High Country News

THE ONCE AND FUTURE PRAIRIE

Alaska fish camp without the fish

The quinceañera gets an update

When is a farm no longer a farm?

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Workers from the Phoenix Conservancy in eastern Washington walk through the area known as the Palouse, where the group is restoring small parts of the endangered prairie. **Rajah Bose / 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. See hcn.org for submission guidelines. Subscriptions to HCN are $45 a year, $47 for institutions: 800-905-1155, hcn.org. For editorial comments or questions, write High Country News, P.O. Box 1090, Paonia, CO 81428 or editor@hcn.org, or call 970-527-4898. For correspondence addressed to High Country News, HCN or to the editors, permission to publish will be considered implicit unless specifically stated otherwise.

The long journey ahead

A FEW WEEKS AGO, I followed a hawk that was following the cliff edge above the beach, flying into the wind. It rarely flapped its wings, except when the wind gusted; then it flapped them slowly, just enough to not lose ground — or air, I should say. It reminded me of taking my chocolate Lab tubing on the rivers of western Massachusetts. She'd float alongside us, dog-paddling only when necessary to sustain her momentum or skirt an obstacle, working with, rather than against, the forces of nature.

I was supposed to be camping in a sky-island pine forest at 7,000 feet. I've been there before, in summer. It was hot and dusty, but the soft breezes wafting that sweet pine aroma made it a haven nonetheless, and I'd been looking forward to returning this fall. However, October heat waves are not uncommon where I live, so the trip was a gamble from the start. Earlier in the week, a red-flag warning was issued, then lifted, followed by the yellowy band of an "excessive heat watch." Overnight it grew into an excessive heat warning, now solid red. That morning, when I should have been packing the car, it was already 92 degrees in the ridgetop pine forest. There is only one way in and out of this place: an unkempt mountain road with steep drop-offs, crumbling asphalt and no cell signal. I decided not to risk it.

At the beach there was thick fog, and it was 10 degrees cooler there than just a mile up the road, where the sun was out. No excessive heat here, thanks to coastal weather. Meanwhile, people in the Southeastern U.S. were trying to reassemble their lives in the wake of one unprecedented hurricane while awaiting the landfall of another. We are like that hawk, navigating stiff headwinds and trying not to lose ground against runaway climate change. And we are like my chocolate Lab, submitting to the current yet steering around obstacles as they arise. We are staring into the eye of an extremely consequential presidential election, with misinformation circulating widely and rapidly, peddled as truth to overly trusting voters while others unknowingly have had their voting rights revoked.

At moments like these, I find myself asking: *How can we do the least harm? How can we make wise choices, with an understanding of how our actions will affect the future? How can we work with, rather than against, nature to get out of this mess?* By seeking facts. By showing up, and knowing when it's time to leave. By being vigilant, and being prudent. By flapping our wings enough to make progress, yet reserving energy for the long journey ahead.

Jennifer Sahn, editor-in-chief

Joanna Kulesza

The mother-daughter duo fighting fossil fuels in Colorado
How Madhvi and Lalitha Chittoor teamed up against a proposed oil and gas development.
By Raksha Vasudevan

Courtesy of Miguel Ordeñana

Audio: What do we really learn from trail cams?
Documenting wildlife can bring us back to nature.
By Ruxandra Guidi

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ON THE COVER

Prairie smoke, *Geum triflorum,* grows in a prairie remnant in a cemetery near Pullman, Washington.
Rajah Bose / HCN

Boats on the bank of the Yukon River in Ruby, Alaska.
Jenny Irene Miller / HCN

FEATURES

REPORTAGE

BOOKS, CULTURE & COMMENTARY

OTHER MATTER

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

(DIS)TRUST ISSUES

I just finished reading and absorbing "Trust Issues" (October 2024). How ludicrous. My mouth is still in gasp mode. I had no idea anything that odious still exists in the U.S.! Hasn't colonialism done enough damage to Indigenous people?

Lynn Waltke
Tucson, Arizona

DESCRIBING THE INDESCRIBABLE

B. "Toastie" Oaster's essay "How do you describe a sacred site without describing it?" was a revelation to this old white guy (October 2024). These were issues I'd never thought about before. Where else but *HCN*?

Jack Burks
Green Valley, Arizona

Oaster's essay provided valuable insight. In many of my dealings with First Nations peoples, I found discussions very reserved, withholding some things that would have helped me understand. Your article explained that this is a way of protecting heritage: not only the land, the symbolism and the people, but your very culture.

Ron (last name withheld by request)
Calgary, Alberta, Canada

The issues Oaster raises around how best to balance reporting on sacred sites with maintaining their sanctity and privacy has been an ongoing struggle for me in my work as an anthropologist. I work with and for Indigenous communities in British Columbia within the realms of land-use planning, Indigenous knowledge, and responses to government and industry. These communities frequently struggle with the "damned if you do-damned if you don't" issues associated with reporting on or documenting the locations of cultural practices. Governments will say, for example, if you reveal the location and uses of a place, it can be protected. But if it is not revealed, then development can go ahead. It's an insidious trap of settler colonialism.

Oaster's article is timely, helpful and will generate lots of discussion.

Tad McIlwraith
Guelph, Ontario, Canada
Associate professor, Department of Sociology and Anthropology, University of Guelph

I was happy to see another in the same uncomfortable predicament. The biggest questions are: How far is too far? And is it really a story if I leave some of it out? I know in my heart that the real depth of these stories is the part I must leave out. I open the file and read them in their entirety, then close it and rest in the beauty of their powerful ceremonies and their spirit, which I carry with me.

Susan Nunn
Joplin, Missouri

Thank you for Oaster's brilliantly written article, for the educational component as well as clearly expressing the push/pull writers experience when writing.

When I was raising my daughters, I came across a book, *The Blessings of a Skinned Knee: Using Jewish Teachings to Raise Self-reliant Children*, by Wendy Mogel. One item from it was very liberating. It basically said: You can tell your children "no" and not owe them an explanation.

I believe this teaching applies to your question, "How do you write about a sacred site without saying why it is sacred, in a way that will help non-Natives care?" You don't need to explain why something is sacred if it is determined to be sacred in the hearts of Native people. That is all we need to know.

Maggie Kennedy Fairbrother
Bethesda, Maryland

EMISSIONS = POLLUTION

I enjoyed Jonathan Thompson's October 2024 article "Downballot." When talking about the release of carbon dioxide or methane, however, I ask that *High Country News* not call it "emissions," but rather "air pollution" to advance our fight against human-created climate change.

The definition of "air pollution" is "any airborne substance in quantities that can have deleterious effects." People understand what "air pollution" is versus what "emissions" are. We can reach the public much quicker and more deeply by this one change in language.

Brandt Mannchen
Houston, Texas

REIMAGINING CITIES

A great report by Jonathan Thompson on California's "Sponge cities" (September 2024). Impermeable concrete and its overuse increase the danger of flooding, pollution and higher temperatures during heat waves.

Urban planning and building codes should be updated to require permeable pavement, more green spaces and rainwater catchment systems on all buildings. Either green roofs, blue-green roofs or solar panels should be required on all new buildings.

These changes may seem extreme, but we must find the political will to make them happen. Urban living could be enjoyable as we work together to improve quality of life for all.

Helen Bourne
Encinitas, California

THE RIGHT WORD

I enjoyed Ruxandra Guidi's article "After despair comes repair" (August 2024) about language for describing the climate crisis. I think *Symbiocene* is an apt term to describe *HCN*'s work as a whole, providing real news and real stories about things that matter in a way that inspires those "positive Earth emotions" about our planet, its people and other equally important life, especially here in the West.

Alex Clayton
Fort Collins, Colorado

CORRECTION

In "Consider the source" (October 2024), we mistakenly identified Tim Lahey as district ranger of Montana's Beaverhead-Deerlodge National Forest. Lahey is Butte district ranger and manages a portion of the Beaverhead-Deerlodge. We regret the error.

Elva C. Lomayaktewa, District II council member, releases Apache trout into Hawley Lake on the White Mountain Apache Reservation during a celebration of the fish's removal from the federal list of threatened and endangered species.

REPORTAGE

The Apache trout swims off the threatened species list

Arizona's state fish is doing better but faces a daunting future.

BY BEN GOLDFARB | PHOTOS BY ZACH DUNCAN

WHEN 19TH-CENTURY miners first scouted eastern Arizona, they found that the region's alpine streams contained more golden wealth than merely ore. The White Mountains are home to the Apache trout, one of only two native salmonids within Arizona's borders. They're lovely fish, endowed with mustard flanks, pink and purple undertones, and constellations of black spots. Miners called them "yellow trout" or "yellowbellies."

Colonization wasn't kind to the Apache trout. The newcomers caught and ate them by the bushel, and logging, overgrazing and mining degraded their mountain creeks. Worst of all were the legions of non-native trout — brook, brown and rainbow — that the state later stocked in the White Mountains to entertain anglers. The introduced fish swiftly overwhelmed the native trout. When the first iteration of the Endangered Species Act passed in 1967, Apache trout were protected by it, and the U.S. Fish and Wildlife Service formally classified the species as threatened in 1975.

This is a familiar ecological saga in the West, where native trout are among the most imperiled groups of species. But thanks to the concerted efforts of federal and state agencies, nonprofits and the White Mountain Apache Tribe, the Apache trout gradually recovered. On Sept. 4, the Fish and Wildlife Service removed *Oncorhynchus apache* from the federal list of threatened and endangered species — making it the first American sportfish to achieve delisting. The fish's recovery, Interior Secretary Deb Haaland said in a statement, "reminds us of the transformational power that collaborative conservation efforts — grounded in Indigenous Knowledge — can have on fish and wildlife."

Yet the Apache trout's future is far from assured. The West is rapidly getting hotter, drier and more flammable — hardly promising for a fish that relies on cold, clear flows. "I don't see this as, 'OK, it's time to stop, we're patting ourselves on the back," said Nathan Rees, Arizona state director for Trout Unlimited.

ALTHOUGH CONSERVATION success stories never have single

"The bottom line is that the habitat is objectively not protected."

authors, the White Mountain Apache Tribe deserves the lion's share of credit for the trout's comeback. By the 1940s, Apache trout endured in just 12 streams — all of them on the Fort Apache Indian Reservation. (At the time, Apache trout were lumped in with Arizona's other endemic salmonid, the Gila trout; not until 1972 did biologists reclassify the Apache as a separate species.) In 1955, the tribe, which prizes the trout, closed its streams to sportfishing — an act of radical foresight that predated the trout's federal listing by more than a decade.

In the 1980s, the White Mountain Apache, aided by a panoply of agencies, began assisting Apache trout in earnest. Land managers closed forest roads, improved logging management and fenced cattle out of streams to ease pressure on the fish's habitat. Tribal and state agency staff bred Apache trout in captivity and returned them to their former public-land domains. Slowly, the fish's population began to tick upward.

"I think we're the leaders," said Tim Gatewood, the tribe's longtime fisheries manager and a tribal member. "A lot of times, those guys that helped take part in management came through our office, and we kind of told them what we wanted."

Most crucially, fish managers curtailed the non-native fish that bedeviled Apache trout. In many streams, agencies installed barriers to prevent invasive trout from penetrating Apache strongholds. With those headwaters secured, biologists set about purging the invaders with poison and currents of electricity. The process was hardly linear: Rock barriers failed and had to be replaced with sturdier concrete ones, and the 2011 Wallow Fire, the largest conflagration in Arizona's history, killed thousands of Apache trout and incinerated riparian vegetation. Several times the fish was on the verge of delisting, only to narrowly fall short.

"We'd get close, and then there'd be a setback," said Julie Carter, aquatic wildlife branch chief for the Arizona Game and Fish Department. "But the species was resilient and would just persevere."

Today, surveys indicate that the species inhabits less than a third of its former range, which once encompassed nearly 700 miles of stream. Still, recovery efforts have saved the fish from immediate jeopardy. According to the Fish and Wildlife Service, Arizona has 30 discrete populations of Apache trout, enough to satisfy the agency's recovery plan. The Apache trout is now among a tiny handful of Western fish, alongside the Modoc sucker, the Oregon chub and the Borax Lake chub, ever to escape the threatened list — and the only one to which an angler is likely to cast a line.

IN ITS 2023 PROPOSED delisting rule for the Apache trout, Fish and Wildlife acknowledged that the Southwest suffers from "a megadrought that has large consequences for streamflows" and thus for the suitability of trout habitat. Megafires, too, remain a concern: According to the agency, some important drainages still face "a high risk of crown fire … and subsequent debris flows" that could smother trout streams.

For those reasons and more, not everyone is celebrating the trout's delisting. In public comments submitted to Fish and Wildlife, Robin Silver, co-founder of the Center for Biological Diversity, excoriated the decision for its failure to account for "the foreseeable effects of climate change and related long-term impacts." While the agency's analysis suggested that the fish's prospects for the next 30 years were fairly rosy, Silver objected to the timeframe's relative brevity. Silver also noted that some streams are still battered by overgrazing, and that non-native fish barriers aren't foolproof. "The bottom line is that the habitat is objectively not protected," Silver said.

Over the next six decades, climate change's impacts on Apache trout may be complex. According to one 2023 study, some formerly frigid headwaters could become just mild enough to support spawning trout, increasing Apache habitat. When the study's authors incorporated the likelihood of reduced rain- and snowfall into

From top: An angler holds an Apache trout before releasing it back into the West Fork Little Colorado River.

Thompson Meadow, a section of the Black River watershed degraded by overgrazing, before restoration by Trout Unlimited and the Forest Service begins.

their model, however, they found that a number of Apache-bearing streams will become less hospitable by the year 2080.

Apache trout are hardly the only Western salmonid in climate-related peril. A 2021 study found that the distribution of bull trout and cutthroat trout in the Northern Rocky Mountains stands to contract, respectively, by 39% and 16% by 2080, as their streams become warmer, drier and more vulnerable to invasive species. Such projections present a conundrum for managers: How should agencies weigh a species' current status against its dubious future?

One answer is to pursue restoration projects aimed at enhancing climate resilience. This year or next, Trout Unlimited will begin to restore Thompson Meadow, a section of the Black River watershed degraded by overgrazing and other pressures. According to Rees, the group intends to plant willows, fence out elk and construct more than 200 artificial beaver dams — work that will, in theory, cool down water temperatures and bring back the complex shaded habitat that Apache trout require. The White Mountain Apache Tribe, the trout's traditional custodian, has received more than $2.5 million from the Bipartisan Infrastructure Act to replace derelict road culverts on trout-bearing creeks, allowing the fish to access cold headwaters as downstream reaches become less habitable.

"I know (delisting) is not the end here," said Gatewood. "It's just more work."

Ben Goldfarb is a High Country News *correspondent. His most recent book is* Crossings: How Road Ecology Is Shaping the Future of Our Planet. *Follow @ben_a_goldfarb*

POEM

Where does the horse come from?

By Blas Falconer

From the North American grasslands
over 55 million years ago. From the genus
Equus, evolving from Pliohippus
during the Pliocene. From a faint
memory or my imagination on the road
from Salinas to the beach one morning,
the sugarcane fields rising up on either side
of us. The sound of its hooves made
a music, one characteristic of
the Puerto Rican *Paso Fino*,
meaning "fine step" in Spanish. My son rides
each week. On the stable wall, a harness for
each horse, the name written under
its hook. *Ohio. Montana.*
My son's father is from *Pennsylvania.*
My son rides slowly in circles inside
the pen, kicking up black dust, as I walk
in circles outside. *Am I Puerto Rican?*
He asks. Some days we walk the ground's
perimeter to be among the horses. To be
among the horses is enough some days.
He holds my hand as we walk. Often,
someone will pass us on the trail, crossing
the bridge over the highway. When we hear
them coming, we step aside. *Where are
they going?* My son asks. We stop to watch
horses disappear into the mountains.

WEB EXTRA Listen to Blas Falconer read his poem at **hcn.org/the-horse**

REPORTAGE

What makes a farm a farm?

Agritourism divides a rural Washington county.

BY REBECCA DZOMBAK
PHOTOS BY JOVELLE TAMAYO

THE RESIDENTS OF WESTERN Washington's Skagit County, which stretches from the Cascade Mountains to Puget Sound, are proud of their county's agricultural heritage. Throughout the region's idyllic patchwork of fields and country roads, crop identification signs tell visitors exactly what's being grown, while family farmstands offer fresh produce.

The amount of farmland, however, has declined over the past century. Now, only 7% of Skagit County is agricultural. And as crop prices fluctuate, costs rise and extreme weather becomes more common, some farmers are turning to more elaborate forms of "agritourism" to make ends meet, opening event venues and expanding their roadside offerings. To some residents, the new buildings and parking lots mean traffic jams, tipsy guests and other disruptions to traditional farms. Others see special events and nontraditional agritourism as the only way to preserve their beloved farmland.

"People are really focused on protecting our natural resource — the soil," said Jessica Davey, who runs a farm and wedding venue in Skagit County. "That's our farmland. It's rich. It's fantastic. But who works that resource? Farmers. Why aren't we focusing more on supporting the farmers?"

EACH YEAR, SKAGIT County's nearly 900 small and large farms produce about $350 million worth of berries, tulips, apples, potatoes, dairy products and other commodities. Agriculture is both a significant local employer and the heart of the county's identity. But while some locals feel that agritourism should limit itself to activities directly related to farming, others want a broader definition that includes event hosting.

"We want options available for creative revenue streams — to keep our farms in business, to keep farming," said Amy Frye, who runs a 35-acre produce farm.

"To have a business that is absolutely dissociated from farmland seems kind of antithetical to the whole idea of agritourism," countered Peter Browning, a Skagit County commissioner who grew up on an organic

farm. "We don't want to completely thwart any sort of business. But if it's not related to farmland, stay away from the farmland and do it someplace else."

Disagreement has been fierce at times, leading to raised voices at public meetings and souring relationships between once-friendly neighbors. And people's opinions are unpredictable; for example, local farmers big and small, young and old, are found in all camps.

Last year, the county's Agricultural Advisory Board proposed changes to the county code which, if approved by the county commission, would clarify the definitions of agritourism and "agricultural accessory use." The suggested language states that "celebratory gatherings, weddings, parties, or similar uses ... are not agritourism." The changes, which would reduce the number of events permitted for each landowner from 24 to 12 per year, would also mandate that they be related to farming activities on the property.

The agricultural board hoped the changes would provide clarity, but they only created more confusion. Many found them ambiguous; some complained that they could prohibit existing farmstands or impact farms that weren't even engaging in agritourism. And residents already operating event venues in compliance with existing codes were alarmed by the proposed restrictions.

In early 2023, Davey purchased a rambling, long-vacant estate near Mount Vernon — Skagit County's "big city" — and revitalized it as both an event venue that specializes in weddings and a working farm that produces hay, a variety of produce and landscaping trees. Given her background in construction lending, she said she was rigorous in her planning and permitting process: "I devoured the county code." But she fears that the proposed ordinance will put her first-generation farm out of business.

The proposed changes in some ways ran counter to the results of a 2021 county survey, in which many residents cited the benefits of agritourism while noting that traffic and parking were becoming a problem. About 78% said restaurants, breweries and tasting rooms qualified as agritourism, while just under 50% of respondents agreed that weddings and other temporary events did too.

"The recommended changes were vastly different from the direction of that (report)," Frye said. "A lot of people felt like, 'Whoa, what happened?' There was whiplash."

Facing page: Briarwood Estate, a farm and wedding venue in Skagit County, Washington.

Above: Visitors at Gordon Skagit Farms' pumpkin patch in Mount Vernon, Washington.

MICHAEL HUGHES, a Skagit farmer and chair of the Agricultural Advisory Board, said the changes reflect existing county and state protections for agricultural lands. Hughes fears that if those protections are weakened, "we'll see more accelerated erosion of agricultural lands and the agricultural economy," he said. The biggest concern, he added, is the conversion of agricultural land to other uses, such as parking lots and non-farm buildings.

Approximately 20 event venues are currently operating on agricultural lands in the county, according to Will Honea, Skagit's chief civil attorney. The extent of agricultural land in Skagit County has shrunk from an estimated 150,000 acres in the 1940s to roughly 88,000 today. But the county has not published a formal inventory of agricultural land converted to event venues and other non-farm uses.

Davey and others said that without such an inventory, it's irresponsible to treat agritourism as an enemy of agriculture.

"Agritourism has been the poster child for why we're losing ag land," Davey said. But that oversimplifies matters: "There's industry pressure, housing pressure ... a lot of different aspects go into that."

The current debate is not unique to Skagit County. King County, home to both the city of Seattle and the traditionally agricultural Sammamish Valley, has been embroiled in a yearslong legal battle with the state over the regulation of bars, tasting vineyards and other event spaces on agricultural land. In a 5-4 opinion issued in September, Washington's Supreme Court affirmed the state's ability to limit the uses of agricultural lands, writing that "agricultural land must be conserved, by maintaining or enhancing the land, and by discouraging incompatible uses."

Back in January, the Skagit County commissioners adopted a six-month moratorium on permit applications for new business uses, including events, on agricultural land. They have since extended it through next April and sent the code changes back to the county's planning commission to be reconsidered. That leaves dozens of small farms facing economic uncertainty — and county residents still at odds.

"It's definitely stressful to be in this limbo," Davey said. And with so much ire focused on event venues, she said: "I feel kind of like a leper in my own community."

Rebecca Dzombak is a science writer covering the intersection of environment, conservation and agriculture from her home in Olympia, Washington. @bdzombak

How climate change affects your energy bill

Wildfires and winter storms are complicating the picture.

BY ERIN X. WONG
DATA VISUALIZATION BY JENNIFER DI-MAJO

ONE OUT OF EVERY FOUR American households could not afford to pay its energy bills at least once over the past year. Some families cut back on groceries or medicine to make ends meet, while others kept their homes at uncomfortable, even unsafe temperatures to save money.

Across the West, electricity rates rose an average of 17% between 2018 and 2023, amid record-breaking wildfires, storms and extreme heat. While the rate hike can be attributed in part to inflation and the cost of maintaining aging infrastructure, experts also cite climate-related costs.

Utilities are now investing billions of dollars to harden their infrastructure to reduce the risk of igniting wildfires. Meanwhile, increasingly extreme temperatures are forcing ratepayers to turn up their heat in winter and their AC in summer. Hurricanes and winter storms, intensified by climate change, also damaged fossil fuel infrastructure in the South in recent years, creating volatility in the price of natural gas.

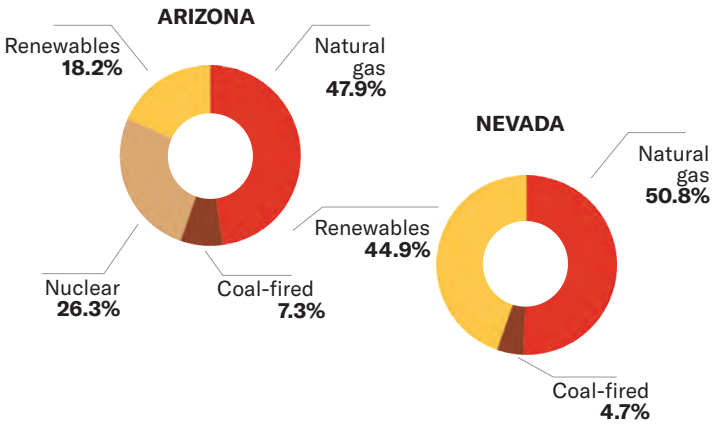
In the runup to this year's elections, both parties have pledged to make energy more affordable. Their strategies differ radically, though: Republicans typically favor more drilling, saying it will lower prices by increasing overall supply, while Democrats argue that solar and wind power is now cheaper than fossil fuels. The latter strategy requires significant upfront investments but has been shown to cut costs in the long run.

As Westerners struggle to pay their power bills, one thing is certain: Utilities' jobs are going to get harder. In the coming decade, overall energy demand will continue to grow, especially with the wave of new data centers and electric vehicle charging stations. Meanwhile, climate change will continue to raise temperatures and intensify storms and wildfires. Here's a snapshot of the impacts so far.

Erin X. Wong is an Oakland, California-based editorial fellow at High Country News, *covering clean energy and environmental justice.*

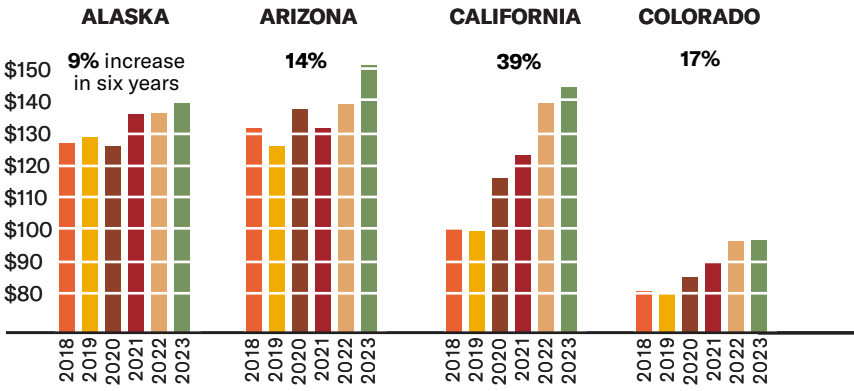
SOURCES: FindEnergy, U.S. Energy Information Administration, California Public Utilities Commission via Energy Innovation, Global Energy Monitor, Lawrence Berkeley National Lab

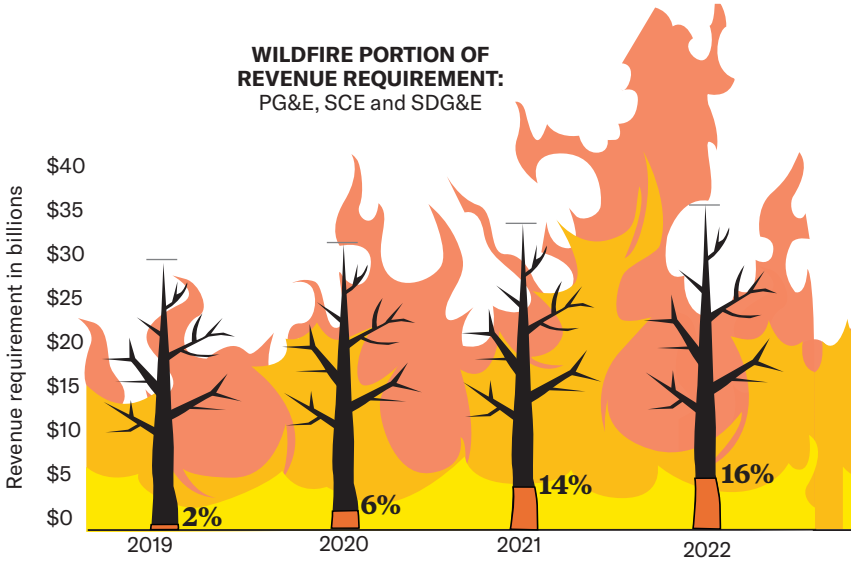
The known unknowns: Natural gas, which accounts for roughly half the electricity used in **Arizona** and **Nevada**, saw volatile price hikes over the last two years. Russia's invasion of Ukraine sent prices soaring in 2022, but climate-induced disasters, like the Texas freeze or Hurricane Ida, can also cause global supply shocks.



The rising cost of residential energy

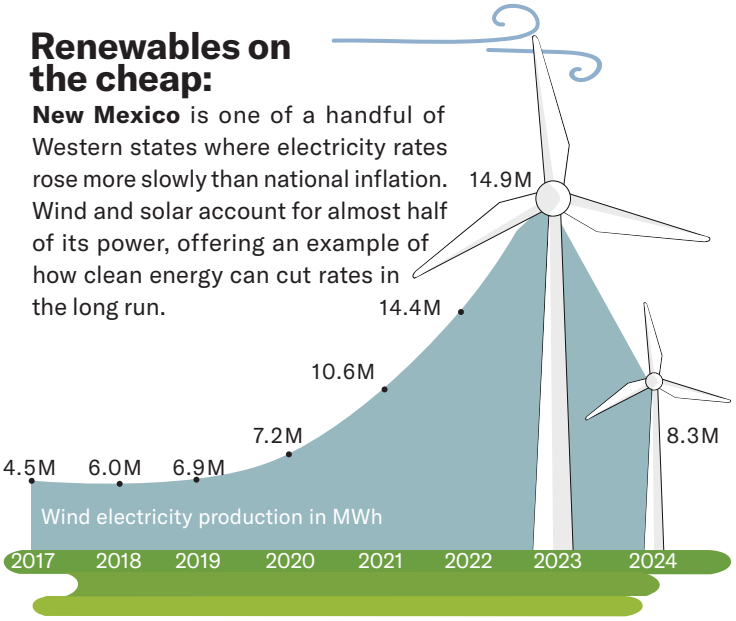
The average





Renewables on the cheap:

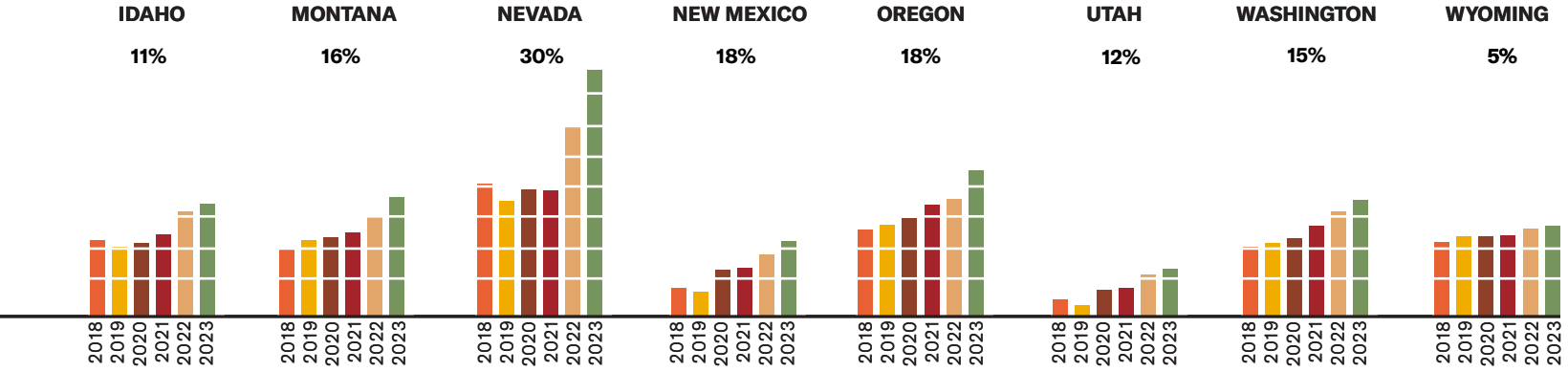
New Mexico is one of a handful of Western states where electricity rates rose more slowly than national inflation. Wind and solar account for almost half of its power, offering an example of how clean energy can cut rates in the long run.



> **We need our utilities to control their spending.**
>
> *—Bob Jenks, executive director of the **Oregon** Citizens' Utility Board. In May, the Oregon CUB called for the state public utility commission to limit rate hikes to no more than 10%. Any costs beyond the 10% increase would be delayed until a future year, requiring utilities to prioritize providing power to customers while reigning in extraneous costs.*

Ratepayer pushback: Energy bills typically rise in the summer and winter, particularly as climate change drives up demand for heating and cooling. In January, some residential customers in **Oregon** saw Portland General Electric's rates jump 18% when a severe winter storm hit the region.

monthly residential electricity bill, by state:

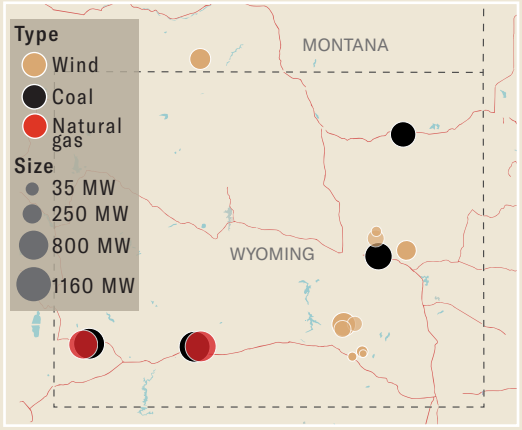


A time of wildfire:

In the wake of the 2018 Camp Fire, **California** utilities invested billions in burying power lines, clearing vegetation and installing sensors to identify potential wildfire risks. It's one of the primary factors that drove up power bills nearly 40% on average across the state by 2023.

Chart data originally published by Energy Innovation

ROCKY MOUNTAIN POWER'S POWER STATIONS



The cost debate: Late last year, thousands of ratepayers wrote to the **Wyoming** public service commission, protesting a nearly 30% rate hike proposed by Rocky Mountain Power. Some residents and officials blamed new infrastructure and transmission lines for the bump, but clean energy advocates were quick to point out the severe impacts of fluctuating coal and natural gas prices.

REPORTAGE

The dam that cried wolf

After multiple false alarms, the residents of Carnation, Washington, have lost trust in the Tolt Dam's early warning system.

BY HANNAH WEINBERGER
MAP BY LUNA ANNA ARCHEY

JULES HUGHES leaned her bike against a vehicle at a construction site in the heart of downtown Carnation, Washington. "Eventually, there'll be seating here," she said, describing plans to create a more welcoming downtown for the city. Carnation, about 30 miles east of Seattle, is home to around 2,500 people and growing. People chattered in nearby beer gardens as Hughes, a local arts advocate, settled onto a rock with her lunch in the September sun and pointed out the recent changes. A construction site across the street separated the Senior Center from its brand-new low-income apartments, and new million-dollar housing was going up near the Tolt River, a half-mile to the south.

But that could all change. Sixteen miles upstream of Carnation sits the Tolt River Dam, built by the city of Seattle in the early 1960s to serve its growing water needs. Today, the dam provides one-third of the water used by Seattle Public Utilities' 1.6 million customers, and recent inspections coordinated by federal and city authorities showed that the dam was still safe and unlikely to fail. If it did, however, it would be a disaster: It could unleash enough water to drown Carnation in 30 feet of water within just 90 minutes.

Carnation residents have regarded the 200-foot earthen dam with skepticism since its inception. Almost immediately after its construction, the city attorney began pushing for an alarm system to be installed. In the 1970s, King County agreed to install an alarm system to give locals time to evacuate if the dam failed, and the county complied, eventually transferring responsibility to Seattle. For decades, loudspeaker tests every Wednesday at noon created an annoying but reliable rhythm to local life.

Then, on July 28, 2020 — a Tuesday — the alarm sounded for 38 minutes. Hughes was on her porch. "It was distinctively saying, 'The Tolt Dam has failed,' which was chilling," she said. She threw photo albums and her late partner's Super-8 tapes into a chest, thinking about how the avalanche of water would soon submerge the town. "It was like, I might be running for my life right now."

That turned out to be a false alarm, and the city of Seattle apologized for the "confusion and fear." But problems with the system persisted, with the tests failing to go off at all on a number of Wednesdays. After a second false alarm in August 2023, the city council declared a "state of emergency" to draw attention to "its concerns and doubts about the City of Seattle's ability to operate the Tolt Dam." Then, in March 2024, a contractor working out-of-state accidentally programmed a test alarm to go off at noon Central Time instead of Pacific Time. On the heels of so many malfunctions, Carnation's city council threatened to sue Seattle.

Emergency communications experts and residents acknowledge that all the incidents may have severed something tough to quantify — something that is hard to win in the first place, but harder still to recover: community trust.

SINCE THE MOST recent false alarm in March 2024, the alarm system has been turned off at the request of the Carnation City Council. In the meantime, multiple recent inspections have shown no issues with dam safety: Federal representatives' June 2024 inspection did not identify any deficiencies. A representative of Seattle Public Utilities, which operates the dam, said that the city's inspection in 2023 did not find any major deficiencies, adding that Tolt Dam was built to withstand a one-in-a-million storm.

But no dam is built to last forever; according to the U.S. Department of Agriculture, most earthen dams have an expected lifespan of around 50 years. Tolt Dam is 62 this year. And climate change is generating more intense storms with heavier rainfall — storms that the Environmental Protection Agency has concluded threaten dams. "As much of the U.S. water infrastructure nears the end of its planned life, climate change impacts, such as more extreme weather events, will further strain its ability to operate well," the agency wrote in a primer on climate change impacts.

Now that the alarms have been disabled, Carnation would have to rely on other systems, such as text alerts, if the dam fails. "We don't like it, but risking false alarms again is just as bad," said Mayor Jim Ribail.

In a real emergency, warning systems are a matter of life or death, said Jeannette Sutton, an associate professor at the State University of New York at Albany who studies emergency communications. Residents won't get environmental cues to evacuate during dam disasters until it's too late.

"Every dam that is near a population center (or upstream of a population center) needs to have some system to alert people. Flash flooding can be devastating. We can't leave it to chance that a dam won't fail," Sutton said in an email. Even as more people have moved into once-rural areas over the past two decades, the number of U.S. dams classified as "high hazard" — dams that would put lives at risk if they failed — has doubled. In Washington, the state Department of Ecology has identified 74 dams, including Tolt, that would put more than 300 people at risk if they were to fail.

Yet no other Seattle-owned dams have a siren system like Tolt's, a Seattle Public Utilities representative said. When asked about how many dams across the state have alarm systems, Samantha Long from the Washington State Department of Ecology said no data was readily available; to assess that information, the state would have to review emergency action plans from all 522 of its high-hazard dams. And with over 91,000 dams in the U.S. owned by a patchwork of local, state, federal authorities and private entities, it's unclear how many dams are connected to audio alarm systems, let alone how many have experienced alarm malfunctions. "There probably is no national data regarding this," said Lori Spragens, executive director of the Association of State Dam Safety Officials.

EVEN IF CARNATION'S alarms were still active, said resident Ceola Rystad, "after a while, you just don't pay attention."

Residents may be experiencing what some call the "cry wolf effect," where too many false alarms lead to distrust, Sutton said. Additionally, people report experiencing emotional fatigue around the threat. Carnation resident Jenn Dean said she reviewed her emergency escape plans every night before falling asleep. "I'll get in this loop where I'm suffering from anxiety," she said.

Collienne Becker, another local, said it's triggering to hear the test alarm and avoided town on Wednesdays at noon before the tests were disabled. This past April, representatives from Seattle and Carnation took Becker and other residents to the dam to show them it's safe. But Becker is still scared, and considering leaving the area. "I just don't trust Seattle Public Utilities that (the alarm system) is fixed. ... It's a fear, but it's also a trust issue."

"It does not matter to a lot of people that (dam failure) is a low risk. It still has the potential for a large failure," Mayor Ribail said. An engineer for the Federal Energy Regulatory Commission, which regulates Tolt Dam and will soon consider Seattle's application for recertification by 2029, sent a letter to Seattle's chief dam safety engineer in March, saying Carnation's situation was "unacceptable." "The combination of the alarm testing frequency and series of false alarm events has clearly become detrimental instead of beneficial to public safety," he wrote.

REPRESENTATIVES FROM Seattle and Carnation's mayoral offices have met regularly since the July 2020 false alarm to hash out a plan, but progress has been slow. "This would not be dragging out this long if it was in the city of Seattle," Ribail said.

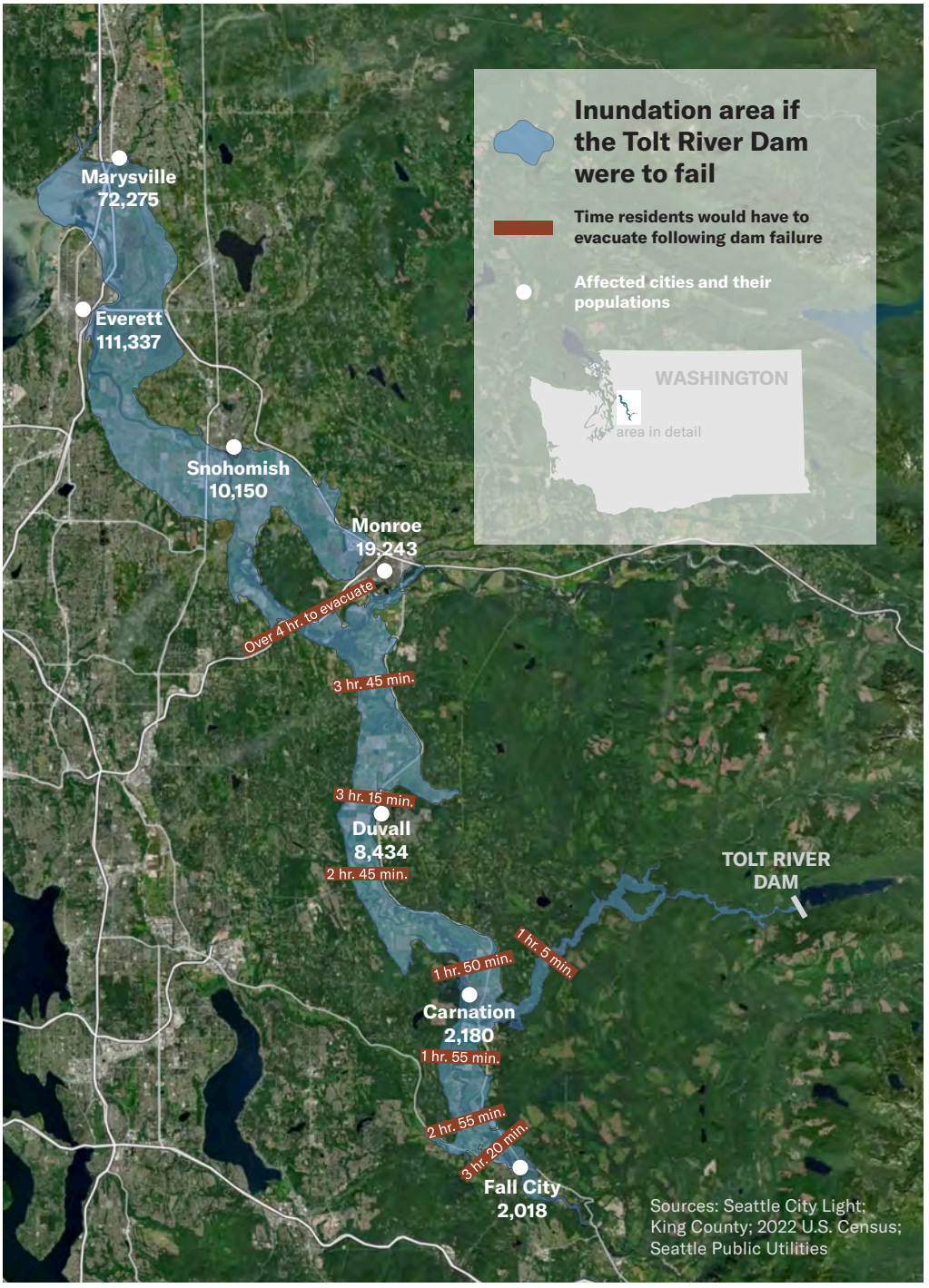
In a letter to the Federal Energy Regulatory Commission regarding dam relicensing, the city of Carnation requested 24/7 onsite oversight of the dam and asked the federal government to develop an alarm system inspection program. Research suggests that leaders might reverse the cry wolf effect by rebuilding trust in the dam and the agencies managing it.

But that won't be easy. For many Carnation residents, the dam itself is the problem.

In the event of a real dam failure, even a perfect alarm system wouldn't change the difficulty of evacuating an entire town in 90 minutes. Between residents, tourists, about 1,000 schoolchildren and nearby farms, more than 4,000 people could try to leave simultaneously.

Dean's friends have talked "constantly" about the stress of living near natural and man-made hazards, she said. One of her friends just bought a cliffside property that might offer more safety in the event of a dam breach. Dean, however, is considering moving. "I don't want to leave," she said, "but I am completely uncomfortable with it."

Hannah Weinberger writes about science and the environment.



A walk in the woods

Time spent among trees can help heal the trauma experienced by wildfire survivors.

BY REBECCA RANDALL | PORTRAIT BY ANDRI TAMBUNAN

CHICO, CALIFORNIA, resident Jessie Raeder dug her fingers into the dirt. Before she arrived, she'd been in a "state of clenching," she said, but this forest therapy walk in the Butte Creek Ecological Reserve left her feeling calmer. The sessions were intended to support locals like Raeder, who live in areas that have burned in wildfires. The guide invited her and the other participants to feel nearby textures — perhaps the roughness of bark, wet grass, or the smoothness of a rock. Raeder held dirt in her hands and noted its earthy aroma. "For me, it was definitely a familiar and welcome smell of childhood," she said. "These sessions were very soothing and grounding and left me feeling refreshed and enlivened."

Tracing back to the 1980s, doctors in Japan began prescribing *shinrin-yoku*, or forest bathing, as a way for patients to listen, breathe and simply be in nature. Their studies found benefits, such as lower blood pressure and improved immune system function, which they posit is the result of exposure to phytochemicals found in coniferous forests. It can also help regulate mood and stress. With the increasing intensity and frequency of climate-related natural disasters, more people across the country have experienced trauma and loss. Forest therapy, which invites people to connect with nature, could be a tool to help survivors recover, especially those who live and work in ecosystems adapted to and reliant on seasonal fires. It may be especially beneficial in addressing the broken human-nature relationships that have disrupted this cycle and left many afraid of fire.

SOCIAL WORKER KATE Scowsmith managed cases for survivors of the 2018 Camp Fire, the most destructive fire in California history. She also lost her home in the fire. She said many of her clients have expressed trepidation about spending time near the forest. One client whose house burned down didn't want to move into her new home, even though trees were sparse in the area. "She's like, 'I can't move there. The trees tried to kill me,'" said Scowsmith. Eli Goodsell, the executive director of Chico State Ecological Reserves, also noticed residents' trauma responses to being around the forest. He happened to learn about forest therapy mere weeks before the Camp Fire, and he saw a need to create outdoor experiences that could help people regain their love for where they lived. He pursued a grant from a local foundation so that social workers like Scowsmith, as well as psychotherapists and community leaders, could be trained as forest therapy guides by the Association for Nature and Forest Therapy (ANFT).

In 2021, the group began offering the community free guided walks. The walks follow a model: Guides lead groups of around a dozen, prompting them with open-ended questions. *What do you see, smell, hear? What's in motion around you?* Perhaps one person examines a ladybug on a leaf, looks up at the trees, or simply notices their thoughts in motion, said Scowsmith and Blake Ellis, the Chico program's manager. The guides invite people to share their thoughts and move as they please; they can sit on rocks or explore new paths. Events cater to a range of abilities and comfort levels, with locations ranging from city parks with paved trails and restrooms to less-developed trails within the eco-reserve. Each guided walk ends with wild teas and refreshments. The ANFT model focuses on reminding us that we are a part of nature, said Ellis. This relationship is foundational to being a human, "just like the relationship you have with your loved ones." Initially, Scowsmith thought of forest therapy as a tool she could offer fellow survivors, but it helped her recover, too, and decide what she wanted her life to look like after the fire. Ultimately, it led her to have a baby and buy a house near her parents' house in the nearby community of Magalia, which lost about a third of its homes in the Camp Fire.

Now beginning its fourth year, the program has provided nearly 6,000 forest therapy experiences to community members in Butte County, and participants say they feel better after.

In 322 surveys collected between October 2022 and June 2024, 92% of participants agreed that they felt more connected to nature afterward, while 87% felt less stressed, and 85% were less anxious. In anonymous feedback, one participant wrote: "I've been in therapy for a while, and today's (forest) therapy session was the best one I've had in years."

But other data has been more difficult to gather. For example, it's still unclear how many of the participants are wildfire survivors; most answered "would rather not share" when asked if they'd been impacted by the recent megafires. "People struggle with how you define the word impact," said Scowsmith. Some impacts, like losing your home, might seem obvious. But others might be more subtle — a yard burning in a fire, say, or letting a friend who lost their home park an RV in your driveway for six months.

According to a 2023 study of Chico's program led by University of Washington researchers, forest therapy could help communities with limited mental health services. Other communities are trying it, said Manuela Siegfried, training coordinator for the ANFT; the organization collaborated with the U.S. Forest Service to train the first bilingual cohort in Puerto Rico following Hurricane Maria. Ellis is consulting with guides in Hawai'i, who are offering the practice to Maui residents following the 2023 wildfires.

Forest therapy isn't just a disaster response, Ellis said. As megafires increasingly impact communities, finding ways to adjust our reaction becomes a form of climate adaptation.

In addition to grants, the program has sought more sustainable funding by contracting with Paradise Recreation and Parks District and other public agencies that offer wellness services, such as local schools. But beyond this

program, Goodsell also envisions forest therapy becoming a critical part of workforce resiliency for agencies like the California Department of Forestry and Fire Protection, or Cal Fire, the Forest Service, and the U.S. Fish and Wildlife Service.

This fall, a grant from the California Fire Foundation will support ecotherapy walks alongside prescribed burns, addressing the community's mental triggers, such as smoky skies and blackened landscapes. "We need to be able to see these landscapes through a different lens," said Ellis. "Otherwise, they're just a constant reminder of our trauma and loss."

For Raeder, who now regularly attends forest walks, it's an opportunity to reconnect with nature. She attended a session in the aftermath of the Camp Fire. "You would see dead trees, but you could also see it springing back to life," she said. "It was good to spend time on it, see the reality of it, but also see plants coming back, birds coming back in dead trees."

Rebecca Randall is a journalist who covers the intersection of climate change and religion and spirituality. She is based in Vancouver, Washington.

"We need to be able to see these landscapes through a different lens. Otherwise, they're just a constant reminder of our trauma and loss."

Kate Scowsmith, who lost her home in the Camp Fire and is now a trained ecotherapist, poses for a portrait in Paradise, California.

A riverside oasis heats up

New Mexicans prepare their beloved bosque for a changing climate.

BY ANNA MARIJA HELT | ILLUSTRATION BY ANGIE KANG

OLD ROPE SWINGS HANG from even older cottonwoods along the Middle Rio Grande in Albuquerque, New Mexico. The riverside forest, known as the bosque, has long been a shady oasis in the arid valley. "It's where everyone would go," said Shelby Bazan, who describes herself as a "born and raised Burqueña," or native of Albuquerque. Her father grew up along the river in the '70s, and both her parents remember summers when the river was alive with water and people.

Myron Armijo, the governor of Santa Ana Pueblo, shares those memories. "The Rio Grande was our playground," he said. "Once we got our chores done, then we would get out there and play, a lot of the time pretty much all day long." Now, water diversions, development and climate change leave more sections of the river dry each year. "If you jump, you're just going to hit the dirt," said Bazan. Nobody has bothered to replace the old swings.

Over the past two decades, restoration efforts large and small have removed introduced plants such as tamarisk and Russian olive, which can form impenetrable thickets, replacing them with native cottonwoods, willows and shrubs that support wildlife and are significant to the people with the deepest roots in the valley. "It means a lot to us, both traditionally, culturally," Armijo said of the bosque.

But as the region warms — average temperatures since 2000 have been 1.8 to 2 degrees Fahrenheit higher than they were over the previous century — and the once-high water table drops, those who love the bosque have been forced to reconsider what can be realistically restored.

OVER MILLENNIA, the bosque's mosaic of plant communities was maintained by a high water table, seasonal flooding and a meandering river channel. "You'd have grassy meadows, wetlands and understory shrubs over here; young cottonwoods over there; older cottonwoods over here," said ecologist Kim Eichhorst, director of the community-science-based Bosque Ecosystem Monitoring Program (BEMP).

By the 1990s, 150 years of water- and land-use decisions had destroyed or degraded much of this historic mosaic. "Channelization, levees to protect communities, impoundments to store water for irrigation purposes — that all changed the river," said Glenn Harper, who's worked for Santa Ana Pueblo for over 25 years and oversees its 142,000 acres of grassland, shrubland and woodland habitat.

Cottonwoods that germinated in the 1930s and 1940s are now separated from the river and nearing the end of their lifespan. Without the seasonal floods that distributed seeds and nutrient-rich sediment, there are few young cottonwoods to replace them. At the same time, drier, hotter conditions have encouraged introduced plants, not only tamarisk and Russian olive but Siberian elm, Ravenna grass and many others.

In response, many Middle Rio Grande communities — at Santa Ana and Sandia pueblos, in Albuquerque and elsewhere — began restoration efforts along the river to bring back the bosque. Though much of the initial work was spearheaded and funded by local communities, many of the projects now have government agency support. For example, Albuquerque's industrialized South Valley is now home to Valle del Oro National Wildlife Refuge, thanks to a collaboration between the local community and the U.S. Fish and Wildlife Service. Though bosque restoration isn't the refuge's sole purpose, it is a part of its plans for the land.

When Santa Ana Pueblo embarked on its ambitious bosque restoration plan, said Armijo, the tamarisk and Russian olive thickets under the mature cottonwoods were so dense that getting through them on horseback was impossible. After the pueblo's Bosque Restoration Division cleared about 1,500 acres, the bosque began to resemble the open cottonwood forest that pueblo elders remembered from their youth.

Since then, though, falling groundwater levels have stressed the aging cottonwoods, and many are dying or dead. "Climate change," said Nathan Schroeder, Santa Ana Pueblo's Restoration Division manager. "That's where I feel like the deck keeps getting shuffled." And because the roots of young trees can no longer reach the water table, the pueblo's original plan for planting new cottonwoods among the old is no longer tenable.

AS CONVENTIONAL restoration approaches become less reliable, advocates are asking how to move forward. "What we really need is to recognize what the system can support," said Eichhorst. Instead of trying to restore the bosque to what it was, she envisions a mix of dryland plants and smaller pockets of "wet-loving" plants, cottonwoods or otherwise, wherever water is sufficient.

At the pueblo, the Restoration Division may plant some native drought-tolerant shrubs where it had planned to grow cottonwoods. Farther downstream in Albuquerque, said geographer and herbalist Dara Saville, some of these species are showing up on their own: "Now that the bosque is largely dry … you see the creeping in of plants from the mesa, from the foothills, from these higher, drier areas."

Saville, the founder of the nonprofit Yerba Mansa Project (YMP), doesn't mind shrubs. "They're key components of my concept of restoration, resiliency and ongoingness." The bosque will continue, she said, but as it changes to adapt to new conditions, tenacious, shrubby plant species will likely become more common. And while shrubs can't provide a shady refuge for people, they do offer food and shelter to wildlife, and some are sources of traditional foods and medicines. Along the Middle Rio Grande, project staff and volunteers have planted native species, such as yerba mansa, pale wolfberry, golden currant and willow baccharis, all of which have medicinal uses.

Bazan, who works as a BEMP educator, said nonnative trees are another option: "If we don't have the cottonwoods, would you rather have an exotic bosque that has Siberian elm that still provides shade — or would you rather have a native bosque, but of shrubs and dry grassland areas?" Though Siberian elms are classified as "noxious weeds" in New Mexico, their tolerance for a lower water table and their ability to provide habitat for local species such as porcupine have led restorationists to consider leaving them in place in some areas.

In the pueblo, however, the focus remains on native plants and wildlife. To support young cottonwoods and willows, the restoration division, in partnership with federal agencies, used excavators to lower sections of the riverbank and bring back some limited flooding. The bosque planted in this new floodplain over the past 15-plus years is luring endangered southwestern willow flycatchers, threatened western yellow-billed cuckoos and, according to this year's survey, yellow warblers, Harper said.

While the restoration projects are ecologically and culturally important, there are many competing uses for the Rio Grande's water, including irrigation and the demands of an expanding urban population. Although riverside vegetation also uses river water, a new bosque mosaic is expected to use less water than extensive thickets of nonnative trees and shrubs.

No matter its makeup, restoring and maintaining a more resilient bosque ecosystem will require cooperation and long-term maintenance. "It never ends," said Harper. Eichhorst is encouraged by the region's shared love of the bosque. "It isn't something that's just an older generation, but it's something that younger students are actively participating in," she said. "It's not hopeless."

Anna Marija Helt is a freelance writer, herbalist and former research scientist who works to (re) connect and engage people with the natural world. Instagram: @annamarijahelt

Tom Reichner

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Remembering a remarkable environmental journalist

Retired California TV reporter Celeste Durant remembers Bob Jones as the tireless researcher who sat nearby in the *LA Times* newsroom in the early 1970s, and became a lifelong friend. "This was at the height of (Publisher) Otis Chandler wanting to make the *LA Times* a world-class newspaper," Durant said. "He was hiring really talented people and giving them free rein to write in-depth stories."

Jones was one of those talented people. He was particularly proud of a story he helped break in 1985 about Mormon rare-document hunter Mark Hofmann, perhaps best known for unearthing the "Salamander Letter," which raised questions about the church's official version of its history. In 1987, when Hoffman admitted to forging the letter and setting off three bombs in an attempt to cover up that and other misdeeds (two people died), Jones published a lengthy, two-part series that told the full story. Here he is explaining why historic documents matter so much to the church:

> *Alone among all the major religions, Mormonism's roots lie in the recent past, not mythological time. After all, Joseph Smith died slightly more than a century ago. His life was littered with personal letters, contracts, court proceedings, and all of these can — and often are — used to scrutinize his claims to divine inspiration. Thus, acquiring a credible account of its divine origins has become the church's great obsession and its peculiar vulnerability. It is as if Jesus Christ's claim of rising from the sepulcher could be challenged by motel receipts showing he had checked into a Holiday Inn the same day. For Mormonism, that threat is always present.*

Jones' son, Casey, remembers his dad as a guy who loved the outdoors. Once, he led Casey and a group of Boy Scouts on a backpacking trip to the top of California's highest peak, Mount Whitney. "He was a big road-tripper," Casey said. "We went to Yosemite, Yellowstone. We went to Utah and hit all the national parks."

Jones had a special love for the Grand Canyon. He did multiple river trips through the canyon, the last when he was in his 70s.

He was originally from Memphis, Tennessee, but his love for the Western landscape inspired him to move out here. And it was that love that led him to push his editors to let him tackle what was then a brand-new beat: the environment. "He was one of the first environmental reporters around," Durant recalled.

That beat took Jones all over the world, from the Amazon to the Pacific Islands to Alaska. The Arctic had a particular hold on his dad, Casey said: "He talked about all the shades of the ice; it was pink in places, and green."

Jones wrote about the wild creatures of LA, too, including ants, crows, rats, and a certain "big brown creature" that crashed through his front window one day when he was at work. Casey, 5 at the time, was home with a babysitter. Jones wrote a column about it:

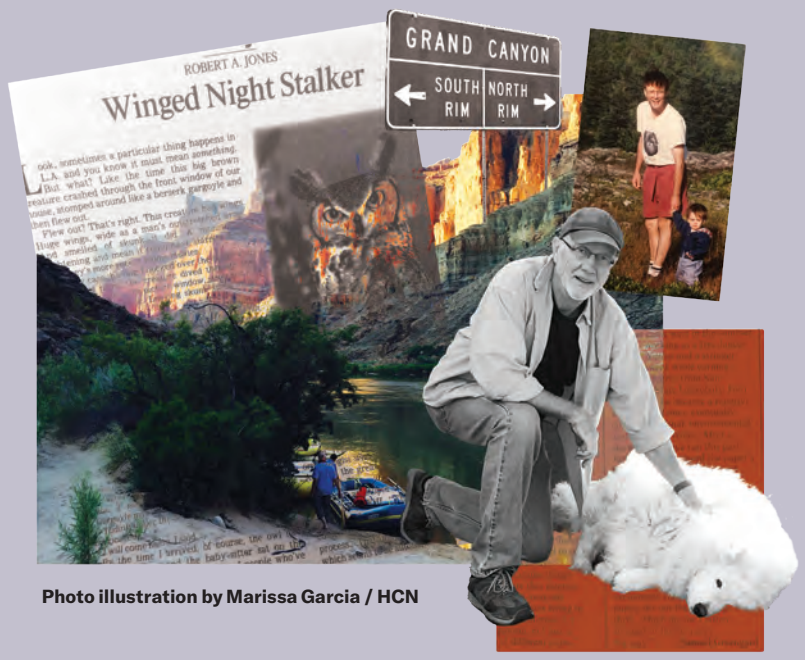

Photo illustration by Marissa Garcia / HCN

> *Around 2 p.m. the baby-sitter called and her voice seemed icily calm.*
> *You should come home, she said.*
> *Why's that, I asked.*
> *There's an owl in the living room.*
> *Tut tut, I replied. You are a grown woman. Remove the owl and be done with it.*
> *The owl is very large, she said.*
> *In the background I began to hear crashing noises. It sounded like a bar brawl in progress.*
> *Where's Casey? I asked…*
> *Hiding under the bed in his room, she said. And barricaded.*
> *I will come home, I said.*

In his *Times* obituary, a former colleague said that Jones wrote "with the precision and artful control of a journalistic jeweler."

Jones died in 2019 after a struggle with lung cancer. In his will, he named environmental groups including American Rivers, the Grand Canyon Trust and the Greater Yellowstone Coalition. And this summer, we learned that he also left a sizable bequest to *High Country News*.

Some of Jones' generous gift will go to pay *HCN's* remarkable community of journalists, who are, in many ways, following in his footsteps. The rest will go into our reserves to serve as an insurance policy so that we can pay our reporters even if catastrophe strikes. We're beyond grateful. And sorry that we never had the chance to meet this wonderful man in person.

—Greg Hanscom, executive director & publisher

When There Were Fish

As a seven-year pause on Yukon River chinook fishing takes effect, Alaska Natives fight to hold onto the culture and flavors of fish camp.

By Julia O'Malley | Photos by Jenny Irene Miller

KATIE KANGAS' SALMON MEMORIES live in her body. They are the ache of the knife in her hand after hours of cutting fish in summertime. The heft of a wooden pole loaded with scored fillets. The smell of cottonwood smoldering in her corrugated metal smokehouse.

Kangas is a grandmother now. Her ancestors, Koyukon Athabascans, harvested fish for thousands of years on this stretch of the Yukon River, 200 miles west of Fairbanks, Alaska, by small plane.

Here, in the village of Ruby, children have always learned how to handle fish by watching and repeating. Teaching them kept elders vital. To her children and grandchildren, Kangas passed on bits of language and details about the natural world, like the way the cottonwood trees tell you the chinook salmon are coming by letting their downy seeds float on the wind. Knowing how to catch, cut, dry, smoke and can salmon is how a person knows they are from here. The chew of a half-dry salmon morsel, oil and phenols lingering, tastes like this place. Or at least this is how it was.

Chinook are better known in Alaska as king salmon. The massive, fat-rich fish that people in this predominantly Indigenous village always relied on to fill their freezers and caches for winter have dwindled alarmingly over the past two decades. Scientists link the decline to water temperature increases related to human-caused climate change, and there are also concerns about salmon incidentally caught in the ocean by large operations trawling for bottom fish. In the late 1990s, chinook numbers became so paltry that managers began restricting fishing, including subsistence — fishing by locals for their food supplies. A major crash in 2008 nearly curtailed the commercial fishery, and it never recovered. Managers closed the river to almost all fishing in 2021. Still, there has been little improvement.

People adapted. Ruby, a village of 150 that's only accessible by boat or plane, kept up the rhythm of summer processing, working with smaller, leaner chum salmon, which they had previously caught and dried mostly to feed their sled dogs. But those chum runs, once relatively reliable pulses in the spring and fall, began failing in 2020, taking scientists and residents by surprise. In response, the Alaska Department of Fish and Game limited and then closed both the Yukon chinook and chum fisheries. For the last few summers, for maybe the first time in more than 10,000 years, there was almost no fishing for either species allowed on the Yukon River at all. Without fishing, the practice of going to fish camp with family, an essential Alaska Native tradition that brings relatives from urban centers to the villages and enables the passage of knowledge about culture and the land from one generation to the next, couldn't happen. Its absence left a hollowed-out, idle anxiety, Kangas said.

"What am I going to do?" she asked in July, looking out her kitchen window toward the river. "There's a big empty river out there."

DOWN A BRUSHY BLUFF, Kangas can see the Yukon, a mile or more across, granite-colored, swirling. It is pure force, born of glacial melt and rain, grinding boulders to

Katie Kangas inspects the recently smoked salmon in her smokehouse in Ruby, Alaska.

silt, dragging blades of springtime ice over the bank, shaving white spruce and trembling aspen to nothing. The third-longest river in North America, it drives 2,000 miles from Canada to the Bering Sea. The salmon runs have always been a counterforce, muscling upriver, part of the longest salmon migration in the world.

Until very recently, people along the river relied mainly on chinook — *Oncorhynchus tshawytscha*, the largest of the salmon species. Historically iconic fish that could weigh as much as 100 pounds, their flesh was heavy with oil to fuel them as they pushed upriver. Chinook have the longest life cycle, generally seven years or so, during which they spend time in the ocean eating and growing, before returning to the Yukon to spawn. Over time, for reasons scientists are still studying, the average size of chinook salmon across the species' range, from California to the Yukon, has decreased and more fish have been returning earlier to spawn. Chum, also called keta or dog salmon, have also always been plentiful in the river. They have a life cycle of three to six years, and their large coral eggs, prized in the Asian market, were harvested commercially for years. The river also has a small run of silver or coho salmon, which have recently had some of their lowest runs on record.

There used to be so many fish, everyone caught enough to eat it all winter and to share. One big chinook brought so much meat, people could fish commercially and support their families. Last year, Kangas began writing down the things she missed about the way fishing used to be:

First task, clean out the smokehouse, scrub the buckets, poles and totes. Have salt and smoke wood ready. Next, send out the fishermen and women and wait. Who would be that lucky one to get that first king? The first king was a celebration! The fish was deeply admired before decisions were made on how to prepare it and how to share it with family and elders. Soon anyone who tried was successful. I fished with a partner for many years and as soon as we got our first king I would buy her a six-pack to celebrate the return of our happiness. Later when our daughters were fishing I'd buy them candy

From left, facing image: Katie Kangas in her smokehouse in Ruby, Alaska, and the view of the Yukon River from Katie and Ivan Kangas' dining room.

to celebrate. Decades of skills were passed from the generation of my mother-in-law to mine, to my daughters to their children, and then, suddenly, it stopped.

Government fish managers are studying the causes and trying to stem the decline. In April, the Alaska Department of Fish and Game signed a seven-year agreement with Fisheries and Oceans Canada, which some people are calling a moratorium, pausing chinook fishing for the length of a full life cycle in hopes of helping the fish recover. If the run shows signs of recovery, the entities agreed, chinook fishing could be permitted again before that. Chum fishing, which is managed separately and re-evaluated yearly, was also limited, pending improvement.

"What am I going to do? There's a big empty river out there."

The pause on chinook fishing in particular requires deep sacrifice on the part of Yukon River villages. Many on the river, including Kangas, are angry that while their fishing has been curtailed, large commercial trawlers, fishing the bottom of the Bering Sea with massive nets for pollock, cod and other fish, are still allowed to incidentally catch some salmon that would otherwise return to the rivers. The incidental catch, called bycatch, is made up of non-target species. There is also worry about overfishing in general in the sea, and what the large nets that are dragged across the bottom might be doing to the ecosystem. Bottom trawling has been linked to fishery collapse in other parts of the world.

According to the North Pacific Fishery Management Council, fewer than 20,000 chinook salmon were caught as bycatch in 2023. Genetic sampling suggests that less than 1% of those were headed to the middle and upper Yukon River. More than 100,000 chum salmon were caught as bycatch that year; most of those came from hatcheries in Asia, but a little more than 2% were returning to the upper and middle Yukon. The council is considering management changes to further limit bycatch of chum.

Scientists say that climate change is a larger factor than bycatch in the disappearance of the fish. Many Alaska Native people living in villages along the river agree that climate is a factor, but also believe that the government should regulate the trawling industry to further limit the catching of salmon. Alaska Native leaders argue that tribes should have more say in the management process, where they say Indigenous people don't have meaningful influence, while commercial fishing interests — with paid lobbying organizations — have considerable sway. Meanwhile, as they face years to come without chinook salmon, Indigenous river communities are looking at ways to hold on to the traditions and flavors that have brought families together every year.

In Ruby and more than 40 other villages,

home to 12,000 mostly Indigenous people, there's a crisis not just to do with nutrition and economics — salmon is a major food source that offsets the high cost of flown-in groceries — but with culture. With a seven-year pause, a generation of children is growing up without an opportunity to practice the skills that sit at the center of their identity, Kangas said. It's one more example of how climate disruptions in Alaska, parts of which are warming almost four times faster than the rest of the world, are also cultural disruptions.

Several years have come and gone with no salmon. The vast Yukon is empty. Sometimes fishing disaster checks arrive. Happiness for a day. $800.00 dollars can buy one load of groceries from Fairbanks including handling and freight and it is enough for a few weeks.

By the time they were eight years old, the oldest among Kangas' 14 grandchildren and five step grandchildren knew how to help when their parents were pulling in the net. They knew how to drive a boat. They could hold a knife and feed a smokehouse fire, their hair and clothes absorbing the smell, an essential scent of summertime.

And, they knew the tastes of things. They teethed on salmon strips as infants. They ate dinner as a family, with a meal of baked fish and beets to mark the start of the season. But Kangas' youngest grandchildren won't grow up with that same knowledge.

This summer, Kangas found a jar of king salmon in her cache, forgotten and spoiled. It must have been at least five years old, from before they knew how bad things could get, before every jar of fish became impossibly precious. The meat was a pale pink, the rendered oil filled the jar to the top. It brought a wave of grief, knowing she'd let the jar go to waste.

One of the questions Indian Health Services asks is, "Are you depressed?" Standard question. Standard answer is always no. I don't think that is true anymore for all of us who harvested king salmon. When our source of

From top: Ruby, Alaska, along the Yukon River. Siblings Marissa McCarty and Matthew McCarty stand near the entrance of their grandmother's fish smokehouse in Ruby after hanging salmon strips to be smoked for their grandmother.

salmon disappeared, it was a weird depression that could not be explained in a clinical setting but there were signs. What do you do now in mid-June and July?

BEFORE THE CHINOOK population began to slide, in the early 1990s, the river was home to a robust commercial fishery that reached all the way to Canada and buoyed village economies. People fished with fish wheels, which operate like watermills, powered by the current, outfitted with wire baskets that scoop fish from the current and deliver them to a holding tub. Then they'd process the fish onshore, heading and gutting them.

In the smokehouses, the heavy fillets, scored and hanging from poles over a smoldering fire, dripped with oil. Commercial fishing on the river fell off as the chinook runs did. Subsistence harvests began to fall as well. Fewer and fewer chinook salmon made it all the way across the international border to the Yukon Territory to spawn.

Fisheries managers' goal is for 71,000 chinook to make it to Canada, but that's a long way off. In 2023, the sonar fish count in the lower river, at Pilot Station, recorded the second-lowest chinook count ever, with 58,500 fish. (The lowest was in 2022.) About 28,000 of the fish that entered the river there were of the type that was headed to Canada, but only about 15,000 made it. By September 2024, about 64,500 fish had been counted at the mouth of the river, though only 24,000 made it across the Canadian border, again far short of the goal.

The situation is more mixed for the chum, which have two runs, in the summer and the fall. In 2023, the summer run was projected to be between 280,000 to 900,000. A healthy 846,000 passed the Pilot Station sonar. But in the fall, as many as 602,000 fish were projected to pass into the river. Only about 290,000 made it, short of the number needed to open the river to fishing. Just over 22,000 of those fish passed the Eagle sonar station at the Canadian border, less than one-fifth of the average fall run. The 2024 summer run again showed signs of improvement, with approximately 758,000 fish passing into the river by mid-July. The fall run, however, was estimated at 200,000, compared to a historical average of 900,000 salmon. A smaller run of silver or coho salmon also had historically low numbers.

Salmon bodies carry memories, evidence of the lives they lived in the oceans and rivers, stresses from heat and poor nutrition. Recent science has shown that the chinook face a number of obstacles related to the river's temperature. In the Arctic region, air temperatures have increased by more than 2 degrees Celsius, or over 3 degrees Fahrenheit, over the last 100 years. The northern part of the planet is warming more than twice as fast as the rest of the world. Temperatures higher than 18 degrees Celsius, or 64.4 degrees Fahrenheit, have been measured most years in the river since the 1990s.

Warmer water makes it harder for fish to reach their spawning grounds. It increases their metabolic rate and their heart's demand for oxygen, but it also holds less oxygen. It may also make fish more vulnerable to a parasite called *Ichthyophonus*, which infects their organs, especially the heart.

Vanessa von Biela, an Anchorage-based fish biologist with the U.S. Geological Survey, conducted a study with other scientists in 2016 and 2017, looking for evidence of heat stress — basically the fish version of heat stroke — among Yukon salmon.

"Overall, it was 50% of the chinook salmon we sampled had evidence of heat stress," she said.

In the years after that study, the water got even warmer. In 2019, record high temperatures and drought caused multi-species salmon die-offs across the state because in-river temperatures exceeded about 70 degrees Fahrenheit, the threshold at which it becomes hard for fish to survive.

Next, von Biela and Kathrine Howard, a scientist with the Alaska Department of Fish and Game, studied how heat stress was impacting fish offspring.

"We found that, indeed, there is a strong relationship between the river conditions that parents face and how many offspring come out in the next generation when they're counted in the ocean," von Biela said. "In years where the parents faced warmer migration temperatures, especially when those temperatures were warm early in the season, they produced fewer juveniles on average."

The scientists also theorize that warmer water may be changing the prey available to fish in the ocean, while also increasing their metabolisms. Some fish are deficient in thiamine, another sign of a change in their diets, which causes developmental problems, Howard said.

The story of the recent chum decline is also connected to warmer water, though the picture is not as grim. Ed Farley, a Juneau-based fish biologist with the National Oceanic and Atmospheric Administration, recently completed a study with other scientists that looked at chum salmon in the ocean. They found that over a couple extremely warm years, between 2017 and 2019, the juvenile chum diet changed. In cooler years, scientists found more *Oikopleura*, a marine invertebrate, in their stomachs. But in warmer years, the fish relied on less-nutritious jellyfish, and so they went into their first winters at sea with low body fat. The ocean remained warm over the winter. Returns in the subsequent years were low.

"We've seen chum salmon respond negatively to these events, and, you know, had really poor returns," Farley said. "However, if you've been monitoring what's going on in the Yukon recently, you know the numbers of (summer) chum salmon are starting to come back."

Even as chum recover, the risk of warmer water and record warm years remains. To the extent that river temperatures correlate with air temperatures, there will likely be more years like 2019, said Rick Thoman, a climate specialist with the International Arctic Research Center at University of Alaska Fairbanks. The river's volume, which is connected to snowmelt, also matters. Years with less snow may mean the river is more likely to warm with the air temperatures, he said.

In the Bering Sea, where the fish go to eat and grow, the long-term trend is for earlier spring sea ice melts, allowing the sea to absorb more of the sun's heat when the sun is high in the sky.

"So, in the future, the combination of events like 2019, with very early sea ice loss and hot early to mid-summer will remain episodic but occur more often in the next few decades," he wrote in an email.

Chinook salmon runs — disrupted in part by human-caused problems like dams and pollution as well as climate-related flooding and droughts — are faltering all along the West Coast, from the Sacramento River through to Canada. There are many reasons Alaska should be one of the last places on earth where

salmon are thriving; the state has few dams and its salmon habitat is perhaps the most pristine in the world. The Yukon River is at the northernmost extent of the salmon's range, von Biela said.

"If it's already too warm here, it's such a sobering thought," she said.

THE VILLAGE OF RUBY sits on a hillside that slopes toward the river. Metal-roofed single-story houses nestle along its few roads, their grassy yards surrounded by tall trees, most with a smokehouse outside. On the wooded edges of town are the weathered remnants of old houses and businesses and derelict fish wheels. Ruby started out as a turn-of-the-century gold mining town, staked at a time when white prospectors were coming from the Lower 48 by steamship, traversing the White Pass or Chilkoot trails and then heading northwest on the Yukon River into the interior of Alaska.

Prospectors — many European by birth — found and developed several productive gold mines near Ruby, and by the early 1900s the area had drawn thousands of residents. Soon after, the population declined, census numbers show. Men left to fight in World War I, and a fire and flood tore through the village. In the post-war era, residents from Kokrines, a longtime Athabascan trading village nearby, moved to Ruby, taking advantage of the opportunity to go to school. Many Alaska Native people living in the village now have white prospectors and miners in their family trees.

Patrick McCarty, 71, the First Chief of the Village of Ruby, grew up going to a fish camp three miles out of town, heading there right after school got out every spring. When he was young, a single chinook could be as big as a child in your arms. Fish of that size are long gone now.

"All summer, getting kings," he said. "We had two wheels going back then to fish, with one above the camp and one below."

Back then, people like miners and mail carriers still traveled a lot using dog teams, he said. His family boarded their dogs in the summer. They used to dry the chum salmon or "dog fish" and stack them in bales.

"They were like about 50-55 pounds per bale, and we sold them to the local trading post," he said. "That offset the cost of, you know, living."

When he grew up, he invested in a big fish wheel for commercial fishing, but even in the early 1980s, he noticed that the runs were getting smaller and more variable. Soon it didn't seem like a wise line of work.

He found other work and fished only for subsistence, even as commercial fishing continued on the river. Looking back, he thinks that everyone took too much — the commercial interests and the residents.

"One year when the fish first crashed, (in the early 2000s) when the salmon crashed, I caught two king salmon," he said. "My wife and I, we made do with that. We made steaks and had enough for boiling. We didn't eat it all the time, we ate chicken or beef or pork chops."

There is no doubt that the warming water is harming the fish, he said, but the state should have managed the fishery more conservatively.

"The state did wrong by allowing us to overharvest, where our every meal was salmon," he said.

He used to always take a picture of himself with his catch, standing in the doorway of the cabin on his boat. Over time, compared to the doorway, the fish started getting smaller. He really noticed it in 2019, he said. They also felt different in the net.

"I noticed then, they weren't even fighting as hard," he told me.

He, too, was concerned about the bycatch in the open ocean, the mile-long nets and the many huge ships. Even if communities along the river had taken less, maybe it wouldn't have mattered, he said.

For his part, he tries to guide his grandson to the river and teach him about not taking too much. The last time they were able to fish together for chinook, he said, his grandson was 9 or 10. His grandson learned how to untangle the net when it got caught up, and McCarty showed him how to keep the catch cool and bring it home.

"My grandson, he would wash the fish, I'd split them, and my late wife did the rest," McCarty said.

They got a few extra, and McCarty was able to show his grandson the act of bringing fish to relatives who didn't have any, an essential cultural value.

"He participated in that. He learned sharing, giving," he said. "I was fortunate to have him with me when there were still fish."

IN MIDSUMMER, just upriver from Ruby on Straight Island, the village holds a culture camp for children to learn about how their family members lived off the land. This past year, Rachael Kangas Madros, Katie Kangas' daughter, ran the camp for about 30 kids. Halfway through the second day, the children gathered under a massive tarp around a small fire in the pouring rain. The kids, who ranged in age from toddlers to high schoolers, had already learned to build fire and shelter. Now it was time to talk with those older than them.

Kangas Madros and Serena "Cuucitcuar" Fitka laid out the complicated way the government manages fish — a mix of federal and state rules. Both women work for the Yukon River Drainage Fisheries Association, a nonprofit that advocates for village interests with government managers. They also talked about the controversial plan, put forward for study last year by Alaska Gov. Mike Dunleavy, R, to supplement the river's salmon with hatchery fish. Historically, hatcheries have had mixed results elsewhere, sometimes leading to declines among wild fish.

"Where's the salmon eggs gonna come from? Are they gonna come from our rivers, or are they gonna come from other streams?" Fitka, the executive director of the association, asked.

She said that the fishing closure is something people are just trying to get used to.

"People are still having to struggle with not being at fish camp, because it is so ingrained in our system," she said. "People get the whole family involved, there are people that you always see then, the communities would come back and be together. And that's not happening anymore."

The kids at culture camp would learn about cutting and smoking with a few fish, she said. But they wouldn't be chinook salmon; they'd be donated fish from another part of the state. And the kids wouldn't be able to experience how it felt to catch them, or to cut so many their hands automatically knew how to navigate the blade along the spine and slice along the rib bones, without any waste.

"We still need to teach them what we still know or remember about fishing, even though there's no fish," she said.

Kangas Madros understood that the seven-year agreement was an effort to conserve the fish and rebuild runs. "But what's upsetting is to know that elders have

Patrick McCarty, First Chief of the Village of Ruby, Alaska, sits on the bow of his aluminum boat on the bank of the Yukon River at culture camp in July.

passed on and did not get their traditional cultural food that they have grown up on, that they have harvested and that they have eaten," she said.

In the village, there's a rhythm to things, she said. Moose hunting in the fall, and in the winter she works on crafts with salmon skin and bones. Summer rolls around and everybody gears up to fish. Fishing is at the center of summer activities.

"So it's like a cycle," she said. "And now the cycle is broken."

And, given the unstable climate and the continued bycatch waste in the ocean, there's no knowing if things will ever return to how they were.

"We don't have the certainty that yes, in seven years, there's going to be the salmon for our kids to take upon themselves to learn that tradition and culture and value and that food security. It's tough," she said.

Diloola Erickson is tribal resource stewardship division director with Tanana Chiefs Conference, a consortium of the 42 Indigenous villages of Interior Alaska, many of them along the Yukon River. People know that climate change is contributing to what is happening with the fish, and they have for many years observed the chinook salmon getting smaller. Some tribal members, though, object to how both fish and trawling are managed.

"I think there's mixed feelings about (the fishing pause). I think there's a lot of people that agree with it, and there's a lot of people that don't agree with the way that it was done," she said. "It was … a moratorium placed on our people and our fish without our input or consent. And I think that the process of it coming about was not an equitable process or an inclusive process."

KATIE KANGAS REMEMBERS the nights when fishing began after midnight, when Kangas Madros and her husband, Ryan Madros, would ride out on the aluminum skiff under the all-night sun. They'd unfurl a net and let it soak while they drifted downriver with the current. When they pulled it in, they'd pick out the fish and cast out again, until the boat held 20 or 30 silver bodies. They'd ride home in the early morning and head to bed while Katie and her husband, Ivan, took over.

It had been a custom for the family to fish in the second week of June, when the mosquitoes run thick and the potatoes and beets are just starting to fill in the garden. In the backyard, they always set up a little plastic pool for the grandchildren and let them play on their own. Ivan removed the fish heads and gutted them. Katie took each fish from him, washed it, split the body, and hung it to dry. She chose some fish to brine before hanging them up again, the ever-present breeze forming what's called a pellicle, a tacky outer layer that holds

From left, facing page: At culture camp along the Yukon River, Victor Williams, 10; Chris Williams, 9; Lian Martin, 11; Karl Nickoli, 9; Evrit Martin, 9, all of Ruby, Alaska, stand for a picture. Ryan Madros takes a boat full of children, teens and adults to this year's culture camp upriver from Ruby, Alaska. Madros and his wife, Rachael Kangas Madros, played key roles in organizing culture camp this year.

in moisture and can absorb smoke. She'd have to watch carefully that the flies didn't get in them. She knew by smell when they were drying right or not.

What happened next was directed by Kangas Madros. Rachael would cut the strips of smoked fish so they'd fit into a jar. She'd add a teaspoon of brown sugar, fresh jalapeños, and chopped garlic, and put batches of 36 into the pressure canner for 90 minutes. You could wrap your hands around each one when it was done and cooled, the weight of a jar a particular kind of wealth people know on the river.

Fishing in Alaska right now is a story of haves and have-nots. Red salmon in places like Bristol Bay and the Kenai Peninsula are having record years, while other runs, like chums and chinook on the Yukon, are failing. Over the last few years, Tanana Chiefs Conference has distributed frozen red salmon to the communities on the river that couldn't fish. The fish from the tribe were from Bristol Bay, 400 miles south.

They were meant to keep people fed, but receiving them underscored the grief people felt over not being able to do the work of fishing. The work is as important as the food. Ivan Kangas called them "charity fish." They were not a species Kangas was used to processing or eating, but she decided to try to put them up anyway. She got 10 fish, and her relatives had received donated fish as well, so they decided to pool them and fire up the smokehouse. Once the fish thawed, she eyed their bodies. Did she need to remove the scales? She called around. Nobody knew.

"I know nothing about these fish," she said.

6 a.m. and coffee. All hands on deck. Grandkids were sent to gather birch bark. There were surprised shouts from the woods. "Gramma! Look, berries." Gathering birch bark was always a fun task for the young ones and soon bags were full of the papery shreds of the tree. Mason asked me why we needed birch bark. I reminded him that Grampa needs it to make fire in the smokehouse to smoke the fish.

"I no remember," he said, handing me the bag.

Mason, who we nicknamed "the otter" because he loved salmon strips from the time he cut his first tooth. Would he see long strips of smoked king salmon again, enjoy the organized chaos of cousins running free while Gramma, Mom and Aunties worked all day in the smokehouse? Would he help carry poles of dried strips to dump on the table and ask for one long uncut strip to proudly munch on?

Kangas split and scored the red salmon, making vertical cuts in each fillet, leaving them attached near the tail. Then she hung them over poles, climbed the ladder and hooked them up high in the smokehouse. The work, the smell of smoke, brought comfort. She took down some when they were "half-smoked," finished on the outside, but still soft on the inside, a delicacy the elders miss most.

"The scored red fish looked beautiful hanging on the rack. We fired up the grill and enjoyed our traditional first taste of salmon with rice, pickled beets and pilot bread. It is a small lean type of salmon, but we savor every bite."

Julia O'Malley, a third-generation Alaskan and James Beard Award-winning journalist, writes about climate, culture and food. Her book, The Whale and the Cupcake: Stories of Subsistence, Longing, and Community in Alaska, *was published in 2019.*

Jenny Irene Miller, Inupiaq (b. Sitŋasuaq / Nome, Alaska), is an artist and teaching artist who works primarily with photography. Jenny is based in Dgheyay Kaq' / Anchorage, Alaska.

PRAIRIE REVIVAL

In a sea of wheat, every acre restored in eastern Washington is worth celebrating.

By Kylie Mohr
Photos by Rajah Bose

The Phoenix Conservancy works to restore and maintain pocket prairies between the fields of dryland-farmed grain in the Palouse Prairie of eastern Washington.

A FEW MILES OUTSIDE Pullman, Washington, a remnant of the Palouse Prairie lies on a small hill, surrounded by undulating wheat fields and studded with cracked and weathered headstones from the late 1800s. More than 100 plant species bloom here at Whelan Cemetery, including pink prairie smoke, purple lupine and yellow arrowleaf balsamroot.

Two centuries ago, before settlers came to the Palouse, these plants were part of what Melodi Wynne, a citizen of the Spokane Tribe, describes as a "million-acre grocery store." The fertile, well-drained soils of the Palouse, which stretches from the forests of northern Idaho south to the Snake River, were carpeted with grasses and wildflowers, many with roots that have long been used for food and medicine by the Nez Perce, Palouse, Coeur d'Alene, Spokane and other Indigenous peoples. To encourage their growth, Native tribes set fires, worked the soil, and planted seeds.

Beginning in the mid-1800s, though, settlers forced Indigenous peoples onto reservations across the Pacific and Inland Northwest and converted the prairie to cropland. Whitman County, once the heart of the Palouse Prairie, has in recent years been among the nation's top three wheat-producing counties. Signs along Highway 270, which connects Pullman to its nearby sister city of Moscow, Idaho, tout that statistic with pride. By most accounts, less than 1% of the original prairie remains, most of it on land too rocky or steep to farm — or, as at Whelan Cemetery, protected by being home to the graves of the people who plowed it under.

But the soil remains rich with root matter from the plants that once grew here, and some locals believe that it's possible not only to preserve what is left of the Palouse but to bring it back — one front yard, school parking lot and apartment complex at a time.

TODAY, A PERSON COULD LIVE and die in southeastern Washington without ever knowing it was once a sprawling prairie. "I grew up in Pullman and I never once learned about the prairie ecosystem," said Aspyn Hoppe, a Washington State University student who works on a field crew for the Pullman-based Phoenix Conservancy. The Palouse Prairie is a prime example of a generally overlooked

— and globally endangered — habitat. "Grasslands are neglected by conservation often," said Bertie Weddell, a retired member of the university's faculty. "They're just not seen as sexy as forests and mountains."

That's why Chris Duke, the conservancy's executive director, likes to say that one of the greatest threats facing the remaining Palouse Prairie is its obscurity. When Duke moved to Pullman to earn a doctorate in biology at Washington State University in 2014, he knew very little about the prairie. He'd spent the previous two years in Venezuela, teaching science at the International School of Monagas in the city of Maturin and focusing on protecting rainforests. When he saw the effects of slash-and-burn agriculture in Venezuela, he marveled at both the extent of the destruction and the fact that magnificent rainforests might one day rise again from the smoking fields. That belief in potential was the inspiration for the Phoenix Conservancy, which he founded in 2016 with fellow grad student Michael Saxton and Ben Stone, an undergraduate in Duke's ornithology class.

"Grasslands are neglected by conservation often. They're just not seen as sexy as forests and mountains."

Above: Miriam Padilla and the crew from the Phoenix Conservancy remove invasive species from farmland they plan to reseed with native plants.

Facing page, from left: A member of the Phoenix Conservancy looks through native seed samples at a greenhouse in eastern Washington.

Native plant seed starts grow at a Washington State University greenhouse in Pullman.

The following spring, a blooming Palouse, full of diversity and beauty, opened his eyes to the potential in his own backyard. Everything clicked: He realized he needed to look down at the world underneath his boots, rather than up at a rainforest canopy. "That shows how little I knew, and how easy it is for anyone to disregard prairies," he said.

Obscurity isn't the only threat, of course: The remaining patches of prairie must compete with invasive species like cheatgrass for space and resources. Invasive species are quick to establish themselves and hard to evict. Once removed, they can be replaced with native plants, but native seeds are often costly; bulk western yarrow or blanketflower can cost $55 per pound, while seeds for the Oregon sunshine plant, known for its yellow flowers, run closer to $300 a pound. And even after native plants are re-established, continued effort is necessary to keep weeds from returning. In the long run, maintenance can be a challenge, said Marty Chaney,

a pasture conservationist with the Natural Resources Conservation Service known to her colleagues as "Mother Prairie" and "The Grass Whisperer": "Funding's done and everybody walks away, but ecology continues to happen."

The conservancy focuses on three endangered ecosystems: the Palouse, where Stone grew up; the Great Plains, where Saxton spent time; and the rainforests of Madagascar, where it is politically easier to carry out conservation work than it was in Duke's former home of Venezuela. Each of these ecosystems is critically endangered and has already lost significant percentages of its original terrain. Today, the Phoenix Conservancy works with groups across the Northern Great Plains to cultivate native seeds, and with a variety of global rainforest groups and Malagasy villages to plant hundreds of "mini-forests," each about 10 meters (about 33 feet) in diameter, that together would double the size of an existing fragment of rainforest in the southeastern part of the island.

In the Palouse, the Phoenix Conservancy plants and maintains native prairies, some of which — the "micro-prairies" — are only three feet in diameter. Landowners pay the conservancy to establish micro-prairies or slightly larger "pocket prairies" on their property, sometimes offsetting the cost by weeding the land themselves, and sometimes by using grants. The organization also weeds, replants and maintains larger habitat remnants like those on Kamiak and Steptoe buttes, about 15 and 30 miles north of Pullman respectively.

Until recently, the conservancy depended mainly on volunteers, using a rented U-Haul to transport their tools. This summer, with the help of private and government grants, it was able to hire four permanent staff, four seasonal staff and four interns and to purchase a white truck, "Betty." Sometimes the group can not only cover the costs of the pocket prairies but earn a little money for larger projects.

IN A SUBURBAN housing development in Pullman, wheat fields unfurl behind houses, some newly built and others under construction. Many yards are covered with neatly mowed, bright-green grass, but Mike Henniger's explodes with white western yarrow. When a Phoenix Conservancy crew stopped by to pull weeds and check the progress of the almost 20 species of native plants in Henniger's yard, small purple blooms of Lewis flax and a few yellow blanketflowers waved in the breeze.

A few years ago, shortly after moving here, Henniger went to a party down the street. Instead of a lawn, his neighbors had invested in a nascent pocket prairie, planted by the conservancy. Henniger was immediately interested. The estimated cost of a pocket prairie, which can range from $800 for a simple design in a small yard to $10,000 for larger-scale commercial projects, was about the same as the sprinkler system he was considering.

Now, a year after the initial weeding and planting, Henniger's yard is filling in nicely. "It's great because you really don't have to water it," Henniger said, pointing to his flowering front yard. "I've grown to love it." He's eagerly awaiting the yellow pops of color from the arrowleaf balsamroot, which can take about five years to bloom if planted by seed.

Just down the street at Kamiak Elementary, the Phoenix Conservancy created another pocket prairie at the edge of the school's parking lot. A grant from the Washington Outdoor Learning Program to the Pullman School District paid for it, and the conservancy will use additional grants to develop lesson plans around it. As of this summer, the conservancy has established about 30 pocket prairies in the Pullman area and is accepting about 16 new contracts each year.

Altogether, the 30 established pocket prairies provide between 10 and 15 acres of

habitat. Such fragments are more vulnerable to invasive plants than a single larger swath would be, owing to their higher ratio of edge to interior space, but quality can matter more than size or location, Duke told me. "Imagine you're a bumblebee," he said. "You don't give a damn. It doesn't matter if it's in a school or a roadcut or my front yard." Pollinators flock to the pocket prairies, which buzz with bees while nearby lawns remain comparatively silent. Last year, a Phoenix Conservancy client found tiny dollops of white monarch butterfly eggs on showy milkweed, one of the only plants in the region that monarchs will lay eggs on. "Big prairies are very impressive, and they're important because we've got animals that need a certain amount of space," said Chaney. "But we may carry some species forward in the pocket prairies."

The conservancy is one of several restoration efforts that are creating a patchwork of prairie across southeastern Washington and northwestern Idaho. The Palouse Land Trust helps landowners implement voluntary conservation agreements, or easements, to restrict future development on their land. Groups such as the Palouse Prairie Foundation, the Palouse-Clearwater Environmental Institute and the Idaho Native Plant Society's local White Pine chapter are working to restore native vegetation and manage prairie remnants.

The Coeur d'Alene Tribe recently purchased just over 1,100 acres that include what's thought to be the largest remnant of the prairie in Idaho — 174 acres amid the conifers and agricultural fields around Liberty Butte. "We haven't had an opportunity to buy a piece like that before, so that was exciting," said Cameron Heusser, who heads the tribe's Wildlife Division. Now, the tribe's Natural Resources Department is conducting vegetation inventories and creating a management plan. One former wheat field was reseeded with native grasses in October 2023; it will take several years to see results. "Fighting the weeds is the biggest issue and one of the hardest things to figure out," Heusser said. Since grasslands often hold soil better than agricultural fields, thereby keeping runoff sediment out of waterways, native prairie restoration supports the tribe's larger stream restoration projects and its ultimate goal of bringing back salmon.

Eastern Washington University in Cheney, Washington, about 70 miles north of Pullman, is collaborating with members of the Spokane Indian Tribe to restore almost 130 acres of campus-owned farmland to native prairie habitat. Melodi Wynne, a university alumna and the food sovereignty manager of the Spokane Tribal Network, remembers that when she first visited the restoration site in the spring of 2019, she marched up a muddy hillside to plant to plant bulbs of *Lomatium canbyi*, an important traditional food that interior Salish-speaking tribes like her own call *púx̣ʷpúx̣ʷ* or white camas.

Wynne shares her expertise in food sovereignty and seed collection and works with other Spokane tribal members to plant native seeds in the project's greenhouse. "That back-and-forth knowledge sharing has been really beneficial," Wynne said. During the COVID-19 pandemic, when there were too few people on campus to plant the project's 900 plant starts, Wynne organized an effort to plant them on tribal land.

While most Palouse restoration projects focus on removing invasives and planting native plants, Wynne includes a third type of plant: "invited" species, which were

introduced by humans but can benefit their adopted ecosystems. Wynne cites broadleaf plantain, which she dries for tea, eats in salads, or infuses into oils for wound-care salves.

This fall, the university project participants will expand their efforts from a 13-acre test site to the remaining 107 acres, where they expect to plant grasses and forbs through the fall of 2026. Wynne dreams that someday the restored acreage could join the short list of off-reservation locations where the Spokane Tribe can gather prairie roots for food and medicine; the tribe currently lacks treaty access to foods anywhere on the Palouse Prairie. As far as Wynne knows, colonization has not completely eradicated any food species, but prairie plants have not been abundant enough for daily consumption and are only gathered for ceremony. "That's something that finds its way into our dreams, that we would have those foods on our plates on a daily basis," Wynne said.

Wynne said the restored prairie patch will provide all the students with a place to clear their heads and connect with nature. This could be especially significant to Native students: "If they would allow students … to dig up some of the roots and take some of the plant materials to make foods and medicines, that would really be beneficial for the students," Wynne said. In her work with the Spokane Tribal Network, she said, "I see that magic happen every day."

"Imagine you're a bumblebee. You don't give a damn. It doesn't matter if it's in a school or a roadcut or my front yard."

From left: The Phoenix Conservancy teaches locals about the native prairie landscape by including informative signs in its restoration projects, such as this one in the front yard of a client.

Members of the Phoenix Conservancy replace conventional grass with native plants in the front yard of a Pullman client.

THE PHOENIX CONSERVANCY doesn't confine its work to small lawns and neighborhoods. When I visited on a blustery day in May, the team was out tackling a dozen or so acres of weeds on a rural property surrounded by farmland.

On our way to the weeding site, we stopped on the landowner's windswept ridge, where a silvery blue bend of the Snake River was just visible in the distance. On the plains below us, a creek wound through fields of wheat. After taking in the view, we bounced down the bumpy road from the ridge to our destination, an area the landowner calls Rattlesnake Gulch.

There, we confronted sprawling stands of poison hemlock, taller than some of the crew members. A red-tailed hawk cried overhead as the team circled Shannon Collins, the conservancy's Palouse Prairie project manager. She

called out reminders: *Try to pull the weeds out by their roots. Wear gloves to protect your skin from irritation.*

The hemlock plant has a storied history: A poison made from it was allegedly used to kill Socrates in 399 BCE; in the Northwest U.S., where it was introduced as an ornamental landscaping plant over 100 years ago, it chokes out native plants and kills cattle. A member of the carrot family, it has a blotchy purple stem and blooms in clusters of little white flowers. As people started to yank it up, a carrot-y smell filled the air.

Multiple rounds of weed pulling, with applications of herbicide on less-windy days, will prepare the soil for hardy native plants like Jessica's aster, cow parsnip, goldenrod and fireweed. The conservancy's native seeds and starts come from commercial suppliers and its own small greenhouse on Washington State University's campus. Seeds are also gathered from prairie remnants. Eventually, the group would like to establish a seed buyback program for farmers and other landowners, offering them a financial incentive to allow prairie restoration on their land and provide a much-needed additional source of seeds.

Native seeds can lie dormant in soil seed banks for decades or even centuries. Duke pointed out that older roads, those built when prairie plant communities were more prevalent, tend to have native plants growing in the disturbed soil right next to them — a sign of a viable seed bank. Newer roads, meanwhile, tend to be bordered by a wash of invasives.

Unfortunately, invasive plants can establish seed banks, too. Last fall, after the crew pulled weeds and sowed native seeds in Rattlesnake Gulch, the hemlock returned with a vengeance, supported by its massive seed bank.

Staring down at the stubborn infestation, Phoenix Conservancy staffer Cullen Anderson gave himself a pep talk. "If you last in the field, then you have to be an optimist," he said. "If you're a pessimist, it will kill you." As he talked, Anderson, Collins and roughly a dozen field technicians used shovels, weeders and gloved hands to yank out the plants. "I've never really gotten my hands dirty," said Miriam Padilla Castañeda, a student at Washington State University and new field crew member this summer. "But in my first 14-hour shift, I learned more than a full semester." A few feet away, crew member and University of Idaho student Paige Simons wrestled with plants that loomed over her head, then hoisted the uprooted stems triumphantly in the air.

The conservancy usually turns weeds into biochar, a form of charcoal that's rich in carbon and can be used as a soil amendment.

Washington's Steptoe Butte State Park is a refuge for native plant species and the insects they attract.

A new biochar production facility — part of a nearly 3-acre property Duke envisions as a hub for supplies, with a native plant nursery — is in the early stages of construction, with hopes of offering biochar wholesale next spring. But hemlock can't be burned because it releases a toxic gas, so it will be left to decompose in piles nearby. By the time the crew breaks for lunch, a surprisingly large swath of the drainage, about a quarter of a football field in size, is hemlock-free.

Ideally, the restored prairie would be burned periodically to remove dead plant material and stimulate new growth, as Indigenous peoples have done for millennia. To conduct controlled burns on this property, though, requires trained personnel, firefighting equipment, and landowner permission, not to mention local acceptance of fire and the smoke it generates. For now, fire isn't part of the restoration efforts; regular weeding is the next best option, though it's by no means a substitute.

THE FINAL STOP on my informal prairie restoration tour was Steptoe Butte, which, at about 400 acres, might be the largest remaining remnant of the Palouse Prairie. The giant quartzite thumb sticks out of the plains, a sharp contrast with the rolling wheat and canola fields around it. For the conservancy, this prairie is both a model for its work and a source of seeds for the pocket prairies in Pullman.

Over 200 plant species thrive on this windy outlook. Pink prairie smoke and sticky geranium bloomed around us as a few members of the field crew and I walked up the winding road to the summit, hiking boots and pants still dusty from pulling weeds the day before. Collins, a bee enthusiast, snapped photos of insects. She also pulled the few invasives she saw lurking among the flowers. "That's the curse of knowing invasives," she said. "You see them everywhere, and you get sad about it."

We spent so much time looking down at the plants that I sometimes forgot about the view. Anderson paused to take in the landscape, which was splotched with shadows from passing clouds. While the flowering forbs around our boots were plentiful, the butte drops steeply into rolling wheat fields, which offer nothing to pollinators. "We're on an island of habitat," he said. "For a bee, the Palouse might as well be open water."

As we walked onward, Collins yelped. A Hunt's bumblebee, a native species, was buzzing along the side of the road, gathering pollen from the bright fuchsia blooms of a Woods' rose. This bee and hundreds of other species need prairie habitat to survive and thrive. Today, patch by patch, those who live here are restoring its flowering glory.

Kylie Mohr is a correspondent for High Country News*, writing about wildfire, wildlife and wild places from Montana. Her work also appears in* National Geographic, The Atlantic, Vox, Grist, Outside *and more. @thatsMohrlikeit*

Rajah Bose is a photographer and artist based in Spokane, originally from the rolling hills of the Palouse.

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Visitors enjoy the quinceañera exhibit at the Yakima Valley Museum in Yakima, Washington.

ESSAY

Stepping out in high-tops

The evolution of the quinceañera in central Washington.

BY NATALIA MESA
PHOTOS BY
ROBERTO (BEAR) GUERRA

WHEN VISITORS enter the quinceañera exhibit at the Yakima Valley Museum, the first thing they see is a pair of seafoam-green Converse high-tops with flashy, graffiti-style lettering on the side that reads "*mis quince*" — "my 15th" in English. "This is Yakima right here," said Yesenia Navarrete Hunter, a professor at Heritage University in Toppenish, Washington, who worked on the exhibit. During a traditional quinceañera, the cumplimentada, or birthday girl, exchanges her everyday shoes for high heels, signaling her transition to womanhood. Nalya Marquez, Navarrete Hunter's niece, used the high-tops as her "everyday shoes" at her quinceañera in 2017.

Navarrete Hunter grew up in the Yakima Valley, an agricultural area in central Washington where Latinos have worked, lived and settled since the 1930s. The region's Latino population is still growing, and Navarrete Hunter, who studies Latino cultural history, is interested in how different generations cultivate a sense of place by celebrating traditions like the quinceañera.

Throughout Latin America, quinceañeras are typically held on a girl's 15th birthday and usually consist of a Mass at a Catholic church followed by a lavish celebration. The exact origins of the quinceañera are unclear, but it is thought to have started in Mexico, and some scholars think it has roots in Aztec and Mayan coming-of-age ceremonies. Navarrete Hunter found little evidence of specifically Indigenous origins during her research, though young people in many cultures go through a rite of passage around the age of 15. What is certain is that the tradition is influenced by Spanish and French colonial practices, and has always carried their patriarchal, heteronormative and cisnormative baggage. That is beginning to change, however.

While the celebration used to signal a young woman's readiness for marriage, that's "definitely not the message we give out anymore," said Ashley Zarco, a Heritage University student who helped put together the exhibit.

Marquez loaned the museum not only her sneakers but her dress, a shimmering green ballgown with a cascading ruffle skirt that resembles breaking waves. Fourteen other women contributed quinceañera memorabilia

"It was a gangster quinceañera. All my homegirls were there."

to the exhibit, which features a rainbow of jewel-encrusted gowns ranging from the 1970s to the 2020s and an assortment of shoes, rosaries, invitations, bouquets and other ceremonial keepsakes. Through these objects and their stories, the exhibit shows how quinceañeras in the Yakima Valley have not only evolved but been reinvented by young Latinas seeking to express themselves and find their own sense of place.

The earliest photo in the exhibit, taken in 1967, shows three young women in simple empire-waist gowns celebrating in front of a wooden house. At the time, most migrant workers in the valley lived in temporary housing, in what Navarrete Hunter described as "impermanent, fragile" structures. Familiar cultural traditions, like the quinceañera, gave migrant families a sense of belonging in a new, unfamiliar place. But as the valley's Latino population grew and became more established, quinceañeras began to skirt convention. "At some point in the last 30-40 years, young women really started taking charge," Navarrete Hunter said.

Madeline Alvizo Ramirez, an artist and substitute teacher based in Yakima, remembers that for her quinceañera in the 1990s, her tailor altered her dress so that it was more modest than she wanted. But that didn't stop Alvizo from subverting traditional norms: She paid for her own cake by picking asparagus that summer, and on the day of the celebration, teased out her hair and drew in pencil-thin eyebrows, embracing the *chola* aesthetic popular at the time. "It was a gangster quinceañera," she said, laughing. "All my homegirls were there."

Religion is still an important part of many quinceañeras, but now, some young women choose to distance themselves from that aspect or even skip straight to the celebration. The celebration is changing as well, Navarrete Hunter said, with single mothers or grandmothers filling the paternal role in traditions like the father-daughter waltz and the changing of the shoes. "There are a lot of ways to decenter the patriarchy in a quinceañera," she said.

Throughout the Americas, young people are subverting the quinceañera in other ways. Queer and transgender individuals are adapting stereotypically feminine quinceañera traditions, and variations such as the *cincuentañera*, a celebration for women turning 50, are increasingly common.

Ruby Gutiérrez, a recent high school graduate who had her quinceañera in 2022, chose to have only boys, or *chambelanes*, in her court of honor, which typically includes both young men and women. Her dress was unique as well, with LEDs sewn into its fabric so that she literally lit up the room. "It was really whatever she wanted," said Rosa Gutiérrez, Ruby's mother. "That was the main goal, for her to enjoy the day."

While most quinceañeras still feature traditional foods and dances, they may represent multiple or blended cultures. Gutiérrez and her guests danced to live music in three different Mexican genres: Banda, Norteño and Mariachi. Some young women perform traditional dances to reggaeton or pop songs. The "surprise" dance, during which the cumplimentada appears in a new outfit, plays a different genre of music or makes an abrupt entrance, might be a country-western line dance or a routine inspired by TikTok.

Quinceañeras remain a way for a girl's family to show their love and support, said Diana Aparicio, an event planner who attends them on a weekly basis. She recalled that her mother worked extra hours picking apples and pears in Yakima's orchards to pay for hers. Other women shared similar stories about how hard their farmworker families worked to throw them a quinceañera. It's also typical for aunts, uncles, cousins and grandparents to contribute to the event in small and large ways. Families "demonstrate their love by putting all this together for you," she said.

All the women I spoke to talked about their quinceañera's importance, not just to them or their families but to their communities. The celebration strengthened their community bonds, they said. Alvizo Ramirez was the only one in her group of friends who had a quinceañera — they are, after all, elaborate and often expensive, and not everyone can afford them. But it meant a lot to her friends to be able to participate, she said. "I was really honored to get that experience," Alvizo Ramirez said. "I recognize the value that it brought to my community."

Natalia Mesa is an editorial fellow for High Country News *reporting on science and environmental and social justice.*

Clockwise from left: Consultants Yesenia Navarrete Hunter and Ashley Zarco helped organize the exhibit at the Yakima Valley Museum.

At Ruby Gutiérrez's quinceañera in 2022, her court was composed only of boys, or *chambelanes*.

The exhibit offers a variety of objects and personal histories from decades of the quinceañera tradition in the Yakima Valley's Latino community.

The guest book from Ruby Gutiérrez's quinceañera.

Facing: Nalya Marquez's high-top sneakers are the first things a visitor sees upon entering the exhibit.

REVIEW

How to write about abortion

Pam Houston's unflinching treatise on *Roe v. Wade* and life post-*Dobbs*.

BY AFTON MONTGOMERY

MOST OF THE SIGNS that mark the Continental Divide in Colorado have one arrow pointing west and another pointing east, with *Pacific* and *Atlantic* in blocky yellow letters. And it's not just the Divide that plays at such duality. It was easy, growing up on Colorado's Front Range, to see things in a simple oppositional framework: There's *this* and *that* — either/or — the Rockies in one direction and the Great Plains in the other. At the feet of massive mountains, the skyline looks simple. But after a short scramble on scree or around a bend, with a thunderstorm setting off rockslides or fire sweeping a hillside into ashes, the entire view changes. Nature's sleight of hand, which turns excessive simplicity into something intricate and even contradictory in an instant, is also endemic to storytelling in the West.

Pam Houston has lived for decades on a ranch near Creede, Colorado, close to the headwaters of the Rio Grande River. Tucked between the hip of the San Juans and the sharp line of the Sangre de Cristos, the river flows mostly due south toward the Gulf of Mexico, laughing at the binary Continental Divide signs as it goes. This is important. Houston is a writer who clearly takes landscape as her teacher, and the laughing Rio Grande has never been more evident than it is in her new book, *Without Exception: Reclaiming Abortion, Personhood, and Freedom*.

A book on abortion does not enter post-*Dobbs* America in an election year without a clear aim: Houston is here to make an unassailable argument for freedom of choice. She uses objective information to build out her argument, including statistics on the incidence of abortion both before and after *Roe v. Wade* came into effect in 1973; a summary of the University of California San Francisco's Turnaway Study's findings on the consequences of having or being unable to have an abortion; statements from doctors post *Dobbs;* and an analysis of the impacts of growing maternity deserts. But she also uses subtle and intelligent rhetorical language to accomplish her purpose, writing with tenderness and nuance and never shunning personal complication.

Her short text consists of 60 micro chapters, which sometimes roll from one right into the next as if continuing a conversation, and which occasionally pick up threads from pages before. It's a form that is natural to Houston — borrowed from her 2011 novel, *Contents May Have Shifted* — quick-moving and allowing for sharp corners. She weaves together her personal history of abortion, abuse, gender and choice with topics as variable as climate concerns; U.S. law regarding personhood and bodily freedom; the fallibility of memory; statistics and philosophy; and the relationship between all of this and writing. Her more outwardly focused chapters are gruff and appeal clearly to fence-sitters in the abortion debate, emphasizing the rights of survivors of sexual assault or abuse, tapping the sympathy of the ideological middle, without discussing those who seek to terminate for less harrowing reasons. On first reading, I found myself frustrated at times by this seemingly milquetoast approach to the issue.

Now, though, I understand it to be a sly strategy for expanding her book's reach. In her more personal chapters, Houston undercuts the simplicity of her "political" arguments for choice, discussing her own history with Husband Mike Number One and Husband Mike Number Two, along with the blooming columbines and bluebells in the San Juans, climate change and the future, before returning to a defense of a person's right *not* to have children if she doesn't or they don't want to. On the mountain and on the page, she thinks things through, and it gets complicated.

As she's previously written, Houston was sexually abused by her father for years. The abuse never resulted in a pregnancy, but, after describing the three abortions she did have, all while in relationships with men she loved, Houston takes the time to imagine what might have happened when she was young. In a chapter called "One True Thing," Houston begins, "I will say one thing with absolute certainty. If I had been forced by the state of Pennsylvania to carry to term and deliver my father's baby, I would have killed myself." Only to reconsider, not one page later, acknowledging that "I can't say for certain I would've killed myself because I can't say anything for certain, which is the beauty of not having killed myself." This sums up her approach in general: "My primary job as a writer is to hold two or more contradictory ideas about the world simultaneously. This is also my primary job as a human being."

Early on, Houston writes about *negative capability*, the phrase Keats coined to describe an open-hearted ability to appreciate the contradictions, mysteries and wild unknowns of life. She writes, "As a nation, since Trump, (and let's face it, well before) we have suffered, and are suffering, from a distinct failure to employ negative capability in the way we interact with each other and the world." Fortunately, the landscape of the West has plenty to teach in the way of unknowns and wonder; its time signature changes and syncopates, and this book clearly aims to surrender to such sounds.

Houston is a rhythmic writer who positions *this* against *that* not only in her chapters, but in her sentences. She layers sound, as she layers content, to create greater complication. Her *this* and *that* change which of their facets face front, adding

depth to the book's sonics and its meaning throughout.

One chapter, for example, focuses on a women-run bison and cattle ranch in southern Colorado where Houston teaches a summer writing workshop. The women there run the place; they train the horses and fix anything that's broken. A *New York Times* reporter came to photograph the ranch for a story and spent an entire day watching the women work before asking, obtusely, "But when do the cowboys come in?"

On the flip side, Houston describes going on a horse trek in Iceland: 16 riders traveling with some 90 horses because they move so fast that the riders have to switch horses every couple hours to give the animals a break. When a woman with her 6-month-old slung on her back asked her au pair to grab the baby so she could fix some loose fence stakes, no one, including Houston, expected to see that the au pair was a "tall and burly man with a Viking beard." With these two chapters, Houston creates a foil and a mirror. Both chapters call up the rhythm of a trot or gallop, but from one to the next, she's changed keys.

She does the same thing at the sentence level. In her description of her recovery from her second abortion, Houston writes, "Grief was not one of the things I felt, and I understand this now as self-protection." There's a duality here with a phantom on both sides: On the first are whatever feelings — *not grief* — she felt at the time of the abortion, and on the other is the possibility that, after the need for self-protection waned, grief entered in. This section is quiet, honest. It comes on the backside of the immense gratitude she's already expressed for being able to have each of her abortions. It's a complicated gratitude, though, because she refuses for anything here to be flat.

"Grief was not one of the things I felt, and I understand this now as self-protection."

Comfort For A 10 Year Old Girl (completed 2022)
Artist: Susanna Eisenman
Rita Dvoynikova

Earlier, Houston writes about her mother ("Every time I begin a new book, I swear to myself that this time, my mother won't make an appearance. But here she is again.") then her father ("And then there was my father, the abuser, also long dead now; the other character in my life story who just won't go away."). Her mother always made it clear that she never wanted a kid, and her father should never have been allowed to be near one. She says, "I didn't want either of them in these pages because to put them here makes the abortion equation far too simple." And then she lists all the reasons why the equation could be too simple, what her admissions about her parents might invite a reader to think. "As if all my reasons for wanting to control my bodily autonomy boil down to just this one," she writes.

"They don't."

"They don't."

Twice. Each its own paragraph.

"But even if they did — " Again, she goes on, back around the bend, past a mudslide, turning one angle into another, taking another look at every possible way to talk about abortion — through moms and dads, earth and bodies, consumption and hope.

"A book's first purpose is to lead its writer into a place much more emotionally complicated, much more fraught, more entangled, more layered, more confusing than she had expected," Houston writes. That she does so in these pages and still ends up with a book whose insistence on freedom of choice entirely backs up its title — *Without Exception* — underlines Houston's power as a rhetorician and the inherent integrity underlying the right to control one's own body.

Afton Montgomery has recent work in Electric Lit, The Millions, Chicago Review of Books, Pleiades, The Common, Prairie Schooner, Fence, *and others. A former independent bookstore buyer in Denver, she calls Colorado home.*

Without Exception: Reclaiming Abortion, Personhood, and Freedom
Pam Houston, Torrey House Press, 2024.
176 pages, softcover: $15.95

LIFEWAYS

An Inuit woman explores living in direct relationship with the land, water and plant and animal relatives of Alaska.

Glen Alps overlook, near Anchorage, Alaska. **Jenny Irene Miller**

Hunting for blueberries

The search for a taste of home in a new place.

BY LAURELI IVANOFF

RIGHT SMACK in the middle of our Unalakleet harvesting season, my family and I moved away. We left for Anchorage — Alaska's largest city — in mid-July. While my brother, his wife and my dad and his wife were getting nets ready for seining, cutting and drying humpies on the Unalakleet River, my family and I were unpacking totes, not sleeping very well on air mattresses, and purchasing things like a new broom, plunger and dish soap for our new-to-us house.

For the first time in my life, I owned a house with a concrete sidewalk and a mailbox outside my door. With a yard I'd eventually have to *landscape.* And though I knew I was going to enjoy living near a library, a Costco, coffeeshops and thrift stores, my belly and lungs carried an anxiety. My physical body, for the past 20 years, cut humpies and picked *aqpiks*, or cloudberries, every July, and cut silvers and picked blueberries every August. Suddenly, instead of cutting and picking, I was … not.

I wasn't questioning whether moving was the right decision: I wanted to be closer to doctors as well as other writers and artists. But my body wasn't OK with this sudden absence of activity on the river, fighting 12-pound silvers, or walking the hills in my backyard, touching the tiny tundra plants, gathering their bounty for a fresh berry pie and bagging the rest in Ziplocs for winter. Facebook photos posted by people at home compounded the ache. Photos of the orangey-pink flesh of humpies drying on racks. Friends and family holding plastic buckets full of blueberries, the backdrop of the clean, life-filled tundra behind them.

So, when my friend Zach texted, asking if I wanted to pick berries on a Friday in August, I canceled my afternoon meetings and drove to the hardware store to buy some one-gallon buckets. I was looking forward to being on tundra, away from asphalt and streetlights, where tiny plants, a breeze on the cheeks and the quiet of being with the Earth seem to make life make sense.

MY SON HENNING and I met Zach at a trailhead to walk our way to the berries. I quickly realized that picking blueberries in Anchorage means alpine hiking up above the tree line. It definitely isn't as easy as driving a four-wheeler to a fecund berry patch to fill a bucket or two. I thought picking berries in Unalakleet takes work, but picking berries in Anchorage is a fairly legitimate physical commitment. It's a good thing I like hiking.

We walked up the trail holding our buckets, backpacks full of snacks, tea and rain gear, me in my *qaspek* and jeans, while spandex-clad REI models hiked past us. Realizing I wouldn't have my own private hill to pick like in Unalakleet, I took a few deep breaths. But the trail wasn't too congested. It was fine.

In an open area, free of willows, my belly relaxed as I saw the red, waxy leaves of the *kaplaks*, or, as *Naluaġmiut* call them, bearberries. Behind my eyes and in my body, deep into my spine, I felt a smile seeing the rounded leaves of the blueberry plant. And a small, ripe blueberry.

For the first time in my life, I owned a house with a sidewalk and a mailbox outside my door. With a yard I'd eventually have to landscape.

We started picking. However, as I picked, I realized most of the berries were hard. More than half were still green.

"They're not ready," I told Zach. I was disappointed, but I picked nearly a quart of not-yet-ripe blueberries for smoothies in the coming weeks.

I got home and placed the berries in a gallon-sized Ziploc bag and into the freezer. I was confused. I had been seeing photos of friends picking berries around Anchorage and over near Wasilla, an hour north. I was determined to find these ripe berries.

The next day, the urgent feeling in my body unrelenting, my husband, Timm, and I took Henning on a drive to a popular berry-picking spot north of Anchorage. We hiked the short way to the hill and, again, found unripe berries. So we decided to try our luck at Hatcher's Pass, a very well-known and very popular and very congested blueberry-picking location where I had seen Snapchats of acquaintances picking ripe berries.

There were people in every direction. No matter where I went, I heard the voices of others. And the berries we found weren't even ripe.

"I can't do this," I said to Timm. "What are they picking?"

I better, sometime soon, be able to look back at this day and laugh, I thought. I sat on the tundra plants and cried.

We drove back home, me dejected. Demoralized. With no berries.

WHILE I KNEW it would just take time for the berries to ripen, my body wouldn't relax. For two weeks, my lungs and stomach felt tight. Most years, by the end of August, Timm and I would have put away 12 gallons of blueberries. On top of that, we would also fill out our chest freezer with aqpiks, lingonberries and crowberries. But now, in Anchorage, at the end of August, I had not one quart of ripe berries. I was not OK.

THEN, ON LABOR DAY weekend, we made our way up above the tree line. We found some beautiful patches of blueberries, ripe, soft and blue. We picked three gallons from two different locations. And my lungs and belly finally relaxed. The cells in the marrow of my spine smiled.

Though I can simply purchase frozen berries from the Costco just more than a mile away, there's something comforting and good in physically, tangibly providing food for your family. There's something that's set right in my soul, my nervous system, somewhere so deep it's spiritual, from taking nourishment that's offered from the land, clean and wild.

Harvesting food from this beautiful Earth will feel, look and smell different, here on the lands of the Dena'ina, in and around Anchorage. I learned it's OK. We will be fine. The relationship with the land and water, the plant and animal relatives, will continue. I now know I can live here.

Laureli Ivanoff is an Inupiaq writer and journalist from Unalakleet, Alaska, now based in Anchorage.

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

YELLOWSTONE NATIONAL PARK

Do you ever feel stuck in a rut and can't get back in the groove? You're not alone. Apparently, dude-bro elks go through something similar every autumn — go into a *very* deep rut, in fact — when they're in the throes of mating season. Tourists flock to Yellowstone National Park between September to mid-October to watch — and listen to — the lovesick bugling of *Cervus elaphus*. According to yellowstonepark.com, it's an auditory spectacle that is beyond thrilling: "The bugle starts low and throaty, rising to a high whistle, then dropping to a grunt or a series of grunts. It's a sound that is difficult for the human alphabet to imitate, a guttural bellow, a shrill pitch, and a hollow grunting." But before you say, "I'll have what he's having," remember to keep your distance — these bulls are not forking around. The contest for dominance is serious business where the lady elks are concerned, and the last thing anyone needs is to be mistaken for competition. You don't want to end up with a sharp rack to the ribs.

CALIFORNIA

It turns out that male flamingos make *egg*cellent foster dads. A feathery same-sex couple at the San Diego Zoo Safari Park is in the news for successfully hatching a flamingo egg. "The pair has perfected their fatherly duties by alternating brooding responsibilities," the zoo stated on social media. The co-parents, both in their 40s, and their foster chick are called "lesser flamingos," which seems like a rather rude name to us, but apparently the species, which is native to sub-Saharan Africa and western India, is used to it. *The Guardian* reported that earlier this year, the twosome showed signs of nesting behavior and were given a fake egg to care for so they wouldn't meddle with other nests. Their trial run went well, so the zoo replaced the fake egg with a fertile one, which eventually hatched. The proud co-parents were clearly tickled pink. Same-sex flamingo parenting is not unprecedented: There have been similar families at the UK's ZSL Whipsnade Zoo, as reported by *Newsweek* two years ago. Many birds are well-adapted for surrogate parenting, since they feed their young with crop "milk" from their upper digestive tracts. Which ... er ... sounds yummy, but we'll take our coffee black, thanks.

MONTANA

The thriller you never asked for: *Jurassic Park* meets *Frankenstein*, or rather, "Frankensheep." Arthur "Jack" Schubarth, 81, of Vaughn, Montana, was sentenced to six months in prison and thousands of dollars in fines for illegally breeding and selling cloned sheep hybrids to captive hunting operations. Schubarth violated the Lacey Act, which prohibits animal trafficking, along with international treaties designed to prevent invasive species from harming domestic wildlife, *Popular Science* reported. Schubarth obtained, um, "parts" of a dead male Marco Polo argali sheep from Kyrgyzstan — the largest sheep species in the world and much sought after by trophy hunters — and had a lab use its genetic tissue to create embryo clones. The embryos were then artificially implanted into ewes on his ranch, resulting in "numerous hybrid offspring." Over time, a "pure male Marco Polo argali" was produced, which Schubarth named "Montana Mountain King." Other ewes were artificially inseminated with MMK's semen and the resulting offspring were "extremely large, never before-seen hybrid supersheep." And if this isn't bizarre enough, Schubarth also sold supersheep semen to breeders in other states. Sheep with just 25% of MMK's DNA can bring $15,000-per-head. This is some next-level super-villain nonsense and so baaad that *The Onion* satirized it, commenting that "Illegal sheep geneticists don't last long in prison."

MONTANA

Music has charms to soothe the savage breast, according to the oft-misquoted line from a 1697 play by William Congreve. But renowned cellist Yo-Yo Ma's eagerness to play music for bison grazing on Blackfeet Nation lands actually stemmed from his desire to find new connections between humans and nature. "More and more, every music I play is trying to figure out what is human nature, what is nature and how the two combine," Ma told Montana Public Radio. Ma has traveled the country playing his cello in remote places as part of his "Common Nature" project. He was inspired to visit the Blackfeet Nation after learning that the tribe was re-establishing a free-roaming bison herd and planning to help other tribes restore bison too. Ma hopes to raise support and spread awareness of that goal. The bison were too blissed out to give a comment.

Tiffany Midge is a citizen of the Standing Rock Nation and the author of Bury My Heart at Chuck E. Cheese's. *Midge resides in Idaho near the homeland of the Nimiipuu. @TiffanyMidge*

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#IAM THE WEST

MICHAEL ZIMMERLE (HE/HIM)
Weekly Back Porch Blues Jam founder, builder, wandwright, musician
Paonia, Colorado

I am relentless when it comes to getting people up on stage. Music completely bypasses intellectual thought. Watch someone sing, and watch their expectations drop away, and suddenly the power of that music becomes a force of nature. It doesn't matter whether it's technically correct or not; I've heard some off-key stuff that touched me in ways that are almost indescribable. When you get somebody up on stage who is trying something for the very first time, and you get an entire group of people exploding in applause for them — even if for no other reason than that they got up on stage and gave it a shot — that is, to me, one of the most beautiful things that happens. They're reaching, they're exploring — they're giving voice to a portion of their soul. Those moments are why I do this.

Do you know a Westerner with a great story?
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