

High Country News

A scenic landscape photograph of a mountain valley. In the foreground, a calm lake reflects the surrounding greenery. The middle ground is filled with dense evergreen forests, including tall spruce and fir trees. In the background, rolling mountains are visible under a clear blue sky. The overall color palette is dominated by greens, blues, and earthy tones, creating a serene and natural atmosphere.

HOW TO BUILD A BETTER
CLIMATE FUTURE

Vol. 56 / January 2024
No. 1 • hcn.org

HIGH COUNTRY NEWS

EXECUTIVE DIRECTOR/PUBLISHER
Greg Hanscom

EDITOR-IN-CHIEF Jennifer Sahn

ART DIRECTOR Cindy Wehling

EXECUTIVE EDITOR Gretchen King

FEATURES DIRECTOR McKenna Stayner

NEWS & INVESTIGATIONS EDITOR Kate Schimel

SCIENCE & CLIMATE EDITOR Emily Benson

INTERIM INDIGENOUS AFFAIRS EDITOR
Sunnie R. Clahchischiligi

VISUALS EDITOR Roberto (Bear) Guerra

ASSOCIATE VISUALS EDITOR Luna Anna Archey

ASSOCIATE EDITOR Anna V. Smith

STAFF WRITER B. "Toastie" Oaster

COPY EDITOR Diane Sylvain

BOOKS & CULTURE EDITOR Melissa Chadburn

POETRY EDITOR Paisley Rekdal

CONTRIBUTING EDITORS

Nick Bowlin, Jane C. Hu, Michelle Nijhuis,
Jonathan Thompson, Raksha Vasudevan

CORRESPONDENTS

Ben Goldfarb, Ruxandra Guidi, Tiffany Midge,
Kylie Mohr, Leah Sottile

EDITORIAL FELLOWS Brooke Larsen, Susan Shain

EDITORIAL INTERNS

Ollie Hancock, Shana Lombard, Natalia Mesa

PROOFREADER Kate Wheeling

DIRECTOR OF PHILANTHROPY Alyssa Pinkerton

CHARITABLE GIFTS ADVISOR Bradon Schwarz

FUNDRAISING COORDINATOR Carol Newman

DIRECTOR OF PRODUCT & MARKETING Gary Love

MARKETING COMMUNICATIONS MANAGER
Michael Schrantz

COMMUNITY OUTREACH MANAGER
Michael Leveton

GRAPHIC DESIGNER & SOCIAL MEDIA COORDINATOR
Marissa Garcia

DIRECTOR OF BUSINESS ADMIN. Erica Howard

FINANCE & PAYROLL ADMINISTRATOR Mary Zachman

HR ASSOCIATE Gina Gurreri

CUSTOMER SERVICE MANAGER Mark Nydell

ASSOCIATE PRODUCT MANAGER KHowe

CUSTOMER SERVICE

Barbara Harper, Jessica Kiernan, Tammy York

FOUNDER Tom Bell

BOARD OF DIRECTORS

Estee Rivera, president (Colo.), Samaria Jaffe, treasurer (Calif.), Fátima Luna, secretary (Ariz.), John Belkin (Colo.), Wendy Fisher (Utah), Dina Gilio-Whitaker (Calif.), Andrea Otáñez (Wash.), Marla Painter (N.M.), Bryan Pollard (Calif.), Raynelle Rino (Calif.), Peter Schoenburg (N.M.), Jim Spencer (Ore.), Rich Stolz (Wash.), Andy Wiessner (Colo.)

DIRECTOR EMERITUS Luis Torres (N.M.)



Two ducks warm themselves as the sun rises over the Tijuana Estuary in Imperial Beach, California, in November. **Roberto (Bear) Guerra / HCN**

Know the West.

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

Fighting for an abundant future

IMAGINE AN AUGUST SUNDAY afternoon a decade from now. Maybe you're reading in your backyard in Carbondale, Colorado, maybe you're biking down the Boise River Greenbelt, maybe you're stepping outside your front door in Tucson. And then the sky turns a flat and ominous shade of orange-gray, and your eyes begin to water from a familiar acrid scent — wildfire smoke.

Or maybe not. Perhaps the sky stays a perfect blue, and you can go about your day without thinking of blazes nearby or distant, all because of the choices people made a decade ago. Perhaps a controlled burn in the North Cascades the previous autumn prevented a single stray spark from turning into a catastrophic wildfire — but only because an increasingly engaged public demanded that policymakers ramp up such burning.

It can be hard to recognize a lack of something: less intense fires, smaller and not-so-deadly floods, summer nights that aren't quite so hot. But these potential future scenarios are also marked by abundance: of cleaner air, healthy ecosystems, cooler temperatures and a more livable and just world. It's that abundance that's worth fighting for as the Western U.S. confronts the climate crisis.

This special issue of *High Country News* is devoted to stories of climate action and collective agency. It's about the work people are doing now to decarbonize the West, mitigate the climate crisis' worst impacts, and rethink the systems that caused the crisis in the first place. We were inspired in part by Rebecca Solnit and Thelma Young Lutunatabua's anthology *Not Too Late: Changing the Climate Story from Despair to Possibility*, in which Solnit writes, "We are deep in an emergency, and we need as many people as possible to do what they can to work toward the best-case scenarios and ward off the worst."

The idea is not to dismiss climate despair, but rather to show that it's possible to channel despair into action. Building a better future is a collective effort, and my hope is that no matter who you are, where you live, or what you're motivated by, you'll see some element of yourself in the people in this issue, whether they're pushing their electrical utility to move to renewable energy in New Mexico, working to restore an estuary in California, or building a new, climate-resilient version of a very old food system in Alaska. Working together, we can make a difference. And in 10 years, under a clear August sky, we'll have all of us to thank.

Emily Benson, science & climate editor

CONTRIBUTORS

Adam O. Davis is the author of *Index of Haunted Houses* (Sarabande, 2020), winner of the Kathryn A. Morton Prize. His writing appears in *AGNI*, *The Best American Poetry*, *The Paris Review* and elsewhere. He lives in San Diego.

Joaquin Estus (Tlingit) is a longtime Alaska journalist who works as a national correspondent for *ICT* (formerly *Indian Country Today*). She lives in Anchorage, Alaska.

Roberto (Bear) Guerra is a photographer and *HCN*'s visuals editor. He lives in Tucson, Arizona. @bearguerra

Ruxandra Guidi is a correspondent for *High Country News*. She writes from Tucson, Arizona. Follow her on Instagram: @ruxguidi

Ollie Hancock is an editorial intern for *High Country News* reporting from Portland, Oregon.

Brooke Larsen is the Virginia Spencer Davis Fellow for *HCN*, covering rural communities, agriculture and conservation. She reports from Salt Lake City, Utah. @JBrookeLarsen

Jenny Liou is an English professor at Pierce College and a retired professional cage fighter who lives and writes in Covington, Washington. Her debut poetry collection, *Muscle Memory*, was published by Kaya Press in 2022.

Terri Loewenthal is an Oakland-based artist. Her work has been exhibited nationwide, from the Yerba Buena Center for the Arts in California to the Booth Western Art Museum in Georgia, and is included in many private, corporate and foundation collections.

Nina McConigley is a writer and professor at Colorado State University. She is the author of *Cowboys and East Indians*.

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

Kylie Mohr is a correspondent who covers wildfire and conservation for *High Country News*. She writes from Montana. @thatsMohrlikeit

Mary Catherine O'Connor is an award-winning reporter whose beats include climate change, energy, waste and recreation. Her work has appeared in *Outside*, *The Guardian* and NPR. She helps produce *The Big Switch* podcast.

B. "Toastie" Oaster (Choctaw) is an award-winning Indigenous affairs journalist and a staff writer for *High Country News* writing from the Pacific Northwest. Follow @toastie@journa.host

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

Anna V. Smith is an associate editor of *High Country News*. She writes and edits stories on tribal sovereignty and environmental justice for the Indigenous Affairs desk from Colorado. @annavtoriasmith

Emily Sullivan is a photographer and writer focused on outdoor recreation, community and environmental wellness, and the human experience. Emily lives on Dena'ina lands in Anchorage, Alaska. Find their work at ejsullivan.net

Jonathan Thompson is a contributing editor of *High Country News*. @Land_Desk

Traditional foods, including herring eggs on kelp, dried pike, smoked salmon, seal oil and dried moose meat, prepared for Dillingham, Alaska, community members and supporters of the Smokehouse Collective, an Alaska Native mutual aid network.

Emily Sullivan / HCN



HOW TO BUILD A BETTER CLIMATE FUTURE

Homeowner's insurance is going up in smoke

Former California Insurance Commissioner Dave Jones on coverage in the age of climate change.

Q&A BY KYLIE MOHR

Kicking fossil fuels

An 80-year-old electric cooperative goes all in on decarbonization.

BY MARY CATHERINE O'CONNOR

PHOTOS BY JUAN ANTONIO LABRECHE

Natural histrionics

POEM BY ADAM O. DAVIS

Thousands of years strong

A new collective is rebuilding Alaska Native food networks across the state.

PHOTOS BY EMILY SULLIVAN | TEXT BY JOAQLIN ESTUS

The wind hard-hearted, the moon cruel

How Chinese kung-fu heroes can grow our climate consciousness.

ESSAY BY JENNY LIQU | ILLUSTRATIONS BY SALLY DENG

When you marry a cookstove scientist

Or how I came to be induced, twice.

TOWNSHIP AND RANGE BY NINA MCCONIGLEY

ILLUSTRATION BY TARA ANAND

Marsh matters

A culture of stewardship saved a Southern California estuary from development. Climate change is the next challenge.

BY RUXANDRA GUIDI | PHOTOS BY ROBERTO (BEAR) GUERRA

12 not-so-easy steps to decarbonize the grid

Electrifying will make a difference if that power comes from clean sources.

FACTS & FIGURES BY JONATHAN THOMPSON

ILLUSTRATIONS BY HANNAH AGOSTA

Shine a little light

In eastern Oregon, spirituality provides moral motivation for climate action.

BY REBECCA RANDALL | PHOTOS BY KAVEER RAI

Solidarity in the energy transition

How the climate and labor movements came together in 2023 and the work that lies ahead.

BY BROOKE LARSEN | ILLUSTRATION BY ISRAEL VARGAS

Indigenous climate leaders

Meet three Native climate experts bringing knowledge and justice to the conversation.

BY B. "TOASTIE" OASTER, ANNA V. SMITH, JOAQLIN ESTUS

ILLUSTRATIONS BY GABRIELLA TRUJILLO

#iamthewest

Justine Norton-Kertson (they/them), eco-witch, author and editor in Eugene-Springfield, Oregon.

BY OLLIE HANCOCK

6

8

11

12

20

28

30

38

42

44

46

52

A key to the stories in this issue



Decarbonization

Greenhouse gases from burning fossil fuels and other sources cause climate change. Decarbonization requires making changes — like generating energy from wind and solar sources — that reduce harmful emissions, or capturing and storing carbon.



Mitigation

Climate change harms critical natural and human infrastructure, often in lethal ways. Mitigation means finding ways to protect against or reduce the severity of these impacts by taking action, such as restoring wetlands to reduce deadly flooding in coastal areas.



Alternate systems

Centuries of capitalism and colonialism preceded the current climate crisis. Alternate systems — rethinking how economies and societies are organized, and whose perspectives are prioritized — could lead to a different and brighter future.

ILLUSTRATIONS BY
GABRIELLA TRUJILLO

ON THE COVER

Psychscape 809 (Lower Bear River Reservoir, California), 2017. Image by Terri Loewenthal

OTHER MATTER

EDITOR'S NOTE	3
HCN COMMUNITY	24
DEAR FRIENDS	27
HEARD AROUND THE WEST	50



Access to subscriber-only content:

hcn.org
hcn.org/56-01

Follow us @highcountrynews



Homeowner's insurance is going up in smoke

Former California Insurance Commissioner Dave Jones on coverage in the age of climate change.

BY KYLIE MOHR



AFFORDABLE HOME insurance is getting increasingly hard to find in wildfire-prone areas in the West. Climate change, along with flammable fuel buildup, is causing bigger, more frequent and more destructive wildfires, putting more and more homes at risk. Meanwhile, climate change is also driving other costly disasters, such as hurricanes and flooding.

In response, insurance companies are raising individuals' rates, sometimes by thousands of dollars per year. They're even dropping some policyholders altogether — right before fire season. According to a report from the nonprofit climate research firm First Street Foundation, 39 million homes nationwide are at risk of losing their insurance due to climate hazards.

Dave Jones, who served as California's insurance commissioner from 2011 to 2019, has some ideas that could help the situation. As commissioner, he was responsible for regulating the nation's largest state insurance market. Today, Jones is the director of the Climate Risk Initiative at the University of California Berkeley law school's Center for Law, Energy, & the Environment.

High Country News recently caught up with Jones to ask about insurance companies' response to climate change, nature-based

solutions in insurance modeling, what a better insurance system in the face of wildfire could look like and more. *(This conversation has been edited for length and clarity.)*

Across the West, people are getting notices in the mail saying their homeowners' insurance premiums have gone up, in some cases, substantially. Why is this happening?

In two words: climate change.

Can you expand on that?

Certainly. As we have failed to combat climate change, temperatures are rising in the West, throughout the United States and across the globe. The increase in temperatures is resulting in more severe and frequent weather-related catastrophes. That's killing people and injuring people and destroying communities. It's also making it challenging for insurance companies to keep writing insurance in some parts of the United States and make money.

Until we stop using fossil fuels and reduce greenhouse gas emissions associated with other sectors of the economy, we're going to continue to march steadily toward an uninsurable future.

Some companies have stopped issuing new policies entirely in some states. State Farm

said it would stop accepting new applications for property insurance in California in May, and Allstate followed suit, halting the sale of new home, condo and commercial property insurance. What was your reaction to that news?

Sadly, I predicted this is where we would end up when I was insurance commissioner back in 2015 and 2016. The good news in California is they haven't pulled out of the market entirely. In Florida, five companies have pulled out of the market entirely.

What can we — and insurers — do differently?

We have to be more aggressive in moving off of fossil fuels and reducing greenhouse gas emissions as the number-one priority.

Insurance can help here. U.S. insurers are collectively investing about \$536 billion in the fossil fuel industry. Why are insurers investing in the very sector that's resulting in the insurers' demise and their inability to write insurance in certain geographies? One thing insurers could do would be to transition out of fossil fuels and other high greenhouse gas-emitting industries as an investor. Insurers are also insuring fossil fuel infrastructure. So another way insurers could help is by transitioning out of providing insurance for fossil fuels.

Do insurers take into account the ongoing wildfire risk reduction work, like thinning and prescribed burning, happening across the region? If not, should they?

There are a number of nature-based investments that have been empirically proven to better protect people, communities and also reduce insurance losses. Unfortunately, insurance companies' underwriting models — the models they use to assign a risk score to homes and condominiums and businesses to decide whether or not to write the insurance — don't account for landscape-scale forest management. Getting the insurers to recognize that these things reduce risk, and then to make decisions to write insurance accordingly, is an important way to keep insurers in the market in California and other Western states with regard to wildfire. Insurance is regulated at the state level, and states need to insist that insurance companies' modeling accounts for the risk-reduction benefits of nature-based investments.

(Reporter's note: Recently proposed changes to California's insurance regulations may allow insurance companies to include wildfire-preparedness measures, such as safety certifications and prescribed burns, in their pricing models.)

If insurance did start including steps that landowners and land managers take to reduce wildfire risk, could it be a force for

good, motivating such improvements?

Absolutely. Not only is that a way to keep the insurers in the market, but it also encourages residents of those communities to support their legislators, whether federal or state, to put more money into forest management.

In the meantime, people still need insurance, and some can't pay major premium increases. What can states do to help protect people living in high-risk areas?

States are and should continue to enact the strongest possible building codes and then also provide funding to help people retrofit their homes. Using roof materials that are more impervious to wildfire, protecting the eaves of the home from embers, making sure you have defensible space, there's a long list of things. Some people are on fixed incomes and need assistance in hardening their home. A role that state policymakers can play is helping those people that are on lower incomes and own a home or condominium to undertake the home hardening.

Where do state "insurance of last resort," known as Fair Access to Insurance Requirements or "FAIR," plans, fit into the wildfire insurance conundrum?

They are an important state policy response to the challenge that insurers are having to write insurance in areas where there are climate change-driven losses. The people that have to go to the FAIR plan in the state are the people that private insurance is saying, "You're too risky to cover anymore," (or that were priced out of other options).

Even though it's expensive, I would argue strongly against artificially suppressing the rates of the FAIR plan, because then you start sending the wrong signal about the risk in certain areas due to climate change.

Could state or federal governments subsidize policies for low-income people? How would that work?

To the extent that there are seniors on fixed income or low-income households in areas that are being forced to go to the FAIR plan and they can't afford it, you could do something similar to what was done with the Affordable Care Act. You could have a premium subsidy, but not suppress the price.

There's also the problem of people's insurance not covering what they thought it would after a wildfire. For example, homeowners affected by the Marshall Fire in Colorado could be a combined \$155 million short in insurance coverage. How do we keep that from happening again?

When I was insurance commissioner in California, one thing I did was to issue a regulation that required insurers to do a replacement cost calculation for your home or your condominium and provide that to you. Insurance didn't like that so much. They sued me to challenge it; we were successful in prevailing in court. And so now, at least in California, you can ask your insurer, "Hey, can you do a replacement-cost calculation based on the labor costs and the material costs in my area, so I can have a fighting chance to figure out how much I need to insure to now?" You can also go out independently and have a contractor do that for you. Other states could require insurance to provide a replacement cost estimate and make that available whenever anybody is shopping for home insurance.

What would an ideal home insurance landscape look like, a decade from now?

I hope that starting now and going forward, we take the steps necessary, across the globe, to reduce utilization of fossil fuels and reduce greenhouse gas emissions so that we at least arrest the temperature rise. That gives us a fighting chance to keep insurance available in many parts of the United States where it's becoming unavailable. That's where I hope we will find ourselves, but I'm not terribly optimistic given the trend lines that we see currently.

You seem to be saying: "Get to the root of the problem."

Exactly. I mean, it reminds me of that campaign manager for a presidential campaign in '92 who said, "It's the economy, stupid," right? Well, you can substitute the economy with climate change. That's what's really driving this insurance issue. And that's fundamentally what we need to address. ☀

Flames rise near homes during the Blue Ridge Fire on Oct. 27, 2020, in Chino Hills, California (opposite). **David McNew / Getty Images**



Illustration by Gabriella Trujillo



Kicking fossil fuels

An 80-year-old electric cooperative goes all in on decarbonization.

BY MARY CATHERINE O'CONNOR
PHOTOS BY JUAN ANTONIO LABRECHE

IN 2006, LUIS REYES JR., CEO of Kit Carson Electric Cooperative, an electricity distribution cooperative in northern New Mexico, was in a bind. On one side, clean energy proponents were pushing him to add more renewables. On the other, Kit Carson's energy supplier, Tri-State Generation and Transmission, was doubling down on coal. Worse, the co-op's contract with Tri-State — which barred it from producing more than 5% of its own energy — wouldn't end until 2040.

"That was really the start of the breakup," Reyes said.

Kit Carson's ensuing separation from Tri-State, which took nearly a decade, was driven by the persistence of its members. Unlike investor-owned utilities, which are controlled by shareholders, rural distribution co-ops answer to the households and businesses that use the energy.

A product of the New Deal, Kit Carson was founded in 1944 to bring electricity to rural northern New Mexico. Today, there are 832 rural distribution co-ops nationwide.

In general, rural co-ops rely more on coal and have moved more slowly toward decarbonization than large investor-owned utilities. But that's changing,

with Kit Carson leading the charge. Co-op members worried about climate change are leveraging the distinctly democratic governing structures of rural distribution co-ops to encourage decarbonization. Robin Lunt, chief commercial officer at Guzman Energy, Kit Carson's current energy supplier, called co-ops "a great bellwether" for shifting public opinion.

"They're much closer to their communities," she said, "and to their customers, because their customers are their owners."

But democracy is messy, and change can take years. Lunt praised Reyes' patience and persistence at Kit Carson, while Reyes credits the committed, vocal co-op members who pushed it to be "good stewards... of the land and water." Still, the job is far from done, as the co-op continues its struggle to phase out fossil fuels entirely.

REYES WAS RAISED IN TAOS, in a home powered by Kit Carson. He was with his mother one day when she paid her bill at the co-op office. A manager offered Reyes a job, which he took after graduating from New Mexico State in 1984 with a degree in electrical engineering. A decade later, he became CEO.

The early 2000s found the co-op trying to expand its offerings in rural areas and launch internet services. Tri-State was also trying to grow, and, in 2006, it announced plans to build a large coal plant in Kansas. It also wanted Kit Carson to extend its contract until 2050, adding another decade. It was around this time, Reyes said, that some members started asking "some pretty tough questions," wondering why the co-op wasn't investing more in renewables and whether it should extend its Tri-State contract.

Bobby Ortega, a retired community banker who was elected to the board in 2005, said that some board members, himself included, were hesitant to move away from fossil fuels. "When I got on this board, I was more leaning towards coal," he said. "We were all raised on that kind of mentality (about) how our energy would be derived."

Most of the board members had open minds, though, Ortega said, and Kit Carson refused to consent to an extension of the contract. The co-op wanted to end its relationship with Tri-State. But legally, the contract was still in force, and Kit Carson needed to find another energy provider before it could



Kit Carson's largest solar array, near Taos, New Mexico. Renewable energy now provides 100% of the year-round daytime electrical needs of the energy co-op's more than 30,000 members.



Kit Carson's long struggle paved the way for other co-ops to leave Tri-State. "That (trend) literally wouldn't have happened, because nobody else would have had the guts to do it."



leave Tri-State.

In the following years, the co-op convened a committee of its members to discuss increasing solar energy usage. Tri-State, however, had set a 5% cap on locally generated electricity. In 2012, a group of Taoseños who shared an interest in renewable energy formed a nonprofit, Renewable Taos, and set a goal of 100% renewable energy for the area — a goal that was blocked by the Tri-State cap.

Renewable Taos reached out to Reyes to discuss the issue. As a co-op, Kit Carson needed buy-in across its service area — Taos and the Taos and Picuris pueblos, along with parts of Colfax and Rio Arriba counties — in order to make large-scale changes. But the co-op's membership was hardly a monolith. "You had the liberals," Reyes recalled, and the Renewable Taos members worried about climate change. But there had been an influx of "very wealthy but very conservative folks" in the Angel Fire ski area, and some of them were actively skeptical of renewables. Other Kit Carson members, notably those without much disposable income, feared that renewables would increase their monthly expenses.

Renewable Taos began

attending Kit Carson's board meetings with a new goal in mind: moving the entire service area to 100% renewable energy if the Tri-State contract was broken. "We didn't align at all," Reyes recalled. The board thought Renewable Taos, some of whose members were well-to-do retired scientists, were "kind of telling us dummies what to do," he said, with a chuckle.

But Reyes and the board found a way to address that tension. "At the end of our first meeting (with Renewable Taos), I suggested to the board, well, if these guys are really going to help us and be critical, let's give 'em some homework," he said. The board asked Renewable Taos to visit every municipality Kit Carson served to build support for a joint resolution declaring that all co-op members were committed to fighting climate change.

Jay Levine, one of the original Renewable Taos members, still wonders if that was an attempt to put them off politely. Even so, the group accepted Reyes' challenge, visiting every municipality in Kit Carson's service area and answering questions about renewables and energy costs. "We talked to a lot of folks, and I think everywhere we went, they signed on," he said. The process was aided by the falling cost of solar energy, which began reaching price parity with coal in the mid-2010s.

By 2014, every community in Kit Carson's service area had signed on to Renewable Taos' clean energy resolution.

Two years later, after the co-op board finally found an alternate energy supplier, it broke its Tri-State contract for \$37 million. Thanks to increased control over its power sources, Kit Carson reached an important goal in 2022: Renewable energy now provides 100% of the year-round daytime electrical needs of its more than 30,000 members.

Now, other co-ops, notably Delta-Montrose in western Colorado, are following Kit Carson's lead and leaving Tri-State in the name of clean energy.

Levine, the Renewable Taos member, said that Kit Carson's long struggle paved the way for other co-ops to leave Tri-State. "That (trend) literally wouldn't have happened," he said,

"because nobody else would have had the guts to do it."

THE CO-OP'S ACHIEVEMENT — hitting the 100% daytime clean energy milestone — is clearly significant, but it also needs to meet a New Mexico mandate that rural co-ops transition entirely to carbon-neutral electricity by 2050. One potential pathway involves a green hydrogen plant that the co-op has explored with the National Renewable Energy Lab, other government partners and the small village of Questa.

Conventional hydrogen production, which uses fossil fuels, contributes to climate change, but so-called green hydrogen can be produced by splitting water atoms with



Luis Reyes Jr., CEO of Kit Carson Electric Cooperative (top). Energy users in the Taos area (right).

an electrolyzer powered by renewable energy. Proponents think widespread green hydrogen could reduce U.S. carbon dioxide emissions by 16% by mid-century. Despite all the investment and hype, however, few green hydrogen projects have broken ground. Still, Kit Carson has beaten the odds before; Reyes recalled that many people doubted that the co-op would ever reach its goal of meeting daytime energy needs with 100% renewables.

The Questa plant would be built at a shuttered molybdenum mine, which operated from the 1920s until 2014 and was a major source of both jobs and pollution. In 2005, a Chevron subsidiary, Chevron Mining, acquired Unocal, the mine's

parent company. Today, Chevron manages the remediation of what is now a Superfund site.

At a series of local meetings, water was the top concern for Kit Carson members. A variety of sources could be used to power the proposed plant, including water that Chevron is already pulling from the underground mine, treating, and sending to the Red River as part of its Superfund mitigation. Reyes is optimistic about the hydrogen project, describing it as the next phase of Kit Carson's clean energy journey. But he noted that the future of the project, and of the co-op as a whole, ultimately lies in the hands of the co-op's members. "They have been part of that equation the whole time," he said. ☀

POEM

Natural Histrionics

By Adam O. Davis

The lights of the world were going out
& I was going out with them.

So I said to hell with it
and walked on full of hellfire & fluoridated water—
a missile of dumb confidence under the sun's sadistic
vespers.

Dark fell fast.
Birds gave way to bats. The moon's black yoke above
a big bit of nothing.

No light, just implacable night.
Soon enough, I found myself in a fix:
quicksand cooled my Quixoticism.

I sank.

Not fast but subtle—a drowsy shimmy
into an underworld of allomorphic rock.
There, I fumbled among fossils for a while, then quit—
my history finally natural history.

The truth is
we're never alone.

The earth is fully peopled
with people. When the lights of the world went out

I went out with them
and though you'll never hear this from me now know
that all I ever wanted from love

was that it never change.

WEB EXTRA Listen to Adam O. Davis read his poem
at hcn.org/natural-histrionics





THOUSANDS OF YEARS STRONG

A new collective is rebuilding Alaska
Native food networks across the state.

Photos by Emily Sullivan | Text by Joaqlin Estus



Smokehouse Collective co-founder Deenaalee Chase-Hodgdon collects blueberries in Interior Alaska to preserve and share with family, elders, community members and supporters (above). "Those berries are going to go to nurture the relationships that are helping to grow the Smokehouse Collective right now," they said. "They're making everything a little bit sweeter."

Buckets of rosehips, crowberries, low-bush cranberries and blueberries that Chase-Hodgdon gathered in late summer. The climate crisis has deepened their desire to gather and store traditional foods like berries, which provide essential vitamins and nutrients for Alaska Native people.





THE ARCTIC IS WARMING TWICE AS FAST as the rest of the planet, according to the National Oceanic and Atmospheric Administration, with dire effects. In September 2022, remnants of Typhoon Merbok damaged more than 35 communities along 1,300 miles of Alaska's west coast, destroying food, fishing gear and camps that had been used for subsistence harvesting for generations.

In addition, warmer water temperatures are contributing to low numbers of fish in the once-bountiful Yukon and Kuskokwim rivers, resulting in closures or severe limits on fishing. The loss of this food source and the income from commercial fishing is a double whammy that disproportionately affects Alaska Native communities.

Yet the Bristol Bay region, the world's most productive sockeye salmon fishery, saw a massive return — 54.5 million fish — in 2023. Ruth Lchav'aya K'isen Miller (Dena'ina Athabaskan and a member of the Curyung Tribe), co-founder and co-director of the Smokehouse Collective, a new mutual aid network across Alaska, sees the bay's abundance as a boon that is "meant to be shared."

Instead, "most of that fish is going to elite markets in the Lower 48 and in different countries," said Deenaalee Chase-Hodgdon (Deg Hit'an Dene and Sugpiaq), the collective's co-founder and co-director. "Meanwhile, here in Alaska, folks are not able to fill their freezers with fish."

In response to the climate crisis, the collective aims to turn this economic system on its head by creating a gathering place and network for Alaska Natives to harvest, preserve — and give away — salmon and other traditional foods. Miller and Chase-Hodgdon have a radical vision: To reinvigorate ancient Indigenous trade practices as a means to redistribute wealth, return land and water in Alaska to Indigenous stewardship, and show that a healthy economy and clean environment can coexist.

Climate-related disasters threaten culture, language and lifeways as well as traditional foods. "(The collective) is not going to put more fish in the Yukon River," said Miller. "We have to hold the grief and the trauma of this time as Native peoples, and the fear that all of us feel of what might come to our ecosystems and to our cultures."

Given that reality, the Smokehouse Collective arose out of a need for food security rooted in Indigenous sovereignty. Chase-Hodgdon said that people living in areas short of fish are missing not just a necessary food

source, but the experience of harvesting and preserving, too. "People are really craving being able to put that net in the water, to be able to get the fish out of the water, to be able to do everything that it takes to participate in the holistic harvesting of salmon," they said.

"We want to make sure that we as (Indigenous people) have networks in place to support our communities," Miller said. It's an investment in "our resilience as Native peoples to persevere in our cultures despite the global impacts we're facing."

Following fundraising that began in May, the collective bought a portable fish-processing plant and is purchasing land for it in Dillingham, on Bristol Bay. The plan is to build a smokehouse by summer. Miller said the collective also hopes to grow produce, and harvest moose, caribou and berries, so that it can trade across regions to provide healthy, sustainable, traditional foods to communities.

Miller credits the collective's early successes to its collaboration with both Native and non-Native allies, including fishermen who were willing to donate part of their catch and local airlines and pilots ready to distribute it to villages in need. "So much of what the Smokehouse Collective will be investing in the coming year is actually just bringing together a network that has already been quietly growing in the region," she said. In expanding that network, Smokehouse is led by the values of Alaska Native peoples. "We are not just checking with our hearts and guts and spirits, but we're in communication with our elders and our aunties and our uncles and the folks who are out on the water every day."

Dewey Kk'oleyo Hoffman (Koyukon Athabaskan), a board member, believes building economies based on caring for future generations is important: Every summer, he takes his young daughter to his home village on the Yukon River in Interior Alaska, even though they can't fish there, and the fish camps and smokehouses are empty.

He envisions Smokehouse creating an opportunity for kids to work on fish, be with family, and rebuild trade networks and kinship ties. "As Athabaskan people, we had routes and networks of bringing different food and objects all across trails, and those relationships are thousands of years strong." The Smokehouse Collective is a way, he said, for Indigenous people to link arms and "bring in Indigenous-led efforts to again protect the lands and waters and also continue our ways of life." ❁

Deenaalee Chase-Hodgdon watches the sun rise at the confluence of the Wood and Nushagak rivers at Bristol Bay (*opening*). In 2023, 16.9 million sockeye salmon returned to spawn in these rivers, and 12 million were caught by commercial and subsistence fishermen. Chase-Hodgdon wants to share Bristol Bay's abundance with Yukon River communities whose fish runs have been decimated.



Ruth Łchav'aya K'isen Miller, co-founder of Smokehouse Collective, stands with a partially tanned caribou hide before it's smoked a final time. Revitalizing the practice of hide tanning represents a return "to traditional lifeways and networks of connection between our peoples that enable us to become more climate resilient, while also centering our cultures in this new future we're living in," Miller said.

Miller wrings a mixture of brain solution and water out of a caribou hide. "Hide tanning is a type of meditation ... that contributes to our long-term health and well-being," Chase-Hodgdon said. "It requires dedication and strength. It requires you to be committed to the process of the becoming of the hide. That is a process that we hope to really embed in all of the work that we do as Smokehouse Collective."





Chase-Hodgdon visits the 4.77-acre plot of land near Dillingham, Alaska, that the collective is in the process of purchasing (*left*). Chase-Hodgdon and Miller hope to create a traditional fish camp with contemporary elements: the communal fish processing plant, as well as housing, gardens, a smokehouse, a sauna and a community kitchen. The collective hopes to host visitors from the Yukon and Kuskokwim rivers who are facing a loss of salmon.

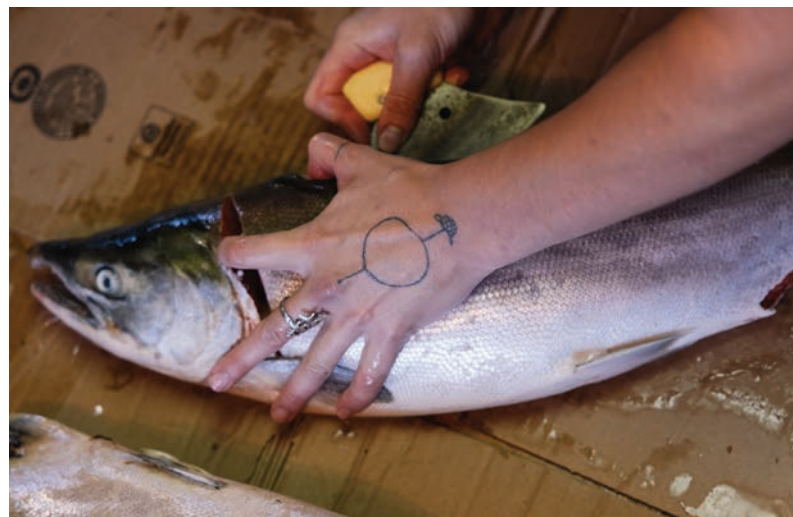
Miller and Chase-Hodgdon meet via FaceTime to discuss new developments and strategize around future goals for the Smokehouse Collective (*below left*). The pair, who met in college in 2016 while organizing for Standing Rock, have been on parallel paths working for Indigenous sovereignty and food security in a variety of roles since then.

Chase-Hodgdon meets with Indigenous partners on Zoom to discuss strategies for culturally relevant fish distribution (*below*). Chase-Hodgdon and Miller have chosen to work with funders and partners that are “actively dismantling the systems that are taking away our vitality,” Chase-Hodgdon said. Such strategic partnerships help achieve the collective’s goal of transitioning away from extractive industry in favor of nurturing traditional practices of exchange and mutual aid.





Chase-Hodgdon and their neighbor Dillon Bennett cut moose meat to dry (*above left*). “As a Deg Hit’an-Sugpiaq person, salmon, moose meat, caribou meat are all the foods that run through my bloodstream,” Chase-Hodgdon said. “My ancestors ... had a relationship with each one of those animals, not just for food, but also for clothing and shelter.”



Chase-Hodgdon filets a frozen Bristol Bay sockeye salmon which they plan to exchange for seal oil from Shishmaref (*above center*). This summer, Chase-Hodgdon helped process fish for seven families throughout Alaska. “The more that we’re able to put away according to everybody’s need — not taking too much from the lands and waters, of course — the stronger our community is going to be overall,” they said.

Chase-Hodgdon prepares jar-fish to send as gifts to board members and Smokehouse Collective supporters (*above right*). After the salmon are harvested and fileted, the filets are cut into strips and partially dried, then smoked with specific kinds of wood before being cut to size, packed and pressure-cooked. “Jar-fish is like the gold of our community, because there’s so much labor,” Chase-Hodgdon said. “There’s so much love that goes into it.”

Chase-Hodgdon inhales the scent of salmonberries pulled from the freezer to make jam (*right*). “Our relations don’t exist in isolation,” Chase-Hodgdon said. “We have berries because we have abundant salmon returns. Those berries are being fed by the waters and by the nutrients that salmon leave when they pass away and begin their next life cycle.” Chase-Hodgdon will send the jam, a precious commodity, to board members and supporters.





Chase-Hodgdon gathers with community members over traditional foods, including moose head soup (*below*). The meal provided an opportunity to share updates on the collective's progress, and to seek ideas and input from people who live in the Bristol Bay region. The collective aims to build its operations with "patience for the pace of trust — the pace (at which) our community is able to manifest this in a responsible way," Miller said.





The wind hard-hearted, the moon cruel

How Chinese kung-fu heroes can grow
our climate consciousness.

BY JENNY LIQU
ILLUSTRATIONS BY SALLY DENG

ON THE SLOPING shoulder of Paradise Ridge, just south of Moscow, Idaho, my dad's spinning kick drives him higher — one arm near his face, the other outstretched, soaring above the sunset-colored spring-time boughs of the peach trees that he planted with those same two hands. His feet regain the ground. He's not even practicing kung-fu in earnest, just egging on the family dog with acrobatic motions before sending a tennis ball flying deep into the pasture. The slope is steep on this little ridge outside the city, and the slightest gain in elevation lifts him above the loess-brown hills visible in the drainages beneath a fringe of wheat and timothy. I call it timothy as if this was still a pasture, though through the decades it has become a sea of bunchgrasses, knapweed, rogue pines and the ever-expanding Chinese vegetable garden that my father has cultivated ever since he

and my mother bought the property in the early '90s.

Over the past year, the conflict between China and Taiwan has escalated yet again, though it has been overshadowed by other violence. I'd debated flying to Taipei with my children, but, talking on the phone with my parents, I mentioned that it might not be too smart to fly straight into the possible threat of a missile attack. "You know, that's why we bought the property," my mother said. This was news to me. She then explained how, in the years leading up to the Third Taiwan Strait Missile Crisis in 1996, my dad's parents and brothers and sisters quietly obtained green cards and contributed whatever money they could spare toward the purchase of our house on the ridge. My parents' share of the down payment came from the savings bonds that my mother's family had given them many years before; five fertile acres,

privacy and a self-sustaining well were suddenly more enticing than the abstract security of slowly maturing money insured by any government.

That's why my father's family visited so often. And then, when the crisis was past, everyone went home. As my mother and I talked, I realized I'd never questioned the surge, then ebb, of my father's family in our lives, or my early childhood immersion in Chineseness, something that had all but disappeared by the time I started high school. This new understanding of my family's history on the land as a martial history changed everything.

In the Chinese genre of *wuxia*, martial artists vie for supremacy, honing their skills and wits in combat against the backdrop of centuries of political turmoil. In what feels to me like a hyperbolization of the genre, *xianxia* fiction nudges the ideal of the martial arts hero further, into fantasy. In *xianxia* stories, the martial arts adept pursues not merely fame nor martial arts ascendancy, but those elusive dreams around which fantasies seem to converge: superhuman knowledge, strength, skill and immortality. The heroes of these novels are known as "cultivators."

My family writes, we fight, and we grow things, a combination of activities, I know, that must seem, from the outside, to be very disparate endeavors, even if we sensed that they were all driven by the same yearning. When I started reading kung-fu fiction, these three worlds leaned into one — my father and I at the dining table poring over a Tang Dynasty translation; the tricky little wrist locks and grip breaks he taught me so that I would always know how to fight if I needed to get away; my hands, and his hands, and his father's hands, all growing Chinese

vegetables, like stories from the dirt.

THESE DAYS, it's not just the threat of another missile crisis that prevents my parents from selling off land that has become increasingly difficult for them to maintain as they age. It's climate change. It's the vague hope that by growing their own food and coaxing water from the aquifer through their own well and mowing down the grasses that spurt up annually around their house, they can magically slow the sweep of history and the onslaught of catastrophic climate predictions.

With his workout complete, my dad pauses to snip some leeks before walking back into the house to work on dinner. My parents have converted all their landscaping to vegetables, like the leeks he's serving now. As we eat, we talk about *The Legend of the Condor Heroes*, Louis Cha's kung-fu saga, written under the pen name Jin Yong. Where the saga's original Chinese-reading audience experienced the novels through the lurch and grind of newspaper serialization, the books' American audience experienced them according to a different pattern — the commercially driven timing of translation. The four translated books of the *Legend of the Condor Heroes* series were published in rapid succession between 2018 and 2021. That series, set in the Song Dynasty, ends with the aftermath of a decisive battle between the Song army and the Mongol horde.

Smoke is still snaking from the edges of the battlefield, where the grass of the unburnt steppe meets burning bodies. Two martial heroes, Guo Jing and Lotus Huang, stride through the field, surveying the destruction. Guo Jing helped the Mongols



win, seeing his alliance with them as the only way to defend the Song Empire against Jin incursions. His own homeland will be the next to fall when the Chinese civil war is overshadowed by the Mongol horde. But *The Legends of the Condor Heroes* ends before that happens, during a period of contingency and hope. Lotus and Guo Jing have been reunited after an arduous separation. They've recovered from nearly mortal wounds and from strained but not quite severed relationships with warring kin. Ghengis Khan has just died, but the Mongol invasions are not over yet.

Cha wrote about the conflict between China's Jin and Song empires and their eventual subjugation by the Mongol horde in the 1950s, as China careened towards the Cultural Revolution. In a period of intense polarization, his stories are remarkable for their lack of political polemic; siding with neither the Communist or the Nationalist party lines, they seek to help the Chinese people navigate the culture-shattering onslaught of inevitable civil war. Now, in the 21st century, as the world floods and burns, and NASA announces the summer of 2023 as the hottest summer on record, I find myself turning to these stories to guide and console myself as we all await a climate catastrophe, the casualties of which will dwarf the dead of history's battlefields.

Just now, after a two-year pause, *The Past Unearthed*, the first book of the next series, *Return of the Condor Heroes*, was published. I tell my dad that I'm surprised to learn that Guo Jing and Lotus Huang, the heroes of the last four books, are, in *The Past Unearthed*, cast as villains. Meanwhile, the son of the last series' traitor, Yang Guo, appears to be the new hero. "Just wait," he says. "That's not how it goes

for long." He knows the whole story by heart. "This is only the beginning."

In 2016, the renowned Indian novelist Amitav Ghosh, in a book entitled *The Great Derangement*, described the collective failure of "serious" literary fiction to grapple with climate catastrophe. Ghosh called for writers and artists to engage with apocalyptic thinking that might be able to delay climate catastrophe by spurring the global culture into action. Ghosh laments that, for the most part, these conversations were relegated to genre writing. The only part of his account that I contest is his dismissal of genre writing as unimportant or unserious. I make

historian John Christopher Hamm describes Cha's novels as "strategies for responding to the altered world." Of course, Hamm is referring not to a world altered by climate catastrophe, but rather to one altered by the ascension of the Chinese Communist Party. I've discovered that much of his approach is transferable to our 21st-century problems. In his book *Paper Swordsman*, Hamm points out that because mid-20th-century martial arts fiction did not "hew to overarching ideological dicta" or "serve the immediate needs of particular political campaigns," it was "relegated to the category of 'poisonous weeds,' banned from the gardens of culture." The

*I find myself turning to these stories
to guide and console myself as we all
await a climate catastrophe.*

no highbrow claims as to what I read in an attempt to forestall the inevitable or seek out consolation; I read kung-fu stories, and Louis Cha's in particular. This isn't just a guilty pleasure; it's an intentional alignment with a certain kind of underground resistance, a riptide wilding the tranquil surface of institutional prose.

When Mao Zedong rose to power in the 1940s, he developed and enforced a blueprint for a national Chinese literature that featured idealized heroes and formulaic plots. Louis Cha's stories defy those formulas. The martial arts literary

way Hamm phrases this judgment makes the reader yearn to be a poisonous weed, to read and champion the minor genres. Where Ghosh grieved the lack of serious works of fiction grappling with the newly altered world, Hamm makes the case that it is the marginalized literary genres that are best suited for exploring the plight of humanity in such newly altered worlds.

Ghosh is far from the first literary scholar to tell us that the stories we tell ourselves about nature are broken. Back in 1999, American author William Kittredge published a collection titled *Taking Care: Thoughts on*

Storytelling and Belief. In that book, Kittredge mourns what he calls "narrative dysfunction," describing the ways in which the stories we tell ourselves about nature, both individually and collectively, are broken. In the absence of stories that bind us to nature, holding us accountable to nature and to each other, Kittredge argues, we hasten nature's destruction and our own.

But when I read Louis Cha, I feel as if the stories that connect me to my family's past and to the earth remain alive. "The wind hard-hearted, the moon cruel," a beautiful but suffering woman sings in the opening pages of *The Past Unearthed*. These words were penned by the lyrical Song Dynasty historian Ouyang Xiu; Cha's novel begins by yoking one character's personal suffering to collective cultural grief. As I read, I imagine my father as a child in a brand-new country, the tatters of one installment of these stories clutched tightly in his fist. I imagine stories as sinuous and armored as a dragon's flank, and I remember the editor's introduction to Cha's first novel, the description of it as "a living dragon appearing in the flesh." That phrase is a reference to the myth of Zhang Sengyou, who painted realistic dragons but didn't paint their eyes in order to deny them the realism that would bring them to life. "The living dragon appearing in the flesh" refers to what happens next in the story: Someone paints the eyes onto the dragons, and they come alive — not as a marginalized genre, but as the embodied force of counter-culture storytelling.

Louis Cha's novels are popular in China, occupying a privileged place in the Chinese imagination that is perhaps similar to the position occupied by the *Lord of the Rings* trilogy

in the English-speaking world. Globally, over 300 million copies of *The Legends of the Condor Heroes* have been sold, and, in recent years, Cha's popularity in the United States has surged as well. I've chanced upon Cha's books on other people's shelves, and my personal consolation is beginning to feel collective.

I THINK I've come to understand something about the environmental narrative dysfunction that William Kittredge pointed out over 20 years ago. Kittredge and Ghosh both seem to believe that the stories that sustain us emerge out of some sort of elevated literary imagination. They fail to see the tendrils of

popular, subversive, "low-brow" stories blooming all around them like weeds, like the good kind of poisonous weeds.

The tomatoes and peppers my father grows are unruly; they pour out of their garden beds and onto the driveway and porch. They're members of the belladonna family, which is full of poisons. Last night was the first hard frost, and my father didn't bring the harvest in before it hit. Instead, perhaps deliberately, he left tomatoes and hot peppers on the stem, eggplants purpling the shadows, in defiance of the forecast. He was not thinking about waste, or plant cells rupturing from frost, or about running out of time. From what I can gather,

he was imagining that maybe, against the odds, the forecast was wrong. Maybe the plants would magically survive, continuing to ripen.

As he explains his reasoning, something in his tone reminds me that he escaped from Communist China, whisked across the grasslands in a basket, and that he survived the hardships of Taiwan, even after his family separated from the Nationalist forces; he survived the solitude of the blood oath his father made him swear — to never contact his cousins, whose parents stayed and fought for Communist China — my father, who lost four of his six younger siblings to untimely deaths. I wonder what the climate

crisis feels like from the vantage of an immigrant who has somehow steered himself through what surely felt like the end of the world. Can the kung-fu legends that sustained him through that altered world sustain me and my generation through the age of climate collapse?

As I ponder, here I am, the gleaner, picking through the destruction of my parents' garden. My dad searches for the ripest tomatoes abandoned on the vine, thinking he'll use them in a stir-fry. I'm gathering the green ones by the fistful with no particular recipe in mind. It's just that I can't bear to see them go to waste, these stories not done with their telling. ☀



Thank you!

We are proud to partner with you in this work.

Many of you made a year-end contribution in support of *High Country News* in the last quarter of the year (actually, nearly 2,500 of you did!) and we just wanted to say **thank you — from the bottom of our hearts — for fueling this nonprofit journalism.**

As a reader-supported organization, we rely on subscription dues and reader donations to fund most of our work. In fact, three-quarters of our budget comes from you. Because of your generosity and persistence, we are able to uncover and share important stories, issues and voices of our region. We train the next generation of reporters and serve as a comprehensive resource for students and legislators across the country.

It's never too late to support this work — if you missed your year-end gift, you can still donate here: hcn.org/not2late

May 2024 bring you peace and a renewed sense of purpose and joy. (And if it doesn't — we still have each other!)

Marissa Garcia

HighCountryNews

Leave a little behind

You can leave a powerful legacy with a planned gift to *High Country News*.

For more information see our guide: hcn.org/pgguide, call our office: 800-905-1155 or use this free tool to create your will: hcn.org/mywill

High
Country
News

George Sanker

Thank you, readers!

Your generous and dedicated support makes these pages possible.

If you would like to make a tax-deductible contribution, please scan the QR code to the right, visit hcn.org/give2hcn, call 800-905-1155 or mail a check to: P.O. Box 1090, Paonia, CO 81428.



INDEPENDENT NEWS GUARDIAN (\$25,000-\$49,999)

Estate of Wayne Fields Jr. | Newcastle, CA
Brenda B. Sheridan | Fort Myers, FL

MEDIA LEADER (\$10,000-\$24,999)

Alison Davis | Sonoma, CA
Richard & Marianne Kipper Foundation | Woody Creek, CO
B Bar Ranch | Emigrant, MT

PUBLISHER'S CIRCLE (\$5,000-\$9,999)

Anonymous
Engel Fund, San Diego Foundation | Del Mar, CA
Washakie Foundation | Nevada City, CA
Holdfast Collective
Pleiades Foundation | Missoula, MT

PHILANTHROPIST (\$2,500-\$4,999)

John Buckley & Anna Bennett | Wilson, WY
Elnora L. Cameron | Joseph, OR
Catherine Gorman & Philip Hedrick | Winkelman, AZ
Rose & Peter Edwards | Telluride, CO
JoAnn Moon | Prescott, AZ
Pixie Siebe | Anchorage, AK
Peter & Cathy Tronquet | South Beach, OR

STEWARD (\$1,000-\$2,499)

Anonymous (2)
In memory of Peggy Rosenberry
In memory of Ted Smith & Emily Jackson
Bill Black & Nancy DuTeau | Pocatello, ID
Diane Davidson | Portal, AZ
Judy Donald | Wallingford, CT
Leigh Ann & Matt Frankel | Prescott, AZ
Nancy & David Hall | Tucson, AZ
Joan & Bruce Hamilton | Berkeley, CA
Constance Holloway | Lake Forest Park, WA
Myron & Sue Hood | Los Osos, CA
Stephen & Kathie Jenkins | Reno, NV

Jonathan D. Kaufelt & Holly C. Corn | Santa Monica, CA
Peter McBride | Basalt, CO
Nancy Moran & Howard Ochman | Austin, TX
Verne Stapenhorst | Mesquite, NV
Eileen Stauss | Federal Way, WA
Glen & Joy Stocking | Seeley Lake, MT

GUARANTOR (\$500-\$999)

Anonymous (2)
In memory of Lynda McClement
In memory of Guido Meyer | Basalt, CO
Michael Barentine | Cascade, CO
Randall Douty | Silverthorne, CO
Thomas Gerstenberger | Denver, CO
Frances Harrington | Taos, NM
Max Hunt | Woodinville, WA
Darcy James | Boise, ID
Barbara Masoner & Scott Goodman | Denver, CO
Amy Mower | Maple Falls, WA
Tricia Powell | Grand Junction, CO
Sara Ransford, The Arches Foundation | Aspen, CO
Peter Smidinger | Springfield, VA
Paul & Arianthe Stettner | Steamboat Springs, CO
George Zyvoloski | Beaufort, SC

BENEFACTOR (\$250-\$499)

Anonymous (2)
In memory of Elizabeth Elser Doolittle
In memory of Felipe & Jimmy Ortega
In memory of William E. Seberger
Kathleen Brennan | Denver, CO
Clint Collins | El Dorado Hills, CA
James C. Faris | Santa Fe, NM
Paul Finley & Lisa Foxwell | Norwood, CO
Alan Gourley & Sarah Brown | Steamboat Springs, CO
Randall Jahren | Bainbridge Island, WA
Jonathan & Joyce Kaplan | Port Townsend, WA
Mark Kincheloe | Snowmass, CO

Joe Kipphut | Missoula, MT
Torrance Lawton | Englewood, CO
Matthew Lowe | DPO, AA
Lisa McKhann & Pete Krieger | Duluth, MN
Patricia Mehlhop | Albuquerque, NM
Norris & Carolyn Peterson | Sedona, AZ
Stephen Rahe | Portland, OR
Peter Rowley | New Harmony, UT
Emily & Philip Verplanck | Boulder, CO
Michael Weir | Chicago, IL
Kathy & Dennis Wellman | Boulder, CO
Robert Westfall | Davis, CA
Burton D. Williams | Fishtail, MT
Ken & Carol Wright | Julian, CA
Heidi & Clifton Youmans | Helena, MT

SPONSOR (\$150-\$249)

Anonymous (5)
Susan Bell | Santa Fe, NM
Eric Coons | Mesa, AZ
Mike Daz | Riverdale, UT
Jackie Diedrich | Lake Oswego, OR
Steve Ellis | Issaquah, WA
Fred Krasner | Ashland, OR
Robert & Carolyn Lupe | Denver, CO
Martha Narey | Denver, CO
Nicki Norman & Peter Cleick | Berkeley, CA
Mary O'Brien | Moab, UT
Hans Joachim Preiss | Boulder, CO
Jack & Donna Rice | Olympia, WA
Martha Rosenau | Colorado Springs, CO
Kim Seidler | Albuquerque, NM
Charles Simenstad & Stephanie Martin | Seattle, WA
Melissa Snyder | Troy, MT
P.J. Timmerman | Chimayo, NM

PATRON (\$75-\$149)

Anonymous (11)
In memory of Kevin Eyraud
In memory of Lori Haugen
Gerald & Kay Adams | Hotchkiss, CO
Judith Anderson | Montrose, CA
Charles Aschwanden | Lakewood, CO
Tom Bean & Susan Lamb | Flagstaff, AZ
Mary Beath | Albuquerque, NM
Peter & Maggie Bierbaum | Larkspur, CO
Linda Biggar | Glendale, AZ
Stuart & Margaret Black | Denver, CO
Joe Breddan | Boulder, CO
Jill Budzynski | Maple Grove, MN
Mary Caulkins & Karl Kister | Denver, CO



“The content and manner of your reporting is in alignment with nature and our universal humanness. This inspires me and strengthens my connection to all that is good. My gratitude to all who make HCN possible and serve humanity in this noble way.”

— Caroline Hamlet, Mount Shasta, California



"I was impressed with your annual report which laid out your dramatic strategic swing to address the current market. I have always been impressed with your in-depth and insightful reporting. Please keep telling your story!"

— Vern Fish, Waterloo, Iowa

Frances & Ronald Chilcote | Laguna Beach, CA
Margaret Conkey | Berkeley, CA
Marianne Gawain | Carmel, CA
Tom W. Deveny | Missoula, MT
Anselm Dines | Boulder, CO
Jim Thompson & Margaret Dowling | Belgrade, MT
Ken Duell | Princeton, NJ
Arthur & Rosemary Earle | San Marcos, CA
Diana Elser | San Clemente, CA
Mike & Colleen Empey | Washington, UT
Judy K. Fabry | Georgetown, TX
Pete Fonken | Carmel Valley, CA
Douglas K. Halford | Idaho Falls, ID
Sara Hammond | Tucson, AZ
Bill & Jane Jackson | Fort Collins, CO
Kathy Jacobs | Southport, ME
Terry Jess | Albany, OR
Clay Johnson | Jensen, UT
Douglas Kaufman | San Cristobal, NM
Samuel W. Kempton | Palo Alto, CA
Jane Kenyon | Mammoth Lakes, CA
Kathie Kinzie | Philo, CA
Karol Kleidon | Dolores, CO
Randy Knop | Union, OR
Susan Kramer | Glendora, CA
Ron Loehman | Albuquerque, NM
Barbara Lowe | San Francisco, CA
Tom & Barb MacGillivray | Windsor, CO
Don MacGregor | Steamboat Springs, CO
Paul MacKeseay | Kingman, AZ
Heather McGregor & Steve Smith | Glenwood Springs, CO
Tap Menard | Yakima, WA
Erik Moeller | Pueblo, CO
Michael Moser | Wolcott, CO
Mary Mowdy | Waikoloa, HI
Alan Mueller & L.D. Artman | Salt Lake City, UT
Judith Munro | Brighton, CO
Gerald Nelson | Grand Junction, CO
Camile Owens | Las Vegas, NM
Jay Parker & Peggine Bensch | Emmett, ID
Greg Pfeiffer | Ketchum, ID
Bryan Pollard | Seaside, CA
Jane Poss | El Paso, TX
Reid Prentice | Salt Lake City, UT
Caroline Pufalt | St. Louis, MO
David Reinke & Roxanne Bradshaw | Cañon City, CO
Melissa Riparetti-Stepien | Santa Barbara, CA
Chad Roberts | Davis, CA
Robert & Katherine Schutte | Newport, WA
Larry Seale | Olympia, WA
Nadine Semer | Carmel-by-the-Sea, CA
Don Shaff | Boise, ID
David Shultz | Colorado Springs, CO
Jim Struve & Jeff Bell | Bellingham, WA
Douglas Thomas & Carol Zazubek | Bloomington, MN
Tomenko Giving Fund | Carmichael, CA
Teresa Urbanowski | Wheat Ridge, CO
Graham & Kathleen Wright | Graeagle, CA

FRIEND (\$50-\$74)

Anonymous (10)
In honor of Lee First Waterkeeper | Chehalis River Basin, WA
In honor of Magdalene Medicine Horse
In honor of Gary & Robin Ottosen
In memory of Margaret D. Hayden | Evergreen, CO
In memory of Richard E. Herrmann
In memory of Beverly Rountree
In memory of Stevan Worden | Prescott, AZ
David Allen | Lake Oswego, OR
Marjane Ambler | Atlantic City, WY
Don & Libby Arnosti | St. Paul, MN
Nancy Ballard | Lebanon, OR
Janet Barnes | Eugene, OR
Mark Beasom | La Cañada Flintridge, CA
Robert Becker | Asheville, NC
Anne E. Benjamin | Centennial, CO
Ann Bieri & John Fleming | Seattle, WA
Michele Boderck | Olympia, WA
Larry Burda | Mars Hill, NC
George Burgoyne | Niles, MI
Joan Burton | Seattle, WA
Deborah A. Caldwell Stone & David R. Stone | Chicago, IL
Anne Chabel | Oakland, CA
Ralph E. Clark III | Gunnison, CO
Catherine Coates | Richmond, IL
Jock Cochran | Guilford, VT
Marco Davis | Orem, UT
John de Golia | Henderson, NV
John Drabing | Colorado Springs, CO
Diane Dugan | Eugene, OR
Bruce & Marlene Ehresman | Ames, IA
Kelly Fleming | Patagonia, AZ
Elizabeth Foree | Santa Fe, NM
David Futey | Colorado Springs, CO
Paul Garrahan | Portland, OR
Deanna Garrison | Austin, TX
Sharlene Green | Boise, ID
Happy Huskies Giving Fund | White Rock, NM
W. Edward Harper | Carmichael, CA
Ken Hughes | Santa Fe, NM
Cate Huisman | Sandpoint, ID
Howard Ingle | Grover Beach, CA
Martin A. Jackson | Lakeside, AZ
Nora Jaffe | La Jolla, CA
Cydne Jensen | Ashland, OR
Jennifer Jewell | Chico, CA
Phillip Johnson | Portland, OR
Norty & Summers Kalishman | Albuquerque, NM

Kathryn & Peter Kemper | Seattle, WA
Lea Kuvinka | Wilson, WY
John Laws | San Jose, CA
Beth Lederman & Bob Granger | Phoenix, AZ
Dorothy MacEachern | Port Angeles, WA
David L. Maddox | Tabernash, CO
Joxe Mallea-Olaetxe | Reno, NV
John & Lynn Matte | Albuquerque, NM
Fred & Dottie McCaleb | Powderhorn, CO
Marylyn Miesler | Penrose, CO
Wayne & Gaye Momerak | Reno, NV
Tish Morris | Albuquerque, NM
Denise Moss | Carbondale, CO
Thea Nordling | Moab, UT
William Phillips | Livingston, MT
John Platt | Bellevue, WA
Caroline Pufalt | St. Louis, MO
Brian & Carole Reid | Winthrop, WA
Jonathan Roberts & Elaine A. Smith | Boulder, CO
Thomas & MaryBeth Romak | Leonard, MI
Richard Rubin | Arroyo Seco, NM
Rebecca Russell | Denver, CO
Don Samdahl | Kirkland, WA
Amy Seese-Bieda & Evan Clendenin | Tumwater, WA
Catriona Simms | Missoula, MT
Scott Smidt | Muncie, IN
Kim Smith-Ferguson | Omaha, NE
David Steensen & Karen Griffin | Medford, OR
Craig Steinmetz & Lisa McVicker | Denver, CO
Buzz Tarlow | Bozeman, MT
Grant Thomas | Pocatello, ID
Diana F. Tomback | Denver, CO
Marjorie True | Paonia, CO
Peter Waller | Glenwood Springs, CO
Andrew Weiner | Albany, CA
Kathryn Weldon | Breckenridge, CO
Allison Wright | Silver Spring, MD
Barbara Yount | Alto, NM
Sandi Zellmer | Missoula, MT

WELCOME TO THE SUSTAINERS' CLUB

Aaron Anderson | Los Alamos, NM
David Carter | Boulder, CO
Marjorie & Stephen Chase | McCall, ID
Cindy Clover | Denver, CO
Dave & Suzanne Conine | Draper, UT
Dennis Corellis | Sacramento, CA
Vern Fish | Waterloo, IA
Pat Flanagan | Twentynine Palms, CA
Jeff & Jamie McFarland | Ogden, UT
Kathy O'Brien | Corvallis, OR
Mark Running | Brownsville, OR
Tracey Schwartz | Crested Butte, CO
Melaine Sloan | Boulder, CO

Want to tell us why
you support HCN?

Email us at:

fundraising@hcn.org



"Thank you for the good work, the voices and their frames of reference, and digging up the details and numbers to support the stories."

— Charlene Anderson, Farmington, New Mexico

Your saved-my-life books

In November, I inquired about your “saved-my-life” books. Here’s a selection of your responses.

The book that had the most influence on **Steve Wegner’s** career with the U.S. Forest Service, Bureau of Land Management and U.S. Geological Survey was *A Sand County Almanac* by Aldo Leopold:

This book was required reading in an environmental ethics class for freshmen where I went to college. It really opened some new ways of thinking about nature, not just from my perspective but from a much broader view. It has and continues to influence my thinking on a wide array of subjects beyond “environmental” issues. It may not have saved my life but it certainly made me a better person and changed how I look at the world.

Karen Ireland said she still recommends *How to Survive the Loss of a Love* by Peter McWilliams, Harold H. Bloomfield and Melba Colgrove years after surviving her own loss:

It’s a slim, 119-page book written by a psychologist, a physician and a poet. It’s short enough to quickly reread but packed with helpful thoughtful information. Five years after my own loss, I had a celebration party like the book suggests. I survived and now thrive.

NC Weil offered two suggestions:

Ken Kesey’s epic novel, Sometimes a Great Notion. This book revealed to me that a writer could place their body in one character, mind in another, and spirit in a third, then mix them together and record what happens. Since I am a writer, Kesey convinced me that

Community and collective action

This special issue distills *High Country News’* mission: “to inform and inspire” our readers. Each article was commissioned, reported, written, edited and presented to send you off with a sense of collective power as we all work toward a more livable and just future.

With this in mind, we’d like to hear about the ways you or your community are working for a better future amid the climate crisis — perhaps flying less, or contacting your representatives, or pushing local leaders to make climate plans, or even using some ideas from this issue, such as starting a mutual aid society or encouraging your utility company to use more renewable energy.

Send your success stories, failures, in-progress initiatives or ideas to dearfriends@hcn.org

noticing, relating and honoring are the tools of the work, and whatever topic we turn our hands to, we can apply them.

The other is T.C. Boyle’s novel When the Killing’s Done, which raises all the gnarliest questions about “restoring” and “native” versus “invasive” and who wins and who loses. It mocks our claims of speaking for ecosystems, defending species and correcting our previous meddling (in the guise of “now we know the right things to do”). It makes for a hilarious and bitter cautionary tale.

SamMi Zellej’s choice was *Man’s Search for Meaning* by Viktor Frankl. Writes Zellej:

I stumbled upon the book during my first semester attending college in Juneau, Alaska. I wasn’t prepared for the rapid loss of sunlight nor the burden of navigating a new life, alone, with no sense of direction and a load of courses that didn’t interest me. I return to the book again and again when I struggle to find meaning, or even when too many meanings burden my spiritual attention.

Thank you to everyone who recommended books and all the folks who continue to write in with stories about encountering HCN in the wild or having brushes with species protected by the Endangered Species Act. I appreciate you all taking part in HCN’s community, and I only wish we had the space to share more of your responses!

— Michael Schrantz, marketing communications manager





TOWNSHIP AND RANGE

Exploring the intersection of race and family in the interior rural West.



When you marry a cookstove scientist

Or how I came to be induced, twice.

BY NINA MCCONIGLEY
ILLUSTRATION BY TARA ANAND

WHEN MY HUSBAND first mentions induction, I misunderstand him.

“Induction?” I ask. He is sautéing onions, the kitchen is steamy with smoke, and I am coughing. But, to be fair, I am also six months pregnant, and the only induction on my mind is how this baby, now heavy on my ribs, is coming out. He points at the smoky room and the sizzling cast-iron pan and I realize he means our stove, a mammoth thing that I clean painstakingly. Most nights, I take off the grates and scrub the burners of stray eggs and oil that have splashed out with his exuberant stirring.

“No way,” I say, “I love this stove. Food tastes better with gas!” And then I tell him that to make chapatis or fry pappadums, staples of my Indian upbringing, you need a flame you can control.

But it’s a losing battle, as I am married to a cookstove scientist.

On our first date, we both described our jobs. Mine was easy. “I teach. I write.”

He went next. “I work in household energy.”

I picked at the falafel I had ordered. He tried again. “I study indoor air pollution.”

I took a sip of water.

“I am a cookstove scientist.” He went on to explain that his work in public health was leading to cleaner ways of cooking and that it was helping to curb climate change. To be honest, I had never once thought about “clean” cooking. Even though I had lived and worked in India and been in many houses with chulas, traditional stoves that use biomass to heat food and leave kitchens thick with smoke. Much of the world uses fire to cook, and inefficient stoves produce a range of climate-warming gases and pollutants.

I went home from our date and looked up cooking as an environmental hazard and learned a few quick facts: Around 2.4 billion people in developing countries rely on firewood or charcoal for their daily cooking. And according to the World Health Organization, household air pollution is responsible for the death of 3.2 million people every year — more deaths than caused by malaria, tuberculosis or HIV— making it one of the most harmful environmental health risks worldwide.

Later that night, I added him to my phone as “Michael Cookstove.”

WHEN I WAS A KID, the grilling season in

Wyoming was short. During those precious weeks of summer, my sister and I had noses like bloodhounds. We could sniff out the smell of a briquette burning several backyards away. Our neighbors grew accustomed to us showing up at their barbecues, hot dogs in hand, the unpackaged franks like extra fingers in our small fists.

“Can we cook this?” we’d ask, raiding the fridge for anything we thought you could grill. Our parents were decidedly not the grilling type. My mother, raised in India, was not the meat type either. But living in Wyoming, she bought hot dogs and prepared them by boiling them on our stove. My sister and I quickly realized that we preferred them grilled, and so whenever we saw the smoke or smelled a BBQ, we’d hustle over to our neighbors, asking if we could cook our paltry hot dogs alongside their hulking rib-eyes and sizzling burgers. I loved it when the meat had a grill mark on it. When you could taste the char. I thought fire was the only way to cook good food.

DURING THE PANDEMIC, I had two children: one in 2020, and the other in 2021, and Michael’s fieldwork in countries like India, Kenya, Nepal, Peru and Rwanda was put on pause. As the months wore on, he set up an air-quality monitor in our backyard in Laramie, and in the summer of 2020, when the Mullen and Cameron Peak fires burned nearby, I watched the light in our yard turn orange and the air fill with smoke. I held Juniper, who was only a few months old, in my arms, inside the house, hoping we were safe there. I paced in front of our indoor air filter, hoping her small lungs would be okay. I looked at the air-quality index on my phone, willing it to go down. Praying the fires would go out. As the smoke seeped in through our old windows, for the first time I worried about the air quality inside, my own privilege having allowed me to forget that much of the world lived like this every day.

Over a year later, in the kitchen cooking onions, now pregnant a second time, I began the slow process of changing my thinking. At the time, Michael was working on a project in the Bronx to replace gas stoves with induction stoves in public housing. Earlier that week, preparing to walk his team through how a new piece of equipment worked, he set it up in our kitchen to measure the air quality while we cooked. In theory, I knew that gas stoves burn

natural gas, which is mostly made up of methane. And when burned, it emits pollutants, many of which can be harmful at levels the Environmental Protection Agency and World Health Organization say are unsafe and linked to illness. As this gas burns, it produces a reaction between nitrogen and oxygen, which creates nitric oxide and nitrogen dioxide, known collectively as NOx. The NOx reading in our kitchen that night was alarming.

And yet, knowing these facts, and even after looking at the blinking numbers of how much NOx was in our kitchen, I still held on to our stove. I promised to run the fan and open a window, not acknowledging that in the winter in Wyoming, it’s too cold to have the window open.

But soon, I would be induced — twice. The first was on a winter morning when our younger daughter was born; the second was when we moved to Colorado for my new job. It wouldn’t be the facts and numbers that sway me to have an induction stove installed in our new kitchen. It was thinking about how another summer of wildfires had instilled in me a keen awareness of how precious clean air is. As I held the new baby, I thought about how I cannot stop a wildfire, but I can make the air in my home cleaner. My decision reminded me of something Mother Teresa said: “We can do small things with great love.”

In India, you do a puja or ceremony for a new home, and we do ours days after moving in. My mother and father travel from Wyoming, and my mother spends the morning making sure our new house is blessed. We break a coconut at the front door to remove hurdles and put lemons by the exterior doors to absorb negative energy. The last step of the ceremony is to boil milk on the stove, which is said to bring prosperity to the house. My mother instructs us to let the milk boil over, as that means our blessings will overflow.

I watch the milk boil over the pan and drip all over the stove. Later, I clean it up with a few swipes of a cloth. It is so much easier to scrub than our old gas one. Why do we hold on to what is harder? What is not good for us? Last month, we installed solar panels. We have a pollinator garden. We have a smart thermostat and LED bulbs. Small things done with great love, for my girls, and for this Earth we call home. I hope that our blessings will overflow, so that everyone can know a world of clean air. ☀



The Tijuana Estuary offers a home or stopover point for some 370 species of birds, including several that are endangered.



Marsh Matters

A culture of stewardship saved a
Southern California estuary from development.
Climate change is the next challenge.

By Ruxandra Guidi
Photos by Roberto (Bear) Guerra





TYPICALLY FOGGY AND COLD “JUNE GLOOM” morning gave way to a blindingly bright sunny afternoon at the Tijuana Estuary as Mike McCoy and I walked down a path bordered by bright yellow goldenbush. The air smelled of sweet nectar, common sagebrush and coastal sage scrub, mixed with prickly pear cactus and black mustard, an invasive weed that can top 6 feet, as tall as McCoy, or taller.

At my feet, a metal plaque on a rock read “McCoy Trail”; our path, I realized, was named after my companion, a local veterinarian in his early 80s with an easy, toothy smile and a penchant for hippie T-shirts sporting pictures of wolves.

McCoy and I followed the path until it opened onto a wide vista. To our right, about a quarter-mile away, stood houses and sleek palm trees — the edge of the city of Imperial Beach, California — and to the left lay an airstrip, part of a U.S. Navy facility. But straight ahead, through brush and marsh grasses, we could glimpse the shallow Tijuana River, meandering about a mile through its delta and widening as it reached the Pacific.

Estuaries are coastal water bodies, partially protected by a barrier island or peninsula, where freshwater and saltwater mix. They rank among the world’s most productive and dynamic ecosystems: Despite rising sea levels and river flooding caused by climate change, which can drown or otherwise

destroy estuarine habitats, the Tijuana River National Estuarine Research Reserve is one of Southern California’s most intact salt marsh ecosystems. Its 2,800 acres serve as a home or stopover for more than 370 species of migratory and native birds, including endangered ones like the western snowy plover and the light-footed Ridgway’s rail, whose decline was driven by salt marsh loss. McCoy first became enamored with this place more than 50 years ago, largely because of birds like these.

But what’s especially unique about this estuary is the fact that it’s still here. It’s survived centuries of nearby development: To the east and north, it’s surrounded by Impe-

A

rial Beach, population about 26,000, about half of whom are Latino. Imperial Beach isn't your typical Southern California coastal community filled with multimillion-dollar homes; the median household income is less than \$70,000. Tijuana, Mexico, is less than 10 miles south. The two cities are divided by the beefed-up border wall but linked by the Tijuana River and infrastructure, including a wastewater facility on the U.S. side that treats sewage from Mexico.

After about 20 minutes, McCoy and I turned around and ran into a man in sweatpants and a baseball cap who called out, "How's it going, Doc?" People all over town recognize McCoy for his longtime veterinary practice, for bicycling around town — and, together with his wife, Patricia, for waging the radical fight to protect this estuary.

Decades ago, realizing that the Tijuana Estuary was at risk of destruction, the McCoy's mobilized friends and neighbors across Imperial Beach, riding the wave of the 1960s and '70s U.S. environmental movement. Then they passed the torch to the following generations even as the struggle — for open space, for conservation and against climate change — grew more layered and complex.

"I guess we went on (defending the estuary) because it's emotional," Mike McCoy told me, struggling to find the words to explain why he and Patricia stuck to this place. "That fight continued for 10 damn years."

Today, less than 15% of Washington, Oregon and California's estuarine habitat survives along the coast. Most of it has been destroyed or fractured by human infrastructure, from freeways and power lines to railroads, and what little



Mike and Patricia McCoy in the backyard of their Imperial Beach home in November (top). The plaque on the rock that marks the beginning of the McCoy Trail reads "Dedicated to Patricia and Mike McCoy and all who cherish wildlife and the Tijuana Estuary" (above).

Opposite, an aerial view shows the sprawling development that surrounds the Tijuana Estuary. Imperial Beach and a naval landing field are on the left, while Tijuana, Mexico, lies just beyond the reserve on the right side of the image. (Aerial support provided by LightHawk)

remains faces new threats posed by the climate crisis. This makes the Tijuana Estuary a symbol of what once was here, and could be again, if coastal cities and counties focus on restoration and adaptation instead of urban growth, and recognize the importance — and fragility — of these ecosystems.

THE KUMEYAAY PEOPLE

lived here or relied on the Tijuana Estuary for thousands of years; some of the 12 Kumeyaay bands that exist today continue to do so. The arrival of the Spanish in the 16th century brought disease, Catholic missionaries, and rancherías with cattle and horses. By the mid-20th century, even more drastic changes had occurred. Farming took over part of the Tijuana River Valley on the U.S. side; across the border, in Tijuana, the population grew more rapidly than the city's infrastructure could handle. Rail lines, freeways, airports sprang up.

Meanwhile, Mike McCoy was growing up in Boulder, Colorado. His father, a building contractor, took the boy to his job sites. When McCoy was 6, they went to a marsh north of town where a crew planned to connect a reservoir to a city water line. In McCoy's memory, cattails rustled by the water and red-winged blackbirds filled the spring day. But then the heavy equipment came down and "mud went everywhere, and the marsh went quiet," he recalled during a 2023 lecture. Witnessing the destruction left a huge impression: "I still feel it today."

The McCoy's fight for the Tijuana Estuary started in 1971, after they moved to Imperial Beach. Developers had proposed dredging the estuary and transforming it into a concrete channel to prevent flooding

since the 1950s. There was also talk of building an upscale marina. Influenced by the research of biologists Joy Zedler and Paul Jorgensen, experts on wetlands and restoration ecology, the McCoys set out to stop the development.

"Rachel Carson's *Silent Spring* started the ball rolling," Mike McCoy told me, referring to the landmark 1962 book that documented the destruction caused by pesticides, dramatically shifting public opinion about environmental issues in the U.S. The Environmental Protection Agency was established in 1970, and in 1973, the Endangered Species Act passed. It was a time of both hope and urgency.

By the spring of 1974, the San Diego-based Helix Land Company owned the estuary land. Imperial Beach and San Diego County, eager to issue building permits, laid out three options: Construct a concrete channel from Mexico to the Pacific, paving the way for the development of the entire valley; develop only part of the estuary; or leave it as it was.

Patricia McCoy, a longtime civic activist, pulled together a political coalition that included friends, locals, property owners, environmentalists, and even the people who brought their pets to the veterinary practice. Mike McCoy traveled to Washington, D.C., to meet with Richard Nixon's undersecretary of the Interior, Nathaniel P. Reed, proposing that the U.S. Fish and Wildlife Service turn the estuary into a national wildlife refuge. Reed and others put him off, telling him to start with local officials. So he did.

"I think that we were tenacious," Patricia McCoy said when I visited her recently at the couple's modest Imperial Beach home, less than a mile

from the estuary. Now in her late 80s, Patricia has a heart condition that keeps her from getting around, but she's as charming and self-deprecating as she was decades ago. "We were the movers and shakers," she told me. This was a time when you could write a letter or pick up the phone and "actually talk to a congressman, even though you were nobody in particular," she said. There were people in Imperial Beach who disagreed with them, she added, but they still brought their animals to her husband.

The battle over the estuary dragged on for years. By the mid '70s, the Helix Land Company had decided to build a \$200 million residential marina for up to 7,000 people. Local and county officials eagerly supported the commercial development of the entire waterfront.

But then nature got in the way. In January 1980, a king tide, an exceptionally high tide that usually occurs once or twice a year, coincided with heavy storms in and around Imperial Beach. In Tijuana, flooding killed 11 people. And after a sewage pipe broke, solid waste and more than 15 million gallons of sewage a day streamed into the estuary from Mexico.

The McCoys organized a massive cleanup. They called it "Save Our Slough."

"They were encouraging us to try to protect the area," Ed Deaton, who aided in the cleanup with his wife, Linda, told me. Linda shared a black-and-white photo from the cleanup: A 30-something Mike McCoy is wearing work gloves and holding debris in both hands, flashing a big smile. A former Vietnam veteran turned anti-war activist, Ed Deaton told me he got local high schoolers involved. "We wanted to pull together whatever political coalition was required."

Among the young people who helped was a teenage surfer, Serge Dedina. The cleanup inspired a lifetime of environmental activism: Dedina later co-founded the conservation nonprofit Wildcoast, and, as Imperial Beach mayor in 2018, he championed climate action. "My childhood was spent fighting for the environment here in what would seem to be losing battles," he told me when we first met almost seven years ago. "You know, stopping marinas and breakwaters."

It wasn't just him: A collective took shape and soon grew powerful enough to attract enemies. The McCoys received death threats, and their friend and fellow activist Richard Raymond was shot; the bullet lodged in the roof of his mouth, but he survived. The reasons behind the attack were never clear, but the McCoys maintain that powerful interests had targeted them for their activism.

The thing that stands out the most about Mike McCoy is his youthful, almost naive, idealism. I heard this from everyone I met who knows him. "My feeling was, if we're gonna have anything left on this planet, you're gonna have to put your life on the line," he said, explaining why they kept at it. "You gotta do it."

The McCoys could feel the momentum building, with more and more people attending city council meetings and pressuring county and state officials. Even so, they were shocked when, soon after Ronald Reagan won the presidency in 1980, a U.S. Fish and Wildlife Service official called them and asked them to meet at the estuary the very next day.

After almost a decade of organizing, cleanups and death threats, the McCoys' dream was

at last coming true. The morning after the phone call, Mike McCoy recalled, a pickup truck pulled up next to the estuary and a guy in a Stetson hat and rodeo belt buckle got out. Patricia McCoy called him the Marlboro Man, but his name was Larry Dean, and he soon became the first manager of the brand-new Tijuana Slough National Wildlife Refuge.

The federal government paid Helix \$7.6 million, and the deed was transferred to the U.S. Fish and Wildlife Service at midnight on Christmas Eve 1980. Within two years, NOAA, the National Oceanic and Atmospheric Administration, officially designated the refuge and adjoining state land the Tijuana River National Estuarine Research Reserve.

"We learned as we went, you know?" Patricia McCoy told me last summer while we sat in the couple's living room, surrounded by family photos and books on environmental history. The experience launched her into local and state politics: In 1998, she was elected to Imperial Beach's City Council, and she later served on the California Coastal Commission, where she advocated for the environment. "You just keep it going, keep going, keep going. And gradually, people began to see its value."

ESTUARIES ARE ecologically essential: Their shallow, brackish water provides critical spawning grounds for fish and shellfish, making them a favorite stopover for migrating birds. They capture carbon from greenhouse gases and store it in sediments and leaves and roots. Estuaries are also a kind of "natural infrastructure" that can protect coastal communities from some of the worst impacts of climate change, acting as buf-



The Tijuana Estuary is home to several unique and interconnected habitats that support a wide variety of native and invasive plant species.

fers against strong ocean waves and river flooding, alternately absorbing or releasing water. Imperial Beach benefits not just from the estuary's open space and recreational opportunities, but from its ability to help prevent erosion and deadly floods.

But an estuary can only stay healthy as long as the river and ocean stay connected. Sediment flows naturally into estuaries, both from upstream and the ocean, but if too much of it clogs the river mouth or wetland channels, freshwater and seawater can no longer mix and the tides are cut off, halting necessary flushing and the influx of nutrients and oxygen. These processes make estuaries dynamic ecosystems that can sustain a great diversity of species and habitats, and shield nearby communities from climate impacts.

Jeff Crooks has been studying the ecological history of the Tijuana Estuary for 30 years. He's the research coordinator for a nonprofit the McCoy's founded in 1979 — the Southwest Wetlands

Interpretive Association (SWIA) — that, together with the U.S. Fish and Wildlife Service and California State Parks, is one of the primary managers of the estuary. Because of its location, the Tijuana Estuary faces the unique challenge of sewage-tainted water arriving from upstream. But that's not the only problem. For the estuary to survive, its managers need to help it adapt to new, climate-driven realities that include increased river flooding and higher tides and sediment flows. "Sediment," Crooks told me, "is the thing that worries me the most about the functioning of this system."

Even after the wildlife refuge was established in 1980, threats to the estuary remained. That same year, the then-mayor of Imperial Beach, Brian Bilbray, temporarily dammed the Tijuana River to block sewage coming from Mexico. Urbanization was happening on both sides of the border, spurred by the economic growth and free trade agreements of the 1990s. All this brought more pollution and sed-

imentation. Restoration became a never-ending project.

The latest phase, spearheaded by Crooks, the McCoy's and others, will address sedimentation in about 90 acres of coastal wetlands by removing soil from the estuary's intertidal channels and moving it to the barrier beach. This should restore sensitive habitat and help preserve the estuary's tidal prism — the amount of water that flows in and out with the tides.

Maintaining the tidal prism is key for the estuary's future as sea levels continue to rise. One solution is to allow the wetlands to expand naturally onto higher ground and along shorelines, if there's enough space to do so, and if there is an open river mouth for the water to flow through. This could offset much of the coastal destruction expected to occur with sea-level rise. The stakes are high; if the sediment isn't removed, the entire ecosystem will be at risk, as well as the protection it offers to the coastline.

Like most nonprofits doing

climate adaptation work, SWIA struggles to communicate the importance of estuary restoration. The science is complex. Six years ago, Crooks commissioned a young artist, 17-year-old Audrey Carver, to convey the scientists' findings about the potential effects of climate change on the estuary. After my chat with Crooks, I headed to a small room at the Tijuana Estuary Visitors Center, where I found four bright latex paintings hanging on a wall.

The first, *Lake Tijuana*, showed what the estuary would look like if stronger storms carried enough sediment to block the river mouth, creating a natural reservoir of sorts. The second — *The Sea Around Us*, with a blue foreground framed by the coast — pictured what would happen if that river mouth stayed open and the beaches and sand dunes expanded with sediment from the Tijuana River. The third, *Salt of the Earth*, showed nothing but salt flats — what the estuary could look like if the river mouth were closed and all the water evaporated in the ever-rising heat.

Marsh Madness, the last painting, showed what things would be like if the restoration succeeds. It looked a lot like the estuary does today: a rich wetland ecosystem comprising a variety of unique habitats — salt marsh, mudflat, brackish pond, riparian — where a great diversity of plants and animals flourish.

No people appear in the paintings. Yet they are the reason the estuary was spared, the reason its restoration is ongoing. Few visitors are likely to understand how the estuary's

existence helps them, but without people, one of the last salt marshes in Southern California would simply disappear.

Crooks' office is inside a pre-fab building on the edge of the estuary. If you look out of one of his windows from just the right angle, you can't see the parking lot or the U.S. Navy base next door or any of the nearby developments; instead, there's nothing but a carpet of dark green that extends uninterrupted until it reaches the sea. Crooks is fascinated by slices of nature like this, the landscapes you can find in densely populated areas that depend on people as much as people depend on them.

The Tijuana Estuary requires restoration in perpetuity; climate change and urban sprawl guarantee that. "I don't think we're ever going to walk away as if it's restored," Crooks told me. "But we're actually making some progress." It shows in the way the estuary has been able to stave off some invading shellfish and plants, and in the way trails are carefully designed to keep visitors away from the most sensitive areas. Above all, you can see it in how, as the years go by, freshwater keeps flowing in, mixing with seawater and creating the mosaic of conditions the creatures here depend on.

A FEW DAYS AFTER the 2018 New Year's holiday, I visited Imperial Beach to witness a harbinger of sea-level rise: king tides, which illustrate what a typical high tide might look like years or decades from now. I stopped at the end of Seacoast Drive, on the border of the Tijuana Estuary, where 8.5 inches of water covered the pavement. Serge Dedina, the surfer and environmental activist who'd gotten his start at the Save Our



Jeff Crooks has been studying the Tijuana Estuary since he first arrived as an intern 30 years ago. He currently oversees much of the restoration work underway in the Tijuana River National Estuarine Research Reserve (top). As the director of the reserve's coastal training program, Kristen Goodrich works to encourage collaborative approaches to protecting coastal habitats like the estuary (above).

The sun rises over the Tijuana Estuary in November (opposite).

Slough cleanup, four years into his job as mayor at that point, had come to survey the tide. A city employee stood a few feet away, using a broom to slosh water toward a drain at the end of the street.

Eighty-seven percent of Imperial Beach — including its stormwater, wastewater and transportation facilities — lies within the coastal zone. According to a Climate Central analysis based on data from NOAA and other sources, the city is expected to experience at least one 3-foot-deep flooding event a year between now and 2050.

As the mayor, Dedina was keen to promote climate solutions. So in 2016, the city of Imperial Beach released a "Sea Level Rise Assessment" that sought to identify "politically digestible and economically feasible" adaptation strategies. Soon after the assessment became public, however, it was clear that the most radical proposal — physically retreating from the coast — would not, in fact, be politically digestible: The assessment was shelved after property owners balked at the idea of being asked to move farther inland.

Still, Dedina continued to push for climate action. In 2017, Imperial Beach and two Northern California coastal counties sued more than three dozen oil, gas and coal companies, accusing the fossil-fuel industry of environmental destruction and deceit. The lawsuit was among the first filed by U.S. municipalities against Big Oil. The coastal city's annual budget was a little over \$20 million that year, and Dedina was clear about his aim: to help pay for Imperial Beach's climate-adaptation and mitigation measures. A week after the lawsuit was filed, Dedina told NPR: "We're a tough town, and

we'll take our chances in court, because the reality is we have no chance with rising seas."

Exxon has accused Imperial Beach and other California coastal cities and counties of collusion, claiming they've conspired to extort money from the oil companies. Dedina faced harassment, and the case itself has faltered in the courts. Last May, however, the U.S. Supreme Court declined to hear it, meaning that the lawsuit will continue in California state court. It's a positive, albeit slow-moving, step: Imperial Beach's climate case is now expected to continue without further delays.

Richard Heede of the Colorado-based Climate Accountability Institute has tracked a growing number of similar climate lawsuits in recent years. "Oil and gas companies are still relatively comfortable in their seats, but I'm hoping that they will lose at least some of these cases, whether it be Imperial Beach or some other community that prevails," he told me. Still, Heede said, he does not doubt Exxon and Chevron and other companies' power and willingness to manipulate the legal process. "But I'm hoping that the courts will stand up and recognize that there are very valid legal arguments being made."

Five years after Imperial Beach filed the lawsuit, Paloma Aguirre, a longtime Wildcoast marine activist who first met Dedina years ago as a coastal cleanup volunteer, became the city's first Latina mayor. "I said, well, if he can do it, I can do it," she told me. "I remember talking to him about it, and he looked at me and said, 'Are you sure you want to do that? You're a Latina on the border. You sure you want to do this?'"

Aguirre told me just how

contentious her campaign was. She faced online harassment and racist death threats. So she reached out to another role model whom she'd gotten to know while working on coastal conservation: Patricia McCoy.

She called one day and found her at home, as usual. "I was like, 'Tricia, they're threatening me,' and she was like, 'Oh, honey, you don't know anything. I've been shot at. Keep on trucking,'" Aguirre told me, laughing.

It's been a little more than a year since that conversation, and Aguirre can clearly see how the complex challenges she faces as mayor might prove to be even tougher than political opposition or hate campaigns. Sewage from the Tijuana River closed Imperial Beach's main beach for most of 2023; there's always an urgent need for repairs and maintenance on U.S. and Mexico water infrastructure. In the

future, Imperial Beach could be flooded for much of the year, filling the Tijuana Estuary with too much sediment, transforming it into a muddy Lake Tijuana-like scenario. There could be less money — or civic or political goodwill — to fight for any of it.

BUT THERE ARE OTHER possibilities. Many of them are already underway, thanks to another estuary defender: Kristen Goodrich. With a background in social ecology and mental health, Goodrich is in charge of the coastal training program at the Tijuana River National Estuarine Research Reserve, which means that she regularly connects with both everyday people and decision-makers over climate change adaptation and conservation.

Last summer, Goodrich took me across the border to Tijuana to meet some of the people living

upstream who are trying to prevent more pollution and sewage from reaching the estuary. Walking around downtown Tijuana, we ended up on a bridge, looking down on the concrete channel that carries the Tijuana River's water — both clean and wastewater — downstream, across the border, and into a treatment facility before it continues to Imperial Beach and the estuary. That evening, I listened to a gathering of Mexican and U.S. researchers and activists discuss their efforts to educate people about waste management. If they could channel U.S. federal funds toward Mexican infrastructure improvements, they said, it would benefit the people and ecosystems on both sides of the river.

The way Goodrich sees it, the estuary could become more than just a place of recreation for residents of Imperial Beach; it could be a binational

hub for everyone who is trying to adapt to man-made climate change. "We might be able to deliver some kind of offering where people could come and think about their relationship to each other, their relationship to nature, and think of these things as reciprocal," she said.

What would that look like? Goodrich doesn't know. She just knows that the estuary can help us connect the dots of its — and our — ecological history, and give us a way to lighten the load of all the loss and grief and anxiety about the future. I can see it, too. The Tijuana River National Estuarine Research Reserve is already that place for me — a vestige of another era, and proof of what can happen when people work together, holding on to their vision even when it seems futile or dangerous, determined to protect something both necessary and unique. ☀





12 not-so-easy steps to decarbonize the grid

Electrifying will make a difference if that power comes from clean sources.

BY JONATHAN THOMPSON | ILLUSTRATIONS BY HANNAH AGOSTA

WHEN IT COMES TO THE COUNTRY'S climate change culprits, the biggest offenders lurk in the transportation sector: Altogether, planes, trains and automobiles, etc., emit 28% of the nation's greenhouse gases, plus other nasty pollutants that harm anyone who lives near highways and airports. Industrial sources — factories, cement plants, steel

mills, etc. — spew nearly one-fourth of our climate-warming pollutants, while commercial and residential buildings are responsible for 13%, and agriculture contributes 10%.

Experts generally agree that the best way to reduce all these emissions is to electrify everything: Just replace petroleum-powered vehicles, natural gas-fired heaters

and stoves and coal-fired cement kilns and steel furnaces with their electric analogs. After all, an electric vehicle's tailpipe emits zero greenhouse gases or other pollutants. In fact, electric vehicles don't even have tailpipes.

There is one nagging little detail, though: The energy producing all that electricity has to come from somewhere, generally from greenhouse gas-emitting fossil fuels. The electric power sector is the nation's second-largest emitter of greenhouse gases, after transportation. Electrifying everything might do little more than redistribute emissions from buildings and cars to the power grid. Unless, that is, the power grid is decarbonized, a simple — but monumental — task: The electric power sector needs to quit fossil fuels, cold turkey. And that requires massive investments in new power sources and innovation to remake the grid for a carbon-free world. ☀

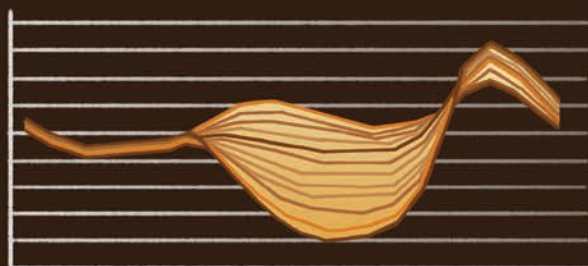
SOURCES: Energy Information Administration, Environmental Protection Agency, Oregon Solar Dashboard, California Independent System Operator, Harvard Kennedy School Belfer Center, National Renewable Energy Laboratory.

1 Put coal power plants out to pasture: Coal is relatively cheap and abundant, but it's also dirty, spewing oodles of climate-warming carbon dioxide and other harmful pollutants. The U.S. power sector has reduced its reliance on the iconic fossil fuel thanks to widespread plant retirements, but utilities need to cull their coal-burning herds even more rapidly.

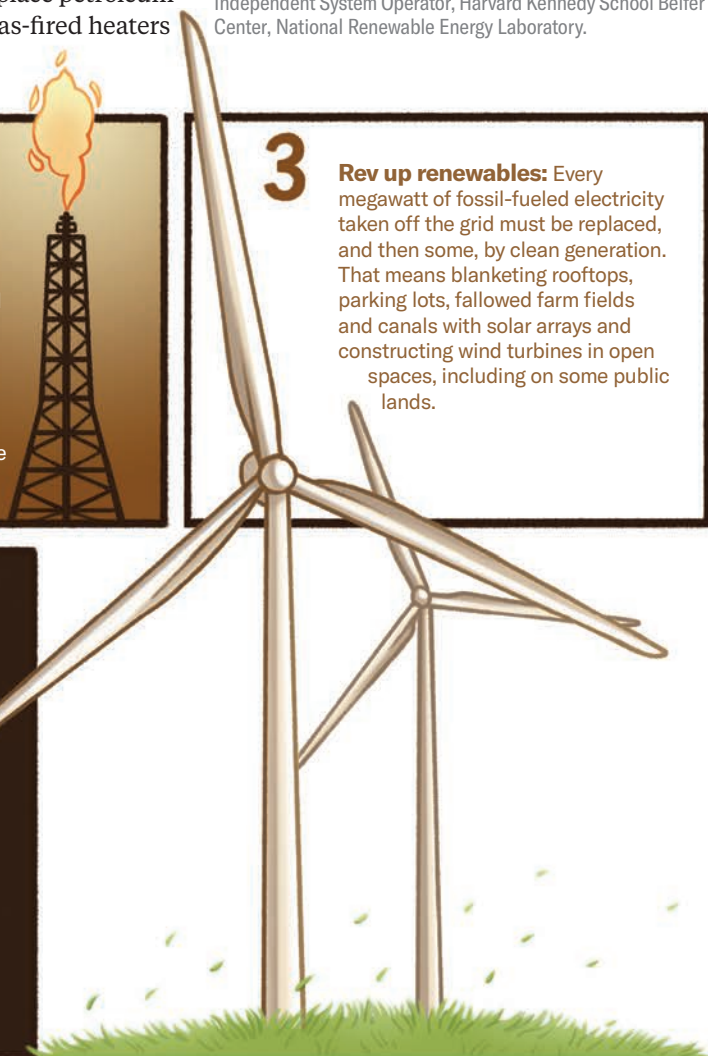
2 Just say no to natural gas: Coal's decline has led to natural gas's rise, substituting one fossil fuel for another. Natural gas burns cleaner than coal, yet methane — a potent greenhouse gas — leaks throughout the production process, offsetting some of those gains.

3 Rev up renewables: Every megawatt of fossil-fueled electricity taken off the grid must be replaced, and then some, by clean generation. That means blanketing rooftops, parking lots, fallowed farm fields and canals with solar arrays and constructing wind turbines in open spaces, including on some public lands.

4 Beware the duck curve! So much solar power capacity has been added to the California grid that on some sunny afternoons, it generates more power than folks can use. Then, as the sun sets, that declines, forcing grid operators to turn to other energy sources, including natural gas. On a graph, this supply-demand pattern resembles a duck. But don't be fooled by



its benign appearance: This particular bird is a predator, threatening grid decarbonization and reliability.



5

Bring on the batteries:

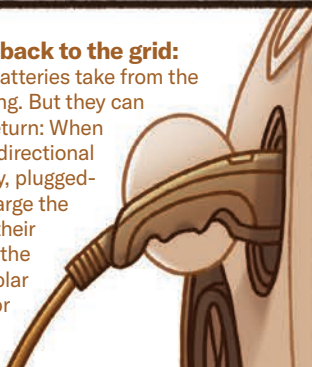
One way to dodge the duck involves storing the excess solar power in batteries and discharging it when generation drops or electricity demand spikes. California has cranked up its battery storage capacity 16-fold over the last several years, enabling the state to avoid power outages during heat waves.



6

Have EVs give back to the grid:

Electric vehicle batteries take from the grid when charging. But they can be generous in return: When equipped with bidirectional charging capacity, plugged-in EVs can discharge the energy stored in their batteries back to the grid when, say, solar output declines or there's a sudden surge in demand.



7

Grow the grid: Another way to pluck a grid-endangering duck is through "geographical smoothing," or sending Wyoming wind power to California when solar output falls at the end of the day. This will require centralizing operations at what are now dozens of distinct power grids across the West — and building more long-distance transmission.



8

Shrink the grid: If the big grid crashes — from weather, wildfires, equipment malfunction or an unexpected spike in demand — the effects can ripple across the network, leaving thousands, even millions, without power. Clean energy and battery-powered microgrids that are integrated into the larger grid but able to operate independently can keep a community's lights on if that happens.

9

Demand response:

Adding generation and/or slashing demand would help utilities tackle the duck. Instead of cranking up natural gas, they could incentivize consumers — through payments, credits or rate structures — to dim the lights or turn down the AC.



10

Make buildings — and everything else — more efficient:

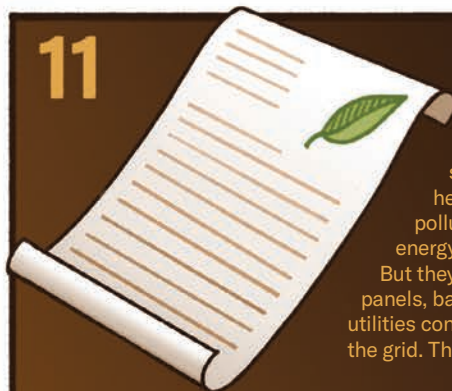
We must work together to use less energy. Insulate! Replace those old lightbulbs with LEDs. Get energy-efficient appliances. Use passive solar. Bring natural light into office buildings. Ride an e-bike instead of an e-truck. Consume less.



11

None of this will happen on its own:

Federal, state and local governments can help clean up the grid by regulating pollution and setting enforceable clean energy goals and efficiency standards. But they can't make people install solar panels, batteries or "smart meters" that let utilities control customers' appliances to aid the grid. That means policymakers must ...



12

... get the public on board

by subsidizing home solar and efficiency upgrades and encouraging folks to generate their own clean power or conserve with net-metering policies and other incentives. Ultimately, only the people can decarbonize the grid.

**\$3.5 million**

Funding the New Mexico Mortgage Finance Authority has allocated to help install rooftop solar on low-income households.

21,894 megawatt-hours

Amount of electricity produced by utility-scale solar facilities in Oregon in 2015.

1.69 million megawatt-hours

Amount produced in 2022.

500 megawatts

Amount of battery storage on California's grid in 2018.

8,000 megawatts

Amount of battery storage on California's grid today.

103.5%

Amount of California's total demand met by solar power on May 8, 2022, a record.

16,044 megawatts

Amount of solar generation on the California grid on Sept. 6, 2023, just after noon, the all-time record so far.

1,000

Feet of irrigation canal to be covered by solar panels at a Gila River Indian Community project in Arizona.

1.05 billion tons

Amount of coal burned for electricity generation in the U.S. in 2007.

469 million tons

Amount burned in 2022.

7.1 trillion cubic feet

Amount of natural gas burned for electricity generation in the U.S. in 2007.

12.4 trillion cubic feet

Amount burned in 2022.

371.5 million metric tons

Carbon dioxide emissions from burning natural gas to generate electricity in 2007.

661 million metric tons

Amount emitted in 2022.

2.33 billion

2007 total emissions (natural gas and coal).

1.5 billion

2022 total emissions.

Notice to our advertisers: You can place classified ads with our online classified system. Visit hcn.org/classifieds. Jan. 4, 2024, is the deadline to place your classified ad in the February 2024 issue. Email advertising@hcn.org for help or information.

Advertising Policy — We accept advertising because it helps pay the costs of publishing a high-quality, full-color magazine, where topics are well-researched and reported in an in-depth manner. The percentage of the magazine's income that is derived from advertising is modest, and the number of advertising pages will not exceed one-third of our printed pages annually.

EMPLOYMENT & EDUCATION

Executive Director — The California Coalition for Rural Housing (CCRH) seeks a strategic and visionary Executive Director. View all job details here: <https://bit.ly/CCRHEd>.

Live and Work in the Oregon Outback — Seeking Facility and Site Manager and Program and Residency Coordinator. The two positions equal a 1.5 full-time position, private two-bedroom house, garage and studio. Responsible for 75-acre property with cabins, studios, central lodge. Responsible for resident and guest services. PLAYA is an equal opportunity employer. Send résumé and cover letter to: info@playasummerlake.org. www.playasummerlake.org.



GARDEN & OUTDOOR

Western Native Seed — Native plant seeds for the Western U.S. Trees, shrubs, grasses, wildflowers and regional mixes. Call or email for free price list. 719-942-3935. info@westernnativeseed.com or visit us at www.westernnativeseed.com.

PROFESSIONAL SERVICES

The Sharpist is a Denver-based mail-order surgical instrument-sharpening service established in 2009. Specialties include surgical scissors, dental elevators, trocar sets and gynecological biopsy forceps. Info at www.thesharpist.com or 720-277-9071.



Environmental Services — We characterize contaminated sites and locate buried drums, tanks, debris and also find groundwater. 208-501-9984. www.ecageophysics.com.



PUBLICATIONS & BOOKS

UTE LEGENDS — These carefully researched stories reflect a deep and abiding understanding of Ute culture and history. These authentic, colorful legends also illustrate the Utes' close connections to nature. Available wherever books are sold.



REAL ESTATE FOR RENT & SALE

12 acres in Eagle, Colorado! — Tranquility and land are becoming more and more rare. This land is a haven for peace, where nature beckons

and flourishes. Enjoy the mountain views from your future dream home in this natural sanctuary where wildlife and meandering Eby Creek are your constant companions. Seller has added natural pathways in the creek and hillside areas of this 12-plus-acre lot. Building site sits above the creek. Recent survey is complete. A new, permitted well is in place; gas and electricity are on property. Private, ideal location off the "beaten path," yet a mere two miles to City Market and I-70 on county-maintained road. Come and walk the land for an understanding of this precious gem! With building costs going down and land more scarce, an amazing opportunity for acreage and proximity in Eagle. <https://1950-ebby-creek-road.yourvailhome.com>. 970-688-0915. brookevailkw@gmail.com. www.SearchVailHomes.com.



Coming to Tucson? — Popular vacation house, everything furnished. Two bedroom, one bath, large enclosed yards. Dog-friendly. Contact Lee at cloler@cox.net or 520-791-9246.

TOURS & TRAVEL

Canyonlands Field Institute — Field seminars for adults in the natural and human history of the Colorado Plateau, with lodge and base camp options. Small groups, guest experts. 435-259-7750. cfimoab.org.

High Country News

Get the most out of your subscription.

Take advantage of online access for exclusive stories, email newsletters, digital extras and more.

Visit hcn.org/activate to sign up.



In this time of
unprecedented
ecological change,
**add your voice
to the conversation.**

**Earn your MFA or MA in Creative Writing
with an emphasis in Nature Writing**

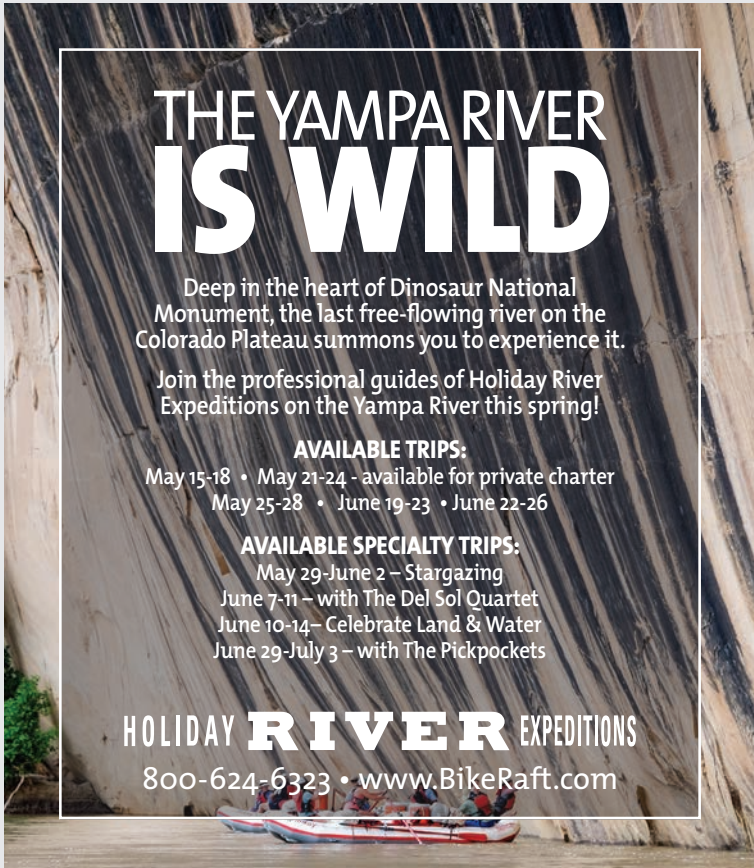
Western Colorado University's low residency
graduate writing program is established on the
core belief that writing can be an agent of change.

Our award-winning faculty includes:
Director Laura Pritchett, CMarie Fuhrman,
Ana Maria Spagna, Karen Auvinen,
Steve Coughlin, and a host of guest speakers
from the environmental writing world.



WESTERN
COLORADO UNIVERSITY
MFA, M.A. IN CREATIVE
WRITING

LEARN MORE: www.western.edu/mfa | [#writewhereyoulive](https://twitter.com/writewhereyoulive)



THE YAMPA RIVER IS WILD

Deep in the heart of Dinosaur National
Monument, the last free-flowing river on the
Colorado Plateau summons you to experience it.

Join the professional guides of Holiday River
Expeditions on the Yampa River this spring!

AVAILABLE TRIPS:

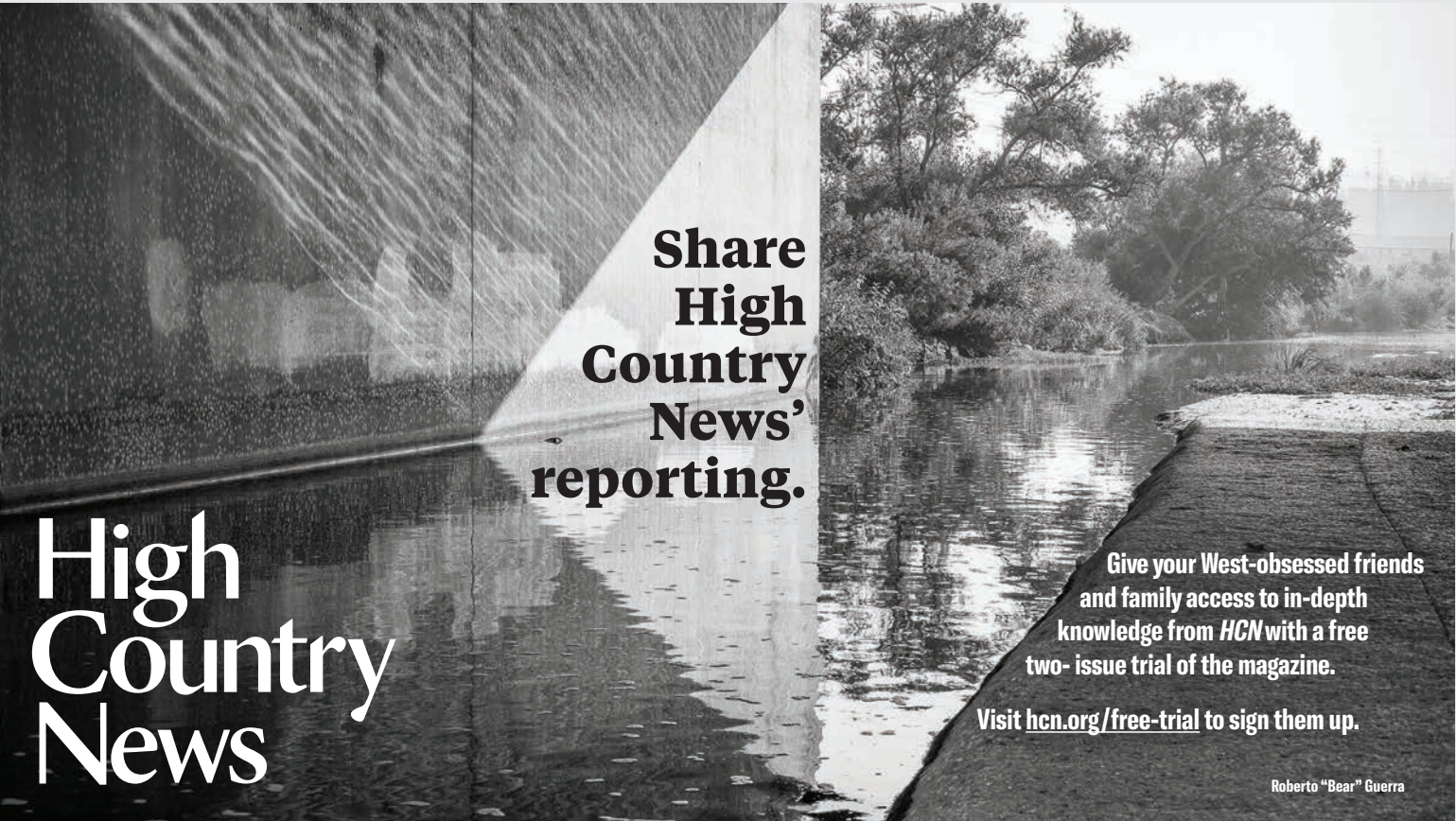
May 15-18 • May 21-24 - available for private charter
May 25-28 • June 19-23 • June 22-26

AVAILABLE SPECIALTY TRIPS:

May 29-June 2 - Stargazing
June 7-11 - with The Del Sol Quartet
June 10-14 - Celebrate Land & Water
June 29-July 3 - with The Pickpockets

HOLIDAY RIVER EXPEDITIONS

800-624-6323 • www.BikeRaft.com



**Share
High
Country
News'
reporting.**

**High
Country
News**

Give your West-obsessed friends
and family access to in-depth
knowledge from *HCN* with a free
two-issue trial of the magazine.

Visit hcn.org/free-trial to sign them up.

Roberto "Bear" Guerra



Shine a little light

In eastern Oregon, spirituality provides moral motivation for climate action.

BY REBECCA RANDALL
PHOTOS BY KAVEER RAI

AUTUMN LEAVES settled on the Umatilla River in downtown Pendleton, Oregon, as it rippled gently over rocks one October day. Up an embankment and across a quiet street rose the stone tower of the First Christian Church. “I see churches as being a positive thing for change,” said Bill Aney, a retired U.S. Forest Service employee and church member.

The river was placid that autumn day as Aney walked over the Main Street bridge. But in spring 2020, heavy rains and rapid snowmelt in the Blue Mountains caused a massive flood. A levee in downtown Pendleton broke, inundating nearby streets. Part of Interstate 84 and many local roads closed, homes were evacuated, and one woman died. Climate change is projected to cause more frequent flooding in Umatilla County, according to a 2020 Oregon report. “God told us to take care of the Earth,” Aney said. He interprets that as a moral imperative to aid recovery efforts after floods and other disasters — and to push for broader climate action.

Aney belongs to Climate Vigil, an eastern Oregon organization founded about two years ago. It grew out of a prayer book written by founder Peter Fargo. So far, it’s mainly offered avenues for climate advocacy and reflection modeled on Christian practices, including a worship album and community vigils.

But Climate Vigil members felt that the issue’s urgency required them to join people of all backgrounds in fighting for common values: human rights, including the right to a safe climate. “We’ve prayed, we’ve sung, we’ve been inspired, we’ve lamented,” said Fargo. “That’s really deep soul work and hard work, and it creates this potential energy that needs to be channeled into action.” Climate Vigil’s moral and spiritual motivations could strengthen the broader movement for climate action, helping participants find the courage to persist during dark times. They saw youth climate activists in particular as people who shared their values, especially in the way young activists articulate their fundamental rights.

In some ways, the idea of a broad coalition has been part of Climate Vigil since the beginning. Fargo was inspired to create the organization by two events at the 2021 United Nations Climate Change Conference, or COP26, in Glasgow, Scotland: a climate march that brought together tens of thousands of people from around the world in one noisy, energetic river of determination to turn political tides toward more climate action, and a Christian vigil at St. George’s Tron Church.

Since then, Fargo has left his communication job with the Forest Service to work full-time on Climate Vigil. He also began writing an Oregon constitutional amendment guaranteeing the right to a safe climate, which he hopes to get on the statewide ballot in 2026.

As part of that widened focus, Aney was preparing to host a community event — a film screening of *Youth v Gov*, a documentary about the lawsuit *Juliana v. The United States of America*, which argued that young people have a federal constitutional right to a life-sustaining climate. To garner support and inspire the communities of Pendleton, La Grande and Baker City, Climate Vigil volunteers were taking *Youth v Gov* on a three-day film tour.

THE RHYTHMIC WHIRRING of a popcorn machine crackled to life with a crescendo of pop-pop-pops outside a lecture hall at Pendleton’s Blue Mountain Community College, where the final screening was about to begin. The popcorn was courtesy of Umatilla County Public Health, which was hosting a booth to collect survey responses for its climate planning. The Eastern Oregon Climate Change Coalition also staffed a table, collecting

contact info for its mailing list and promoting monthly Zoom climate conversations.

The film began by connecting the 21 youth in the lawsuit to their communities’ climate impacts: water scarcity on the Navajo Nation, hurricanes in Louisiana, wildfires in Oregon, and more. During an intermission, the audience — a few dozen people sprinkled through the rows of narrow tables and chairs in the lecture hall — broke into small groups to discuss the ways climate change affects them.

Pendleton High School seniors Persephone Bearchum, of the nearby Confederated Tribes of the Umatilla Indian Reservation, and Aurora Whiskeyjack, of the Saddle Lake Cree Nation in Alberta, mentioned late-summer wildfire smoke. Bearchum runs cross-country and cheers, but coaches have to cancel or move practice inside when air quality is poor. “It’s not only impacting your physical well-being but also your mental well-being from being stuck at home,” she said. Whiskeyjack works as a lifeguard at the local pool, which shut down several days in a row last August due to smoke; she didn’t get paid for those days.

Bearchum’s mother, Claudette Enos, sat a couple of rows behind her daughter. She recalled digging for roots with her grandma in the 1990s, and said that Indigenous foods are harder to find today. Hotter summer temperatures and less rain threaten roots such as *χάωσ* (cous), which Bearchum remembers digging with her family.

After intermission, the film continued rolling, with backdrops of Oregon farms, mountains and forests, among other images. Eleven of the 21 youth plaintiffs live in Oregon, a point Fargo hoped would resonate with local audiences. “Oregonians can lead



on this global issue,” he said in an interview after the screening.

Still, the film ended on a somewhat despairing note: The plaintiffs’ case was dismissed. “It’s made me emotional,” said Bearchum, who teared up. “But it’s really empowering.”

In an interview the following week, Laura Hudson, co-pastor of First Presbyterian Church of La Grande, who helps host Climate Vigil events, stepped up to a metaphorical pulpit to discuss the role of hope in the climate crisis. She paraphrased the work of Miguel A. De La Torre, a Latinx scholar at Denver’s Iliff School of Theology, who writes that hope is not what gets you through the struggle to upset the status quo. “What’s necessary is the willingness to just keep working at this

thing — perseverance,” Hudson said. “That helped me reframe how I saw the film. It’s the courage not to give up.”

Fargo hopes to grow the Climate Vigil movement through faith-based networks and churches in the region, even as he joins with others ready to support an Oregon climate amendment. Climate Vigil plans to hold a gathering in support of the amendment and a statewide climate vigil in Salem, Oregon’s capital, in the coming year.

Aiden Wolf, a Umatilla tribal member and theater student at Whitman College in Walla Walla who presented the land acknowledgment before the film screening, said that he appreciates the way Climate Vigil invites people of all cultures, in all their

distinctiveness, to join forces. That’s echoed in *Youth v Gov*, which features young people from a variety of cultural backgrounds, including Native youth.

Wolf went home thinking about the significance of coming together. “The film made me think how different all tribes are — the practices they have, how they perceive the world around them, how they take care of it,” he said. “If we’re going to fight climate change, we’re all in the same country, all in the same planet, and we need to do it together.”

As Fargo puts it, all of us — including people of faith — are “tributaries in the big river that we all need to wade into to get to where we need to go on climate action.” ☼

Clockwise from top left:

A pastor engages students in a discussion after a screening of the documentary film *Youth v Gov* at Blue Mountain Community College in October.

Posters outside the auditorium invite passersby to join Climate Vigil.

After watching the film, attendees broke into groups to discuss how they could help address climate change in their community.

A screening of the documentary film *Youth v Gov*.



Solidarity in the energy transition

How the climate and labor movements came together in 2023 and the work that lies ahead.

BY BROOKE LARSEN
ILLUSTRATION BY ISRAEL VARGAS

IN SEPTEMBER, the United Auto Workers walked off the job and onto picket lines, not only in the Rust Belt, but across the West, from Reno to Rancho Cucamonga. “Who’s got the power?” Reno’s GM workers chanted. “We got the power! What kind of power? Union power!” Ultimately, more than 45,000 workers around the country joined the strike, the first time the union simultaneously challenged the Big Three automakers: Ford, General Motors and Stellantis (owner of Jeep and Chrysler).

For six weeks, autoworkers walked picket lines in red shirts, waving signs that proclaimed: “UAW Stand Up: Record Profits Record Contracts.” The Big Three made a quarter-trillion in profits and CEO pay rose 40% from 2013-2022, but average real wages for auto workers have fallen almost 20% since 2008, according to the Economic Policy Institute.

“My parents were able to afford a home and cars — GM cars,” said Carina Rosales, who grew up in an autoworker family and chairs the UAW local that represents GM workers in Reno. “Now my brothers and sisters out here, they’re working (additional) part-time jobs just to cover their normal bills.”

Along with better wages and benefits, the autoworkers were fighting for their place in the transition to electric vehicles. UAW contract negotiations coincided with the rollout of the Inflation Reduction Act, which will funnel billions of dollars into renewables and electric vehicle manufacturing. IRA tax credits include incentives for companies that pay good wages, but they don’t require union labor. Previous UAW contracts with the Big Three didn’t cover EV manufacturing facilities.

“The massive EV subsidies that came with the IRA sort of catapulted autoworkers onto the front lines of this transition,” said Sydney Ghazarian, organizer with the Labor Network for Sustainability

Last summer, with the strike looming, Ghazarian talked with environmental groups about their stake in the UAW fight and an energy transition that protects both workers and the environment. As a result, 150 groups from Greenpeace to Sunrise Movement signed a letter to the Big Three CEOs, declaring that “The Climate Movement Stands with UAW!” These groups also joined autoworkers on picket lines.

In recent years, green groups and labor unions have often been

at odds over phasing out fossil fuel industries: Environmentalists want a swift transition, while labor unions want jobs for their rank-and-file. J. Mijin Cha, a professor at the University of California, Santa Cruz who researches labor and climate, called it “ridiculous” to expect workers to quietly accept the loss of their livelihoods. “You’re talking to folks who will actually lose their jobs in a country with no safety net, right?” Cha said.

Business leaders have often framed the growing EV market as another zero-sum game for labor and climate; UAW demands, they said, were blocking the energy transition, which could be conducted more cheaply in non-union plants or overseas. At one battery plant co-owned by GM and LG, some workers earned barely half what union members make. Meanwhile, a 2020 UAW report suggested that EV manufacturing would require fewer workers than gasoline cars. (Research from Carnegie Mellon found the opposite may be true.) “If climate change is a central problem, we should want climate change technologies produced as inexpensively as possible,” said Lawrence Summers, former President Barack Obama’s Treasury secretary, in a recent speech.

At the beginning of the strike, automaker executives said they couldn’t bargain over unionizing battery plants. But after weeks of escalating strikes that caught the Big Three off-guard, autoworkers successfully challenged the notion that the energy transition requires cheap labor. In one of the most significant wins for American labor in decades, the UAW forced the Big Three to include EV battery-manufacturing workers under the union’s contract. The union won other significant

gains: elimination of wage tiers, reinstatement of cost-of-living adjustments, re-opening of a shuttered plant, the right to strike over future plant closures and significant raises, including a 168% increase for the lowest-paid temporary workers at Stellantis. Mike Miller, director of UAW Region 6 in the West, called the raises “life-altering.”

FRESH FROM THESE HISTORIC contract negotiations, the UAW is now looking to secure labor’s place in EV manufacturing beyond the Big Three. “We’re talking with lots of workers who don’t have unions right now all across the economy who are excited by the strike and excited by what it means for workers’ rights and fighting climate change,” Miller said.

In November, UAW announced simultaneous organizing campaigns at 13 non-union automakers, including Tesla. It won’t be easy: Elon Musk, Tesla’s CEO, is notoriously anti-union. When employees at Tesla’s Fremont, California factory pushed to unionize in 2017-’18, workers claimed the company illegally fired at least one organizer and that Musk threatened to revoke stock options if they unionized. The National Labor Relations Board ruled against Tesla on both matters in 2021; an appeal is pending.

Autoworkers also hope to inspire other labor movements. “It’s not just about UAW,” said Rosales. “It’s really about everyone just trying to earn a living to support themselves and their family.”

In 2023, U.S. workers went on strike in numbers unseen in decades. Workers cited inflation, stagnating wages and pandemic policies that put their lives on the line. Concerns over climate change-induced extreme heat



“If we have the exact same systems and institutions and we just changed fuel sources, that’s not a just transition.”

also drove people to the picket line. UPS drivers, part of the Teamsters union, achieved heat-protection wins, including AC in vehicles purchased after 2023 and updates to existing trucks. Meanwhile, the United Farm Workers’ ongoing demand for nationwide heat-protection standards is backed by dozens of environmental groups.

Solar and wind industries may be the next target for labor and climate movements. Matthew Mayers and Nico Ries, executive director and lead organizer of the Green Workers Alliance, a group advocating for good renewable energy jobs, said temp agencies with poor labor standards control many entry-level positions.

Dalia Bonilla, a member of the group, has worked at solar job sites for a variety of these agencies. In 2023, she and her family traveled from Texas to a worksite in Montana, then to another in Colorado. “There’s so many challenges you face out there,” she told *High Country News* — travel, expensive lodging, racism and more. At the Colorado site, she witnessed — and even experienced — discrimination toward Latino employees. She eventually quit.

“If we have the exact same systems and institutions and we just changed fuel sources, that’s not a just transition,” said Cha, the UC Santa Cruz researcher.

The Green Workers Alliance is creating an app where workers can discuss worksite conditions. The group is also campaigning to strengthen federal labor standards for utility workers.

As funds roll out from both the IRA and Bipartisan Infrastructure Law, unions are securing jobs agreements for large utility-scale projects. This may be the next area where enviros and labor have to reconcile. Some environmental groups worry about corporate-run energy systems and the impacts on wildlife from new transmission lines. Unions often fight with utilities over working conditions, but large-scale projects offer good-paying union jobs.

“Animosity toward investor-owned utilities kind of complicates things,” said Brian Condit, director of the New Mexico Building and Construction Trades Council, an alliance of craft unions. “Utilities pay good wages. Those are my jobs.”

These divides are not easily resolved. But the UAW win demonstrates that labor unions and climate groups can find common ground. “People are no longer getting sucked into this ‘jobs-vs.-environment’ false narrative,” said Cha. “Too often we flatten workers into, well, you’re an auto worker, as opposed to you’re a whole person who cares about climate change.” ☀



Indigenous climate leaders

Meet three Native climate experts bringing knowledge and justice to the conversation.

ILLUSTRATIONS BY
GABRIELLA TRUJILLO

ALL OVER THE WORLD, conversations about climate change and solutions to it are happening, at conferences, in documentaries, in offices, even over coffee. Climate scientists, government officials, tech entrepreneurs and others all have opinions about how humans should address the crisis, but many of them are leaving out something important: the experience and knowledge systems of the land's original stewards — Indigenous peoples. *High Country News'* Indigenous affairs team has compiled three short profiles that center Indigenous people and their knowledge in the climate realm. The profiles showcase the efforts and expertise of people who are working, in one capacity or another, to address climate concerns through data and knowledge sovereignty, promoting the act of close listening, and helping everyone involved understand the power and truth of Indigenous ways of knowing and experiencing landscapes. They continue the work of their ancestors and remind us to take the time to really *listen* — not just to Indigenous stewards like them, but also to each other, and to the environment itself.



AMELIA MARCHAND (COLVILLE)

BY B. "TOASTIE" OASTER

"Indigenous people have so much to give, if people would just stop taking it," said Amelia Marchand, senior tribal climate resilience liaison at the Affiliated Tribes of Northwest Indians (ATNI) and a citizen of the Confederated Tribes of the Colville Reservation. "For so long, our knowledge has

been extracted." Science and academia, she explained, have a history of taking intellectual property from communities that do not benefit from its use.

Through her work at ATNI, Marchand guides climate scientists in conducting research equitably — by, for example, making data sovereignty or intellectual property agreements with Native communities before making use of Indigenous

“Tribes are rights holders, not an interested party.”

knowledge. Ethically engaging with tribes, she said, requires ensuring that scientific research aligns with the priorities of tribal communities. Too often, state and federal agencies treat tribes as ordinary members of the general public. “Tribal nations are not a stakeholder group,” she explained, noting their status as governments. “Tribes are rights holders, not an interested party.”

Having recently relocated from the Colville Reservation to Kānaka Maoli lands on O‘ahu, Hawai‘i, Marchand now conducts trainings with tribes, universities, nonprofits and government agencies like the U.S. Geological Survey, working to develop climate strategies that include Indigenous priorities. “It’s advocating and educating at the same time,” she said.

Marchand said that while it may be possible to survive climate change without Indigenous leadership, that scenario is not a good one for the future. “It’s business as usual, with more of the same terrible history that’s led us here,” she said. A better future will require a focus on equity. “It’s interesting, the place where humanity finds itself, because we have all the tools — the technology, the wealth, the brainpower — to initiate those changes,” Marchand said. “What we lack is the political will.”

And Native leaders know how to implement traditional practices in a good way. As an example, she noted that in September, Interior Secretary Deb Haaland (Laguna Pueblo) revised four climate-related Interior Department policies, all of which now refer to Indigenous knowledge. Marchand credits “Auntie Deb” with implementing this knowledge at a federal level in a way that’s not extractive. “We, as a whole, would not be as far without her,” Marchand said.

Through ATNI, Marchand has had a hand in crafting policy resolutions that might influence states like Washington

and Idaho, or perhaps pass up the chain to the National Congress of American Indians and on to the U.S. Congress. Concerning more boots-on-the-ground changes, Marchand has also cofounded the L.I.G.H.T. Foundation, a nonprofit that supports native plant conservation and gathering traditions for Pacific Northwest tribes. Working with climate sustainability students from Western Washington University, she’s used lessons about the protection of native plants and pollinators to talk to students about sovereignty, drawing attention to the braided nature of climate, conservation and Indigenous rights.

LYDIA JENNINGS (PASCUA YAQUI AND HUICHUL)

BY ANNA V. SMITH

The global shift toward renewable energy is fueling growing demand for copper, lithium and manganese, minerals that are often found near tribal reservations or on sacred ancestral lands. At the same time, Indigenous knowledge is increasingly sought by governments and scientists to inform land management and climate research.

Lydia Jennings’ research sits at the nexus of these two tensions: She’s a soil microbiologist studying mining and natural gas sites near tribal communities. Jennings, who is Huichul and a citizen of the Pascua Yaqui Tribe, splits her time between the very different biomes of Phoenix and Durham, North Carolina, as a postdoctoral researcher at Arizona State University’s School of Sustainability and a research fellow at the

Nicholas School of Environment at Duke University. In both roles, she’s deeply interested in how federal agencies and policies include tribal nations’ priorities and concerns. “We value Indigenous knowledge when it comes to healing the ecosystem, but don’t really value Indigenous knowledge when it comes to the proposal of a new mining site,” said Jennings.

Jennings was first drawn to the stories that soils tell when she worked as an environmental toxicologist at UC Davis. Traveling from the Tijuana River to the California-Oregon border, she noticed that soil pollution varied widely. Her research focused on a major source of environmental harm: hardrock mines and the tailings they leave behind.

Part of her dissertation at the University of Arizona dealt with the Rosemont Mine in the Sonoran Desert, a proposed copper mine southeast of Tucson, on a site that overlaps the ancestral lands of Jennings’ own tribe, as well as the Tohono O‘odham Nation, the Hopi Tribe and others. If approved, it would be the third-largest copper mine in the U.S. Jennings’ work underlined the importance of Indigenous rights in consultation and land management. That work catalyzed her interest in data sovereignty and the way Indigenous knowledge and information is shared. “We’re talking about all these ideas and concepts around climate change and integrating more Indigenous knowledge, and that’s a beautiful idea,” Jennings said. “We need to also know that there are rights that communities have to protect that data, to be able to steward that data in the same way that they steward their ecosystems.”

That philosophy extends to climate research and tribal consent. In her current research with the Lumbee Tribe in North Carolina, Jennings is working with Ryan Emanuel, an assistant professor at Duke University and a citizen of the Lumbee Tribe, on environmental health concerns over methane gas emissions near the community. The important thing, she said, is that “it’s work that upholds the questions and concerns a tribal nation has,” instead of being driven entirely by researchers from outside the community. “It’s all really being led from community members themselves, and those who have a much longer understanding of both problems — the challenges — but also



“We’re talking about all these ideas and concepts around climate change and integrating more Indigenous knowledge, and that’s a beautiful idea.”

community dynamics and community-based solutions,” Jennings said.

When facing large-scale problems like climate change or influencing federal policy, Jennings looks to the past for strength to figure out solutions. “We’re in a place where you have to make a lot of tough decisions, but it’s not the first time Native nations have had to make those decisions, and it won’t be the last,” she said. Jennings often thinks about the decisions prior tribal leaders had to make when confronting world-upending changes like colonization. “For better or for worse,” she said, “it’s a continuation of those responsibilities.”

**ROBERTA TUURRAQ GLENN-BORADE
(IÑUPIAQ)**

BY JOAQLIN ESTUS

Iñupiat Roberta Tuurraq Glenn-Borade’s passion for bringing Iñupiat knowledge to Western science stems from her childhood in Utqiagvik, formerly known as Barrow, Alaska. “My dad was a whaling captain and a sea ice scientist, and sometimes he would take me out to where the scientists in Barrow were deploying their instruments. But I noticed while I was growing up that there is a little bit of a cultural barrier between the scientists that were coming in and our Iñupiat people,” she said.

The researchers would describe things that were already obvious to the people: “For example, explaining to us what permafrost is when we already have an understanding of what that is,” Glenn-Borade said.

She said scientists used to disregard Indigenous knowledge. In the 1970s, the federal government imposed a harvest quota of zero bowhead whales, a crucial food source for the Iñupiat, due to low population estimates. The Iñupiat knew that the population counts were wrong, because they didn’t include whales traveling under the ice. After the Iñupiat took over the count, “the quotas were updated to reflect a strong bowhead whale population, and the U.S. government began to take the voices of Indigenous folks

in Alaska more seriously,” Glenn-Borade said.

In college, Glenn-Borade trained as a geoscientist and learned about research in other parts of Alaska: “I felt like I had a perspective I could share that could help bridge these two worlds.”

In January 2022, for her master’s thesis at the University of Alaska Fairbanks, Glenn-Borade published a story map — a digital map and narrative — that showcased the photos, data and voices of local observers across the state along with Western scientific information. Entries about stormy weather, for example, appeared with a chart on the multi-year trend of increasingly wet summers, as well as a vignette from Iñupiaq Bobby Schaeffer of Qikiqtaġruk (Kotzebue) from September 2021:

“We had two storms go by back-to-back, producing gobs of rain and howling winds. ... Rising river and creek waters will cause more erosion. South winds will bring in storm surge and huge ocean waves will batter the beaches and cause more erosion on permafrost hills. ... Hunting efforts have been hampered by a lot of wind and rain.”

Now, Glenn-Borade is the project coordinator and community liaison for the Alaska Arctic Observatory and Knowledge Hub (A-OK), a partnership of communities in Arctic Alaska. The hub gives observers in several villages a platform to share their observations, knowledge and expertise on Arctic environmental change with each other as well as with other scientists.

In addition to warmer temperatures, locals are seeing changes in the sea ice and in the wind, along with increased coastal storms. “Yes, we have changes that are going on,” Glenn-Borade said. “Yes, there are struggles. However, we are still able to harvest healthy animals. We’re still able to go out and practice our cultural traditions, our subsistence activities. We’re still here, and we’re going to continue to be here.”

“I find hope in the strength of Iñupiat culture,” Glenn-Borade said. “That’s where I know we’re still able to have a positive attitude about things, because we still do. ... We’re living it.”

As far as solutions to climate change go, she said, “I have opinions about whose guidance and perspectives we should seek. For me, that’s the people who are living with these changes every day.” ❄️

*“I find hope in the strength
of Iñupiat culture.”*



OREGON

William ShakespEAR, a female Townsend's big-eared bat from Butte Falls, Oregon, defended her title for the second year in a row in the "Bat Beauty Contest," an annual contest hosted by the Bureau of Land Management to raise awareness about bat conservation, *OPB News* reported. Townsend's big-eared bats are noted for having, well, very big ears — ears that measure half the length of their bodies. The contest, which coincides with International Bat Week, accepts photos of bats taken on public lands across the country starting Oct. 24 and ending on Halloween. Emma Busk, a BLM wildlife technician, photographed the winner. "There are a lot of myths around bats, but they're amazing wildlife and they contribute so much to our ecosystem," Busk told *OPB*. Not only do they keep the mosquito populations down, they look fabulous in the itty-bitty-teeny-weeny bikini competition.

ARIZONA

Congratulations to Alfredo Aliaga, 92, who became the oldest person to complete the Grand Canyon's Rim-to-Rim hike, 24-miles long and with an elevation gain and loss of over 10,000 feet, *Backpacker* reported. Aliaga made it in 21 hours over two days, breaking a Guinness World Record for being the oldest person to finish (verification pending), succeeding the former record-holder, John Jempka, who was 91 years and 151 days old. This wasn't Aliaga's first rodeo: A Spanish-born geology enthusiast, he's hiked the Rim-to-Rim twice before, first in 2019, with his daughter and son-in-law, and again last year. Aliaga's wife died in 2006, his son-in-law, Jurgen Buchenau, told *Backpacker*, and he consoled himself by revisiting places they'd loved, including

the Grand Canyon. Aliaga — who trained by walking three hours a day in Berlin, Germany, where he lives — is already planning a fourth hike in 2024. Meanwhile, we're exhausted just thinking about all those back-and-forth transatlantic flights.

OREGON

If you're going to Bend, Oregon, keep an eye out for Big Obvious Boulder, aka "Bob," a rock with almost 6,000 Facebook fans. Bob is renowned for what you might call its "magnetic personality": It tends to attract careless or distracted motorists, whose cars somehow end up high-centered on top of it, *Central Oregon Daily*

News reported. The boulder sits at the entrance of a plaza at the corner of NE Third Street and Franklin Avenue, in case you want to drive over — carefully, please — and take a selfie, as scores of fans have. Kristin Morris, director of hearing care for My Hearing Centers, a business at the plaza, said that trucks seem to find Bob irresistible. "Trucks have hit it mostly and dragged the rock into the middle of the parking lot, and it's had to be replaced back into its position many times," Morris said. "People have actually driven on top of the rock and their cars get stuck." According to Morris, this happened six times in just the last month. The people in those

cars probably think "Obvious" is the wrong name for the boulder. Then again, Bob appears to be, literally, impossible to miss, at least for some drivers.

WASHINGTON

A strange-looking many-tentacled creature that washed up on a Whidbey Island beach has had scientists at odds about its identity, *KentReporter.com* reported. Ron Newberry of Admirals Cove found the sea creature on Ebey's Landing beach one morning at low tide and sent a photo to the *Whidbey News-Times*. "I didn't know for sure it was an octopus," Newberry wrote in an email. "It's pretty common to see large jellyfish washed up on shore." When he posted the photo on the Whidbey Camano Land Trust's social media pages, it attracted a lot of notice. An engineer from the Seattle Aquarium thought it looked like "a Dumbo octopus from the deep sea," while a University of Washington biology professor could not identify it and sent the photo to other biologists for their opinion. Soon scientists from across the country were weighing in, including researchers from the Monterey Bay Aquarium Research Institute, the National Oceanic and Atmospheric Administration and the Smithsonian Institution. After much fanfare, a consensus was reached, confirming that the curious creature was a *Haliphron atlanticus*, i.e., a seven-armed octopus. The name is actually a misnomer: Males actually do have an eighth arm, but it's kept "tucked up inside in a sac near its eye" and used for breeding, don't ask us how. Anyway, hats, or gloves, off to *Haliphron*: We generally expect octopuses to have eight appendages, but here in the good ol' USA, you have the right to bear as many arms as you want. ☀



Heard Around the West

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

BY TIFFANY MIDGE | ILLUSTRATION BY ARMANDO VEVE

HISTORIC CLIMATE VICTORY

We represented 16 young people in the first ever U.S. climate trial alongside our partners at Our Children's Trust and McGarvey Law, aiming to hold Montana's government accountable for worsening the climate crisis through a misguided devotion to all forms of fossil fuels.

During that trial, the youth plaintiffs bravely testified about how climate change has harmed their health, livelihoods, cultural practices, psychological well-being, and the state they call home.

World-renowned climate experts testified that Montana's promotion of fossil fuels and suppression of renewable energy have aggravated drought, fueled megafires, and depleted natural resources.

The state constitution guarantees Montanans the right to a clean and healthful environment, equal protection under the law, and more. Unfortunately, the state's laws and policies favoring fossil fuels infringed on those rights.

In August, the court issued a historic ruling in the plaintiffs' favor, recognizing that the right to a clean and healthful environment is meaningless without a livable climate.

Montana appealed this victory to the state supreme court, where we will continue to fiercely defend our clients' constitutional rights and protect the climate.

JOIN US AT [WESTERNLAW.ORG/GIVE](https://westernlaw.org/give)

We are a nonprofit organization that uses the power of the law to safeguard the public lands, wildlife, and communities of the western U.S. in the face of a changing climate.



**Western
Environmental
Law Center**



HCN

119 Grand Avenue
PO Box 1090
Paonia, CO 81428

U.S. \$5 | Canada \$6

#IAM THE WEST

JUSTINE NORTON-KERTSON (THEY/THEM)
**Eco-witch, spell book author, founder
and editor-in-chief of Android Press and
Solarpunk Magazine**
Eugene-Springfield, Oregon

Witchcraft is about nature worship, or at least, having a strong reverence for nature. I attempt to bring witchcraft back to the basic element of connection between people and the world around us. I use spell work to motivate myself to go out into the world and make things happen. It's putting your will and energy into a thought or idea and working to manifest it in some way, symbolically or magically.

Eco-witches and solar punks push the radical idea that nature, the environment, animals, other creatures and beings besides ourselves are important. We recognize the sentience in other things. Given the state of the world, we find any opportunity to use the tools of witchcraft to help fight climate change, because I feel like it's an all-hands-on-deck situation.

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

f @highcountrynews | #iamthewest | hcn.org