the variety of contaminant behaviors and half-lives. Some sink into the riverbed while others wash far downstream. Some will continue polluting for a few more decades, others for tens of thousands of years.

The federal government moves some of the most hazardous material, including plutonium and uranium, to places like Los Alamos. They store other waste, including the husks of nuclear submarines, in a massive landfill in the middle of the Hanford Site. Meanwhile, the DOE is emptying some of the leaky underground tanks, hoping to turn their sludge into a stable form of glass.

Current efforts also include "soil flushing," which involves flooding the soil with water to deliberately carry more toxins into the groundwater. Afterward, technicians "pump and treat" — extracting the groundwater, removing contaminants and injecting the treated water back into the aquifer. "You have to flush it to get it out. Otherwise, they stay there and slowly release into the groundwater," said Li Wang, a hydrogeologist with the Yakama Nation's Environmental Restoration Waste Management program.

But federal cleanup has been so slow and expensive that some government officials have suggested abandoning the site. Just days before the Hanford Journey, the DOE sent tribal leaders a new report listing three possible cleanup strategies, each with a 290-year timeframe — the agency's best estimate for how long it will take strontium-90 to decay to what they consider acceptable levels in the aquifer. "The upshot is, they're going to wait for 300 years," Serres said.

In 2023, the departments of Energy and the Interior signed a legally nonbinding memorandum of understanding, promising to support tribal nations' spiritual and cultural connections to Lalíik. Meanwhile, tribal nations and federal agencies are pursuing co-stewardship or possibly co-management agreements for the mountain.

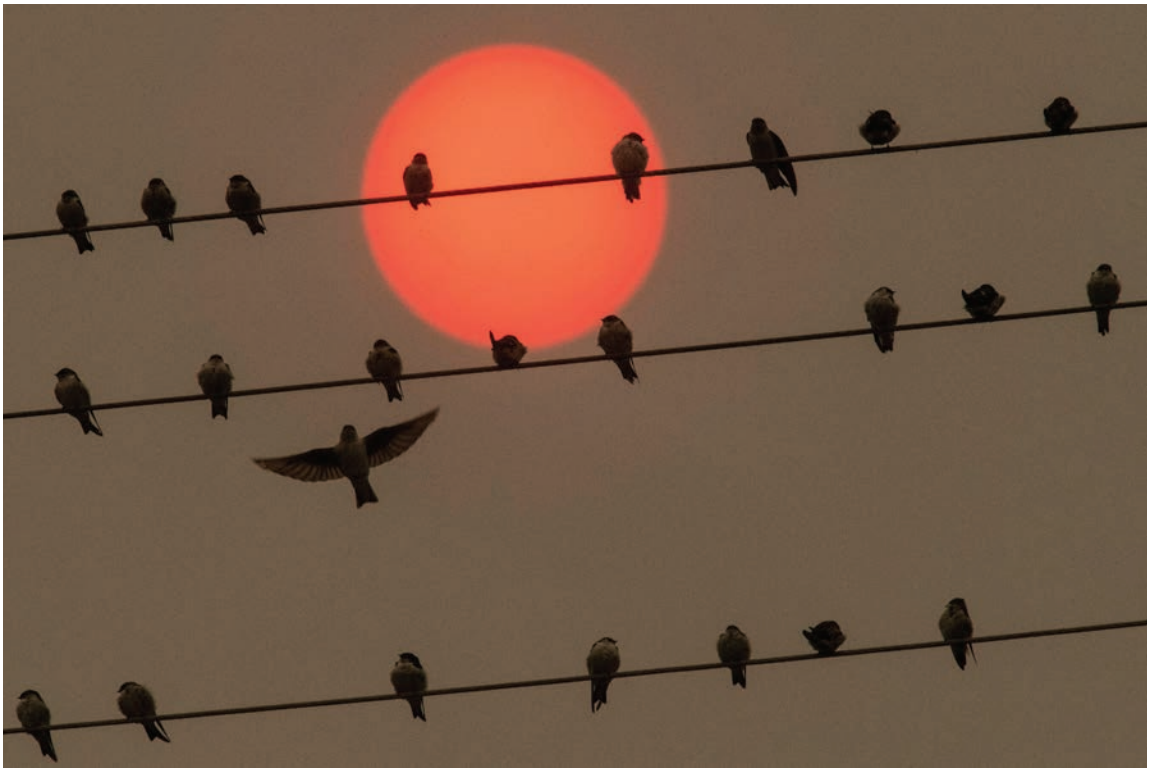
Every year, the tribal Environmental Restoration Waste Management program enlists interns to help solidify site cleanup as a multigenerational endeavor. Josephine Buck (Yakama), a geography student at Central Washington University, is interning on the cultural team to ensure that certain historic areas remain undisturbed during cleanup, preserving their natural serenity. "A big part of that is just trying to get the land back to close to what it was before," said Buck. "It'll never be the same, but to get it close." She said they hope to someday bring people back, noting that the land didn't become Hanford until fairly recently. The timeline for a safe return is uncertain, but tribal members recognize it will take generations.

Meanwhile, access to Lalíik and to the rest of Hanford Reach, which is not contaminated, is improving. Earlier this year, the Yakama Nation returned to Lalíik for the first tribal elk hunt there in 70 years — using Geiger counters to make sure the elk meat was safe. "The way that we reference the land is, more broadly, *ichi timinii tiichum iwa nimi,* which translates to 'this land is a part of me,'" Washines explained. She said her people's DNA is linked to the foods and medicines found here. "We are stronger by those resources, and we need to be sure that we always speak for them."

Jim passed away in 2018, at the age of 82. But his intergenerational work continues. "We have a mandate to preserve and protect our land and resources for the future generations," he said in a 2003 interview at Hanford with the Atomic Heritage Foundation. "And we do not look out just for the Yakama People. We look out for all people."

"The way that we reference the land is, more broadly, ichi timinii tiichum iwa nimi, *which translates to 'this land is a part of me.'"*

A banner hanging at Hanford Reach, where people gathered to connect with the landscape.



Swallows perch on utility wires over the Umpqua River near Elkton, Oregon, in 2020 as numerous wildfires burn across the state. **Robin Loznak**

REPORTAGE

Smoke alarm

A citizen science initiative is piecing together how wildfire smoke changes bird behavior.

BY KYLIE MOHR

LAST SUMMER, Carrie Brown-Kornarens spent 10 minutes every week observing birds in her Los Angeles backyard and at nearby Griffith Park. Brown-Kornarens, a ceramicist with a background in graphic design and animation, looked and listened closely for birds amid the coastal sagebrush, scrub, oak and walnut trees. She was already collecting data for a local raptor study, and she liked the idea of learning even more about birds and their behavior.

Just 10 minutes a week: That's all it takes for volunteers to help scientists like Olivia Sanderfoot, a postdoctoral scholar at the University of California, Los Angeles, understand how birds respond to wildfire smoke. Brown-Kornarens is one of over 300 volunteers who participated in Project Phoenix, a joint initiative of UCLA and the Natural History Museum of Los Angeles County, led by Sanderfoot. Following a successful pilot season in California last year, the effort is expanding into Oregon and Washington this summer, with data collection to run from July 1 to Nov. 30.

Birds are more sensitive to toxic gases and particle pollution than humans are. They're sometimes enlisted as early indicators of poor air quality — that's where the expression "a canary in a coal mine" comes from. But little is known about the specific effects of wildfire smoke and its fine particulates on bird health and behavior. In 2021, a U.S. Geological Survey study of radio-collared tule greater white-fronted geese suggested that smoke pushed at least four birds hundreds of miles out of their way: On average, the quartet's members flew an additional 470 miles to go around the smoke, doubling their migration time. Lead author Cory Overton said that a handful of waterfowl also detoured around the smoke plumes from Canada's wildfires in 2023. Longer migrations require more energy and more recovery time, which could hinder reproduction or even lead to death.

As wildfires grow in frequency and severity due to climate change and forest mismanagement, birds and other species are being forced to adapt. "Smoke impacts millions of animals, and yet we know so little about what their natural defenses are against that," said Jamie Cornelius, a biologist at Oregon State University who has collaborated with the Project Phoenix team. Air pollution from wildfires is eroding the improvements in air quality seen since the passage of the Clean Air Act in 1970. While summer smoke doesn't typically coincide with breeding seasons or spring migrations, that could change as fire seasons lengthen. "There's an urgency here to figure out more about what's going on and how we can help birds in this tumultuous time," Sanderfoot said.

Sanderfoot is studying behavioral changes in 20 species of backyard birds, including crows, song sparrows and two common hummingbirds. No

one really knows what to expect: Birds might hunker down, limiting their activity to minimize smoke exposure, or they might become more active, increasing their preening and feeding. They may show signs of stress, such as loss of appetite, or changes in vocalization, as in singing more or less — even engaging in aggressive behavior. Or they might leave the area entirely in search of cleaner air. Smoke might also attract other species like the black-backed woodpecker, which feeds on the insects that are drawn to smoke.

Project Phoenix volunteers are asked to record all the birds they see during a 10-minute survey each week at the same location. Knowing which birds are around when, and in what numbers, will indicate where they are and aren't when it's smoky. As the project progresses, researchers will use that basic information to learn more about different species' behavioral responses. Last year, Project Phoenix volunteers captured 170 hours worth of data at over 320 different sites throughout California.

Volunteers — including Westerners living outside the three primary states of California, Washington and Oregon — can sign up at any point during the study window. The project also provides resources to help novices identify birds; no previous bird-watching experience is required. "It was kind of too easy," Brown-Kornarens said. "I thought, am I missing something?"

Recruiting volunteers is about more than just collecting data, said Caitlin O'Neil, communications lead for the project and an undergraduate student at UCLA. "We also wanted to introduce birding and the benefits of it to people who maybe had never heard of it or never really thought about getting involved with it before," she said. Sanderfoot hopes to inspire a birder or two along the way. Bird-watching, she said, "has changed my life in a very powerful, positive way," becoming a meditative practice that has improved her mental health. "I just want to share that with other people."

In Oregon, Cornelius is trying a different approach to learn more about what birds do when it's smoky outside. Each summer, she travels to the region's smokiest areas to catch, tag and monitor common forest songbirds. Her team assesses the birds' fat and muscle tone and takes blood samples in order to measure stress hormones and immune responses. She also attaches small radio transmitters to finches to track the birds and document their heart rate, likely a good indicator for activity levels. As these data accumulates, her lab will use it to understand what's going on in the bodies and brains of birds in acrid air.

The summer of 2023 wasn't particularly smoky in California, so last year's data will serve as a baseline for smokier summers. Even so, Brown-Kornarens left her survey sites with a deeper understanding of the world around her. She learned the favorite cache spots of acorn woodpeckers and even found a great horned owl's nest. "It's learning more intimate things you wouldn't normally pay attention to," Brown-Kornarens said. She plans to volunteer with Project Phoenix again this summer, adding more observations to a growing dataset.

This story is part of High Country News' *Conservation Beyond Boundaries project, which is supported by the BAND Foundation.* **hcn.org/cbb**

POEM

Morning Mist

By Arthur Sze

1

Mist veils the apricot branches and trunks—
magpies and crows spread across the grass in silence—

2

White flags run uphill
from the street to a neighbor's construction site—

in this near distance, the flags are tiny flags of surrender—

3

No one can see a line that divides "ours" from "theirs"—
no one shouts, whines, or threatens—

4

Looking at the lines in his palms, he does not prognosticate
but sees a history of struggle—

along the sloping driveway,
a cluster of daffodil shoots—

5

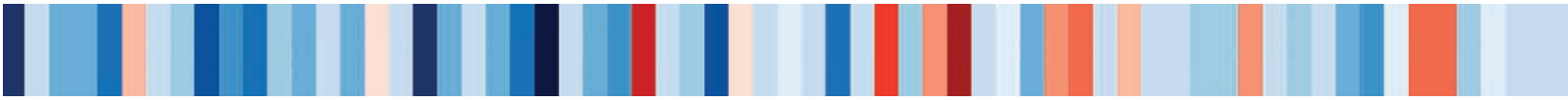
As he inhales, gratitude runs through his fingers—
exhaling, he notices mailboxes on posts—

6

Remnants of hail, white, over grass—
sunlight comes and sounds like copper chimes—

WEB EXTRA Listen to Arthur Sze read his poem at **hcn.org/morning-mist**.

IT'S GETTING HOTTER Each climate stripe represents the temperature in the U.S. averaged over the year between 1895 and 2023.



1895

FACTS & FIGURES

The inequity of heat

Extreme heat doesn't discriminate; the ability to escape it does.

BY JONATHAN THOMPSON | DATA VISUALIZATION BY JENNIFER DI-MAJO

ON THE LAST DAY of June 2023, during the hottest summer on record — though perhaps the coolest we're likely to see this century — the temperature in Phoenix hit 110 degrees Fahrenheit. And for the next 31 days, it kept meeting or exceeding that level, finally cooling off to a brisk 108 degrees on July 31.

Given these scorching numbers — and the fact that heat starts affecting a healthy person's body and mind at about 86 degrees — it is heartbreaking, but not surprising, that at least 645 people died of heat-related causes in the greater Phoenix metro area last year.

Extreme heat, exacerbated by human-caused climate change, doesn't discriminate; it kills more people than all other natural disasters combined. Still, a closer look at what happened in Phoenix last year reveals that high temperatures are especially hard on the less affluent: 46% of those who died lacked housing altogether, while all the indoor deaths occurred in homes, apartments or mobile homes that lacked air conditioning, allowing the average ambient temperature to reach 102 degrees.

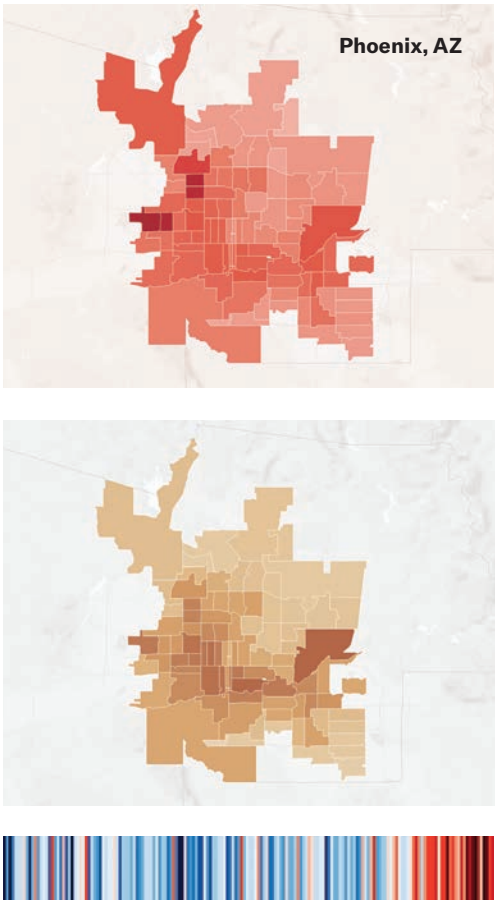
That's because it's not just heat that's at fault here. As a 2021 report from the Arizona State University's Knowledge Exchange for Resilience put it, "It is rather the lack of opportunity to mitigate the heat and stay resilient to it." Unfortunately, that ability is distributed unequally among communities of different income levels, race and ethnicity.

For most upper-income, white Phoenicians, the searing heat is a mere inconvenience, experienced briefly as they sprint from air-conditioned cars to air-conditioned homes or businesses. It may elevate their monthly utility bills, keep them from their outdoor workouts, and provide something to gripe about over a cold one, but it is not an existential threat.

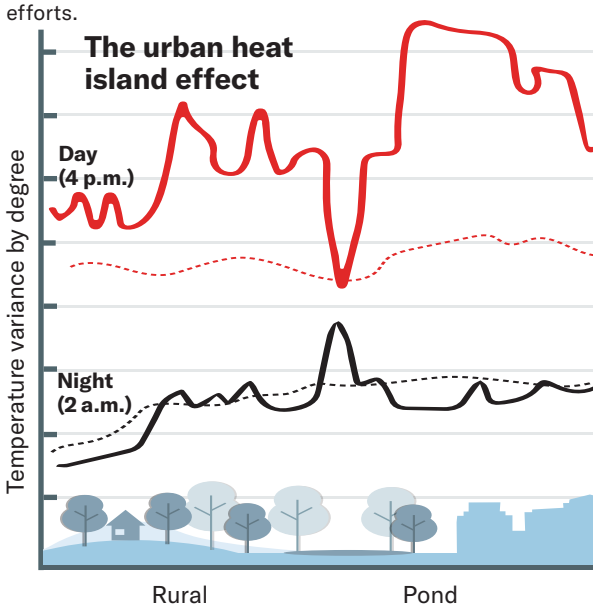
But for those who lack a car or a home, or live in shoddily insulated mobile homes and can't afford air-conditioning units or the power to run them, this kind of intense, sustained heat — which never quite eases up, even late at night — is a constant adversary, threatening them at nearly every hour of the day. An unhoused person who faints or falls or simply sits down for a minute risks second- or third-degree burns from scorching concrete. Many lower-income people live in homes and neighborhoods that are ill-equipped to fend off heat-related illness and lack the shade-giving trees or public green spaces that ease the urban heat-island effect.

Heat inequity plagues every Western city, from Portland to Denver to Sacramento, and there's a clear and disturbing alignment between income levels, race and ethnicity and surface temperatures and vegetation density. Still, there are ways to mitigate heat's impacts, from opening more cooling centers and finding homes for unhoused folks, to planting trees and covering streets with cool pavement. Homes need proper insulation, reflective roofs and efficient electric heat pump air-conditioning units. With temperatures rising, it is literally a life-or-death situation.

Maps show heat and health burden *(top)* and percentage of residents in poverty *(bottom)* for selected ZIP codes.



PHOENIX has a goal of creating 100 "Cool Corridors" by 2030 by planting some 20,000 trees across 24 neighborhoods and constructing shade structures, drinking-water stations and other heat-mitigation efforts.



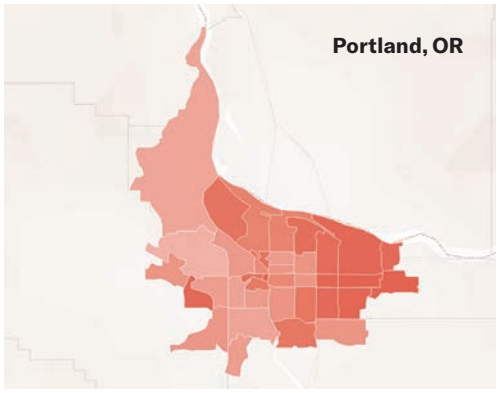
2023

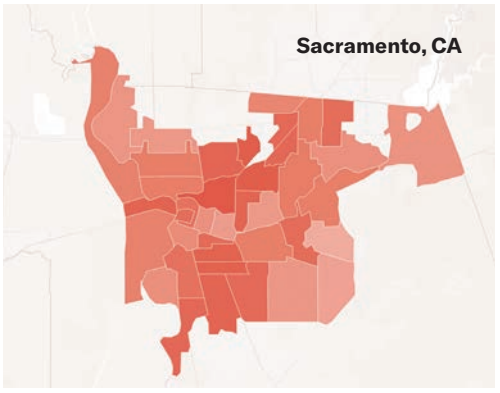
Overall heat and health index percentile

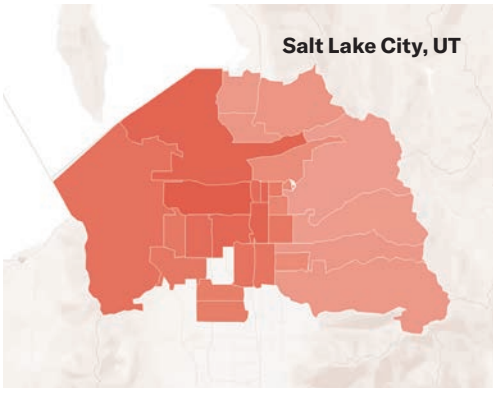
0 100

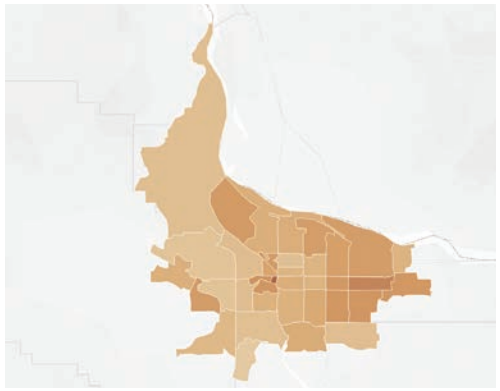
Percent of people below 150% poverty estimates

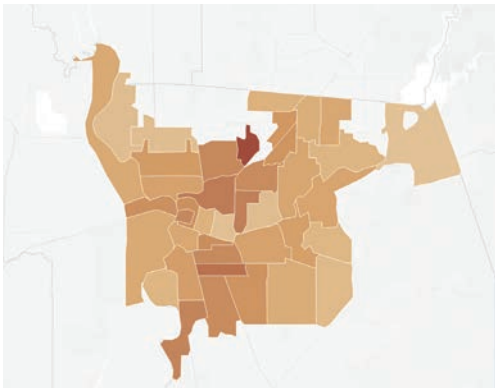
0% 100%

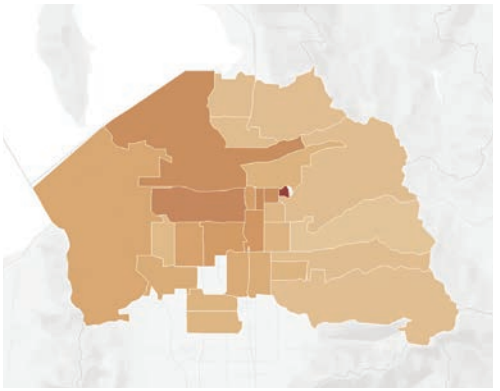








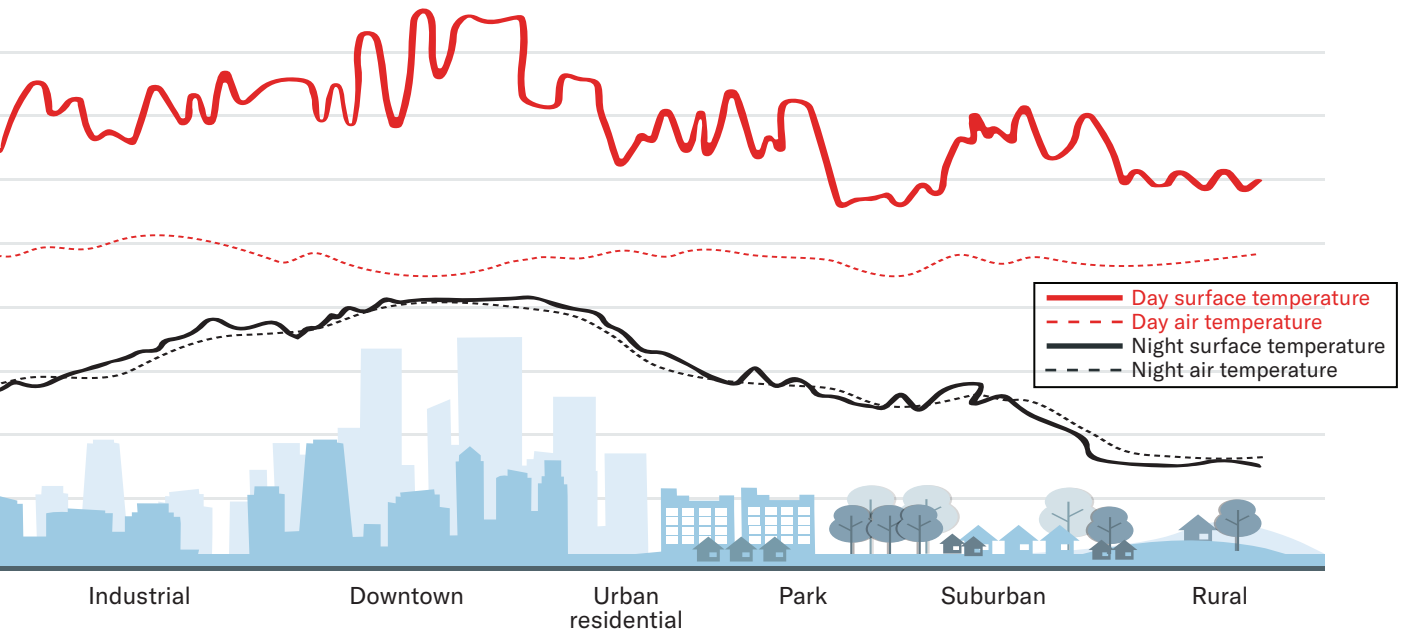




The Cooling **PORTLAND** program is working to get efficient heat pumps and cooling units to low-income residents, and the city opens cooling centers when a heat threshold is met.

SACRAMENTO's land-use plan prioritizes planting urban vegetation and building green infrastructure, especially in transit corridors and neighborhoods with high populations of vulnerable people.

SALT LAKE CITY's Urban Forest Action Plan calls for planting 1,000 trees annually in lower-income west side neighborhoods to tackle the heat island effect.



SOURCES: Centers for Disease Control and Prevention, Environmental Protection Agency, Arizona State University Knowledge Exchange for Resilience, Maricopa County, Multnomah County, "Dimensions of Thermal Inequity: Neighborhood Social Demographics in the Southwestern U.S.," by John Dialesandro et al.

REPORTAGE

A deer corridor through sprawl

How one fast-growing Utah exurb is trying to preserve a path for migrating ungulates.

BY BEN GOLDFARB

EVERY SPRING, AROUND 2,000 mule deer traipse through Utah's Cedar Valley, a broad, sage-dotted flatland some 40 miles south of Salt Lake City. The herd winters in the Lake Mountains, nibbling sagebrush and other forage, and summers around the Oquirrhs, whose green shoulders jut from the valley floor to the north. The animals commute between the ranges via two general routes, following washes and ridgelines and their own ancestors' trails. They have likely made this journey for centuries, perhaps millennia, the culture of migration passing through the generations like language.

Modern obstacles now threaten this timeless trek. The herd's passage takes it through Eagle Mountain — 50 square

Cars speed past wildlife fencing just west of Eagle Mountain, Utah. **Jordan Utley**

miles of sprawling exurb, composed mostly of subdivisions layered atop former ranchlands. Since its incorporation in 1996, Eagle Mountain has exploded from just 250 lonely souls to more than 50,000. It's now on track to surpass 150,000 by 2060, making it one of the fastest-growing cities in Utah.

As Eagle Mountain has grown, its deer have suffered. Subdivisions are encroaching on their habitat, and swelling traffic kills around a hundred every year. It's a common crisis in the West, where, in 2016, researchers calculated that a football field of open space succumbs to development every 2.5 minutes. Mule deer are among the primary victims of this creeping habitat loss. Wyoming's herd has declined by nearly half over the last three decades; in Colorado, researchers have found that residential development is worse for fawn survival than fossil fuel extraction. In housing humans, we evict deer.

Eagle Mountain is aware of the problem. Few Western municipalities have done more to incorporate ungulate movement in their planning. Prodded by a scrappy local group called the Eagle Mountain Nature and Wildlife Alliance, the city has written deer-friendly ordinances into its zoning codes, negotiated conservation deals with would-be builders, and, most ambitious of all, sought to permanently protect the herd's narrow migration corridor. "When this started, the mayor said it was a dream," Bettina Cameron, the Alliance's director, told me. "We've overcome so many different obstacles."

These efforts have attracted notice. "So many towns are retroactively trying to fix situations like this, and to get out front before development fills it in too much is a neat concept," said Matt Howard, natural resource manager at the Utah Department of Transportation. Whether Eagle Mountain can continue to grow without sacrificing its most charismatic fauna, however, is far from certain. The stakes are high: If the city succeeds, it could provide a blueprint for other Western towns trying to strike their own precarious balance between development and conservation. If it fails, the deer will suffer the consequences.

ONE SPRING MORNING, I drove to Eagle Mountain to see the corridor for myself. I joined a group that included Cameron, Mayor Tom Westmoreland and municipal wildlife biologist Todd Black. We headed up a promontory called Turtle Hill for a bird's-eye view of the city — cul-de-sacs, pickups in driveways, vivid emerald lawns. Million-dollar homes sat next to tumbleweed-strewn lots. Cameron gestured toward a vast swath of undeveloped land owned by a patchwork of state agencies and private developers and explained that it was slated for large residential developments serviced by a new highway. "This is going to have 4,500 homes on it," she said.

Cameron is part of the city's rapid growth. A former member of New York's Air National Guard, she moved to Utah in 2008, seeking open space. She and her husband came to Eagle Mountain in 2018, the same year the Utah Division of Wildlife Resources began fitting mule deer with satellite tracking collars, documenting the routes by which they meandered through town. A year later, Cameron read about the state's research, recalled the deer that roamed seasonally across her own five acres, and realized she'd inadvertently bought property near a migration route. She and like-minded neighbors formed the Alliance and began urging the city to protect deer movement. "We started looking at county maps and saying, 'OK, where can they go?'" she recalled.

At first, it seemed hopeless: Valuable lots pressed against the migration route everywhere, and a maze of highways and residential roads fractured the corridor. Nevertheless, the Alliance found a relatively receptive audience in city government. In 2018, Eagle Mountain banned construction along ridgelines and seasonal washes, part of a broader effort to keep a third of the city as open space. "We're trying to create something unique, and not just another urbanized development," said Mayor Westmoreland. "If we can have an equal amount of land dedicated to outdoor recreation and wildlife, that just seems like a pretty ideal place to live."

In 2021, the city hired Black, a research scientist who'd spent his career studying deer movements at Utah State University, making Eagle Mountain among the only Western cities with a municipal wildlife biologist. Black knew that deer wandered into subdivisions seeking ornamental plantings and gardens, running afoul of landowners and cars; if too many deer strayed, the migration could dissolve. He and others began to design a vast chute, composed of more than 20 miles of 8-foot-high fencing, that will someday guide deer through Eagle Mountain. Around dense subdivisions, the funnel will narrow to around 330 feet to hustle deer through; in other places, it will expand to give them space to feed and rest. Wildlife corridors are often abstract, loosely defined pathways, but Eagle Mountain's will, in theory, be a piece of solid infrastructure. "I tell everybody to picture a mule deer luge that runs through the city," Black said.

The deer luge is years from completion, as Eagle Mountain cobbles together funding from the Mule Deer Foundation and other sources. ("Sugar daddies welcome," Black half-joked.) In partnership with the state, though, the city has already installed some crucial components, like a stretch of deer-proof fencing along State Route 73, a historic collision zone. At a gap in the fence, where the corridor bisects the highway, a roadside infrared detector flashes an alert to drivers whenever deer approach. Eventually, the warning system will be replaced by an underpass, one of nearly a dozen proposed wildlife passages. In the meantime, highway roadkill has already plummeted, Black said.

At times, the corridor's infrastructure struck me as almost surreally proactive. From Highway 73, we drove to the foot of an adjacent hill, where an 8-foot fence cleaved the brush. On one side of it, Black explained, the land was protected by conservation easements and would remain deer habitat in perpetuity; on the other, a development agreement ensured that houses and residential roads would eventually bloom. Earlier, Black had averred that the city was trying to "put the horse before the cart," and this preemptive fence seemed to epitomize that philosophy. The barrier ran like a zipper across the land, dividing nothing from nothing, waiting patiently for the subdivision that would justify its existence.

THAT SUBDIVISION, and more, are coming. In Eagle Mountain, signs advertised

One of the many new housing developments in Eagle Mountain, Utah. The city's population is projected to triple by 2060. **Jordan Utley**

growth around every bend: Master Planned Communities, We Buy Land, Lots Available, New Homes, New Builds, Now Selling. A Tyson Foods billboard thanked locals for welcoming the company's new beef and pork plant. Meta had opened a data center, and Google planned to follow suit.

As Eagle Mountain grows, deer will shape its expansion. The city's transportation plan requires wildlife crossings for new roads along the migration route, and its planning code includes Wildlife Corridor Overlay Zones — stretches of habitat where developers must install animal-friendly fencing, minimize artificial lighting, avoid construction during deer migration and bird-nesting seasons, and abide by other restrictions. Along the herd's most critical migration pathway, development is almost entirely proscribed.

Of course, it's one thing to protect deer on paper, and another to foster private-land conservation during a real estate boom. Both the city and the Alliance are leery of infringing on property rights, which many Utahans consider sacrosanct; as Black put it, "The last thing I want is for it to be a take." The city prefers to deploy carrots rather than sticks — courting landowners, many of whom have generations-deep roots in the valley, and offering conservation incentives. One developer donated 55 acres to the city just before her death. Others have agreed to density transfers, ceding land within the corridor in exchange for permission to build houses with smaller road frontages or squeezing more homes into other developments. (None of the developers contacted for this story responded to a request for comment.)

Not everyone is eager to accommodate ungulates. The city has also been forced to make concessions to builders — including, in some cases, amending the proposed deer luge by routing animals up to a quarter-mile from their habitual trails. "If we can make it look as comfortable as we can to them, I think it's going to work," Jeremy Anderson, Utah regional director for the Mule Deer Foundation, told me. Nonetheless, it's a suggestion that wildlife must still compete with development. "I'm always afraid that I'm going to miss something that's going to destroy this corridor," Cameron said.

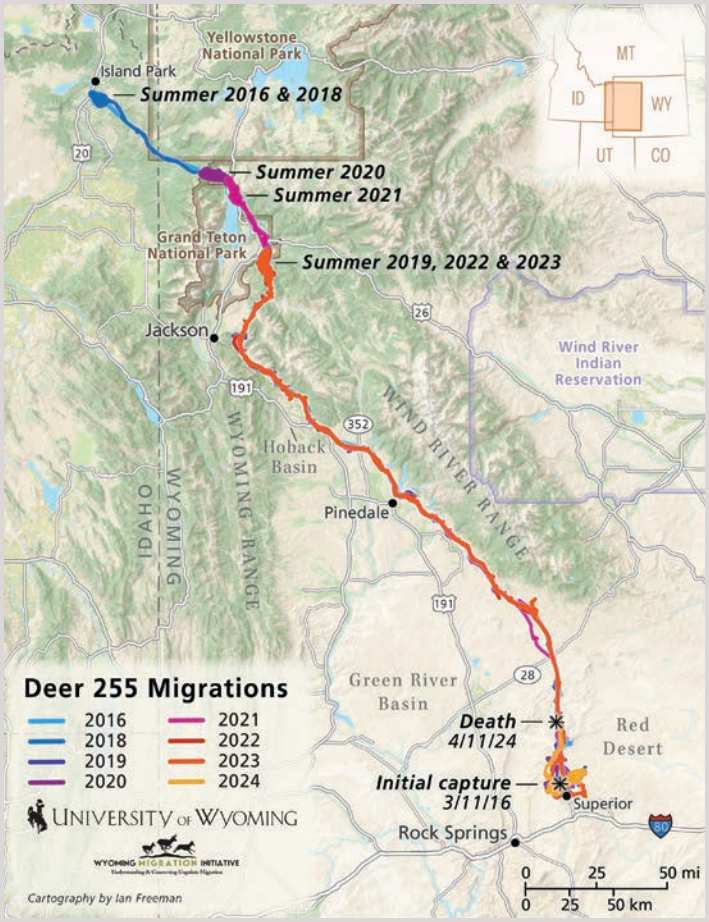
And some of the project's toughest challenges still loom. At one point, we passed two undeveloped parcels, totaling 320 acres, owned by Utah's most powerful political force, the Church of Jesus Christ of Latter-day Saints. Those lands, smack in the middle of the deer corridor, are protected by a U.S. Department of Agriculture conservation program through 2030, but the church has signaled its interest in building on the lots once that deal expires. "They're the only landowner I haven't had the opportunity to sit down with yet," Black said carefully.

The deer luge struck me as a perfect Anthropocenic conundrum — both a wildly innovative conservation initiative and a reminder of how we've squeezed nature in the contemporary West. "I applaud Eagle Mountain for what they're trying to do, but I feel very sad when I go there, and see that we're telling wildlife they can only go through this narrow strip now," Patricia Cramer, a transportation ecologist who's consulted with Utah's agencies, told me later. But what were the alternatives? As Cramer put it, the paving-over of deer migrations is "the story of the West." Eagle Mountain's plan represents a different and creative narrative, one in which humans made space, however circumscribed, for wild creatures.

At the tour's end, we drove into a subdivision at development's bleeding edge: houses still clad in their Tyvek epidermis, yards crawling with front-loaders, a gated community with nothing behind the gate. Beyond lay the sere hills of Camp Williams, a 24,000-acre National Guard training site in the Oquirrh Mountain foothills, where the deer summer. Between the camp and the subdivision ran Black's fence, shepherding deer away from the lawns and gardens that would someday blossom here. The animals were out there somewhere, and I hoped we'd glimpse one — it would make for a powerful juxtaposition, these ancient nomads set against modernity's trappings. The deer, however, didn't show.

This story is part of High Country News' *Conservation Beyond Boundaries project, which is supported by the BAND Foundation.* **hcn.org/cbb**

Deer 255 with her twin fawns at a fall 2020 migration stopover in the Prospect Mountains, Sublette County, Wyoming. **Courtesy of Benjamin Kraushaar / Wyoming Migration Initiative**



REPORTAGE

The end of a journey

Deer 255, a mule deer that migrated farther than any other deer known to science, died in Wyoming's Red Desert around noon on April 11. According to researchers with the Wyoming Migration Initiative, the evidence shows that she was just three days into her yearly 240-mile migration from southwest Wyoming to central Idaho when she was killed by a predator, most likely a mountain lion.

At 10 years and 10 months old, Deer 255 had spent years leaping fences, crossing highways and avoiding predators in search of nourishing food for herself and her fawns, which included seven sets of twins. She was especially skilled at eluding researchers in the field, and migration initiative scientists recalled her as the wiliest deer they had studied.

To the many humans who followed her travels online, she exemplified the extraordinary endurance — and vulnerability — of the deer, pronghorn and elk that sustain themselves and their herds by migrating hundreds of miles every year.

Deer 255's herd mates completed their spring migration, and many spend the summer south of Grand Teton National Park in Wyoming. Their migration routes, like those of most other migrating mammals, still await permanent protection. *—Michelle Nijhuis*

This story is part of *High Country News*' Conservation Beyond Boundaries project, which is supported by the BAND Foundation. **hcn.org/cbb**

President Joe Biden at the Intel Ocotillo campus in Chandler, Arizona. Intel received the largest investment under the Biden administration's CHIPS Act. **Cassidy Araiza / Bloomberg via Getty Images**

REPORTAGE

A silicon rush in the West

Is the region ready for more of the world's thirstiest technology?

BY ERIN X. WONG

ALONG INTERSTATE 17, between Phoenix and the satellite community of Anthem, Arizona, a gleaming construction site stretches across 1,100 acres of open desert. Here, the Taiwan Semiconductor Manufacturing Company (TSMC) is building a factory that will produce some of the world's most advanced semiconductors — hardware essential to U.S. national security and most modern technology.

Chris Camacho, president and CEO of the Greater Phoenix Economic Council, spoke enthusiastically about the project's potential. "We're at the forefront of the next 30 years of massive transformation," he said. "Energy, climate tech, batteries, EVs, quantum computing, health-care diagnostics — at the center of all of this are (semiconductor) chips."

Semiconductors, or microchips, help computers process and store information. Until the early 1980s, the U.S. dominated global microchip production, but as manufacturing shifted overseas, the technology advanced and began to require more specialized expertise and equipment to produce. Today, the U.S. depends on other countries for the key components necessary for cutting-edge chips, making the industry uniquely vulnerable to supply shocks, such as those caused by the pandemic. That's why a bipartisan coalition in Congress passed the 2022 CHIPS and Science Act, which unlocked billions of dollars to boost domestic production, much of which will flow directly to cities in the Western U.S.

In 2022, the U.S. produced 10% of the world's semiconductors. Now, it aims to make 20% of the world's most advanced chips by the end of the decade. As of mid-June, the Biden administration has signed preliminary deals with 10 foreign and domestic chipmakers totaling $29.5 billion in federal funding from the CHIPS Act. In the West, up to $6.6 billion will go to three new TSMC plants, while another $8.5 billion is earmarked for the American chipmaker Intel's operations in Oregon, New Mexico, Arizona and elsewhere.

"It's exciting," said Wayne Johnson, county manager of Sandoval County, New Mexico, where Intel plans to use public funds to upgrade its manufacturing facilities. "It creates opportunity, it creates jobs, it creates the ability for us to provide better (municipal) services."

Those economic opportunities, however, will be accompanied by resource demands. Semiconductor manufacturing is notoriously water- and energy-intensive, and the more advanced the semiconductor, the more water is typically required. One industry report commissioned by the Arizona Commerce Authority estimated that to produce 16% of the world's semiconductors, the U.S. would need an additional 46 billion gallons of water and 38 million megawatt-hours of power per year.

Across Arizona, water resources remain tight. Roughly 40% of the state's water comes from the Colorado River, and drought and rising temperatures have reduced that supply, forcing officials to cut the amount of water available for agriculture. In 2023, Arizona declared a moratorium on new housing developments that rely solely on groundwater and lack an assured long-term water supply.

The first of the three Phoenix-area TSMC factories will use an estimated 4.75 million gallons of water a day, approximately enough to supply 2% of the city's housing units, according to *The Arizona Republic*. The company said it plans to reclaim most of the water it uses; the new site is expected to meet 65% of its water demand with an in-house

recycling system.

Phoenix draws most of its water from the Colorado and other rivers. To meet future needs, including anticipated demand from TSMC, city water resources management advisor Cynthia Campbell said Phoenix plans to increase conservation measures and build an advanced water purification plant that could generate 50 million to 80 million gallons of potable water per day. The city also supports the expansion of a dam on the Verde River, a project that would require Congressional approval.

The three TSMC factories are projected to create 6,000 permanent jobs and anchor a new economic corridor in northern Phoenix, generating significant property and sales tax as well as rate revenue for utilities. Sarah Porter, director of the Kyl Center for Water Policy at Arizona State University, said the economic boost will make it easier for the city to develop the water purification plant, which she called "a major project that will enable the city to, in the end, have much more flexibility with respect to the Colorado River."

On the outskirts of Phoenix and Chandler, Arizona, where Intel is expanding its own semiconductor operations, cities and towns that have a greater reliance on groundwater may have a harder time securing additional water sources. If they hope to cash in on the anticipated boom, they will need to invest in a wider variety of water solutions, such as leasing river water from tribes.

Several hundred miles northeast, in Sandoval County, New Mexico, county officials are more concerned with housing than water supplies. According to the Semiconductor Industry Association, chip manufacturing boasts a job multiplier of 6.7, meaning that every job in the industry indirectly supports 5.7 other jobs. If, as anticipated, the CHIPS Act helps create 700 new jobs at Intel facilities in the city of Rio Rancho, those positions could generate roughly 4,000 jobs in other sectors. Even if the company hires a significant number of local workers, as it has in the recent past, housing demand is likely to grow.

The average home value in New Mexico rose nearly 50% between the start of 2020 and April 2024, according to Zillow. In Sandoval County, the increase was closer to 60%, from $228,000 to $359,000. The county is partnering with developers to boost its supply of affordable housing, including a new 240-unit apartment block along Highway 550.

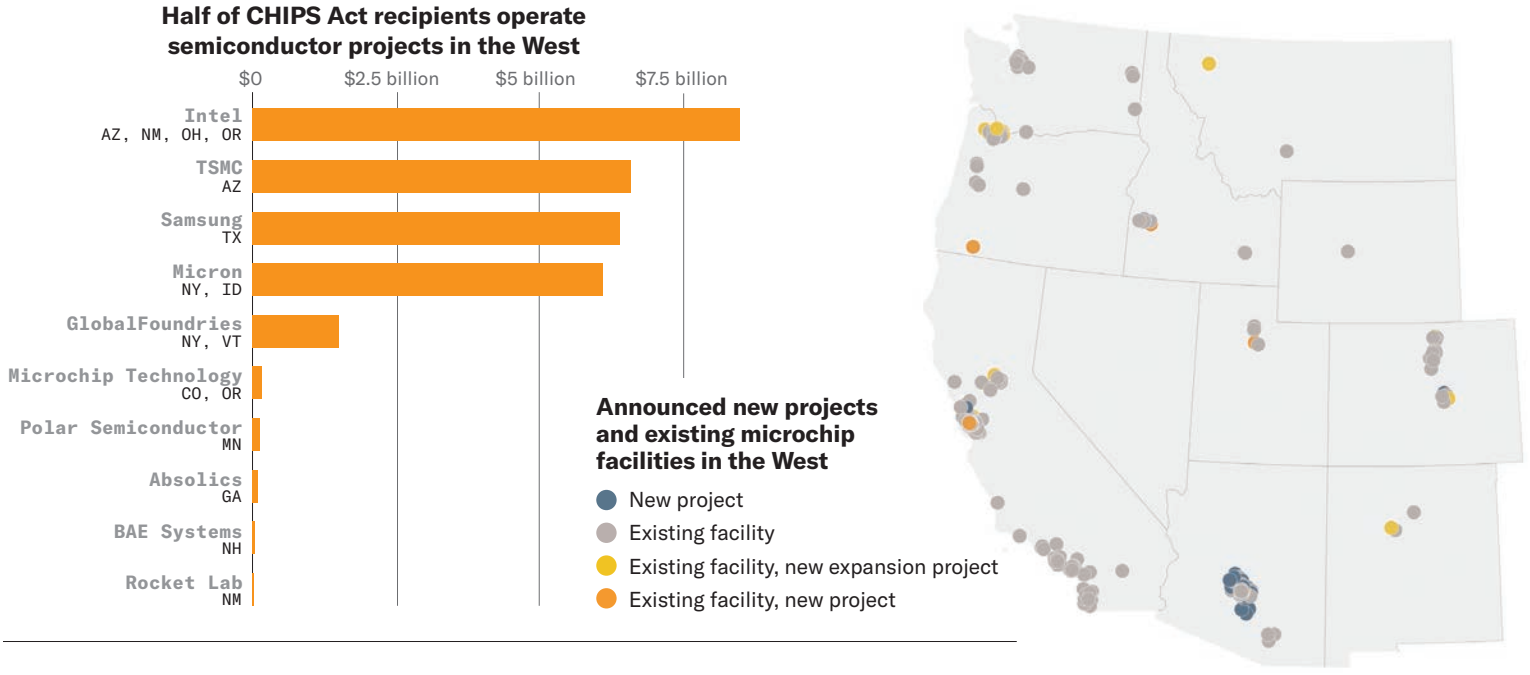
County Manager Johnson hopes that Intel's expansion will attract more technology manufacturers to the county. "(Intel) has, in many ways, made Rio Rancho possible," Johnson said. "The CHIPS Act just makes that a little bit easier for us going forward to remain competitive in the global market."

Elsewhere in the West, the semiconductor manufacturer Micron plans to spend $15 billion on a new memory chip facility in Boise, Idaho. That private investment, the largest in the state's history, will be bolstered by the $6.1 billion the company received from the CHIPS Act. Another chipmaker, Microchip Technology, has signed a preliminary agreement with the U.S. Department of Commerce that would provide $162 million in federal funds for the expansion of its manufacturing sites in Oregon and Colorado.

The process of deciding where to allocate CHIPS Act funding began in early 2023. White House officials evaluated proposals for their commercial viability, workforce development plans and potential to meet national security objectives. They also examined companies' plans to conserve water and maximize clean energy use, though all projects will need to undergo a full environmental impact review.

TSMC may face a rocky road in the Phoenix area: The company reportedly clashed with an Arizona construction union and struggled with cultural differences between its Taiwanese management and American employees. In January, TSMC pushed back the opening of its second factory to 2027 or 2028; its first will begin production in 2025. But local institutions ranging from community college training programs to Mandarin language schools have mobilized to support the new arrivals.

"There's pride in us resurrecting an industry that has been in Arizona really since our inception, post-World War II," Camacho said. "Now we're back as semiconductor central."



REPORTAGE

The land of accessible child care

New Mexico has used oil and gas revenues and COVID funds to become a leader in early childhood education.

BY SUSAN SHAIN
PHOTOS BY ADRIA MALCOLM

AFTER GEOVANNA Losito's son was born in the spring of 2021, her mother took care of him while Losito worked remotely. But as her son grew, so did Losito's worries.

Losito knew that soon, her mother, who is disabled, would no longer be able to pick her son up. And Losito knew that soon she would have to resume commuting one hour each way from her home in Albuquerque, New Mexico, to her government job in Santa Fe.

What Losito, 33, didn't know was how she'd be able to pay for child care so that she could continue working. Losito, who supports her son and her parents — her father is a disabled veteran — was always broke at the end of the month but still earned too much to qualify for public assistance.

Then, in August 2021, New Mexico dramatically expanded its child-care subsidy program to include families earning up to 400% of the poverty line, making roughly half of the state's children eligible. For a family of four, like Losito's, that now includes households earning up to $124,800 annually. The state has also waived all co-pays, making child care free for qualified families.

Approximately 70% more New Mexico families are now eligible for free child care, according to the Urban Institute. When coupled with its other new policies — including permanent funding and higher provider pay — advocates say New Mexico is a model in early childhood education.

"The guiding star of the thing is 'How can we make this as free as possible for as many people as possible?'" said Hailey Heinz, deputy director of the Cradle to Career Policy Institute at the University of New Mexico. "It's as close as any states have gotten to trying to get at universal (coverage)."

NEW MEXICO'S DRIVE to be the best came from its frequent ranking as the worst: Earlier this year, the Annie E. Casey Foundation once again named it the worst state for child well-being, according to 16 different indicators.

"People feel acutely that there is an urgent problem to be solved," Heinz said. "If we're going to get serious about the well-being of children, one way to do that is to get really serious about the early years."

Research shows that interventions targeted at ages 0-5 are both critical and cost-effective. One Nobel Laureate economist found that early childhood programs can improve outcomes for disadvantaged children in education, health, income and behavior, ultimately resulting in a 13% return on investment.

So New Mexico advocates zoomed in on those first five years. With financial help from some large foundations, they began to drum up public support for early childhood policies. Studies and task forces and focus groups followed.

Teacher Sabrina Moquino works with students during circle time in a pre-K class at the First Presbyterian Church of Santa Fe's Child Development Center in Santa Fe, New Mexico. With the new state child-care program, the center no longer has to cap the number of students that receive subsidies (*left*). A student goes down a slide in the playground (*below*). Learning tools are displayed on a shelf in a pre-K class (*bottom*).

After years of work, the state's voters elected Gov. Michelle Lujan Grisham, D, on an early childhood platform in 2018. She quickly established the Early Childhood Education and Care Department, which brought all the state's programs under a single umbrella. (Few Western states have similar agencies.)

To head the department, Lujan Grisham tapped Elizabeth Groginsky, who had previously helped turn Washington, D.C., into an early childhood leader. Groginsky "came in with so much knowledge," Heinz said, and a "really thoughtful, smart, bold vision for how to pull lots of different policy levers."

Then COVID-19 hit, sparking a national reckoning on the importance of child care — and unlocking federal money that enabled states to experiment. "New Mexico happened to be primed in many ways from all these years of grassroots advocacy," Heinz said. "And ready to go big in ways that other states weren't."

One of the ways that it went big was with money — specifically, money that would continue when COVID relief funds ran out.

There was the Early Childhood Trust Fund, established just before the pandemic, which receives a small percentage of the state's budget surpluses. Then, in 2022, 70% of New Mexican voters supported a constitutional amendment that dedicated a portion of the Land Grant Permanent Fund, the state's largest educational endowment, to early childhood.

While the principal in both investment funds comes primarily from fossil fuels, as does roughly a third of the state's recurring revenue, the accounts are insulated from that industry's volatility. In boom years, the funds get padded; in bust years, they still generate a return on their investments. "It's forward-looking in that it contemplates a future in which we won't have as much oil and gas money as we do now," Heinz said. In the meantime, high oil prices have helped the trust fund balloon from $300 million to more than $5.5 billion in just four years.

Heinz acknowledged not every state has such resources, but added: "Lots of oil and gas states are not choosing to invest this money in children. That, I think, is important to highlight."

THOUGH THE FREE child care gets the most attention, some of New Mexico's biggest changes have been on the provider side.

Previously, when a provider accepted a child-care subsidy, the state reimbursed them at a rate based on what the average area day care charged. But advocates say that amount rarely covered the true cost of business, leading some providers to refuse or limit subsidies.

So, in 2021, New Mexico followed D.C. and became the first state to base its subsidy reimbursement rates on the actual cost of providing child care. Its formula includes rate increases for quality, meaning that centers with lower staff-to-child ratios receive higher reimbursements.

Anne Liley, the director of First Presbyterian Church's Child Development Center in Santa Fe, said that reimbursement rates for her center, which has the highest possible quality rating, have nearly doubled since the changes took effect. She used to get $800 per month per toddler; now she gets $1,500, which is more than her center's private pay tuition of $1,250.

As a result, Liley no longer has to cap families with subsidies at 10% of her total client base. "We don't care if you're paying private tuition or if you're getting tuition assistance," she said. "This is a business model that finally makes sense."

The updated reimbursement rates, based on child-care workers earning at least $15 an hour, could also boost equity in an industry that has historically relied on the free or underpaid labor of women, mainly women of color, said Kate Noble, president and CEO of Growing Up New Mexico, a nonprofit organization. Nationally, infant and toddler teachers earn an average of $10.86 an hour, according to the Center for American Progress, while more than a third of child-care workers are women of color.

By increasing wages, policymakers hope to generate interest in early childhood careers and thereby help ease worker shortages. "The sector is strained," Noble said. "To pretend that it's anything different would be false." She and other advocates want the state to ramp up capacity through workforce development and even more robust funding.

Like most New Mexico parents, Losito, the Albuquerque mom, wasn't involved in the behind-the-scenes policy talk. One day, she just got an email informing her that she might qualify for a child-care subsidy. Her son now has full-time day care, at no cost to her. New Mexico's new program, she said, "is how we can afford to have a normal life."

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Memories of summer road trips

It's summertime, meaning it's time to hit the road. On a recent jaunt to an outdoor music show, some friends and I recalled childhood family meanderings around the West, often un-seat-belted in the back of a 1970s gas-guzzler.

My family rumbled around in a sky-blue International Scout Traveler that my brother and I dubbed "The Beast." Hours spent staring out the window, sketching clouds, collecting russet and copper-green sand in southern Utah, camping out in our big green canvas tent. ... I'll never forget my mother's reaction when she caught me catching lizards near Lake Powell — using her pillowcase.

My daughters remember traveling in the back of our Subaru Forester "Glenda" (named for the Good Witch, of course), listening to the *Hamilton* soundtrack on repeat. (Chloe still knows every word.) Once, camping in Yellowstone, I got mosquito repellent in Lucia's eyes. Reacting like the trained wilderness EMT I was, I quickly washed it out using the nearest water bottle, which turned out to be holding Gatorade. Was that the same trip I spilled canned salmon on her head? We were sure the bears would find her irresistible.

That reminds me of *HCN* copy editor **Diane Sylvain**'s 2012 essay chronicling a few of her own childhood road trips, and the time that one of the kids (diplomatically unidentified) responded to her father's remark, "Honey, you look like you need to throw up," by leaning over the seat and demonstrating that, in fact, she did. "By throwing up. Down her daddy's back." And that's not even the best part. (You can read the full essay at **hcn.org/drive-with-dad** .)

Have any special road-trip memories or vintage photos to share? Email **dearfriends@hcn.org** or tag us on social media. And don't be bashful about those tube socks or short shorts. They're probably coming back into fashion, anyway.

(From left) Greg Hanscom and his family spending time in the Wasatch Mountains in Utah, McKenna Stayner and her brother enjoying Mono Lake in California, Gary Love and his family at Dinosaur Park in South Dakota, Carol Newman and her friend taking a break from the road in Lacombe, Louisiana, and Jennifer Sahn taking in the view from the Pacific Coast Highway in Big Sur, California. **Photo illustration by Marissa Garcia / HCN**

Welcome, Eric!

HCN's new director of philanthropy, **Eric Lane**, got to know the Intermountain West by airplane and bus as a member of Boise State's basketball team. Eric, who was born and raised (and currently lives) in Los Angeles, says his time with the team opened his eyes to the wider region, as he met teammates and their families in Oregon, Montana and elsewhere.

"Coming from LA, you're taught that anything outside of the city is the middle of nowhere," he says. But he soon learned to appreciate the small towns and, even more, the people. "Everyone talks about Southern hospitality, but my experience is that the West is full of great people who have amazing stories to tell."

Eric got started in fundraising at the YMCA where he played ball growing up. Since then, he's worked at California Baptist University, Cal State Fullerton and elsewhere, and even built his own consulting firm, which tackled fundraising assignments around the region and the world. One project had him working for the National Outdoor Leadership School in Lander, Wyoming, where *HCN* was born in 1970.

He now manages a staff of three (five, if you include me and our Boise-based contract grant writer, Anna Demetriades), overseeing all of our fundraising activities, from seasonal drives to grant proposals to building relationships with friends and foundations who help support *HCN's* journalism. All told, this provides roughly 80% of the income that allows us to pay our writers and photographers and keep this nonprofit news organization, well, on the road.

Eric's latest Mountain West connection: His eldest daughter, Jaelynn, will be attending the University of Northern Colorado in Greeley this fall. Like her dad, she's an athlete, competing in the long jump and the triple jump.

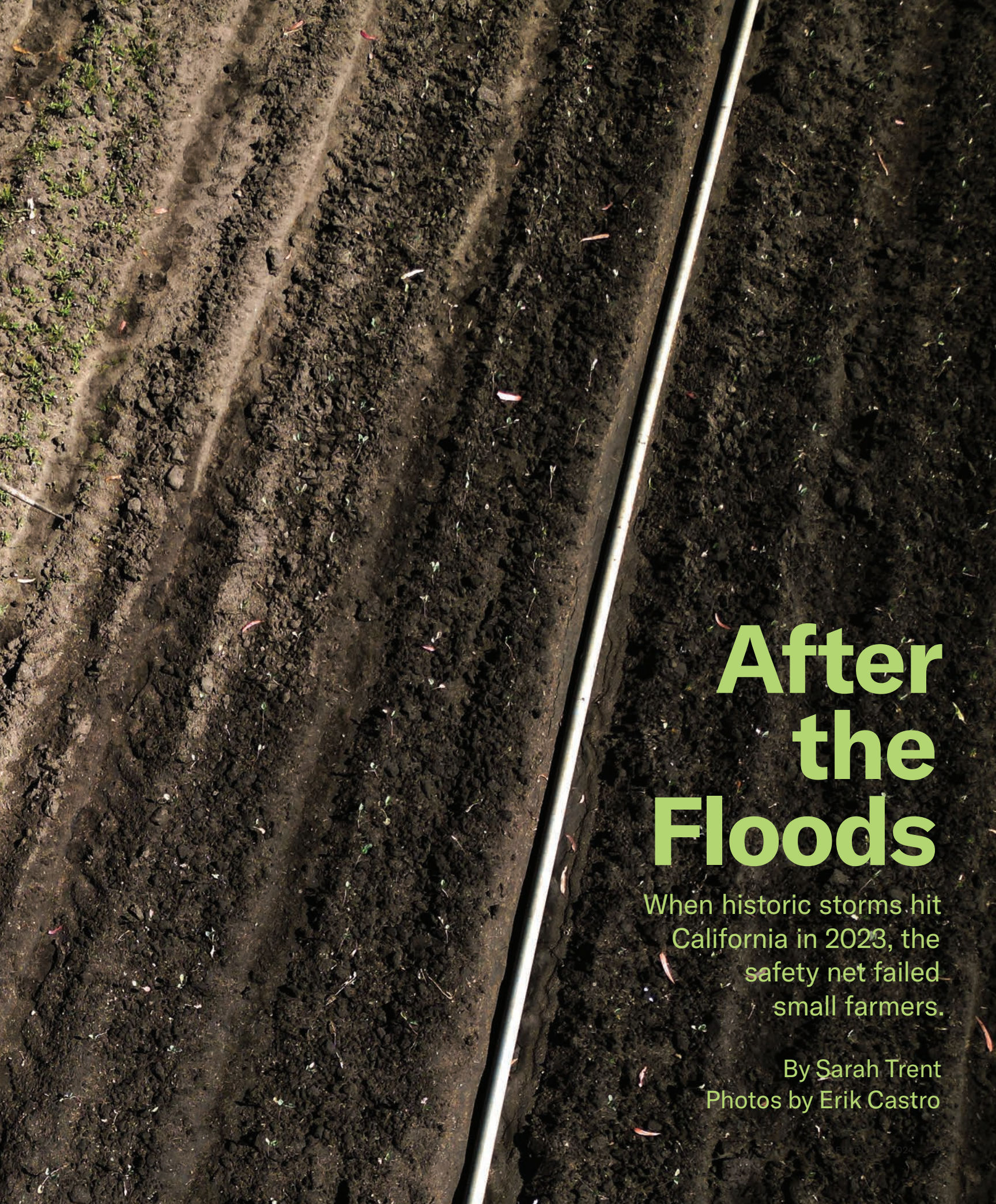
—Greg Hanscom, executive director & publisher

A correction, and thanks

In last month's Dear Friends column, I wrote that *HCN* stopped using "direct mail" to acquire subscribers in 2020. It was actually 2022.

Thank you to all who called or wrote to say that you happily share copies of the magazine or otherwise help spread the word about our work. Please keep it up! There's nothing like a recommendation from a trusted friend to pique someone's interest in *HCN* and in this wonderful, inimitable *HCN* community.

Feel free to share this link, which lets folk sign up for a couple of free issues: **hcn.org/subscribe/trial**.



After the Floods

When historic storms hit California in 2023, the safety net failed small farmers.

By Sarah Trent
Photos by Erik Castro

IT WAS RAINING on Dec. 31, 2022, when Maria Narez pulled off Highway 101 at the turnoff for her farm. It had been raining in Prunedale, California, since just after Christmas, and the final half-mile was too muddy to keep driving. She parked on the gravel shoulder as cars slicked past on the highway.

After four years of drought, rain had come to Northern California, and even more was forecast. Soils were saturated, waterways brimming and rainfall records being set. Neighborhoods in Salinas, just south of Prunedale, were evacuating, and Narez and her wife, Esmeralda, were worried. The day before, they dug a ditch near rows of radish and broccoli to channel water away. Today's rain was worse.

Narez, sturdy and stubborn, fought the mud on foot for half an hour before their 10-acre rented plot came into view. Strawberry rows, covered in plastic, sloped down to her farm. Across the small valley, hills rose into pastures dotted with mansions. Stormwater had funneled down the slopes; the creek at the bottom was swollen, and most of her crops were underwater.

A porta-potty on the far side of her land tilted, then started drifting toward the creek. As the floodwaters neared her tractor, Narez broke into a run.

Narez bought that tractor for $20,000 in 2019. It wasn't expensive, as tractors go — it was already 15 years old — but it took everything she'd saved. For years, she'd worked on other people's farms, saving up for her own, sick of how she was treated when people realized the woman she worked with was her wife.

She'd dreamt of farming since childhood. When her cousins ran off to the mall, she followed her grandfather to his Salinas strawberry fields. He had taught her how to drive a tractor. She had promised him she'd succeed.

She fell in the mud, got up, then fell again. "My mom says, 'God always sends you warnings,'" she reflected later. "That was my warning. But I kept running."

When she reached the tractor and climbed up its side, the long cultivator attachment parked beside it started rotating, pulled by the flood. "In my crazy mind, I figured that if I got down and held onto the implement, it wouldn't be washed away," she said. But her shoelace caught, and she fell a third time, onto the metal tines that worked her fields. Her face struck one, hard.

She remembers calling home, but not how she drove there, while Esme waited, carless and afraid. Neither knew that Narez's injury had split and collapsed an iris, leaving metal shards and bacteria inside it. Or that, without insurance, they could not afford all 27 surgeries and an implant her doctors would recommend — that ultimately, most of the vision in that eye would be lost.

The income the couple and their four children relied on was lost, too. The flood destroyed all their vegetables and mangled their irrigation pipes. The cultivator was gone, the tractor drowned.

Their crisis was only beginning: A dozen more atmospheric rivers would hit California from January through March. The support Narez and hundreds of other small farmers would need to weather them would not.

California's smallest farms — those cultivating less than 50 acres — comprise two-thirds of the state's farms. The backbone of rural communities, they play a vital role in the nation's food security and climate resilience: They hire and spend locally, bring competition to a market dominated by industrial-scale agriculture, and grow a greater diversity of crops than the biggest producers, which usually focus on a tiny range of products or a single commodity for fuel or processing. Research shows that small farms feature greater biodiversity and are more likely to use climate-resilient or regenerative practices. But the safety net that helps big operations through disasters — which are worsening with climate change — wasn't built to protect them.

"We expect so much from small farmers," Josefina Lara Chavez, who, until recently, ran Latino farmer programs at the Community Alliance with Family Farmers (CAFF), said. "We expect them to solve the food system, to be ecological, to have the best produce, everything." But when 17 back-to-back storms wiped out their livelihoods, realistic government help didn't exist.

TO BE A FARMER is to live at the whims of the weather. Drought, fires, floods, heat, frost — growing food requires as much optimism as it does sunlight. But business resilience, especially after a disaster, takes more than personal strength.

"I think about recovery as a formula," Poppy Davis, a farm business and policy consultant who formerly worked for the U.S. Department of Agriculture, said at the EcoFarm conference in January 2024. "The key things are your personal savings, the amount of insurance you have, and your ability to access credit," she said. "Plus government disaster payments," depending on the disaster.

Previous spread: Maria Narez's wife, Esme, works on the couple's farm in Salinas, California.

Facing: Maria Narez, right, and her wife, Esme, prepare their tractor for field work.

But many small farmers — especially farmers of color, who own more than a quarter of California's farms — are short on those resources, which require things that small growers seldom have: enough money to get by until aid arrives; the time and business records needed to navigate government programs and applications; the assets or documents necessary to borrow money.

For some, education, language or immigration status create further barriers. In the Central Coast counties of Monterey, San Benito, and Santa Cruz, where the USDA counted 595 Latino-owned farms in 2022, CAFF counts more than 250 owners who only speak Spanish. The region also has a large Indigenous Mexican community, whose first or only languages include Mixtec, Triqui and Zapotec.

Narez, raised in the U.S., speaks some English, but is fluent only in Spanish. She has dual U.S. and Mexican citizenship — she was born in Mexico while her parents, who had gained asylum in the U.S., were attending a funeral. Her siblings tease her for being "the Mexican one," but her U.S. citizenship affords her more options for help than people with temporary or no legal status.

Nonprofits that support small farmers and federal officials who administer relief programs say that even tools designed for farmers like Narez often fail to help them. As a result, many small farms fail, launching a cascade of consequences: Farmers and their workers lose income, and sometimes housing; families are traumatized and suicide risk rises; land, stewardship and power are consolidated into fewer and larger hands. "Look at the ripple effect on their lives," Chavez said. "It's not just, 'I lost my farm.' It's at the family level, the community level, the ecological level."

For decades, small farms have evaporated at a far higher rate than large ones. According to the latest USDA census, the U.S. lost nearly 150,000 farms from 2017-2022, even as the largest grew in number. At least 6,237 of them were California farms smaller than 50 acres. Meanwhile, the frequency and scale of extreme weather are rising — events that affect rural, poor and non-white communities most.

AMONG THE WORST disasters American farmers ever faced was the 1930s Dust Bowl. That disaster wasn't just weather; it was the result of Depression Era poverty and settler farming practices, fueled by the Homestead Act, that stripped millions of acres of the Great Plains bare. The fallout — tens of thousands of families abandoning their farms and homes — spurred unprecedented federal action that became the foundation of modern farm policy.

Before the 1930s, opposition to disaster relief was deeply entrenched in the American ethos. But the Great Depression "helped to soften deep-rooted, hard-line attitudes of free

Nancy Nuñez's partner, José, harvests produce at their Picoso Farm in Gilroy, California.

enterprise, individualism, and the passive role of government," researcher Richard Warrick wrote in his 1980 analysis of the Great Plains droughts' social impacts.

Using the framework created by New Deal-era programs, government disaster relief was born. At least 20% of all rural Great Plains families got federal aid. Soil conservation programs began. An experimental crop insurance program was created. The first Farm Bill was drafted. Consequently, Warrick noted, major droughts in the 1950s and '70s wrought far less societal harm.

The Federal Crop Insurance Act of 1980 and reforms in the early '90s formalized what is now the core of federal farm-disaster response. The 1930s version of crop insurance never took off — it was expensive and covered fewer crops — and Congress was tired of signing large ad-hoc relief bills. Droughts had destroyed swaths of Midwest commodity crops in the '70s and again from 1988 to 1990.

Today, nearly every acre of American commodity corn, wheat and soybeans is insured, making the program, by some measures, a success. But this cornerstone of disaster recovery was "not designed to help small farmers," Anne Schechinger, an agricultural economist at the Environmental Working Group, said. Few in California have it.

Crop insurance is usually purchased for individual crops, from a narrow list that doesn't include most vegetables. A small farmer with an eligible crop — say, storage onions — first needs "an agent willing to sell a policy to a really small farm," Schechinger said. Those are hard to find; agent pay is based on policy size. Then, they'd need records of their historical yields, so they could prove a loss — difficult for small farmers like Narez, who grow dozens of crops in short rotations over several seasons each year.

Two newer tools, one covering non-insurable crops (launched in 1996) and one covering a whole farm's revenue (from 2015), were supposed to fill this gap. "But they feel like retrofits, made unenthusiastically by people not steeped in the needs of small producers," Davis said, weeks after speaking at EcoFarm. Both, she said, require records far beyond what the farmers they're meant for can keep.

The insurance gap is especially stark in California, the nation's largest agricultural economy, famous for its diversified farms. The Central Coast alone produces half the nation's lettuce and broccoli, a third of its spinach and most of its artichokes. Strawberries are common, too, part of the annual rotation that makes this region anything but monocrop. Of those five crops, only strawberries are insurable in California, and only since 2021. The latest USDA data shows just 2% of them are insured.

Narez didn't have crop insurance. Neither did Nancy Nuñez, who, 15 miles north of Narez, lost half her strawberries and vegetables in subsequent storms.

"They lost their dogs, their cattle, they didn't know how to rescue their chickens, they didn't know where to go."

WHEN NUÑEZ and her mother came to the Central Coast from central Mexico in 2003, she'd wanted nothing to do with farming. At 17, the youngest of 10, she left everything behind to escape her father's abuse. They fled to Watsonville, where her siblings had already relocated, but a month later, he followed them. When he attacked her mother again, "my brother said, 'No, no more,' and called the police," Nuñez said. Her father's arrest helped both women gain legal status.

Nuñez hoped to keep studying — she'd been an IT student in Mexico — and learn English. But once she arrived, all that ended. "Here, everybody had an (adult) life already," she said, full of work and chores. Her siblings gave her two months rent-free. After that, she knew, "If you don't work, you don't live."

She started in her niece's fields, but didn't like it, so she handled sales at her siblings' market booths, tried housecleaning, and eventually drove for Uber, enjoying the travel and being her charismatic, social self. By the time she met her partner, José, she was also single-parenting four young children. José had been farming since his teens, and at first Nuñez wasn't impressed.

"I thought, he's too short, he's too ugly," she recalled, through a Spanish interpreter. He had grown on her anyway; he was kind, generous, hardworking and didn't mind that she had children. "Even when he's doing his work, he does it with love," she said. "That's why we're here."

In 2020, they started with four rows. By the end of 2022, they'd grown to eight acres on leased land that sloped from the 101 to a creek near the Pajaro River. José worked the fields, Nuñez managed sales. They called it Picoso Farm, making José its secret namesake: Nuñez and her sisters had decided he was *chiquito pero picoso* — short but spicy, someone whose strength and goodness far outshone his size.

When floodwaters crept up their land on Jan. 9, 2023, reaching the top step of the RV where the couple and their 11-month-old baby normally slept, they took it in stride. They harvested all they could and moved belongings to the highest part of their land, above the plywood structure José built to house a kitchen and the older children's bedrooms. That night, they lost some equipment, but not their home.

When the creek started rising on March 10, Nuñez recalled, "We didn't think it could happen again." Or, at least, that it couldn't be worse. Around 1 a.m., with water approaching fast, they changed their minds. Her 9-year-old watched the baby while she woke her other children to help move everything they could, including $3,600 worth of vegetable seedlings — all their plantings for March.

It was cold, windy and difficult. Wearing trash bags as raincoats, they moved tablecloths, scales and tools. They didn't have time for furniture or clothing. José climbed onto the roof he'd built beside the RV, and the family shuttled 60 trays of broccoli, cauliflower and lettuce seedlings up to him as the water rose around them.

At 3 a.m., after all the trays were up, they fled.

THAT STORM, March 9-11, wasn't the winter's largest, but it was among the most destructive. Parts of the Central Coast saw 13 inches of rain, and flooding farther down the Pajaro breached a levee, devastating a farmworker community. January's storms had already dumped more than 32 trillion gallons of water on the state.

In the Salinas and Pajaro valleys, tens of thousands of cropland acres were submerged. In Monterey County alone, trade groups estimated total losses at more than $2 billion.

From January on, staff at CAFF and at California FarmLink and Kitchen Table Advisors, which provide business training and advice to small farmers, including Narez and Nuñez, started getting calls from farmers who couldn't access their land, needed to evacuate, or had lost everything. "It was awful," Chavez said, still burnt out a year later. "They lost their dogs, their cattle, they didn't know how to rescue their chickens, they didn't know where to go."

When disaster hits a farm, USDA crop insurance is the first line of defense. For those without it, or with other losses, the next option is emergency aid from the USDA's Farm Service Agency (FSA). Applicants must have legal status in the U.S., navigate myriad programs and complex requirements to determine which suit their losses, fill out onerous applications, and then wait.

For large farms, this isn't insurmountable: They're less likely to lose everything in one event, and more likely to have a professional support network. "A successful mainstream farm bureau member pays the people that take care of that complexity for them," Davis said. But small farmers often muddle through alone.

And in 2023, navigating FSA aid programs was even harder than usual. Staff at CAFF and FarmLink said FSA was unprepared for the scale of the disaster, despite being designed for this. Farmers drove to one FSA office, only to be sent to another, and the agency had just two Spanish-speaking staff in the region.

"It was quite crazy," Navdeep Dhillon, executive officer at FSA in California, said of those early months. The agency's Monterey and San Benito county offices — among the state's smallest —were still bogged down with applications from previous disasters, and "the sheer number of producers that were impacted was quite overwhelming." The USDA's 2022 census counted 1,600 farms across both counties; Dhillon estimated that they received about 800 aid applications.

"There is a gap," Blong Xiong, head of California's FSA since 2022, acknowledged, between the needs of underserved farmers and what FSA can currently provide. Xiong, who previously led a Fresno nonprofit supporting small Asian growers, said he was pushing for better programs and outreach. Language, technology, access — all are issues, he said. "But at the end of the day, it's also because it's a government process. We have to be able to get (small farmers) to be part of the system."

That system, though, has a long-documented history of discrimination, adding still more real and perceived barriers. Starting in the early 2000s, the USDA faced lawsuits from Latino, Black, Indigenous and women growers alleging discrimination concerning aid, loans and more. The USDA settled those suits, but as recently as 2021, the U.S. Government Accountability Office found that racial and income-based disparities persist.

Meanwhile, any funding that does get awarded often takes so long to arrive that it can't help growers who lack deep pockets in the first place. Dhillon said most of the applications FSA received were for a program that covers post-disaster cleanup, such as debris removal or irrigation repair. But that program, which covers up to 90% of an approved project, reimburses farmers only after cleanup is completed. Farmers who have lost substantial income can't always front these costs.

When it comes to lost crops, FSA emergency aid requires congressional approval, creating yearslong delays. In March 2024, FSA was awarding funds for 2022 disasters. Aid for 2023 will require new legislation and likely wouldn't start paying until at least 2025.

State aid was hard to come by, too, in a state more accustomed to drought relief. That July, urged by CAFF, Gov. Gavin Newsom dedicated $27 million to winter storm relief for small farms in the state's 2023-'24 budget. Of this, $5 million was promised to a program that allocates funds to community organizations that farmers already trust, such as CAFF. But as of July 2024, none had yet been allocated.

Nancy Nuñez shows a photo of a flooded structure on Picoso Farm. When the storm hit last March, they stored seedlings on its roof *(left)*.

Facing: José picks strawberries in a field at Picoso Farm in Gilroy, California, as Nancy Nuñez and their 2-year-old daughter look on.

Meanwhile, $20 million went to a program administered by Lendistry, a private lending firm hired by California's Office of the Small Business Advocate (CalOSBA). CAFF was upset at how poorly it served farmers, so staff compiled a memo, later shared with legislative staff and *High Country News*, documenting myriad failures, including inadequate Spanish-language support, requiring forms that were irrelevant to small farms, and customer service that was condescending and unhelpful. Lendistry declined to comment. CalOSBA said that few other firms were large enough to administer this program, and that language capacity was a "key consideration" in awarding the contract.

FarmLink program manager Stephanie Stevens said that after she helped a farmer apply last fall, she spent six months responding to requests for more documentation — some of which had already been filed — only to learn this spring that funding had run out. Other farmers just gave up, she said.

CalOSBA said 4,203 farmers applied, requesting $39 million. Only 385 grants were made.

So, CAFF, Kitchen Table Advisors and FarmLink started making their own donor-funded grants, totaling about $600,000.

Some money went to Narez, who put it toward her mounting medical bills. With help from a GoFundMe campaign, she bought seedlings and leased new land. But the family couldn't afford their apartment, so the teenagers stayed with Narez's parents, while the couple and their 3-year-old rented a small room. Esme cleaned houses, and their oldest children chipped in, too. "I was taking savings away from my son, who's trying to save for college," Narez said. "I'm the parent. I'm supposed to be supporting my kids."

A cascade of crises followed. They finally started harvesting lettuce in July, selling to several distributors. But the company that took most of it never paid, claiming it hadn't reached its destination intact. Even when distributors control shipping and storage, the risk still often lies with farmers — a shady but legal practice that farm advisors say is especially common in immigrant and vulnerable communities. Narez estimated she lost $80,000 in vegetables, yet owed the company $2,700 for packing materials.

Then the water pump on their new land broke — a loss her lease didn't protect. Narez was told it would cost more than $200,000 to repair. Without irrigation, the rest of her crops started failing.

Later, battling a debilitating cough, she learned she'd contracted Valley Fever, a deadly infection caused by a soil-borne fungus that thrives after heavy rains. It's becoming more common, especially in California and the Southwest, likely due to the flood-drought cycle fueled by climate change. The medication Narez needs can cost more than $1,000 a month, but when she skips it, everything is harder.

"When I start to feel depressed, I tell myself, I can do it," she said. "I *will* do it.

"But every time I see that shimmer of light at the end of the tunnel, something else covers that light," Narez continued. "They say once life starts hitting you, it hits you, and it hits you, and it hits you again. And once you say, 'I'm gonna be able to recover, I'm getting up,' you get hit once more."

NUÑEZ AND JOSÉ returned after the March storm to find that the seedlings on the roof had survived. But the home below did not: Water had risen thigh-high in the RV and over the bedframes in the older children's rooms. Clothing and bedding were everywhere. Half their crops were destroyed.

After the January flood, Nuñez went to the Federal Emergency Management Agency (FEMA), which gives aid for household losses, but she wasn't eligible since a disaster hadn't been declared in her county. This time, one was, and with her information already on file, FEMA called her — but said they'd need to send someone to the farm. Nuñez was worried: The plywood house wasn't legal, and the RV's registration had expired. "But I (told myself), 'It's OK, they don't want me to sit with my children under a bridge,'" she said. "So I took the risk."

FEMA gave her $5,000 for the RV. That came in days, but there was little she could do about the farm losses: She lacked the paperwork that federal aid required. FSA suggested she seek the government's third farm disaster relief program: an emergency loan.

Nuñez was sure that a loan could tide her over. Enough crops had survived that she continued selling at two markets, and a small GoFundMe campaign helped, too. But in order to keep earning, she needed to pay workers; she'd already had to let several go. She also needed to buy transplants and cover large monthly payments on the land and the two vans they drove to markets. Soon, she'd owe rent, too: After years of searching, she'd found an affordable apartment that would accept their large family.

Getting a loan is complicated for small farmers; even programs designed for small businesses seldom help. Farms are hard to finance: Risk is high, and small farmers often lack the records, credit scores or collateral conventional loans require.

FSA offers loans designed to work around this, but, as with other USDA programs, "There's a perception of discrimination and a hesitancy to work with them," FarmLink's Stevens said. Her organization, a community development financial institution, makes similar loans — many backed by FSA — but works intimately with small farmers to do so, helping them with paperwork, flexible terms and more.

Nuñez quickly gave up on FSA: "They were asking for so many things that I didn't even know if I had," she said. The 17-page application required, among many other things, three years of financial and production records, cash-flow projections for every crop grown, and a "certification of losses" documenting yield per acre for every crop in a normal year as well as the disaster year — all challenging records to keep on a small, diversified farm.

In April, Nuñez applied at FarmLink instead, with help from Kitchen Table Advisors. At first, she didn't qualify; her farm was too new. But a few months later, she got a call.

The loan would be $90,000, at 0% interest, to refinance her vans, cutting her monthly payments in half. The loan would take a few months to finalize, as long as she didn't take on other debt.

But another emergency intervened: A relative in Mexico called, desperate for $15,000. Days later, Square, the credit card payment system Nuñez used at farmers' markets, offered a $40,000 merchant cash advance. Operating outside the financial regulatory system, advances like this, based on expected sales, are risky, and often considered predatory. This one had a $7,000 fee, with 18 months to pay — the equivalent of at least 21% interest. Square would take a large cut of every transaction until she did.

"What could I do?" she said. She took the advance, and let the better loan go.

SOMETHING DEEPER, beyond the safety net, is broken, say the advisors, advocates and researchers who know these systems best.

In the 1930s, when farm programs were first created, most farms were under 500 acres, drought was the primary concern and wheat the crop most at risk, Schechinger, from the Environmental Working Group, said. Between climate change and the consolidation caused by federal policy, "our industry has changed so much," she said, while "the thought process has stayed the same."

Nonprofits, researchers, legislators and officials are all advocating for changes.

Many call for crop insurance reforms that ease access to policies or shift subsidies from commodities to diversified food crops, thereby helping farmers with less capital and greater need. Schechinger cited a bill introduced in 2023 that would streamline whole farm revenue insurance, reducing the paperwork and changing the incentives for agents that sell it.

California FSA officials have recommended changes to the non-insurable crop insurance program. Xiong said that shortly after he was appointed, he wrote to national officials about trimming the requirements. But without legislative action, his hands are tied.

When it comes to improving credit programs, Brett Melone, who heads FarmLink's lending program, supports a bill introduced in 2023 that would ease access to USDA loans and make it easier for farmers to appeal denials — important steps, advocates say, for addressing historic discrimination. A rotating line of credit for farmers waiting for aid payments could fill an important gap, too, he said.

As for aid, CAFF Policy Director Jamie Fanous wants to see more state dollars funneled through community-based organizations, rather than for-profit companies that lack relationships and experience with small farms. She also wants a permanent relief fund to replace ad hoc appropriations. Political and administrative delays "are not sustainable for anyone," she said. "Look at COVID: They moved money like it was nothing. The government can work when it wants to."

Several California Democrats, including Sen. Alex Padilla, have also pushed for a permanent federal disaster fund. After an embattled Congress failed to draft a 2023 Farm Bill, Padilla and others pushed to include such a fund in the 2024 bill. Congress finally began Farm Bill hearings in May 2024, but this was not included. In July, Padilla's office said another option was still being discussed. It would require recipients to buy crop insurance after getting aid.

Many, including Fanous, Schechinger, Kitchen Table Advisors staff and Poppy Davis, believe more holistic change is also needed. They want resource hubs to help farmers manage bookkeeping and insurance, more business education, better access to affordable health care. "Crop insurance is very important, but it comes behind a number of other issues that are much more critical," Davis said. She pointed to farmers like Narez, who increased her risk by investing all her cash in a tractor, and to farmers who don't know they need things like workers' compensation coverage.

Above all, "I would rather a farmer have health insurance than crop insurance," she said; illness and injury are more common than floods. Even when small farms struggle to

Erick Acosta harvests produce at Picoso Farm in April.

make ends meet, they often show enough profit that the owners don't qualify for Medicaid or health-care subsidies.

Without any of these changes, the U.S. stands to keep losing small farms and all that they offer the nation: jobs and security in rural and vulnerable communities, more sustainable land stewardship, a diversity of fresh, healthy food. Some of their land will be swallowed by bigger farms, or investors might develop it instead. While new farms start every year, the newer a farm is, the more likely it is to fail.

IN JANUARY 2024, most of Narez's fields were weeds. Without irrigation, four acres of broccoli had gone to flower, and her kale wasn't far behind. She and Esme had both gotten COVID the week before, and the furrows between their onion rows had gone untended.

They'd decided to keep trying until the end of the year, hoping to find another plot of land — one small enough for the two of them to manage, and safer for the thousands of seedlings they'd ordered months ago, which needed to be planted soon. Doing so wouldn't be easy: Affordable small plots of land are hard to find. And they're usually the most vulnerable to disasters.

"I have this fire in my heart," Narez said, standing beside her wife near a row of tiny lettuce. "I feel like we can do it."

In the kitchen above her farm, reheating the tamales her family made the day before, Nuñez was optimistic, too. A Christmas wreath still hung on one peach-colored plywood wall. José chose the color a year before to lift their spirits. Before the storms, they'd never wanted to paint: They worried authorities would realize the structure was a home. The new apartment had made so many things easier.

Two of the children napped in the next room, while José and several workers harvested lush rows outside, carrying overflowing crates of greens up toward boxes packed for farmers markets that weekend.

On Sunday morning, Nuñez woke at 4 and drove two hours north to Martinez, van loaded with produce. All day, customers came to her stall. Above her clean denim apron, her eyeliner was perfectly winged and she chatted with nearly everyone as she weighed produce and counted change. When customers held out a credit card, she offered the Square-branded reader atop her cashbox. Each swipe was one small payment on the advance.

Soon, she'd take a FarmLink course to improve her record-keeping and business practices. "I don't want to be small," she said. "My dreams are bigger." She wants a home, surrounded by many acres of farmland, where her children are safe. "That is the ultimate dream. To be on our farm, to know that this is our home, this is our farm, we made it."

The Vision of Little Shell

I'VE THOUGHT ABOUT INDIANS my entire life. I grew up with the vague knowledge my father's side of the family was Indian — Chippewa, specifically — as my grandmother would speak of it at times. I have a dim memory of being 4 years old and sitting on the faded linoleum kitchen floor of our little farmhouse in Huson, Montana, assaulting a coloring book with crayons. When asked why I depict a pair of children with red skin, I say it's because they're Indians. My visiting grandmother, Ruby Katherine (Doney) La Tray, sitting at the table, asks, "Is my skin red? No? But I am an Indian. And so are you."

I was very young, and now I'm not, but the memory has stuck with me.

It wasn't until my grandfather, Leo Stanley La Tray, died just shy of 83 years of age in late September 1996 that pieces started falling into place. I was 29 years old. When I arrived at the small Catholic church in Plains, Montana for his funeral service, I was amazed to find the nave crowded with Indians. I took my seat in the front row, beside my dad, and stared around in a state of puzzled awe. During the service, which I barely remember, Dad kept poking me in the ribs and trying to make me laugh. When we exited the church and prepared to join the procession to the cemetery, Dad leaned in and asked, "So, what did you think about all those Indians?"

"There were a lot of them," I said, for lack of a better answer. What I didn't say was how astounded I was.

Dad didn't talk about my grandfather very much, and when he did it wasn't flattering. Something my dad and his father had in common was the denial of any Indigenous heritage. Suggesting my dad was Native made him angry. I could never understand why. I was the opposite. I wanted to be Indian. I wanted that identity, and I took it for myself, even if it had to be largely locked up. To me it was cool. Who wouldn't want to be an Indian? Who wouldn't want to be Chippewa? Growing up, if there was anything I knew about the answers to those questions, it was this: Don't ask Dad for them.

When he passed away in 2014, Dad left me with a lifetime of questions about who he was and where he came from. No, who *we* are, where *we* come from. I'm certain he had the answers to many of these questions, but he chose to take them with him to his grave. I decided I would do what I could to find them on my own. If not from him, then through people who lived a similar experience. Through the story of our people.

I've attempted to answer some of those questions, to tell the story of my own family heritage, certainly, and why my dad felt the way he did about his heritage. If I've learned anything at all, it's that I'm not the only one to grow up in these kinds of circumstances. I'm also not alone in trying to find my way back to who I was all along: a proud Indian.

I'm not a scholar. I'm not a historian. I don't have an academic bone in my body. I'm a storyteller, and this is a story that needs telling. I feel *compelled* to share the story of the Little Shell Tribe, the longtime landless Indians of Montana. Because it's clear we're largely unknown, not just to the wider world, but even in Montana, the first state to recognize us as a legitimate tribe, despite our centuries-old association with a larger Indigenous family.

Like the stories of all Indigenous tribes of the Americas, it's a sad story. Yet it's a story brimming with grit and determination, a story full of facts and dates shared as best as I've come to learn them. Other storytellers may unearth different versions. This version of the story is mine. It is a story still unfolding.

How Ayabe-way-we-tung fought for his people in the face of colonization.

By Chris La Tray

MY INITIATION in the history of the Little Shell begins in 2013 with a talk by Nicholas Vrooman, a historian from Helena. The vast majority of what I know about the Little Shell I owe to Vrooman. I've picked up more bits and pieces in talking to other tribal members, visiting with other historians and scholars — armchair and professional — and reading books, but I stand on Vrooman's shoulders when I share what I know.

In the months and years that followed my accepted enrollment application in the Little Shell Tribe, I stepped up my interest in learning all I could about it. I attended quarterly meetings and spent a small fortune on books for research purposes. I also began a steady correspondence with Vrooman via email and the occasional phone call. I recall sitting with him in his second-floor office in an old building on the corner of Placer Avenue and historic Last Chance Gulch, my view the outer wall of the post office opposite the street my chair by the window faces.

I chuckle to myself when I recall how I asked him for a short answer to this question: Why are we called the "Little Shell" Chippewa people? I laugh because there isn't a short answer, and even if there was, I don't think Vrooman would be capable of providing it. Yet I'm going to try.

We could as easily still be called Pembina Chippewa — named for the Ojibwe word for what we call the "high cranberry," a bitter little fruit from the honeysuckle family that grows in small, bright red clusters on thick, bushy shrubs — or Turtle Mountain Chippewa, or even Rocky Boy Chippewa Cree, who are our close relatives. We're called "Little Shell" because of a man called Little Shell who led these related people during a tumultuous time that, for all the decades stacked up

Chief Little Shell III, facing, served as chief from 1872 until his death in 1903. He is noted for his refusal to accept the McCumber Agreement, which arranged to cede land claims for 10 cents per acre.
Courtesy of the Turtle Mountain Chippewa Heritage Center

before his arrival, truly began to unravel in the 1850s, and rapidly fell apart in the wake of the Old Crossing Treaty of 1863, just as it did for all the related Indigenous people of the region.

His name was Ayabe-way-we-tung, which means "He Who Rests on His Way." He was the third hereditary chief of the Pembina Chippewa to be called Little Shell, so he's sometimes referred to as Little Shell III. But for my purposes, when I refer to Little Shell the person, it's this man.

Little Shell never led his people into great battles against the settlers in defense of his homelands in the way more recognizable Plains Indian leaders — like Red Cloud, Sitting Bull or Crazy Horse — did. Nor was the Pembina peoples' forced exodus away from their homeland as dramatic as that of Chief Joseph and the Nez Perce. But it was no less harrowing; the same rifles that were aimed at Nez Perce women and children in 1877 under the charge of Gen. Nelson A. Miles were directed our way too. His name should be spoken with at least as much reverence as these other guys. Perhaps it's because in America we tend to exalt our historical figures as much by the body counts they achieved as anything else; I don't know. I contend Little Shell's efforts on behalf of his people are no less significant than these other leaders.

Little Shell, the man the tribe is named after, became hereditary chief of the Pembina Chippewa when his father, Weesh-e-damo, died around 1872. Weesh-e-damo (aka Little Shell II) was the tribe's leader starting in 1815, after his father, Aisance, the first of this Little Shell line, was killed in battle with the Dakota near what's now Devil's Lake in Minnesota. Aisance's leadership began around 1770.

I'll pick up the story when Ayabe-way-we-tung becomes Little Shell.

ANOTHER HISTORIAN who helped me figure all this out is Les LaFountain. LaFountain is a Turtle Mountain Chippewa tribal historian and former North Dakota state senator. He teaches at Turtle Mountain Community College in Belcourt, North Dakota, where the Turtle Mountain Chippewa are headquartered. He's probably a decade older than me but doesn't look it. His face is lined, and his short hair is dark and streaked with silver. The smile he flashes from beneath an impressive mustache is wide and features a narrow gap between his front teeth.

LaFountain and I met in person for the first time in Huot, Minnesota. I had joined a small delegation of Little Shell Tribe members — four of us, including my cousin (and tribal council member) Kim McKeehan and two other women, plus an attending entourage of two husbands and a couple grandchildren — who have made a similar trip all the way from Montana. A few months of organizational meetings online have led to this: We Little Shell are dignitaries from our "lost" tribe invited to participate in this commemoration of 158 years since the signing of the 1863 Treaty of Old Crossing. It's an honor, and my excitement to have been invited is overflowing. It's a first for us to be included, and though our delegation is small we are hopeful that in coming years our participation will be much larger. The roots of our tribal connection to this event are deep; more than 94% of our present membership can be traced back to signers of this treaty. I'm eager to visit the location where it all went down nearly 160 years ago.

Little Shell's influence depended entirely on his ability to suggest reasonable decisions and lead with integrity.

What exactly is the 1863 Treaty of Old Crossing? David Treuer, an Ojibwe author from Leech Lake who likely had relatives here same as me, writes in his book, *The Heartbeat of Wounded Knee,* "In 1863, the Red Lake Band and Pembina Band of Ojibwe were induced by Alexander Ramsey, governor of Minnesota, to sign a treaty ceding roughly eleven million acres of prime wood lands and prairie on either side of the Red River. The Treaty of Old Crossing promised them considerable annuities and the right to hunt, fish, and travel in the ceded area in exchange for what Ramsey described as the 'right of passage' for oxcarts and wagon trains headed west."

The gotcha here is this idea of "right of passage." This is what the assembled chiefs thought they were negotiating, what they were led to believe they were negotiating. But it wasn't. It was another land grab. Ramsey deliberately misrepresented the language of the treaty in an effort to yank all that beautiful land out from under the Ojibwe people who already lived there.

Fourteen days of lowball offers and arguments and grand speeches and threats and mistranslations across languages finally led to a confused agreement. On Oct. 2, 1863, the Pembina and Red Lake Treaty — the Old Crossing Treaty — was signed. Six Indian chiefs and nine warriors signed it. Pembina chiefs Red Bear and Little Shell both signed the treaty. Of the handful of Pembina warriors who signed it, at least two of them represent direct ancestors of members of today's Little Shell Tribe.

The result? Just under 10 million acres of land ceded to the United States. The agreement included annual payments of $20,000, divided equally as per capita payments to enrolled tribal members, for 20 years; funds set aside for farming and education; money specifically for chiefs, and even houses built for them. Land, 160 acres, for "each male adult half-breed or mixed-blood who adopted the customs of civilized life or became a citizen of the United States and homesteaded the claim for five years."

The Indians understood that they could stay where they were, continue to use the territory as they always had, but would leave the settlers alone. That's what they agreed to. But it isn't what the document actually says.

Of course, it doesn't end here. Once the treaty went to Washington for ratification, changes were made, some significant. This led to a revised treaty being signed in Washington on April 12, 1864. Little Shell didn't make the trip to D.C. and didn't sign the revised treaty. (Red Bear did, however.) He'd had enough with the doublespeak and betrayals of the United States government and determined to never negotiate again.

This is why, while many people refer to the McCumber Agreement of 1892 as the blow that left the Little Shell people landless, I set the true beginning 30 years earlier to this treaty, Old Crossing, in 1863, and Little Shell's

refusal to sign the remade document. While the treaty itself had greater consequences to the Ojibwe people still in Minnesota, its ripple effects were the beginning of the end for the related Pembina Chippewa north and west of the Red River.

WHEN I ARRIVE at the Turtle Mountain Community College, LaFountain greets me with a smile and a firm handshake. He wears a beautiful beaded turtle medallion around his neck. He gives me a tour of the institution, and it's beautiful, surrounded by forest and hills. The Turtle Mountains — more rolling hills than what we in Montana might call mountains — are gorgeous in the fall light. We begin a deep discussion of who Little Shell really was, and what he represents to our people.

"Little Shell III is probably the most significant leader at Turtle Mountain," LaFountain says, pointing at a portrait of the Pembina chief, "and the reason for that is he was challenged at a time when the land base was being taken away or being threatened."

Consider the state of the world Little Shell became chief in. The Old Crossing treaty was signed just under a decade earlier, an interaction his father walked away from in disgust, vowing never to make treaty with the Americans again. But encroachments on Chippewa land were gaining steam, and the region was crawling with homesteaders looking for land, regardless of what any treaty said about who it belonged to.

This land the Pembina Chippewa occupied at the time, about 10 million acres worth, had been established in an agreement signed in 1858 that came to be known as the Sweet Corn Treaty. The agreement was "forged between the chiefs and headmen of the (Pembina) band and the Sisseton and Yankton Dakota" and "sought to establish peace and to define hunting and territorial boundaries so that there was no cause for warfare and so that resources would be shared without animosity."

By the 1870s, that language was meaningless. Agreement or not, settlers wanted the land, and the government was determined to see they got it.

Little Shell would spend the rest of his life trying to preserve a people and culture that was threatened on all sides. By 1872, the buffalo, and the centuries-old cultures that revolved around them, were largely gone. Many of the Turtle Mountain people who used to travel out of the region to hunt buffalo were still out and staying away longer. By the 1880s, the buffalo were essentially eradicated. There was more and more pressure on Little Shell to turn this land over to the Americans, but he was steadfast in retaining the Turtle Mountains for his people.

"There was no reservation," LaFountain says of the still-unceded land. "He resisted the removal of the Turtle Mountain people from the Turtle Mountains. That was all the doings of Little Shell."

IT SHOULD BE NOTED that even as chief, Little Shell didn't enjoy the kind of "my way or the highway" leadership one might expect. So he wasn't just negotiating with settlers. He had to accommodate all the factions and concerns of his own people, a task that was certainly daunting as well. He couldn't force anyone to do anything; he had to lobby and convince and lead through wisdom. His influence depended entirely on his ability to suggest reasonable decisions and lead with integrity. This leadership included presiding over councils, making general day-to-day decisions related to his band, and mediating disputes. He represented his people when it came to interacting with the Americans or even with gatherings of other tribes.

This wasn't top-down leadership like we see in tribal governments today. There weren't any *Robert's Rules of Order* protocols in place like what I suffer through whenever I attend a tribal council meeting. That's a colonial form of leadership. The Pembina Chippewa didn't operate like that. In his role as chief, Little Shell had a number of subchiefs called "headmen" to advise and assist in leading the Pembina people and hearing their opinions and grievances. These included a number of leaders in the Métis community as well, who were a large part of the population. Little Shell even had a lawyer working on the tribe's behalf, Jean Baptiste "J.B." Bottineau, the Métis son of notable guide and fur trader Pierre Bottineau, who represented the interests of the people of Turtle Mountain until his death in Washington, D.C., in 1911.

Yes, a lawyer. Because by now these negotiations were largely being waged by bureaucrats, not soldiers. Between the time Little Shell began his tenure as leader of the Pembina Chippewa and the McCumber Agreement of 1892, he and his representatives made several trips to D.C. to make a case for where they should be allowed to stay. Most of their efforts fell on deaf ears. If there's an upside to all this, it's that these visits are largely where the photographs we have of Little Shell come from.

Little Shell's tenure can be described largely as one of resistance in an effort to preserve as much as he could for his people. He rejected early efforts to move the Pembina Chippewa to what's now the White Earth reservation in north-central Minnesota, created in 1867 and one of seven Chippewa/Ojibwe reservations in that state. He also rejected an attempt to move them to the Fort Berthold reservation, which, while on Pembina land, would've forced them from the Turtle Mountains and onto land to be shared with the three affiliated Sioux tribes of the Mandan, Hidatsa and Arikara nations.

Little Shell could see the writing on the wall as his people clashed with more and more settlers. He wanted a reservation, but it had to include the Turtle Mountains. He finally got one in 1882. It was roughly 450,000 acres. Two years later, two executive orders by United States President Chester Arthur reduced the reservation by 90%, to 46,000 acres, where it remains today. Little Shell spent the rest of his life trying to restore the original boundaries. These tireless efforts directly resulted in the fateful McCumber Agreement in 1892, which Little Shell refused to cooperate with, that led ultimately to him and all his followers off-reservation being disenrolled, creating the ludicrous situation of any Indigenous North Americans being described as "landless."

"This reservation really is here because of Little Shell," Les LaFountain says of the people who became the Turtle Mountain Chippewa. "We would not be here if not for Chief Little Shell."

We're Little Shell Chippewa because we are the people who were shut out, driven, essentially, into exile. When the U.S. government established means for unrecognized Indians to gain federal recognition in 1978, the official "Little Shell" tribe came into existence as a unique entity splintered off from a larger people. During my time in Minnesota for the Old Crossing event, I spoke with several members from the Minnesota Ojibwe tribes — a couple even in positions of leadership — who told me they didn't even know we were out there.

WHEN OUR LUNCH IS OVER, I give my friend LaFountain two bags of tobacco in exchange for his hospitality and knowledge. I drive around a little more after leaving and decide to spend another night at the Skydancer. In the morning, I rise before dawn and walk maybe half a mile out onto the prairie. I want to get clear of the floodlights around the casino parking lot. It's cool, maybe 50 degrees, and a slight breeze is blowing. I climb up onto a hill that looks out over the dark rolling landscape below and sit down. The moon is to the east, just a sliver, but the light of her reflection is so bright I can see her fullness even in shadow. Such fullness, and so beautiful. And the stars, oh, the stars, brighter than they ever are where I live.

I wish I could say it's quiet. The hulking, brightly lit casino where I am staying is just yonder, and big buildings are noisy for all their immobility. A few cars pass on the highway below. I don't get to hear the rustle of any relatives who might be up and moving in the grass. I hope coyote might happen by, give me a sniff, a wink. I've not seen him since I was in Montana several days ago.

If I could stand, arms wide in my best shaman's pose, and cast my vision out for miles and miles, across the plains to east, south and west, and up north through the rolling hills and forests that comprise the Turtle Mountains, I would place my loving gaze on Chippewa land. But the reservation is small; at 6 by 12miles, it encompasses a mere 72 square miles. It's all the United States allowed the Turtle Mountain people to keep after stealing everything else.

I spend the day driving back across land that was free for us to roam, all across North Dakota toward my home in Montana. There are more oil wells than people, it seems. I reach the Montana border at the town of Plentywood, in the extreme upper-northeast corner of the state, in the waning moments of sunset. Darkness falls quickly, and driving at night I get a taste of what it might've been like before market hunters decimated indigenous animal populations; there's so much damn wildlife beside and on the highway that it's white-knuckle driving for hours until I find a place to stop for the night. I average a top speed of maybe 40 to 45 miles per hour. At one point, I come to a full stop in the middle of the highway, my headlights shining on the still form of a slain porcupine. Here is a coyote beside the animal, laughing at me, and not that swift in retreating from my approach. Just beyond the reach of my high beams is a cluster of deer, at least a dozen or so, also watching me. By the time I find a room at the La Casa Motel in Glasgow, I'm emotionally exhausted, and my voice is raw from yelling, "Stay off the fucking road!" out the window at all my unwary four-legged relatives.

It's still dark in the morning when I set out again, this time on the more traveled Highway 2 heading west. I plan to stop at Cree Crossing, near Malta. At the turnoff there's a brown sign — or "brown board," as I've since learned they are called — indicating a site of historical significance. I pull off and stop in front of a three-walled structure encasing two large rocks, both with faded petroglyphs carved into them. The sign indicates the larger rock is called "Sleeping Buffalo Rock," and it reads:

Montana's native people revere this boulder that once perched high atop a wind-swept ridge overlooking the Cree Crossing on the Milk River. The ancient, weather-worn effigy resembled the leader of a herd of reclining buffalo in an outcrop of gray granite. Ancient markings define its horns, eyes, backbone, and ribs. Since late prehistoric times, native peoples of the Northern Plains have revered the Sleeping Buffalo's spiritual power. Oral traditions passed down among the Cree, Chippewa, Sioux, Assiniboine, and Gros Ventre as well as the more distant Blackfeet, Crow, and Northern Cheyenne tell how the "herd" fooled buffalo-hunting parties. While each tribe has its own culture and beliefs, all Montana tribes share worldviews. A Chippewa-Cree elder explained, "These rocks are sacred, just like our old people." Locals claim the Sleeping Buffalo, relocated to Malta's City Park in 1932, was restless, changing position and bellowing in the night. The Sleeping Buffalo found this final resting place in 1967 where the smaller "Medicine Rock," also collected near Cree Crossing, rejoined it in 1987. These timeless objects continue to figure prominently in traditional ceremonies, linking the present with the past when the power of the prairie was the buffalo.

I follow a dirt road back off the highway for a couple miles past Nelson State Recreation Area to get to Cree Crossing. It's now an officially designated state wildlife management area. This location was a point where the Milk River could be safely crossed even during periods of higher water. Everybody who needed to ford the river used it, but it bears the name of my Cree-named relatives.

I arrive just at sunrise, an indescribable red glow stretching all across the eastern horizon. I park and walk out onto the bridge that spans the low, slow flow of the Milk River at the end of what has been a hot, dry summer. It's incredibly stirring; whitetail deer start and rustle and retreat into the willows and cottonwoods on the southern bank. In the distance, I hear magpies rasping out their greeting to the morning. In my mind's eye, I imagine people queued up here, laughing and cursing, urging their animals and two-wheeled carts across the river. I take some photos and wipe tears from the corner of my eye.

This place, this prairie, this sweeping landscape I've crossed that was the territory of people so many now know so little of.

Chief Little Shell died in 1901 (or possibly 1903, according to some records), "unsuccessful in his quest to bring his Montana brethren into Turtle Mountain." A July 4, 1901, article on his death in the *Minneapolis Journal* said Little Shell was prominent in the "Indian troubles" of 1895 that could have led to "the sacrifice of many lives." Finally, it said, "The chief was eloquent and never could forgive his race for surrendering title to a foot of land or leaving it without making a fight."

Until my trip to Minnesota and my brief time at Turtle Mountain, I'd never felt a connection to Little Shell beyond the idea he was a man whose name our people chose to identify ourselves. But now I sense his presence as an individual, a person who faced more difficult choices than anyone should have to, all in service to his people. More than ever, I feel a sense of pride and duty to live up to this name, Ayabe-way-we-tung or Little Shell.

"Great leaders around the world," Les LaFountain told me, "we think of them as people who gave of themselves for the people. Little Shell was one of those individuals."

FAZAL SHEIKH

THIRST
EXPOSURE
IN PLACE

Now on view

Fazal Sheikh: Thirst | *Exposure* | *In Place* is organized by the Denver Art Museum. The exhibition is presented by Jane P. Watkins, with additional support from the donors to the Annual Fund Leadership Campaign and the residents who support the Scientific and Cultural Facilities District (SCFD). Promotional support is provided by *5280 Magazine* and CBS Colorado.

IMAGE: Fazal Sheikh, from the series *Thirst: Great Salt Lake*, November 2022. Pigmented inkjet print. © and courtesy Fazal Sheikh.

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THE SEASONS OF UŊALAQŁIQ

An exploration of living in direct relationship with the land, water, plants and animals in and around Uŋalaqliq (Unalakleet), on the west coast of what's now called Alaska.

The tundra provides

Picking blueberries and other forms of sustenance.

BY LAURELI IVANOFF

FROM ABOVE I saw them: Two little girls, about 7 years old, lying on the tundra, talking. One on her belly, the other on her back. The sun was out. There was a breeze strong enough to keep the mosquitoes away. It was a perfect early fall day in Unalakleet. The girls' quart-sized plastic buckets hung on the branches of a nearby 8-foot-tall spruce tree, and the color on the spruce reminded me of Christmas. Their adult person was just a bit farther down the hill, near the alder bushes, picking blueberries.

I stopped the four-wheeler. Seeing those little girls caused my lungs to soften, my belly to relax. I didn't realize how much tension I was carrying, and I smiled. I had just picked a gallon of blueberries on the east side of the hill and was heading back home. It was a hill my mom and her friend Nancy used to pick berries on, a hill I probably followed Mom to when I was the same age as those girls.

From a distance, I couldn't tell who they were or who their adult person was, but the moment was so precious I took a photo. And remembered how at 7, 8, 12, heck, even 20 years old, I didn't enjoy picking berries. I was 4 years old when television came to Unalakleet, and I'd rather have been home, watching *The Mickey Mouse Club* or even *The Price Is Right*. Being on the tundra leaves you alone with your own thoughts. But I didn't have the attention span for my own thoughts. I'd rather, like those girls, hang my bucket in a tree and lie on my back, telling stories. Or practice handstands and cartwheels and my front handsprings on the squishy tundra. Or, more likely, I'd ask my Mom if we could go home. When she'd say no or answer no by just ignoring me, I'd wish I was back home on the couch, watching TV.

But now, lying in bed, happy I had four more quart-sized Ziploc bags of berries in our freezer, I scrolled through my photos and found the one of the girls. The red- and turquoise-colored buckets lent a bit of whimsy to the calm and comforting scene. I smiled again, happy that the girls were out with their adult person that day with every intention to pick berries, but instead, were lying on the *ayuu*, or Labrador tea, and lichen and all the little plant beings that make up the tundra. Though they probably didn't pick many berries that day, I knew that one day they would likely find themselves walking the tundra, picking berry after berry after berry after berry and not wanting to go home until their buckets were full. Because a full bucket means fruit all winter long.

I loved that they were outside, in the fresh air, feeling the breeze, feeling the heat of the sun on their beautiful brown cheeks.

Wild blueberries in the foothills of the Alaska Range, near Cantwell. **Emily Sullivan**

I know, because that's what happened to me. One day, in my early 20s, while out picking berries, I found I didn't want to return home until my gallon-sized plastic bucket was full. It was a strange urge. And annoying, honestly. I didn't want to be out there any longer, but the urge to stay until my bucket was full was strong and, on that day, the urge won out. I stayed. And picked. And picked. And picked. Even when I was tired and ready for a hot bath, I picked. That was the day I realized I had kind of grown up. Or something like that. A Native girl's rite of passage? An entrance into some sort of adulthood? It was odd. And while, yes, I was overly proud of myself for filling my bucket that day, I wasn't completely comfortable with this new sense of responsibility.

I'm going to have to fill my bucket every dang time, I thought.

I laugh now, but in those early adult days it felt like a lot of pressure — to do things you don't necessarily want to do, but know are good for you and those around you. After a few decades of serious adult picking, I've gotten faster. What was once a chore, a have-to-do, is now mostly enjoyable. I don't know exactly when that shift happened, but it did. Sure, the mosquitoes get really annoying. Sure, there are times when I leave the house forgetting to pack snacks or water, and halfway through the picking I realize I'm thirsty. Sure, there are days when I'm exhausted — from work, from family or life stresses, from the fatigue that comes with whatever as-yet-unidentified autoimmune issue I have. But the joy of August wouldn't be the joy of August without getting out and picking gallon after gallon of blueberries, day after day.

Those girls will know this life. This good life, I thought, looking at my phone. And I realized that's why my lungs felt light immediately upon seeing them. I loved that they were outside, in the fresh air, feeling the breeze, feeling the heat of the sun on their beautiful brown cheeks. I loved that they were feeling the scratchy tundra plants through their pants and on the backs of their necks as they lay there on the ground. I loved that they were enjoying the day. The hill. The smells. The tart punch of the Alaskan wild tundra blueberry. The sounds of wind and the feel of delicate blueberry skin against their fingertips. And I loved that they weren't even trying. That's what makes me smile the most: They weren't even trying.

Eventually, they'll know the goodness that comes from days spent living in relationship with the little plant beings on the tundra. Because on some level, they experienced that goodness on a very normal August day in Unalakleet. A day when the land taught them, in little whispers, that it will provide as long as we protect it. That it will heal and reveal life truths, if you share your thoughts and listen. Or just get lost in the somehow therapeutic act of picking berry after berry after berry. They'll learn that the land gives food, beauty, life and physical, emotional and spiritual nourishment.

I drove home grateful that day. Grateful that Mom took me picking even when I was a whiny, annoying kid, wishing I was home. Even when I didn't pick much more than a cup or two. Even though I'd whine so hard, trying to get out of picking berries, trying to get my Mom to drive us back to town. She never did, of course. Not until her own bucket was full. And so I'd lie on the tundra. Or practice my handstands and handsprings. Or simply stare up at the sky and wait.

REVIEW

Come and get your love

Indigenous people deserve gushy romance novels.

BY TAYLAR STAGNER | PORTRAIT BY AMANDLA BARAKA

DANICA NAVA LOVES LOVE and writes about it well. An enrolled Chickasaw citizen, she is the first Indigenous rom-com novelist to be published by a mainstream publishing house. She bubbles over with excitement when she talks about her debut novel, *The Truth According to Ember*, an easy, breezy and welcome addition to the genre for Native readers, and for anyone who lives, laughs and (of course) loves.

"I love the butterfly feeling," she said during our Zoom interview, speaking with infectious excitement and an easy smile while taking a break from being a new mother to talk about what inspires her. Even though movies like *The Princess Diaries, Bridget Jones's Diary* and *Legally Blonde* belong to her favorite genre and she likes to say she's a sucker for romance of all types, she realized she never saw Indigenous people playing the lead in these stories. And so she decided to write her own version, saying, "I want this to be so unapologetically Native, and I want us experiencing joy."

There's an upsetting history behind romance novels when it comes to Indigenous people: The genre is littered with one-dimensional and offensive stereotypes. But Nava's book succeeds by forging its own way forward despite that history. It's the kind of book that leaves the Native reader with the same elated and giddy feeling that your favorite rom-com might give you, only better. A romantic comedy with interesting characters who meaningfully embody the Indigenous experience? *Yes, please. I'll take two.*

For every depiction of Native people in crisis, dispossessed and historically neglected, there ought to be an equal amount of literature in which we are shown overcoming obstacles, living fulfilling lives, laughing and falling in love.

The Truth According to Ember succeeds by reminding the reader that you need to learn how to be your authentic self before you can open the door to romance. Ember Lee Cardinal is a 25-year-old living in Oklahoma City and dreaming of something bigger. She loves numbers and wants to be an accountant, but she has not graduated college, and she suspects that the fact that she's Chickasaw limits her opportunities. After applying for — and being rejected by — dozens of jobs, she decides on a desperate remedy: Why not just lie on her résumé? And so she starts calling herself white and saying that she has an accounting degree from a community college. The situation is loosely inspired by the challenges Nava herself faced trying to find a good job while Native.

Then — *boom!* — she gets an interview. But on the way there, Ember meets the person who will turn out to be her leading man: Danuwoa Colson, the company's hot Cherokee IT guy. The character is loosely based on Tanaka Means, with long braids, six-pack abs, a winning smile, the works. And the chemistry is immediate: They tease each other, and, as in any good romance, there are constant, playful hints of something more.

There are references to serious Indigenous issues, but they are well integrated into the story: how it feels when you think someone is a "pretendian," a cringy attempt at sage-burning at a corporate retreat, hearing weird racist language from your boomer boss. It's not sexy, but the fact that these issues are raised helps Native readers sink comfortably into the book. And it all hangs together nicely, adding a certain depth to the rom-com atmosphere.

The corporate world is lampooned throughout. The company our protagonists work for is clearly unaccustomed to having Native people work there: *Going off reservation, low man on the totem pole* and *let's have a pow-wow* are all examples of the thoughtless corporate jargon that so often makes Indigenous people uncomfortable. Language becomes another arm of colonization embedded in corporate culture, a ticking reminder that Native people rarely exist in these professional spaces. Again, Nava draws from her own experience, noting that one of her real-life former bosses used a slur while speaking to her about another Indigenous woman.

As Ember gets used to her new job, she finds herself struggling to keep up with all the lies she's been telling: that she has a degree, that she's white, that she already has a boyfriend. Lies to cover up yet more lies, as she and Danuwoa flirt and grow closer. Danuwoa sees through the falsehoods, but as they get bigger, Ember starts to lose control of the situation. It's hard not to get angry at the character as her lies start to hurt her, as well as those around her.

"Ember has had a hard life without much opportunity," Nava explained. The book is about more than romance with all its sweet gooey feelings; it's also about the author's own frustrations with the financial state so many young Natives find themselves in. Ember is under immense amounts of stress, and, overwhelmed by escalating issues at work and with her family, she responds in the worst way possible: She isolates herself and refuses to ask for help. She and her family have always struggled financially, but when she finally gets a well-paying job, she begins to unravel, convinced that she doesn't deserve a stable income. Imposter syndrome sets in; she is lost in a corporate

system where her real background leaves her constantly anxious and isolated. "It's about the corporate and capitalistic institutions that systematically undervalue BIPOC employees," Nava said.

Ember's faults are obvious, and the book is better for them. When she isn't enmeshed in her tangle of lies, Ember is charming and funny. The reader can't help caring about her, and it hurts when everything finally falls apart. But that makes it all the better when she finally picks herself back up and comes to terms with who she is. It is only when she is exposed and forced to accept herself that she can open up to love.

Like many Indigenous people who realize they need help, Ember ultimately turns to her community. No spoilers here; I'll let you read the book to find out how the romance bits pan out — including a very surprising, heartfelt rendition of Peter Gabriel's song "In Your Eyes."

The whole time she was writing her novel, Nava said, she was thinking of the song "Come and Get Your Love" by Redbone, a Native rock band whose breakout-hit remains legendary in Indigenous circles. Every time she got writer's block, she played that song. She wants her readers to feel like they are listening to it while reading her book: Like *The Truth According to Ember,* it's the kind of joyous bop you can sink right into as you let yourself fall in love.

"It's fun and vibrant and the vibe I want in my summer rom-com," she said. "Come and get your love, Ember."

The Truth According to Ember
Danica Nava
348 pages, softcover: $19
Berkley Publishing Group, 2024

Danica Nava at Lake Casitas Reservoir, California.

ENCOUNTERS

An exploration of life and landscape during the climate crisis.

After despair comes repair

Can words change how we think about climate change?

BY RUXANDRA GUIDI

A NUMBER OF TERMS have been coined in recent years in an effort to make sense of the climate crisis. Language, after all, is a living thing that constantly mutates to keep up with reality, and as our environment changes in unprecedented ways, we struggle to find words to describe what's happening, even as we struggle to understand it.

Take the widely used "Anthropocene," first employed back in the 1980s. It brings together the Ancient Greek *ánthropos* (human) and *kainós* (recent) to define the current era, when humanity began to substantially alter the surface of the planet we live on. The Anthropocene Era dates back to at least the 19th century Industrial Revolution, though a number of scientists believe it's part of the current Holocene, which began almost 12,000 years ago. Experts also disagree on whether the Anthropocene began earlier than that, or if its starting date was much more recent — as recently as the 1950s, in fact, when the global risks of nuclear wars and terrorism took center stage. Our species' impact on the planet is hard to define: The consequences have grown exponentially in the last 200 years, and they've done so in increasingly complex ways.

"Anthropocene" is not an official unit of geologic time, and not everyone who accepts the concept thinks the word is an apt description. Scholars like Donna Haraway argue that "Anthropocene," by its nature, assumes that all humans should be blamed equally for ecological destruction. Haraway prefers calling this era the "Capitalocene." She did not come up with the word, though she is credited for its spread across the humanities.

"No species, not even our own arrogant one pretending to be good individuals in so-called modern Western scripts, acts alone," Haraway wrote in her commentary "Anthropocene, Capitalocene, Plantationocene, Chthulucene: Making Kin" in *Environmental Humanities*. "But, is there an inflection point of consequence that changes the name of the 'game' of life on earth for everybody and everything?" Haraway, a feminist studies professor emerita at the University of California, Santa Cruz, agrees with other critics that instead of blaming humanity, we should look at yet another human construct: the capitalist mode of production and its endless push for growth.

Stephen J. Pyne, an Arizona State University professor specializing in environmental history, came up with the term "Pyrocene," which reflects our experience of increased wildfires, or of burning fuels for energy. "I see the world through a pyric prism," Pyne wrote in a 2022 essay in the journal *Psyche*, titled "Our children will need to find the beauty in our burnt planet." In the reforging of Earth, I see fires, especially those burning fossil fuels, as a cause. I see fires, mutating into megafires, as a consequence — and fires everywhere as a catalyst."

"No species, not even our own arrogant one pretending to be good individuals in so-called modern Western scripts, acts alone."

Whichever concept we use to help us move through our current world — Pyrocene, Anthropocene or Capitalocene — can it give us some new agency, or are we obliged to accept this era as a new normal, a geological epoch whose fate is written in the stars?

The word "solastalgia" was coined by Australian environmental philosopher Glenn Albrecht to describe his and our collective anguish at living amid environmental destruction. The term isn't as widely used as the Anthropocene, but the sentiment seems to be everywhere these days. It combines the Latin *sōlācium*, meaning comfort, and the Greek *algia*, or pain, to describe the kind of sadness, malaise or existential dread that many of us may feel in connection to rapid environmental destruction. Climate despair is obviously different from outright denial, but it implies a feeling that it's already too late to stop the worst impacts of climate change.

Solastalgia reminds me of another word, the Portuguese *saudade*, a type of nostalgia for a place or a person we love and miss. I love the idea of saudade, how sometimes one can experience it for something that hasn't even existed, but will, or perhaps can — how it defines a longing that reminds us of home, or of any beloved place that we yearn to return to, especially if we know it still exists. But what if our home is disappearing around us? In addition to having words that define our feelings, or our epoch, we need frameworks for dealing with this moment and the future as we try to navigate toward better ways of being.

It turns out the term already exists: The Symbiocene. Inspired by the Greek symbiosis, or "living with," the Symbiocene was also dreamed up by Albrecht.

"The idea of the Symbiocene stimulates all humans to create a future where positive Earth emotions will prevail over the negative," Albrecht wrote.

Albrecht believes that "positive Earth emotions" ought to define the next era of human and Earth history, making it a time of mutual benefit between humans and planetary systems. As an imagined epoch, the Symbiocene doesn't blame all humans for climate change, nor does it indulge our sense of fatalism and helplessness. The Symbiocene hints at an imagined future. But it also captures something that has always existed: Humanity, not at the center of existence, but as part of a system that's interconnected, dependent, responsible — to other species, to ecosystems, to life.

The planet Venus glows in the evening sky over Patagonia, Arizona. **Roberto (Bear) Guerra**

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 DANIEL GONZALÉZ

CALIFORNIA

If you're planning to embark on a cross-country trip but worry that air travel might be too ruff on your canine companion, maybe give BARK Air a shot — no, not *you*, Gov. Kristi Noem, put down that gun! According to FOX KTVU, the airline's inaugural flight — a "white paw experience," as in "white glove," not "white-knuckled" — took off from Westchester County Airport May 24 and landed successfully at Los Angeles' Van Nuys airport. Everything went smoothly, although a few days later Westchester County sued BARK for exceeding the passenger seat limit for private jets — 14 instead of the regulation nine. The lawsuit was settled June 10, according to fox10phoenix.com, with BARK Air agreeing to sell a maximum of nine seats. The airline offers a fancy assortment of "dog-centric" luxuries to keep its four-footed passengers in furred-class comfort, including a concierge service, noise-canceling earmuffs, chicken-flavored "puppuccinos" and doggie champagne (chicken broth), among other amenities. The price for one dog-and-human ticket runs $6,000, one-way, so it isn't exactly budget-friendly for the average Joe, or Fido. Next up: Canine Carnival Cruises on a luxury yacht? Noah's Bark, here we come!

OREGON

If you've ever doubted that dogs deserve first-class treatment, doubt no longer. When 62-year-old Brandon Garrett's truck plummeted off a steep curve into a deep ravine somewhere in the Wallowa-Whitman National Forest, one of the four dogs he had with him, a whippet named Blue, raced off to find help, *Field & Stream* reported, running four miles through dark woods despite having glass embedded in his snout. Later that night he found the campsite where Garrett planned to meet up with family. Roused by Blue, the family searched all night and located the crash site at the bottom of the ravine the next morning. Their 911 call brought help from the Baer County Sheriff's Office, Baker County Search and Rescue, Pine Valley Rural Fire District and Halfway Ambulance. Garrett was airlifted by Life Flight Helicopter to a hospital where he was treated for several non-life-threatening injuries and released. One of the four dogs suffered a broken leg, and another received surgery for a broken hip. And Blue, who certainly proved true-blue, answered the eternal question once and for all: *Who's a good dog?* You are, Blue. You are.

CALIFORNIA

Back in 2019, Diesel, a pet donkey living on a ranch in Auburn, California, accompanied his owner, Dave Drewry, on a hike in the Cache Creek Wilderness near Clear Lake, CBS Sacramento reported. But Diesel got spooked and ran off. The Drewrys, who suspected he'd been eaten by mountain lions, searched for weeks on horseback and using drones, but "finally kind of gave up," Terrie Drewry said. Then, this June, five years later, a hiker captured video footage of what appeared to be — you guessed it — a donkey living happily with a herd of elk, and Terrie is positive that it's Diesel. "It was amazing," she said. "Finally we know he's good. He's living his best life. He's happy. He's healthy, and it was just a relief." Now that Diesel is a full-fledged member of the Elks Club, the Drewrys have no plans to bring him back to the ranch. "To catch him would be next to impossible, anyway," Terrie said. "He is truly a wild burro now."

MONTANA

The birth of a rare white buffalo in Yellowstone National Park on June 4 occasioned a celebratory gathering on June 26, NPR reported. The calf is believed to be the first white bison born in Yellowstone, according to park officials. To many Indigenous people, a white buffalo is sacred; its birth fulfills a prophecy and reminds humanity to take better care of the Earth. "It's like a miracle to us," said Chief Arvol Looking Horse, a spiritual leader of the Lakota, Dakota and Nakota Oyate peoples and the 19th keeper of the sacred White Buffalo Calf Woman Pipe and Bundle. Around 500 people from several tribes gathered at the headquarters of Buffalo Field Campaign between Hebgen Lake and Madison Range to celebrate with singing, dancing, drumming and a retelling of the Buffalo Calf Woman story. The calf's name, revealed on a painted hide, is "Wakan Gli," which means "Return Sacred," in Lakota. Yellowstone officials say the calf hasn't been seen since June 4. Perhaps this is just the spokesbison's way of saying "No comment." Besides, as Looking Glass told NPR, "The thing is, we all know that it was born, and it's like a miracle to us."

VICTORY KEEPS 48 BILLION TONS OF COAL IN THE GROUND

Eighty-five percent of coal produced on federal public lands comes from Wyoming and Montana's Powder River Basin—the largest geographic source of carbon dioxide pollution potential in the nation.

With our local and national partners, we won two federal court cases and urged three successive presidential administrations to stop new leasing there to protect our climate, public health, and the environment. This spring, the Biden administration ended coal leasing in the basin, a historic victory for WELC and the planet, **keeping 48 billion tons of coal—and its massive climate pollution potential—in the ground.**

But keeping coal—and its threat to a livable climate—in the ground is only step one. Coal mines need cleaning up for safety and the environment, and we are urging the federal government to ensure a just transition to cleaner, renewable energy by retaining former coal workers to help clean up these dangerous, polluted sites.

We can and must address the climate crisis with all possible speed while protecting the needs of communities that have overrelied on the fossil fuel industry for far too long.

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#IAM THE WEST

RYAN BREEZY (HE/HIM)
(NAVAJO/PAIUTE)
Indigenous makeup artist
and plus-size model
Shonto, Arizona

Representation matters. I never thought just being me and being in this space would inspire so many. I have been involved in the world of fashion for over a decade — working specifically in the Indigenous fashion and beauty world — beginning with makeup. The industry can be intense; if you don't fit within the universal standards of beauty, you are not given a second look. But the standards in fashion and beauty are finally changing. Inclusivity is important. I view fashion and beauty as art, and there are no rules when it comes to art. It's a way to express ourselves without words and to be comfortable in our own skin. I am grateful for all the opportunities presented to me, and I hope to see more Indigenous people in the world of fashion and beauty.

Do you know a Westerner with a great story?
Let us know on social.

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