

High Country News

A MEGA-DAIRY COMES TO THE DESERT

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Extreme heat
vs. the grid

Seeing beyond the
Skagit River dams

A new era of
Indigenous-led TV

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Diablo Reservoir on the Skagit River from Highway 20 in Washington's North Cascades. Diablo Dam is one of three Skagit River hydroelectric dams facing new scrutiny during the federal relicensing process.

David Moskowitz / HCN

Know the West.

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EDITOR'S NOTE

Reality check

THE OTHER DAY I took a walk along the beach in the morning before the clouds lifted. A steady breeze and the moist coastal air kept things cool enough to warrant a jacket. The high that day reached a rather pleasant 69 degrees Fahrenheit. By afternoon, it was warm in the sun, cool in the shade and comfortable all around: 69 degrees is well within the temperature range at which a human animal can live and thrive. But 110 (the high in the coastal town of Quillayute, Washington, on June 28) is not; nor is 116 (the high in Portland, Oregon, on June 28); or 117 (Las Vegas, June 20); or 118 (Dallesport, Washington, June 28); or 119 (Phoenix, June 20); or 121 (Lytton, British Columbia, June 29); and especially not 125 (Needles, California, June 20); and forget about 130, one of the hottest temperatures ever recorded on Earth (Death Valley, July 11). During this spate of record-breaking temperatures in the West, hundreds of people died.

The heat, and the number of records it set, was unprecedented. Many of the record-breaking highs occurred in America's temperate rainforest, where historically summer temperatures have been comparatively cool. This is a reality check in a series of reality checks, putting the human species on alert that we appear to be pushing this planet beyond human habitability. Climate migration and the number of climate refugees are both on the rise, with the greatest hardships largely hitting those least responsible, including here in the West. But where is there to go if the heat reaches everywhere?

The 10 warmest years on record have all occurred in the last 15 years, nine of them within the last decade. And the heat waves of the future are projected to be hotter, more frequent and longer-lasting. According to a recent study in the journal *Nature Climate Change*, 37% of the heat-related deaths globally between 1991 and 2018 can be attributed to anthropogenic climate change. Like the temperatures themselves, this number, too, is sure to increase.

Most of us are implicated in the carbon-based economy, and many of us have at least some idea of what's needed to slow, if not reverse, this trend. There are ways of powering our homes and transporting ourselves and the goods we consume that can reduce carbon emissions and put us on a path to becoming a carbon-neutral society. Here in the West, we have the knowledge, the technology, the money — and, above all, the very strong, very urgent need to tack hard in this direction. At stake is nothing less than the livability of the places we love — for humans as well as other beings — and the viability of the ecosystems that sustain us. But do we have the political will to confront the crisis that is happening all around us? Our society will be judged by how we respond to this moment of reckoning.

Jennifer Sahn, editor-in-chief

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FEATURE

Sucked Dry

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As a Minnesota mega-dairy expands into the West, aquifer levels reach a dangerous low.

BY DEBBIE WEINGARTEN AND TONY DAVIS
PHOTOS BY ACKERMAN + GRUBER AND ROBERTO (BEAR) GUERRA / HCN

ON THE COVER

Cows at the Coronado Dairy's feedlot in the Kansas Settlement area near Sunizona in southeastern Arizona. The feedlot is among the farm properties recently acquired by the Minnesota-based mega-dairy Riverview LLP. **Roberto (Bear) Guerra / HCN**

Anastasia Rabin on her small farm in Elfrida, Arizona, where recent dust storms have left deposits of beach-like sand up to two feet deep.

Roberto (Bear) Guerra / HCN

Like many Apsáalooke, Birdie Real Bird was raised on the banks of the Little Bighorn River, which she and her family used to rely upon for all their water needs.

Brandon Yadegari Moreno / HCN



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A grassroots movement seeks to revive traditional Apsáalooke water sources

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BY RAJAH BOSE

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LETTERS

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

A HALLUCINOGENIC TOAD IN PERIL

I lived in prime Sonoran Desert Toad habitat from 1989-2019 and read “A hallucinogenic toad in peril” (July 2021) with interest, especially since I know people who occasionally harvested the toad’s hallucinogenic secretions. The habitat I refer to is a facility built on abandoned cotton fields in Pinal County, Arizona. Nightly watering of the grass combined with security lights that attracted insects created an artificial, but apparently very hospitable, toad habitat. The population went through wild fluctuations every few years, though. Sometimes the toads would be abundant to the point of inconvenience as they gathered near outside security lights to feast on insects, making getting through the doors a challenge. Other years we would remark on how few there were. I suspect the cyclical population changes were due to many factors other than human harvesting.

Bryan Burke
Bellingham, Washington

HOW MUCH LITHIUM DO WE NEED?

Thanks to Maya Kapoor for her excellent series on lithium mines (“When Indigenous religious freedom and public-lands management clash,” July 2021, and “The next mining boom?” March 2021). Cultural and environmental damage worldwide weigh heavily on us already. I, for one, can’t wait for a better alternative fuel.

Valerie McBride
Boulder, Colorado

UNCERTAIN WATER SUPPLY

I thought “Uncertain water supply” (June 2021) was a deeply engaging and illuminating piece of regional journalism. It is clear that a lot of effort was invested in the research and reporting of the article’s subject, and it is very much reflected in the writing.

It is a great example of the kind of investigative regional journalism that I most appreciate from *HCN*.

Eddy Torres
Mesquite, Nevada

HOPE FROM BIDEN’S 30X30 PLAN

Wufei Yu’s excellent reporting “A reality check on Biden’s ‘30 by 30’ conservation plan” (hcn.org, June 23, 2021) springs open the conversation for the nation to digest and design a better 30x30. I am inspired to study the report.

Elaine Jefferson
New York, New York

PUBLIC LANDS INUNDATED?

The claim that Colorado and other Western states are being loved to death is wildly overstated, except for the most-Instagrammed spots (“Public lands inundated,” June 2021). I backpacked 732 miles diagonally across Colorado from the southeast to northwest corners in the summer of 2020 and encountered no more than three hikers a day in every place except near the resort town of Breckenridge. A check of hiking groups on Facebook reveals recommendations that point to popular places like the Fourteeners, Rocky Mountain National Park, Crested Butte and Boulder. I think today’s concentrations of use are because few people these days know how to read a regional paper map or use a guidebook which would point them toward a bear’s buffet of splendid unknown areas.

India Wood
Boulder, Colorado

THE FIRE NEXT TIME

In the article “The Fire Next Time” (June 2021), I wish to point out that despite numerous large wildfires, global warming and the ongoing destruction of global rainforests, the Forest Service continues to promote the cutting down of live trees. These trees are harvested for the large egos that run the bureaucracy, so that they can maintain their authority.

To sound effective, the Forest Service proclaims that trees need to be thinned in case a wildfire happens by one summer. They explain that thinning is necessary in order to prevent or control wildfires. In reality, thinning is a polite word for the term logging, and it’s

used to encourage people to believe it is not so bad.

It needs to halt immediately. We definitely cannot continue forest thinning to sustain the bureaucracy at the expense of the environment. The Forest Service needs to wake up and plant young trees to encourage new growth, not deplete the remaining timber.

Harry Strong
Cottonwood, Arizona

ENCOURAGING WORDS

Thank you for your editor’s note “Keeping up with the changing West” (June 2021). As the editor of a regional weekly focused on agriculture, farming life and related politics in Southern and Western Norway, your words confirm to me what also our magazine *Bondevennen* (“Farmer’s Friend”) really is and should be all about: celebrating our lands, and safeguarding them for all living creatures, today and tomorrow. Here, too, the pace of change is accelerating, and any mention of “restraint” is quickly and nervously brushed off as negativity and a hindrance to “development.” Your words are an encouragement to keep on conveying this very message, all the same.

Bothild Å. Nordsletten
Norway

RENEWING, FOR NOW

I’m guessing I’m a bit more urban and left-leaning than Neil Snyder (Letters, June 2021, “Changes”), but I largely agree with him about *HCN*. Yet I’m sticking with you for now, renewing for just one year based on Jennifer Sahn’s first issue as editor-in-chief. She may not be a physicist, like *HCN*’s best in my memory, but thank God she’s not a preacher, like the worst. As long as *HCN* remembers that BLM means more than Black Lives Matter — say their names, but abbreviate such a worthy statement, really?? — but rather the Bureau of Land Management, full of its own controversies, *HCN* will not have lost its soul.

Jeff Winslow
Portland, Oregon

CORRECTIONS

We apologize for the mistakes in “Uncertain Water Supply” (June 2021). The correct name of the subdivision is Cadence at Gateway, not Gateway; there are three pools, not two, and currently no coffee shop or spa; the community center was wrongly identified; and other companies besides Lennar have built houses in the subdivision. Much of that information was found on Cadence’s website, and we thank the developer for contacting us to correct the mistakes. We regret the errors.



Sharayah Jimenez and her grandmother, Victoria Robles Orosco, stand in front of an addition to the home they share in Tucson's Southside.
Roberto (Bear) Guerra / HCN

WHAT WORKS

Casitas against displacement

In a gentrifying West, housing advocates turn to backyard dwellings to keep communities together.

BY JESSICA KUTZ

TODAY, SOME OF Tucson's downtown barrios are mere ghosts of their former selves. The longtime residents of these historic neighborhoods, primarily Mexican Americans as well as Chinese and African Americans, have been displaced twice in the last half-century.

The first time was in the 1960s, when hundreds of adobe homes were bulldozed in the name of

urban renewal. In their 2010 book *La Calle*, Tucson historian and author Lydia Otero described how the barrios were demolished for a slew of city-approved projects that catered to a growing white suburban population, including a multilevel parking garage, a convention center and a police station. Single-family homes with carports and front yards became the preferred style of desert living.

Before long, sprawl would overtake the urban landscape.

Now it's happening again, as moneyed newcomers flock to the remaining neighborhoods and gentrify them. Compounding the problem is the fact that Tucson, much like the rest of the country, is facing a housing crisis. Prices have risen by nearly 27% over the last year, due in part to low interest rates and a pandemic-inspired influx of transplants from other states. More than a third of the city's residents are "housing cost-burdened," spending more than 30% of their income on housing, according to research compiled by the University of Arizona MAP Dashboard project. The same trend is playing out across the West.

In order to increase the housing stock, policymakers are increasingly turning to accessory dwelling units, or ADUs — extra units on property typically zoned for single-family houses. ADUs can come in the form of cottages or casitas, or be attached to the existing house, like basement apartments. Though they're clearly not a solution to the crisis, housing advocates across the region see ADUs as a way to help prevent the displacement of communities by gentrification. They can provide an extra source of income for homeowners struggling to pay rising property taxes, as well as giving renters more affordable housing options.

TUCSON CITY OFFICIALS kicked off the rezoning process to allow for ADUs last November. The Arizona city is a relative newcomer to the growing trend: California and Oregon passed statewide laws in 2019 to encourage ADU construction in response to their own housing crises, having legalized the units many years before. Cities in Colorado, Utah,

New Mexico and Washington are trying to encourage ADU development by making them easier to build and permit.

But critics say this approach can backfire. In a series of public meetings held in May over Zoom, Tucson residents shared some common concerns. Many fear that ADUs could be converted into short-term rentals like Airbnbs, or that investors will simply purchase the properties in order to turn an even greater profit. Furthermore, ADUs are often too pricey for low-income homeowners to build. In Seattle, for example, in 2017, most ADU permits were acquired by already-wealthy homeowners, according to the Urban Land Institute. And while ADUs do provide more affordable options in high-priced cities, they are often still out of reach for low-income residents.

Housing advocates like Sharayah Jimenez believe the solution is to prioritize low-to-moderate-income residents (earning approximately \$51,000 for a family of four) in the rollout of ADU development. Jimenez is the founder and principal designer for the architecture firm CUADRO. As part of Tucson's ADU stakeholders' group, she is focused on making sure the benefits flow to the city's remaining historic barrios and to the Southside, the mainly working-class Latino neighborhoods where she grew up. "What I'm hoping to do is work with homeowners to teach them how to develop their lots themselves with these ADUs and add value to their homes, (as well as) get the funding and the loans they need to make the improvements to stay in their neighborhoods," she said.

In Denver, Colorado, an ADU pilot program could soon provide a blueprint for how to reach such residents. Run by the West Denver Renaissance Collaborative, which includes the city and county of Denver and the Denver Housing Authority, the initiative has spent the past year assisting low-to-moderate-income residents in rapidly gentrifying neighborhoods.

The program provides between \$50,000 to \$75,000 in cost savings to homeowners who build ADUs, along with technical assistance and pre-approved designs. In addition, the city is offering \$30,000 loans that do not have to be repaid if the owner agrees to rent the unit at an affordable rate for 25 years. “Building ADUs requires a fair amount of money that a lot of families don’t have upfront,” said Renee Martinez-Stone, the initiative’s director. For that reason, residents who are at risk of foreclosure or facing equally dire financial circumstances have the option to join a community land trust, a nonprofit that essentially holds onto the land, removing it from the private market. They can then use that equity to invest in financing the remaining cost of building an ADU.

Seattle is also looking for ways to remove financial barriers to ADU construction, said Nick Welch, a city planner. Plans to roll out a loan program targeting low-income homeowners were put on hold

during the pandemic, but, he said, “there are ongoing conversations in the city about how we might better support BIPOC homeowners to do those types of projects.”

For residents like Ruby Holland, a housing activist in Seattle, ADUs feel like one of the last chances to prevent further displacement in the city’s Central District. Holland grew up in the district, home to the city’s last stronghold of Black residents. Today, she lives in the house her parents bought decades ago, in the days of redlining. Back then, she said, the neighborhood had a majority Black population. Now, however, Black people make up just 20% of residents. So, three years ago, Holland started a neighborhood group, Keep Your Habitat, whose mission is to teach Central District residents how to hold onto their properties by transforming parts of their current homes into ADUs — converting basements into apartments, say, or building backyard cottages, even renting their yards for parking. “I

feel that whatever investors could do with our property in terms of ADUs, we can do ourselves, (so we can) keep this in our family and have intergenerational wealth,” she said.

Holland’s efforts took on new urgency in 2019, when the city passed the Mandatory Housing Affordability legislation. Though her house fell outside its boundaries, many of her neighbors were affected by the legislation, which allowed single-family homes in parts of the city to be redeveloped into multifamily units. She calls it “redlining in reverse,” because ever since it passed, her neighbors have faced increasing pressure to sell to developers, even as their property taxes have increased. Holland fears that this type of policy is deliberately designed to force the city’s last Black residents out of Seattle. But Stephanie Velasco, a communications manager with the city, defends the MHA program as a tool to increase affordable housing, “not (one) that is actively displacing households.”

BACK IN TUCSON, Jimenez hopes to incorporate ADUs into the community before it’s too late. It’s already happening informally in the Southside, where a majority of work has been done without permits. “We have no data on this, but we think that there’s a very large number of these unpermitted units already in existence. So part of our work is to make sure that those homeowners who have already done this have a clear path as to how to get their units (permitted),” she explained.

Rather than penalize the new additions, she hopes the city can find ways to promote them by educating current homeowners about their options and empowering families to hold onto their lots in the face of rising property taxes, much as Holland is doing in Seattle. Otherwise, she explained, homeowners in low-income communities of color often don’t realize the value of their land. “They sell too early, and they get ripped off, and then somebody comes in and does what they probably could have done themselves,” she said.

She applauds how many of the already-built units have been created in what she calls a “barn-raising fashion,” in which family and neighbors help people build their units to keep costs low. Often the new ADUs are used to house relatives. “People are already responding to the housing crisis on their own,” she said. “The city is just now catching up to that.” ✨

“They sell too early, and they get ripped off, and then somebody comes in and does what they probably could have done themselves.”

THE LATEST

Residential school review

Backstory

The residential boarding schools of the early 19th and mid-20th century left a brutal legacy: Native children were taken from homes, abused, forced to assimilate and used as leverage against tribes that resisted U.S. expansion (“The U.S. stole generations of Indigenous children to open the West,” 10/14/19). Their descendants have long demanded transparency about why so many died at government- and church-run schools like the Carlisle Indian Industrial School, and why their remains were not returned to their tribes.

Followup

In June, Interior Secretary Deb Haaland (Laguna Pueblo) announced plans for the Federal Indian Boarding School Initiative, a first-of-its-kind “comprehensive review” of the U.S. government’s history of separating Native children from their families and forcing them into boarding schools. It will investigate Interior’s records, identify known and likely burial sites, and present a final report in April 2022. The discovery of 215 unmarked graves at a former school in Canada prompted the department to examine the United States’ own genocidal past. —Anna V. Smith

A quest for oil sparks a tribal sovereignty fight in Alaska

A company with a history of environmental violations is conducting exploratory drilling in the Yukon Flats.

BY MAX GRAHAM

EVERY SPRING, the shallow ponds and spruce forests of the Yukon Flats, in Interior Alaska, stir with the flapping of scoters and scaups, the laugh-like yelps of white-fronted geese and the high-pitched whistle of wigeons. Up to 2 million birds arrive each year to nest in some of North America's most productive waterfowl breeding grounds. Along with salmon, moose and other wildlife, they provide food for the human residents of the region, where a half-gallon of milk can cost \$7.99.

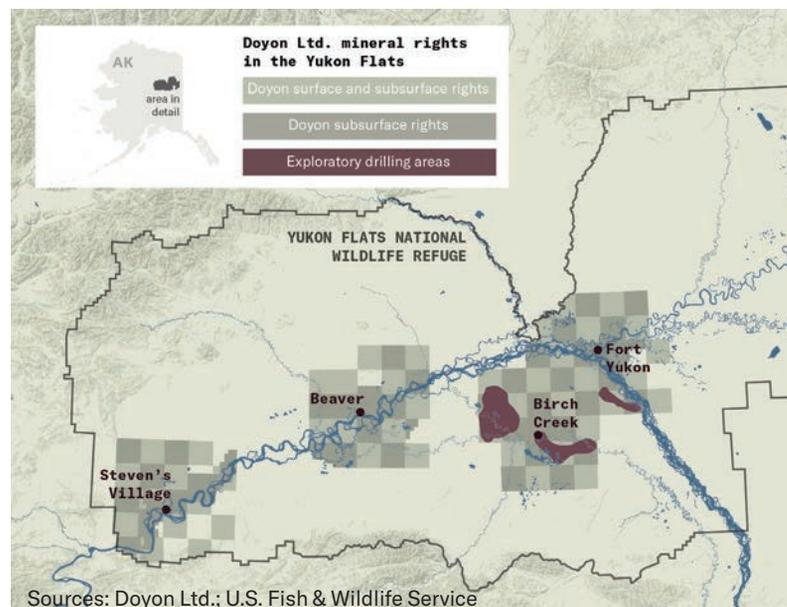
"It's not only our subsistence," said Rochelle Adams, a member of the Gwichyaa Zhee Gwich'in Tribal Government of Fort Yukon, who is from the villages of Fort Yukon and Beaver. "It's our connection to the lands and waters. It's a part of our identity, because our people have lived here since our creation."

This summer, drilling rigs will join the wildlife in the Yukon Flats, as Hilcorp Alaska, a private company with a reputation for regulatory violations, explores for oil and gas. Hilcorp is operating under a 2019 agreement with Doyon Ltd., an Alaska Native regional corporation, which owns 1.6 million acres of mineral rights bordering the Yukon Flats National Wildlife Refuge. The companies' plans have raised concerns among local tribes and exposed the complicated dynamics between for-profit Alaska Native corporations and sovereign

tribal governments.

Soon after Doyon announced its deal with Hilcorp, the Gwichyaa Zhee Gwich'in Tribal Government passed a resolution opposing oil and gas development in the Yukon Flats, citing worries about environmental degradation, threats to traditional ways of life and infringements on tribal sovereignty. Last fall, the board of the Tanana Chiefs Conference, which represents 42 tribal governments in Alaska's Interior, also opposed the project. "What we get to consume here is the most unadulterated food on the planet," said Dacho Alexander, a Gwichyaa Zhee Gwich'in Tribal Government council member and former chief. "Our water is clean. Our environment is clean. There's just simply no dollar amount that you could put on those places."

To Alexander, Doyon's push to explore for fossil fuels illustrates a "major disconnect" between Alaska Native regional corporations and tribal governments. Unlike federally recognized tribes, which are sovereign nations, Alaska Native corporations are for-profit companies owned by Alaska Native shareholders, who receive annual dividends of a few hundred to a few thousand dollars. They were created under the 1971 federal Alaska Native Claims Settlement Act to give tribal members economic autonomy, primarily through ownership of natural resources. Today, Doyon



is the largest private landowner in Alaska, with more than 20,000 shareholders.

"A lot of people seem to give Alaska Native corporations a pass because they are titled Alaska Native corporations," Alexander said. "There is this view that what they are doing is in the best interest of the people." But even when individual shareholders do not want to develop natural resources, Alexander said, they're represented by board members whose duty is to the corporation's bottom line. Doyon did not notify its shareholders, according to Alexander and Adams, both shareholders, and did not consult all the tribal governments in the Yukon Flats before announcing its deal with Hilcorp in December 2019. (Doyon refused to comment for this story.)

Now, Doyon and Hilcorp are proceeding to drill 15 stratigraphic boreholes — shallow test wells for soil analysis — near the Gwich'in villages of Birch Creek and Fort Yukon by the end of summer. Doyon has promised that oil and gas development will bring economic opportunity to the region. The company entered into a "cooperation agreement" with Tihtee't Aii, the Birch Creek village corporation, but neither entity has released specifics about it or the projected economic benefits. (Tihtee't Aii did not respond to requests for comment, and the

Birch Creek Tribal Council declined to comment.)

Doyon's press releases assert that Hilcorp's drilling this summer will not cause environmental damage. Yet opponents worry that exploration could lead to long-term development, and they have concerns about Hilcorp's environmental record: The company, which bought all of BP's fossil fuel assets and interests in Alaska in 2020 and is now one of the state's biggest oil and gas producers, has been responsible for numerous natural gas leaks in Alaska's Cook Inlet. In a 2015 letter to Hilcorp, the chair of the Alaska Oil and Gas Conservation Commission, which regulates fossil fuel production in the state, wrote that regulatory noncompliance is "endemic" to the company's approach. Since then, Hilcorp has accrued three times as many citations as each of Alaska's biggest oil producers during that time, ConocoPhillips and BP, according to state documents *High Country News* obtained via a records request.

As Hilcorp begins drilling in the Yukon Flats, Adams, who started a Facebook group to raise awareness of the project, recalled a 2017 leak from a Hilcorp gas pipeline in Cook Inlet that lasted for about four months. "I can't even imagine what can happen to the Yukon River," which bisects the Flats, she said. "I don't want to imagine." ❁

A grassroots movement seeks to revive traditional Apsáalooke water sources

A polluted river has forced many families to rely on wells, which come with their own problems.

BY SURYA MILNER

FILM STILLS BY BRANDON YADEGARI MORENO

EMERY THREE IRONS, a Crow tribal member, stood in tall, lush grass one day in late May, contemplating a cream-colored house. After 20 minutes of reflection, he approached two 5-year-olds standing on the front steps, eating popsicles and playing with a puppy. “Is your grandpa awake?” he asked them, his soft voice barely rising above the thrum of the nearby interstate. “Go ask him, Ivan,” the girl said to the boy. “No, you go ask him,” the boy responded, before they both disappeared into the house.

Three Irons followed them into the living room to meet with Everette Walks, an Apsáalooke grandfather. Walks’ house is on the Apsáalooke, or Crow, Nation in Montana, not far from the

Wyoming border. While the kids played hide-and-seek, Three Irons peered underneath the kitchen sink and surveyed a set of exposed pipes, speaking with Walks in the Apsáalooke language about connecting one of the property’s two wells to a working pump. For three months, Walks, who works nights at the Rosebud Mine at Colstrip, his wife, Kim, and their grandchildren had lived in the house without running water. When Kim broke her arm a few months ago, she had to have surgery. “Not having water makes it harder,” Everette said.

The visit was part of a new project for Three Irons, a GIS analyst for the Crow Water Quality Project, a group of scientists from Little Big Horn College and Montana State



Members of the Crow Tribe are working to study the Little Bighorn River — once a primary source of water for Apsáalooke communities — and to protect it from contamination.

University working to improve access to clean water on the Crow Nation. Early this summer, he began conducting home assessments in rural areas, troubleshooting ways to install potable running water in the many houses that lack plumbing.

Until the 1960s, the Little Bighorn River was the main source of water for the Crow Nation. But pollution from upstream farms contaminated the river, forcing many families to switch to well water. The Little Bighorn still provides municipal water to Crow Agency, the Crow Nation's government headquarters, but the tribe's water rights are junior to those of some non-Native farmers in the area. During the growing season, much of the river is diverted for

agriculture, some through a federal system of canals that waters local alfalfa, wheat and sugar beet fields. Extensive withdrawals have left the river ankle-deep in the summer, causing dangerously high levels of nutrients along with periodic town-wide water restrictions.

And area wells aren't much better. In 2018, local scientists and tribal members found that 40% of them are contaminated with coliform bacteria; many also contain nitrate, uranium and arsenic at levels that exceed EPA safety standards, increasing the risk of chronic diseases like cancer and diabetes. Researchers think the most likely culprit is a combination of leaking septic tanks and agricultural pollution. They also say the impacts of climate change — erratic spring flooding, lower water levels and longer summer droughts — could exacerbate the problems.

Three Irons had just graduated from college with a degree in geospatial and environmental analysis in 2015 when leaders of the Crow Water Quality Project approached him and asked him to undertake a graduate project studying well water contamination and spring water quality. He agreed immediately; he grew up along the banks of the Little Bighorn River and wanted to use his education to help his community. Now, Three Irons and his colleagues are combining scientific, cultural and community-centered approaches to revive the traditional water sources of the Crow Tribe. "Water is life," he said, quoting a popular

slogan. "They're not lying, even though it's cheesy and seems like a common saying."

TWELVE MILES DOWN the interstate from the Walks home, Peggy Wellknown Buffalo sat in the wood-paneled living room of a building, situated between the river and an irrigation ditch, that houses the Center Pole, a grassroots nonprofit organization she founded to provide food and water to the community. As we spoke, her grandchildren streamed in and out, moving boxes of donated clothing and cooking up burgers for lunch.

During the pandemic, she recalled, she asked community members what everyday items they needed most. "I couldn't believe how many people called for water," she said. About 150 to 200 people were worried about their plumbing, their wells running dry or pumps breaking. Wellknown Buffalo has had her own water tested at the Center Pole three times over the past decade; the results showed that it's unsafe to drink, high in *E. coli* and metals. She drives 19 miles a couple times a week to buy 5-gallon jugs of clean water for \$3.99 each.

Wellknown Buffalo's grandmother and great-aunt taught her to see the river as a place of refuge, a lesson that she still carries. The river's presence meant she never needed to feel helpless. "It will provide for you," she said. As she spoke, her childhood friend Birdie Real Bird nodded in agreement. *(continued on page 44)*

Living Water

Accompanying this story is a short film, *Living Water*, about the Apsáalooke community's efforts to protect and revitalize the Little Bighorn River. This film is the second in a series of documentary projects directed by Brandon Yadegari Moreno as part of HCN's Climate Justice Fellowship, with support from the Society of Environmental Journalists.

To view the film, visit hcn.org/living-water or, using your smartphone's camera app, scan the code below:



Emery Three Irons at his family home along the Little Bighorn River.



The Gorge Dam, the lowest of the three large hydroelectric dams on the Skagit River in Washington, in an area known as the Valley of the Spirits.



THE SKAGIT RIVER RECONSIDERED

The Skagit River runs about 150 miles through what is now British Columbia into northwest Washington, from the Cascade Mountains to Puget Sound. Along the way, three major hydroelectric dams owned by the city of Seattle — Ross Dam, Diablo Dam and the Gorge Dam — block the river's flow. Now, as part of a once-every-few-decades federal relicensing process, the ecological alterations caused by those dams are being re-examined by scientists and regulators. The license renewal is exposing other changes, too, including how Indigenous nations are increasingly asserting their sovereignty and rights. Looked at from one angle, this regulatory process is simply a bureaucratic hoop Seattle must jump through to keep using the Skagit River to generate power. From another, however, it's a chance to reconsider the value of the river itself. The relicensing process has triggered many different conversations on the Skagit's future; the following stories focus on a few of them.

PHOTOS BY DAVID MOSKOWITZ / HCN



Reassessing the dams

Seattle's Skagit River dams may be a death sentence for chinook salmon — unless federal regulators act.

BY LESTER BLACK

DEVIN SMITH WASN'T IMPRESSED as he looked out across the stagnant water of Barnaby Slough, a pond near the edge of the Skagit River in northern Washington. “Steelhead like fast-moving water,” Smith said, a steady May rain pelting his glasses. The slough, however, was more like “a big bathtub.” Smith is the habitat restoration director for the Skagit River System Cooperative, a natural resources consortium of the Swinomish Indian Tribal Community and the Sauk-Suiattle Indian Tribe.

Barnaby hasn't always been such a bad place for young fish. Over a century ago, this valley of towering cedars and moss-drenched maples was one of the most productive salmon habitats in the entire Pacific Northwest. Back then, the Skagit River meandered across the valley floor in a maze of waterways, which exist today as glades

etched into the forest, and Barnaby Slough was the river's mainstem. The complex network of side channels this produced protected young salmon from heat and predators. But by the 1940s, the Skagit River had straightened and become separated from Barnaby, cutting off hundreds of acres of salmon habitat. Eventually, Washington state added small barriers to turn the slough into a fish-rearing pond, further isolating it. Today, the river remains detached from the surrounding fish habitat, and scientists are wondering why.

Seattle's three Skagit River dams, approximately 25 miles upriver from Barnaby, are a likely culprit. Commissioned between 1924 and 1952, they generate roughly 20% of Seattle's power. But they also limit the river's seasonal flooding and starve it of the sediment and fallen trees that

“We had salmon then. We don’t now.”



would naturally raise its water level and help salmon access side channels. Now, researchers want to know: Could the Skagit and Barnaby reconnect if the sediment currently locked behind the dams was released into the river?

That question could soon be answered. Seattle launched over \$20 million worth of studies this summer as part of the federal process to renew the dams’ licenses, which expire in 2025. These studies will investigate how the dams are hurting the ecosystem, including protected salmon populations, which have plummeted in recent decades. They’ll also help determine what the city must do to mitigate the problems. As Seattle applies for a new license that could last as long as 50 years, the latest science is showing that the dams may not be compatible with a healthy river.

Federal scientists are already convinced

that Seattle’s dams are harming local salmon and orca populations. Two of the river’s salmon species, Puget Sound chinook and Puget Sound steelhead, and the river’s bull trout are listed as threatened under the Endangered Species Act, while a third salmon species is a “species of concern.” The local killer whale population, which almost exclusively eats chinook salmon, is sliding toward extinction, with only 74 individuals left. While other factors are also to blame — mining operations, highway construction and farming have all damaged the river’s health — the National Marine Fisheries Service wrote in October 2020 that Seattle’s current dam operations are “not adequate to support survival and recovery” of the protected species.

Seattle’s early decisions in the relicensing process generated widespread condemnation

Barnaby Slough was once the Skagit River’s mainstem, but today the slough and its surrounding salmon habitat are rarely connected to the river. The dams’ obstruction of sediment and logs could be to blame (*facing*). Upper Skagit Indian Tribe scientists and others have found evidence of salmon upstream of this section of the river below the Gorge Dam. Seattle City Light, however, claims that it is a natural barrier to spawning fish (*above*).

from state, federal and tribal governments. Seattle City Light, the city department that manages the dams, spent the last two years refusing dozens of study requests from regulatory agencies on topics such as how the dams impact the river’s estuary, side-channel salmon habitat, fish passage and key water-quality standards. This spring, however, the utility changed course, and in June it agreed

to many studies it had earlier rejected, although it continues to deny a request from the Upper Skagit Indian Tribe to look at removing the Gorge Dam, the city's lowest and oldest dam on the Skagit. (See companion story opposite.)

Scientists now are working across the entire watershed to understand the dams' impacts through dozens of studies, from installing new thermometers that will measure water temperature fluctuations below the dams to surveying how often trout in the city's reservoirs are killed by the dams' turbines. Researchers will also attempt to quantify how much sediment the city's three reservoirs hold. That, combined with a new pilot program to release sediment into the river, should help them figure out how to reconnect the side-channel habitat at Barnaby Slough — and perhaps bring salmon back to the area.

ONE OF THE MOST CONTENTIOUS questions facing Seattle's dams is whether the concrete barriers prevent salmon from reaching the Skagit's glaciated headwaters in North Cascades National Park. Seattle City Light has long maintained that a steep section of riverbed littered with cabin-sized boulders two miles below the Gorge Dam — and not the dam itself — thwarts spawning salmon. Federal agencies, however, have said the city hasn't identified any rocks that would actually qualify as a barrier to the fish.

The Upper Skagit Indian Tribe's own history confirms that fish could spawn above this section. The tribe wrote in an October 2020 FERC filing that its scientists had documented the presence of salmon upriver of the rocks the city claims block the fish. Two months later, Seattle City Light dismissed the tribe's evidence, writing that it was "inappropriate to engage in conjecture" about fish passage. But as recently as



Lorraine Loomis, the fisheries manager for the Swinomish Indian Tribal Community (left).

Seattle City Light produces about one-fifth of Seattle's electricity. The Skagit River dams are a critical part of the utility's power infrastructure (below).

we have new tools, and we have agreed to model the optimal flows for anadromous fish passage," Townsend said. "If it shows that we need to do fish passage over one or more of the dams, we will do that."

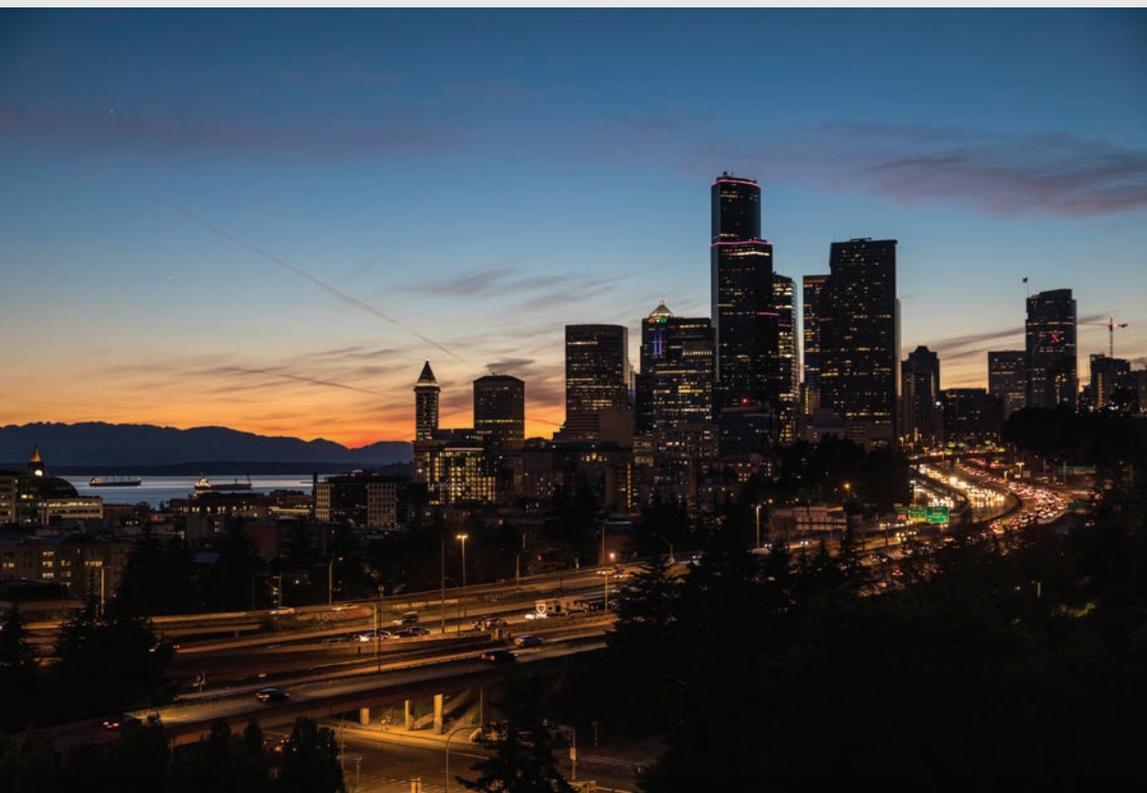
Building fish passages would likely cost millions of dollars. In 1996, during the relicensing of the Condit Dam on the White Salmon River in southern Washington, FERC required the dam's owner, PacificCorp, to install fish passage technology. But rather than pay for the expensive improvements, PacificCorp removed the dam in 2011.

Regardless of what FERC ultimately decides for the Skagit, the science on the risks the river faces — and the regulatory agency decisions driven by that understanding — has changed since the current license was issued in 1995. During that relicensing process, the Washington Department of Ecology voluntarily waived its right to analyze how the dams affect the river's water quality, and the Fisheries Service didn't even request studying fish passage at the city's dams.

Lorraine Loomis, the fisheries manager for the Swinomish Indian Tribal Community, said the decline of the river's salmon since 1995 is painfully obvious. "We had salmon then. We don't now," she said as she sat at an old picnic table on her tribe's reservation near the mouth of the Skagit River, the smell of saltwater hanging in the air. The river's nearby estuary is a grassy maze of tidal wetlands that protect young salmon from predators, just like the woody side channels 70 miles upriver at Barnaby Slough.

Loomis compared these environments to hotels: They give salmon a place to stay and grow stronger before they swim to the sea. But now, "there's not enough hotels along the river anymore," she said, leaning forward, her hands on the picnic table's rough boards. "So rather than stay at some place to grow a little, they keep on going down the river and then go out to sea, and they can't survive."

The Swinomish are fighting for additional research — studying how sediment impacts the estuary habitat, for example — because the shrinking salmon stocks are threatening both their treaty-protected fishing rights and their very way of life, Loomis said. "We have to make sure we do everything possible to recover the salmon." ❁





Restoring the sacred

The Upper Skagit Indian Tribe is pushing to protect its way of life, calling on Seattle to remove the Gorge Dam.

BY RICO MOORE

RAINDROPS FELL through gusts of fresh April air as clouds and mist draped the ridges above the Skagit River near Hamilton, Washington, a few dozen miles upriver from Puget Sound. Lifelong fisherman Scott Schuyler, an Upper Skagit Tribal elder and a policy representative for the tribe, was dressed for the weather in green rubber boots beneath an orange and yellow rain slicker. His 20-year-old daughter, Janelle Schuyler, in similar gear, hopped on board her father's boat as he shoved off from shore in search of salmon.

"We hope to have a good day out here on the river," Scott Schuyler said. He wanted not only to catch some fish, but also to use the trip as a learning opportunity for his daughter. "One of the things I like to instill in our young people, and my daughter in particular, is make a difference, effect change, while you can."

Scott and Janelle Schuyler haul in chinook salmon on the Skagit River. Whenever tribal members fish on the river, a tribal law enforcement officer stands guard at the boat launch to ensure their safety; hate crimes and anti-Indigenous violence have been regular occurrences over the years.

Scott Schuyler's family left their Skagit Valley homeland before he was born, in search of economic opportunity. The state of Washington had said it was illegal for them to fish in the Skagit. The tribe's treaty-protected fishing rights had yet to be adjudicated, and state law forbade the practice.

Following the "Fish Wars" of the early 1970s, when Indigenous activists successfully fought for their fishing rights, the 1974 federal Boldt Decision affirmed the tribes' treaty rights to 50% of the harvest in their "usual and accustomed



grounds.” Schuyler’s family returned to the valley, and he reconnected with his culture and became a fisherman. “I knew immediately that this is who we’re supposed to be, who I am, and who I will always be,” Schuyler said.

As he explored his ancestral homeland, Schuyler visited the upper Skagit River Valley, where he encountered the Gorge Dam. When the city of Seattle decided to dam the Skagit River in the early 1900s, it chose a sacred area known as “The Valley of the Spirits,” without consulting the Upper Skagit, who at the time were fighting for their survival. “You look throughout the world’s cultures,” Schuyler said, “when they have their individual stories in their culture of how life began, this is it for us. I can’t explain the emotions of seeing this historic wrong, and the hurt.”

Now, thanks to the federal dam license renewal process, the Upper Skagit have an opportunity to push Seattle City Light to right that wrong by taking down the Gorge Dam. The Upper Skagit Indian Tribe is asking Seattle to conduct an official removal assessment for the

dam, which has dewatered parts of a three-mile stretch in the Valley of the Spirits. Schuyler is leading the tribe’s effort. “There’s over 100 years of the river dewatered, that five generations of Upper Skagit had to endure,” Schuyler said. “We don’t see the river flowing. There’s an eerie quiet that’s unnatural to us. You don’t have the sounds of the river singing.”

The Upper Skagit believe the declines among the river’s once-abundant fish — the bull trout, chinook salmon and steelhead that once thrived here — are primarily due to the Gorge Dam, which blocks fish from reaching miles of historic salmon habitat upstream and prevents the downstream passage of wood, gravel and sediment that are essential for the fish. The dam has also inundated a culturally significant area. “If you do this assessment, and if you remove one of these dams, well, you immediately take away all these harms for at least a portion of the watershed,” Schuyler said.

The Upper Skagit share federally reserved treaty rights to co-manage the Skagit River with the Swinomish Tribe, the Sauk-Suiattle Tribe

“Dams just aren’t good for salmon. ... The time is now in order to keep salmon for future generations.”

The numerous braided channels of the Skagit River estuary, created by sediment washed down the river, are vital habitat for juvenile salmon.

and the state of Washington. The tribes must be consulted and their issues and interests taken into consideration as part of the relicensing process. But their consent is not required, nor can they insist that a study be completed. For the dam removal assessment to happen, Seattle City Light must grant the Upper Skagit's request — which it has denied, even though the city has championed tribal rights in other contexts — or FERC itself could mandate the study. Failing that, the Upper Skagit can file suit in federal district court to attempt to have the assessment carried out.

The Sauk-Suiattle Tribe did just that, filing a lawsuit on June 30 against Seattle City Light, arguing that the Gorge Dam blocks the passage of fish and therefore should not be maintained in its present condition unless a means for fish passage can be provided.

The Swinomish Tribe has not issued an official position on whether it wants the Gorge Dam taken down. "The Swinomish Tribe has a dream of a free-flowing Skagit River," Swinomish Tribal Chairman Steve Edwards said. But he added that the benefits of removing the Gorge Dam are unclear. "Our focus and priority are ensuring that the best, most current science guides future policy decisions for the Skagit River's management."

"Dams just aren't good for salmon. If we can find another way to supply electricity to folks other than dams, I'm all for it," said Jeremy J.J. Wilbur, a lifelong salmon fisherman and a Swinomish Senate member, speaking for himself and not on behalf of the tribe. "The time is now in order to keep salmon for future generations," he added.

BACK ON THE SCHUYLERS' BOAT, the rain continued to fall as Scott Schuyler cast his fishing net into the water. "We'll just pray for some fish," he said.

Janelle has taken action of her own on behalf of the Skagit's salmon, gathering over 45,000 signatures for an online petition she started in 2019. She has also written to Seattle Mayor Jenny Durkan, asking her to consider removing the Gorge Dam. "I want you to know that carrying this knowledge of what the city has done here brings me great pain and sorrow every day with my understanding of what has been inflicted on the Upper Skagit people and our salmon," she wrote. The mayor never responded to her, or, for that matter, to *High Country News* when asked for comment regarding the denial of the request for a dam removal assessment.

"They're never going to understand," Janelle said of Seattle City Light. "They don't have years and years of lineage tied to this land, salmon,



Scott Schuyler of the Upper Skagit Indian Tribe cooks some of the salmon he just caught at the tribal headquarters. Schuyler learned the ironwood skewer barbecue technique from other fish cooks, including master fish cook Claude Wilbur from the Swinomish Tribe, grandfather of Jeremy J.J. Wilbur. Schuyler hopes to one day "pass the torch" to younger tribal members (above).

The Swinomish Canoe Family performs songs along the banks of the Skagit River to honor the water. They spoke on the importance of salmon in preserving their cultural identity and how this directly impacts the health and well-being of their community (below).



and the water. It makes us who we are as people."

On the boat, she watched her father with a subtle smile, then turned to look at the net, where her father's gaze was fixed. A loud splash erupted in the mesh, and the silver flash of a big salmon's tail arched and pounded the river's surface, shooting droplets of water into the rain. "That's unexpected!" Scott Schuyler exclaimed with a grin.

After hauling in the fish, Janelle said: "I know that the dam is coming down in my lifetime. It's no biggie. I had an epiphany last time I was out on the water with my father, fishing. I was just thinking about the ceremony that we're gonna have when the dam is removed, and the relief. It's going to be great.

"I'm only 20. They're gonna have to deal with me for a long time," she added, referring to city officials.

"Never, never underestimate the resolve of this tribe," Scott Schuyler said. "We've been here for 10,000 years. We're gonna be here after these dams are long gone, and we certainly are going to continue to push them to do the right thing." ✨

Climate change wrecks havoc on the grid

Heat and drought combined are especially deleterious to the power system.

BY JONATHAN THOMPSON

IN LATE JUNE, A BLISTERING HEAT WAVE settled over the Pacific Northwest, shattering high-temperature records from California to Canada. Hundreds of outdoor laborers or those who lacked air conditioning were hospitalized for heat-related ailments, and dozens died. Portland's transit operator suspended rail service because of heat-damaged cables, while highways in Washington were closed due to buckling asphalt.

But the heat's biggest — and perhaps most consequential — infrastructure victim was the vast electricity grid that powers nearly every aspect of modern life, including potentially life-saving air conditioning. Extreme weather exacerbated by climate change can mess with the grid in any number of ways: Cold can freeze gas lines, while hurricanes topple transmission towers. But heat, particularly when combined with hydro-power-depleting drought, has an especially deleterious effect, wreaking havoc on the power system just when the warmer climes need it most.

Meanwhile, power plants — the fossil-fueled “heart” of the grid — make climate change worse and the planet even warmer, creating a feedback loop that resembles a gigantic electrical monster swallowing its own tail.

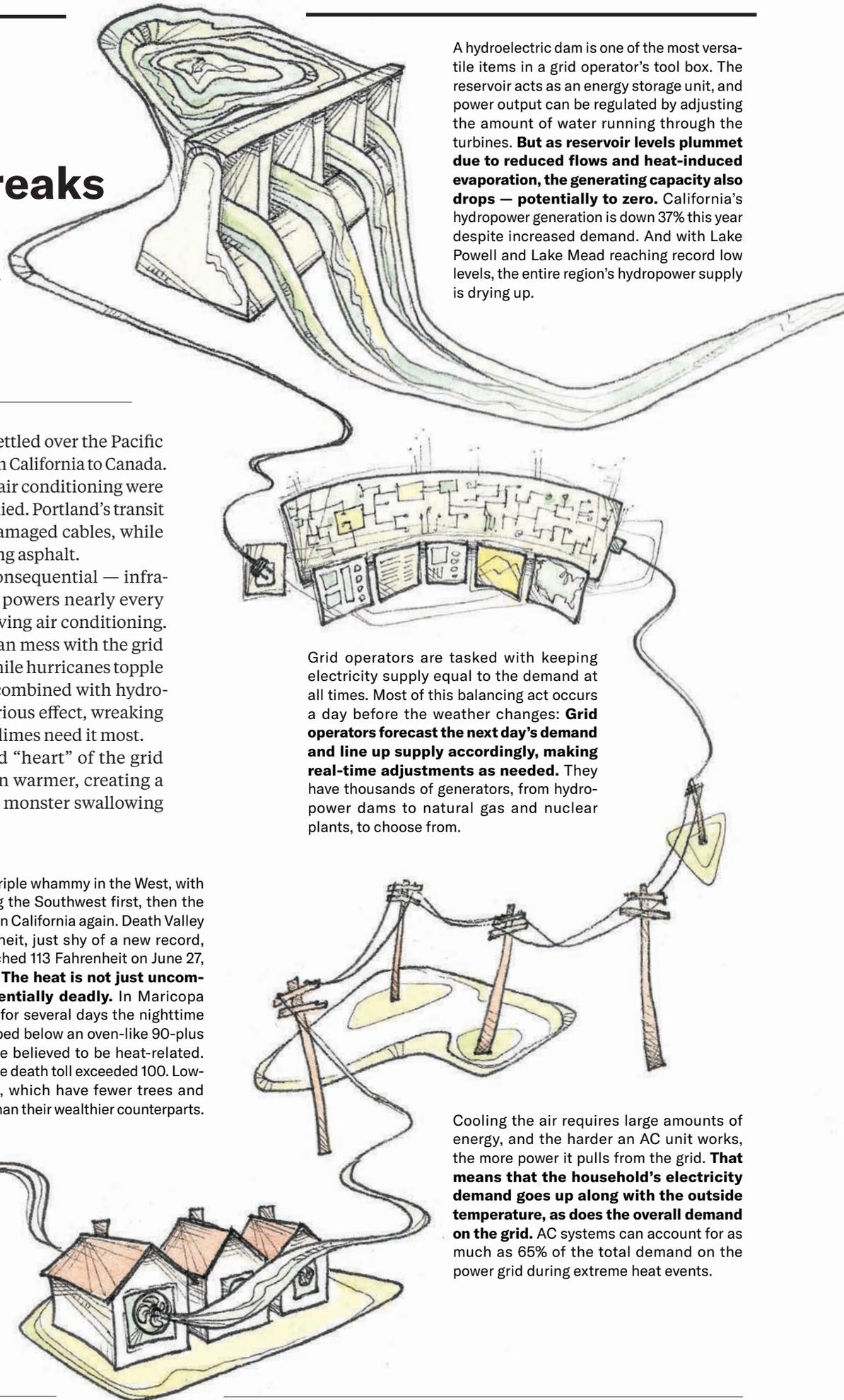
June scored a hot-time triple whammy in the West, with extreme heat blanketing the Southwest first, then the Northwest, then Southern California again. Death Valley hit 129 degrees Fahrenheit, just shy of a new record, and Salem, Oregon, reached 113 Fahrenheit on June 27, melting the old record. **The heat is not just uncomfortable; it's also potentially deadly.** In Maricopa County, Arizona, where for several days the nighttime temperature never dropped below an oven-like 90-plus degrees, 53 deaths were believed to be heat-related. Meanwhile, in Oregon, the death toll exceeded 100. Low-income neighborhoods, which have fewer trees and parks, tend to be hotter than their wealthier counterparts.

As the temperature shot up, thermostats triggered millions of air-conditioning units — in households able to afford them — pulling the hot air out of homes, businesses and institutions, only to blow it outside. **All of that extra hot air actually exacerbates the urban heat island effect:** It raises the ambient temperature, thereby increasing the need for air conditioning and creating a vicious cycle within the greater feedback loop.

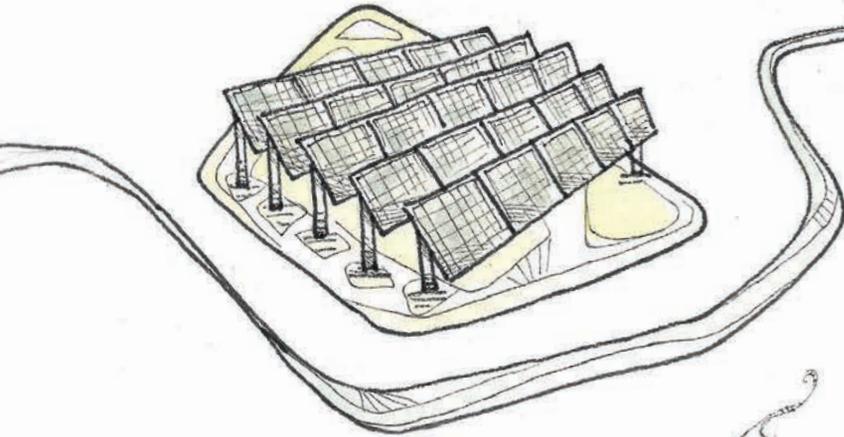
A hydroelectric dam is one of the most versatile items in a grid operator's tool box. The reservoir acts as an energy storage unit, and power output can be regulated by adjusting the amount of water running through the turbines. **But as reservoir levels plummet due to reduced flows and heat-induced evaporation, the generating capacity also drops — potentially to zero.** California's hydropower generation is down 37% this year despite increased demand. And with Lake Powell and Lake Mead reaching record low levels, the entire region's hydropower supply is drying up.

Grid operators are tasked with keeping electricity supply equal to the demand at all times. Most of this balancing act occurs a day before the weather changes: **Grid operators forecast the next day's demand and line up supply accordingly, making real-time adjustments as needed.** They have thousands of generators, from hydro-power dams to natural gas and nuclear plants, to choose from.

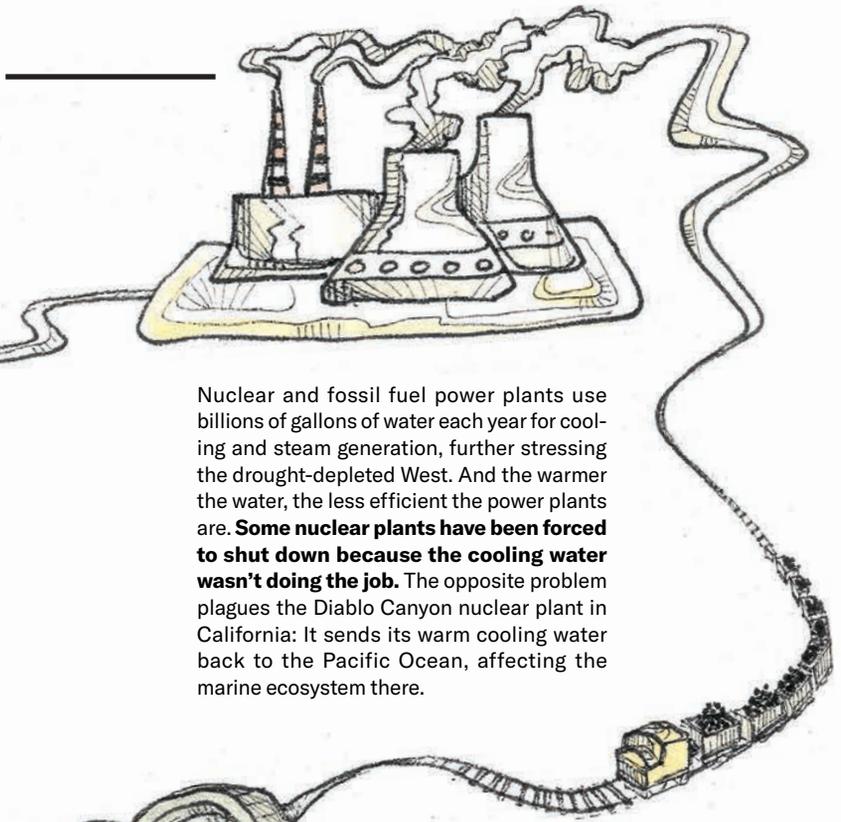
Cooling the air requires large amounts of energy, and the harder an AC unit works, the more power it pulls from the grid. **That means that the household's electricity demand goes up along with the outside temperature, as does the overall demand on the grid.** AC systems can account for as much as 65% of the total demand on the power grid during extreme heat events.



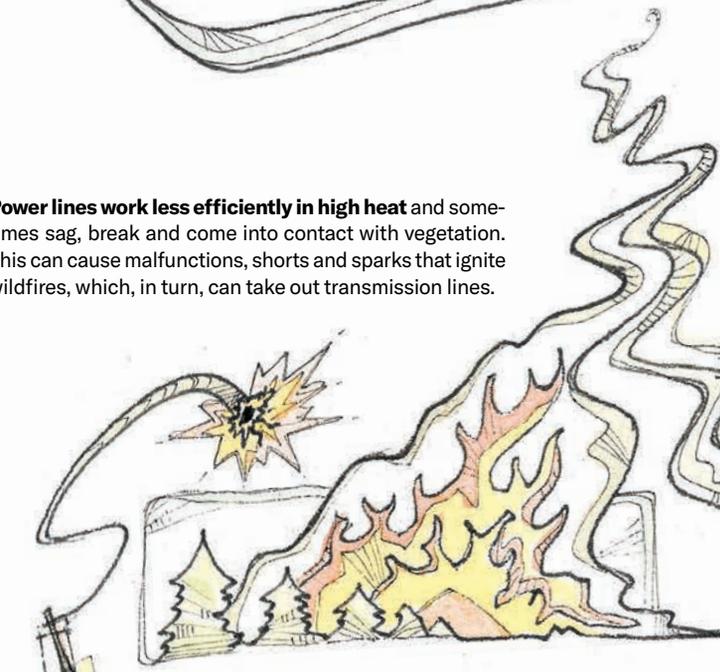
Long, sunny summer days are great for solar power, enabling solar plants to crank out the juice throughout the middle of the day. **But that output starts falling around 4 p.m., just when the temperature — and the AC — really starts cooking.** And solar has its own issues with climate change: Wildfire smoke last year caused significant declines in California's solar output.



Nuclear and fossil fuel power plants use billions of gallons of water each year for cooling and steam generation, further stressing the drought-depleted West. And the warmer the water, the less efficient the power plants are. **Some nuclear plants have been forced to shut down because the cooling water wasn't doing the job.** The opposite problem plagues the Diablo Canyon nuclear plant in California: It sends its warm cooling water back to the Pacific Ocean, affecting the marine ecosystem there.



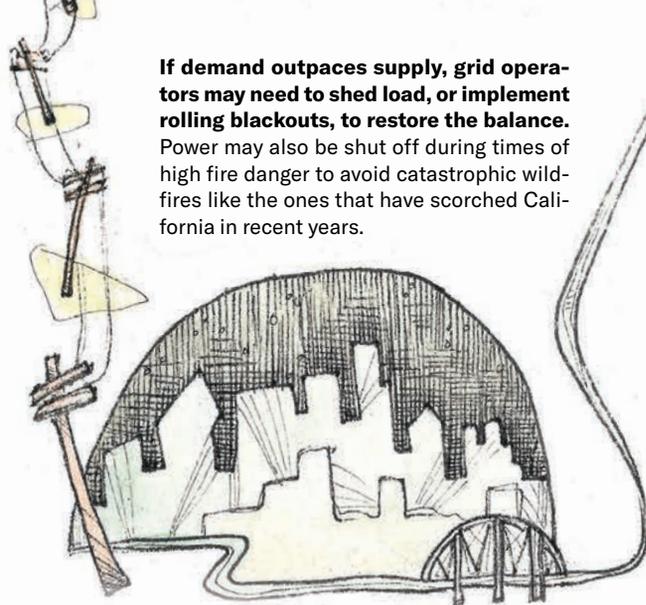
Power lines work less efficiently in high heat and sometimes sag, break and come into contact with vegetation. This can cause malfunctions, shorts and sparks that ignite wildfires, which, in turn, can take out transmission lines.



With hydropower on the wane and solar dropping off in the late afternoon, grid operators tend to turn to natural gas combined cycle plants to follow the climbing load, along with peaker plants — gas-powered jet-engine-like turbines that can be ramped up quickly — to cover the critical time before sunset. But these plants are expensive to operate and emit carbon dioxide. And methane — a potent greenhouse gas — leaks out when the natural gas burned in the plant is extracted, processed and transported. **More natural gas being consumed causes natural gas prices to shoot up, which may encourage utilities to turn to polluting coal power plants in order to save on fuel costs.**

Sources: California Independent System Operator (CAISO); Energy Information Administration; California Clean Energy Almanac; Bonneville Power Administration.

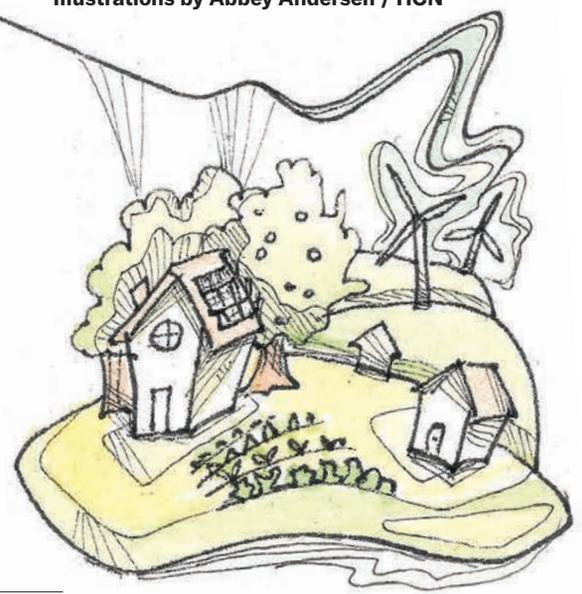
If demand outpaces supply, grid operators may need to shed load, or implement rolling blackouts, to restore the balance. Power may also be shut off during times of high fire danger to avoid catastrophic wildfires like the ones that have scorched California in recent years.



The best way to avoid a heat-caused collapse of the grid is to slow human-caused climate change by cutting carbon emissions. **That requires decarbonization of the grid by replacing fossil fuels with clean energy sources and — just as important — an overall reduction in energy use.** In the absence of this, however, we can only make homes more energy-efficient, develop and deploy more efficient air-conditioning systems, better integrate the power grid to make it easier to ship California solar eastward and Wyoming wind westward, and bolster the amount of rooftop solar with battery systems at homes and businesses.

Oh, and we can also turn out the lights when we don't need them. ☀

Illustrations by Abbey Andersen / HCN



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In memory of K.M. Timmerman
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 In honor of Joseph Golightly
 In honor of the reporters doing the work
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 In memory of Luke Engelhardt
 In memory of Ronn Harding
 In memory of Bill Lindauer
 In memory of Hiram Doc Smith
 In memory of K.M. Timmerman (6)
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Anita Jackson with her spouse and children at Yosemite National Park, California.

“Every day I am so grateful for a publication that tells the authentic stories of our West and the truth of who we are. It feels like seeing a mirror for the first time. The voices and imagery that have been dominant for so long leave the story of the West incomplete and sometimes distorted. HCN is where I find the vastness of life and land in the West, with all our contradictions and all our magic.” —Anita Jackson, San Ramon, California

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“I am a high school teacher in Boise serving students from a wide range of political, social, economic and cultural backgrounds. I’ve repeatedly used articles about Indigenous people and communities of the West to continue discussions about colonization and resistance and (to help them) recognize that the story is ongoing. HCN does an awesome job of writing about the West in all of its complexities, while acknowledging and challenging, but not perpetuating, some of its most harmful myths. Thank you!” –Brendon Kehoe, Boise, Idaho

Our never boring board

HIGH COUNTRY NEWS HAS BEEN BLESSED with a dedicated, ever-changing group of volunteers who have helped us navigate the tricky waters of the rapidly changing West for five decades now. They make up our Board of Directors, and we honor them all — past, present and future.

We were saddened to hear that **Farwell Smith** of Big Timber, Montana, who served on *HCN*'s board in the 1990s, passed away in June at the age of 94. Farwell, the first member who truly understood finances and fundraising, was instrumental in creating a small financial reserve for *HCN*. He enlivened many a board meeting with his wicked sense of humor; as a young man, he and his Harvard roommate, writer George Plimpton, crashed the Boston Marathon. According to the *Bozeman Chronicle*, Farwell ducked in just before the finish line, sprinting to finish third before jumping into a getaway car driven by Plimpton.

Brian Beitner, who steps down from the board this month after four years, has continued in Farwell's footsteps: As chair of both the Finance and Fundraising committees, he has revamped *HCN*'s investment strategies and encouraged the organization to develop a more systematic approach to major donor work — putting the “fun” back in fundraising, as he's often quipped. It has paid off splendidly — we are completing a successful 50th Anniversary Campaign — and we will miss Brian's leadership.

This month, we are delighted to announce the most recent additions, voted in at our June board meeting:

Fátima Luna of Tucson, Arizona, serves as the climate and sustainability policy advisor for Tucson Mayor Regina Romero, leading the development and implementation of the city's climate action plan. She worked as the environmental and natural resource economist for the Sonoran Institute in the Water and Ecosystem Restoration program (formerly known as the Colorado River Delta Program). In addition to being a racial and environmental justice ad-

vocate, Fátima is a mother of three, and enjoys weightlifting, gardening and hiking.

Kara Teising of Nashville, Tennessee, is a managing director at Koya Partners, a national, mission-driven executive search firm committed to keeping diversity, equity and inclusion at the center of the search process. She spent 17 years as a professional matchmaker, specializing in partnering with national conservation and environmental organizations, including *HCN*. The youngest child of a career Navy officer, Kara grew up in the West and loves exploring the region with her two young children.

Andrea Otáñez of Seattle, Washington, a lifelong devotee of the high-desert country, has worked as a reporter, copy editor, team editor and columnist for *The Salt Lake Tribune* and *The Seattle Times*. She is currently an associate teaching professor in the Department of Communication at the University of Washington, Seattle, where she has developed courses in race, gender and equity, focusing on critiquing the rituals of journalistic objectivity and the media representation of Latinx people.

Dina Gilio-Whitaker (Colville Confederated Tribes) lives in San Clemente, California, and is a lecturer in American Indian studies at California State University San Marcos. She teaches courses on environmentalism and American Indians, traditional ecological knowledge, religion and philosophy, Native women's activism, decolonization, and American Indians and sports, especially surfing. She is also the author of two books, including *As Long As Grass Grows: The Indigenous Fight for Environmental Justice from Colonization to Standing Rock*.

And finally, we welcome **Bryan Pollard** back to the board. Bryan spent the last six months as an *HCN* staffer, leading our Indigenous Affairs desk. As Editor-in-Chief Jennifer Sahn put it, “He didn't just hold down the IAD, he put processes and systems and guidelines in place to allow this work to flourish into the future.” He also helped us find our next IAD editor, **Nick Martin**, a member of the Sappony Tribe of North Carolina, who starts this month. Nick comes to *HCN* with substantial experience as a writer and a producer of projects and story packages at *Deadspin*, *Splinter*, *The Washington Post* and, most recently, *The New Republic*, where he has penned several smart stories a week for the past two years. Our hiring panel was especially impressed with Nick's big-picture thinking and his ideas for how to make *HCN*'s Indigenous affairs coverage stand out from that of other outlets. Welcome aboard, all! —Paul Larmer



HCN's new board members (from top) Fátima Luna, Kara Teising, Andrea Otáñez, Dina Gilio-Whitaker.



Nick Martin joins the *HCN* staff as the new leader of our Indigenous Affairs desk.



Native Women in Science

Making a difference in Indigenous communities and beyond

Dr. Julie Baldwin Leads the Way to Health Equity

At Northern Arizona University, research leaders like Regents' Professor and public health scientist Julie Baldwin, PhD, explore, discover, and find solutions to the most critical health challenges facing Arizona and the world today. Dr. Baldwin is changing the way researchers address health disparities in the region across a range of topics including oral health, drug abuse, and obesity. A citizen of the Cherokee Nation of Oklahoma, Dr. Baldwin has made

a lifelong commitment to serving diverse communities and to advocating for health promotion programs for children, adolescents, and families. As Director of the Center for Health Equity Research (CHER), she actively recruits and mentors students, providing hands-on opportunities for them to conduct important research.

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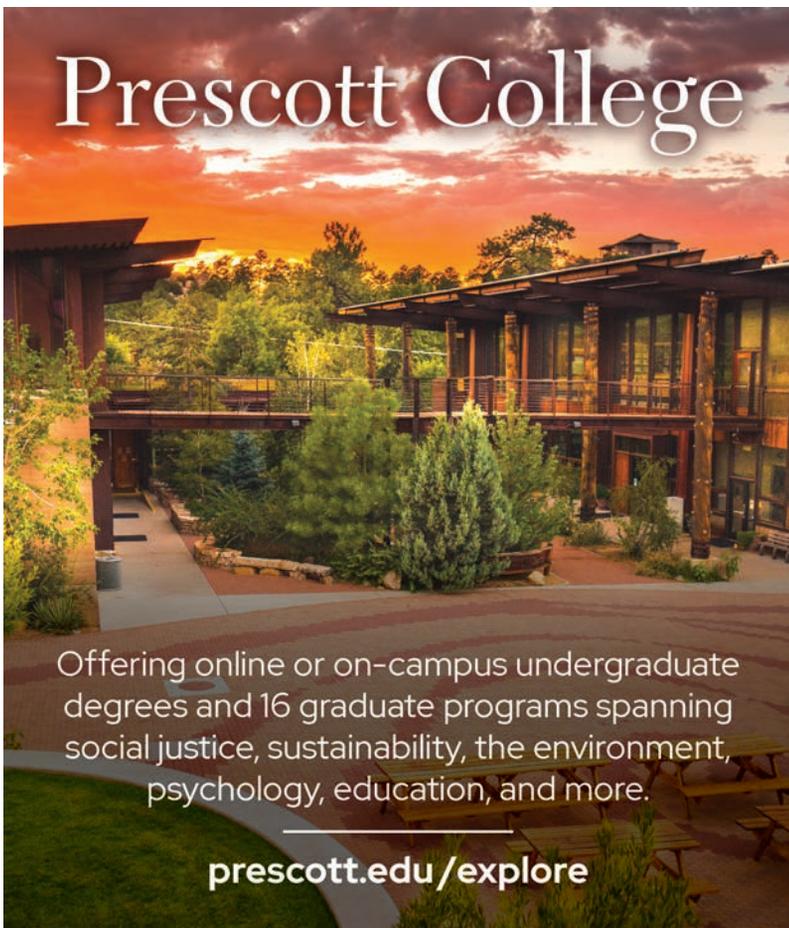
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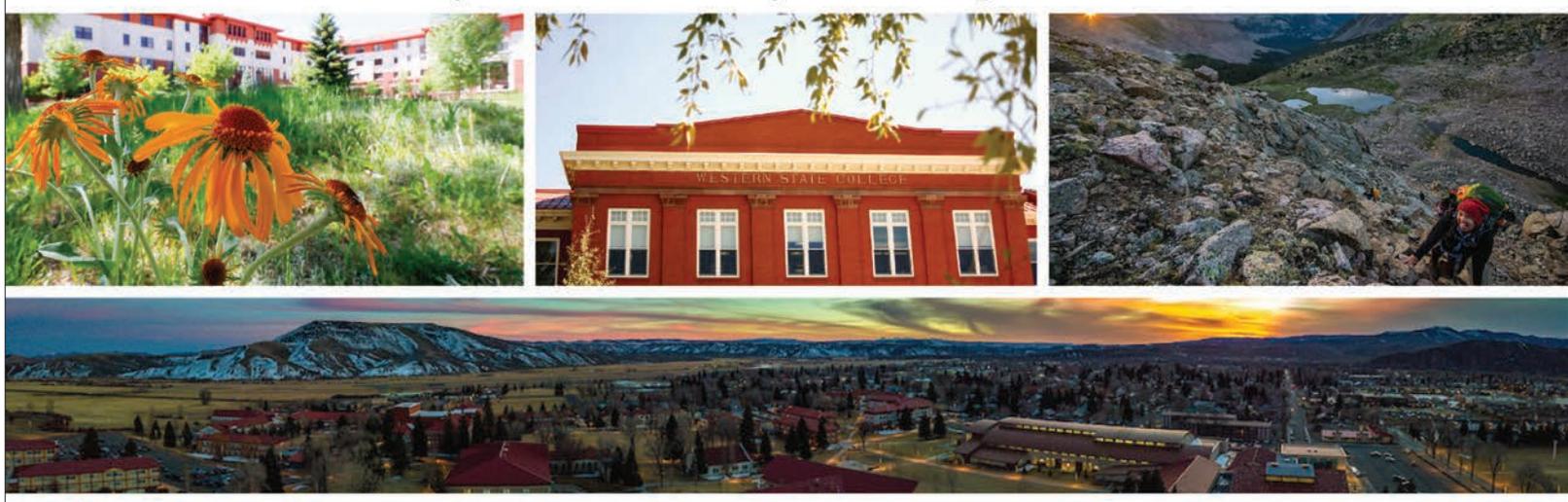
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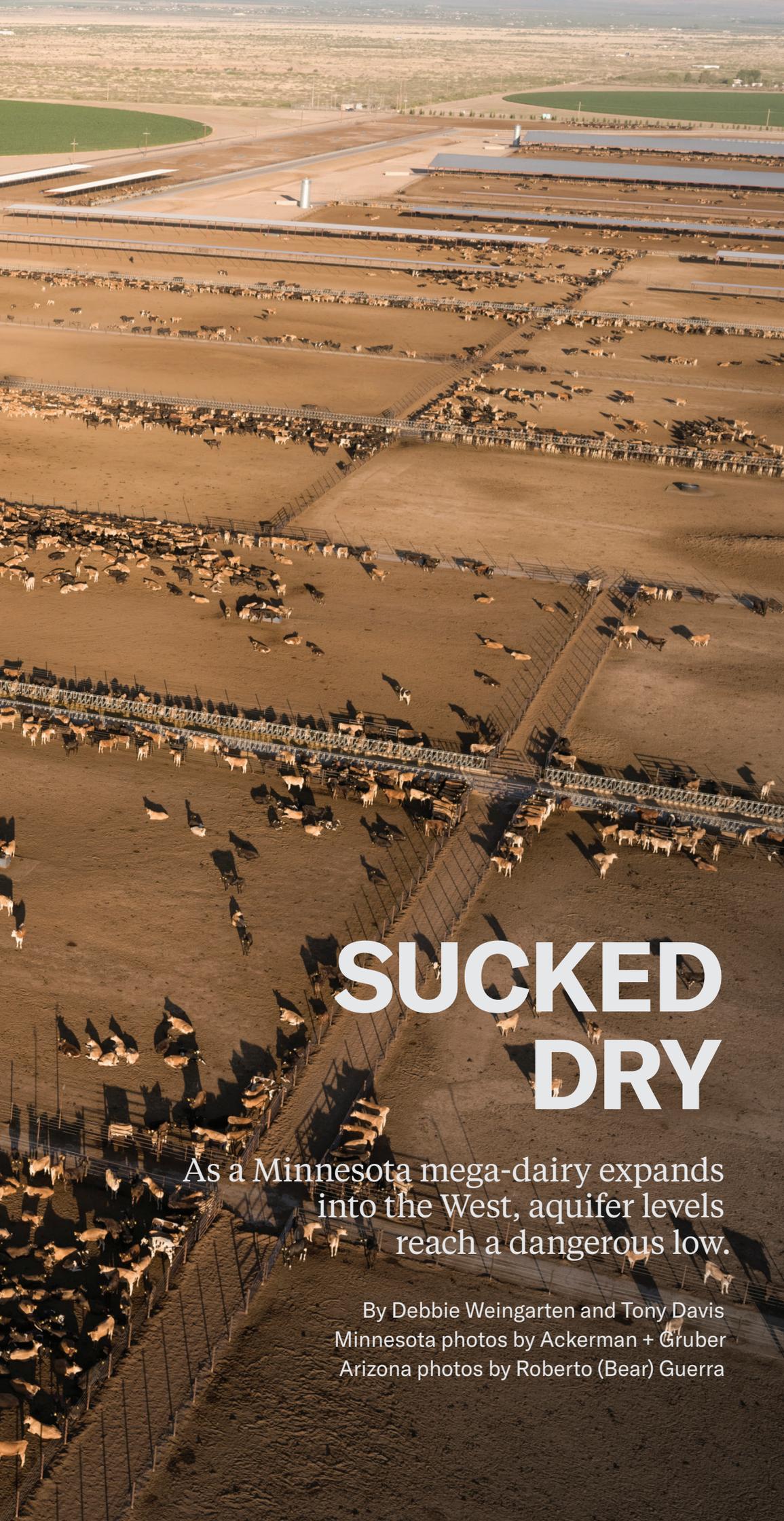
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The Coronado Dairy on Kansas Settlement Road in the southeast corner of Arizona. Riverview LLP, a Minnesota-based dairy, has been buying up land and drilling new wells to grow feed for its cattle. **Lucas Foglia**



SUCKED DRY

As a Minnesota mega-dairy expands into the West, aquifer levels reach a dangerous low.

By Debbie Weingarten and Tony Davis
Minnesota photos by Ackerman + Gruber
Arizona photos by Roberto (Bear) Guerra

IN THE WINTER OF 2018, Laura Lynn moved out of her mobile home in Sunizona, an unincorporated community in southeast Arizona. After more than six years, she was tired of hauling water for drinking and bathing, and she couldn't afford to drill a well — certainly not one deep enough to survive the impending squeeze once a nearby mega-dairy began to operate.

Lynn's story epitomizes the challenges local residents are facing over the ongoing water crisis in this rural community, a problem that worsens every year and that no person or agency has figured out how to solve. She is one of hundreds of people, mostly low- to middle-income, living in a high-desert landscape whose groundwater is rapidly disappearing as water is pumped to grow alfalfa, corn, nuts, wheat and barley.

But the greatest pressure on the region's aquifer comes from Riverview LLP, a Minnesota-based dairy company whose groundwater pumping is seen by many as the primary cause of their drying wells.

Far away in Kerkhoven, Minnesota, farmers Jim and LeeAnn VanDerPol have watched as their community lost many of its residents following decades of shrinking agricultural margins and increased corporate consolidation in the livestock sectors. Their former neighbors have been replaced by the five huge Riverview facilities within 10 miles of their house. In Chokio, Minnesota, about an hour away, locals successfully fought to keep Riverview from building a 9,200-cow dairy, citing concerns about pollution and groundwater decline.

Smaller dairy farmers nationwide have weathered years of milk prices below the cost of production that culminated in an industry-wide economic crisis. Now they face a new adversary: mega-dairies, or dairy CAFOs (concentrated animal feeding operations). In Franklin, southwest of Minneapolis, James Kanne struggles to hang onto his small family dairy even as mega-dairies like Riverview compete for the few remaining milk processors.

This investigation follows Riverview's rapid expansion in two of the five states it operates in, linking the environmental and economic consequences — and the lives of those who are impacted.

The people we spoke with in Minnesota and Arizona are 1,500 miles apart, connected only by the ever-growing presence and power of Riverview. But their communities have much in common: The local industry and resources have been monopolized by a deep-pocketed entity. The groundwater is being depleted and polluted. Incessant traffic, dust, lights and the stench of livestock cause home values to plummet and strain the emotional ties locals have to the places they call home.

SUNIZONA, ARIZONA — On a winter evening in 2020, Laura Lynn stood behind the counter of the Days Inn in Willcox, Arizona, where she worked as a desk clerk. Inside the quiet lobby — the walls decorated with paintings of cowboys, the continental breakfast bar closed for the night — she spoke resolutely about the previous decade, during which she had tried desperately to make a life for her family in an increasingly parched landscape.

Lynn and her six children moved to Sunizona in 2011 from St. David, about 55 miles away. They needed to find someplace cheap, Lynn said, so they bought 2.5 acres for \$3,600. “I liked the rural atmosphere, but our main thing was that it was an emergency, and it was inexpensive,” recalled Lynn. “It was what we could afford with our tax refund.”

In Sunizona, population 212, tract, manufactured and mobile homes border dirt roads and the state highway that leads to the Chiricahua Mountains. Sunizona has a mini-mall, a café, an elementary school, a laundromat and a couple of churches, but no post office — not even a convenience store.

The Lynns first moved two RVs and a van, then a mobile home, onto their land, but the property lacked electricity and had no well. Years later, the family managed to get electricity, but water remained a problem. Almost every day for six years, Lynn and her children walked to a church a mile and a half away, where they, and 12 other families, filled 1-gallon jugs with water from a hose.

“It was a real hassle, but you gotta do what you had to do,” Lynn said. “I had kids and I had to make sure they were watered.”

The family wanted their own well. But it wouldn’t be cheap: Lynn said the well drillers told her it would cost about \$40,000. Water was already scarce and demand was growing: Riverview would soon begin construction on Turkey Creek Dairy, its second dairy in

Arizona, just down the road, and it would be drilling deep, she said.

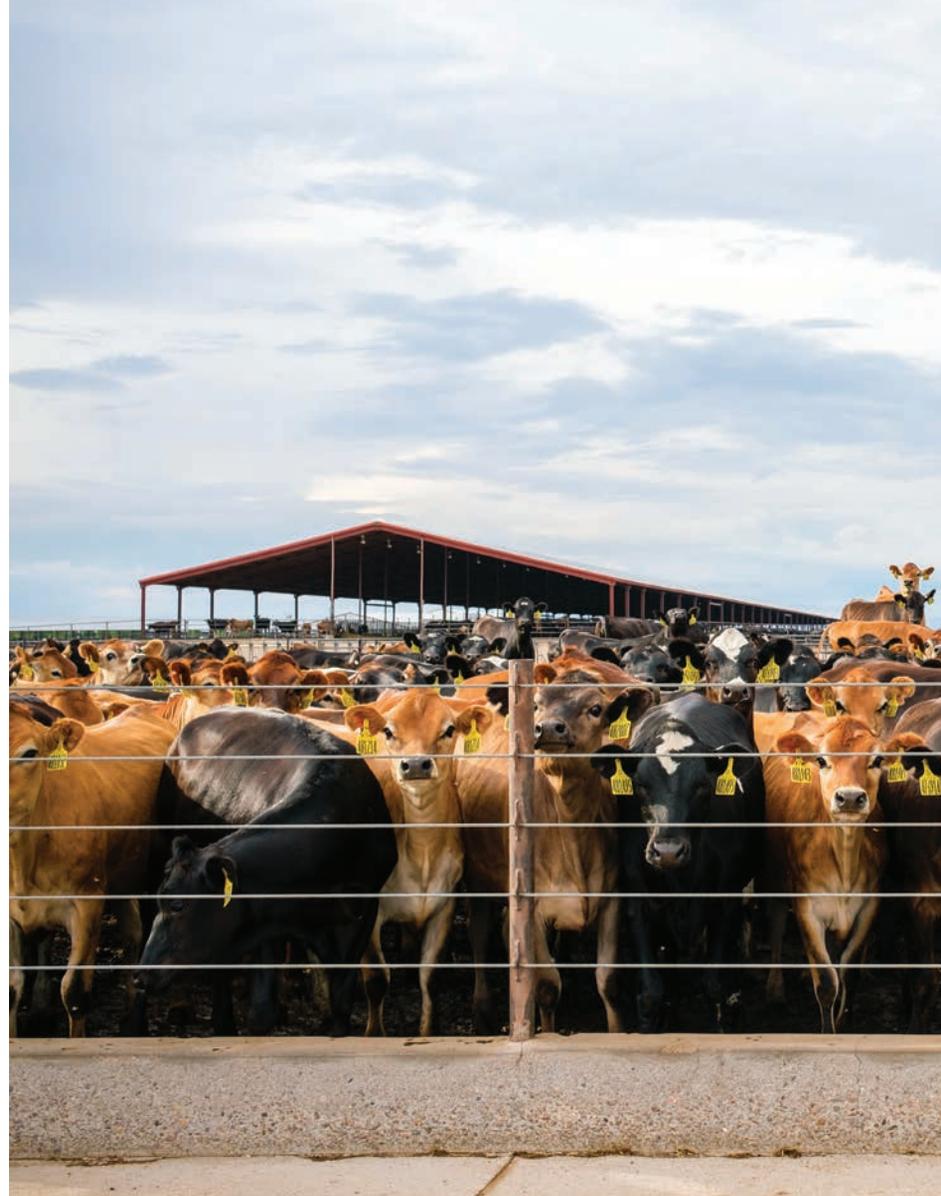
At the time, Lynn was earning minimum wage as a home-care aide for elderly and disabled patients. She was living paycheck to paycheck, and far from alone: In 2019, according to the census, Sunizona’s annual median household income was \$22,500 — just over 61% of the median household income in Willcox, 30 minutes north, and just 38% of the state’s.

Lynn could not afford a new well. She was also worried about the new mega-dairy and the traffic and other problems she thought it might bring. Ultimately, it was all just too much; she decided to leave. In 2018, she gave the property to a close friend from church and moved to Willcox, where she got the job at the Days Inn. Her new property has two wells.

Though several years have passed since she left Sunizona, Lynn is still angry about what happened. She said Riverview sucking up the water was a major factor in driving her and many of her neighbors away. “Too many people are afraid of saying anything,” she said, her voice taking on a passionate edge. “I believe business runs America, and when the big guy is taking a precious resource like water — that I’m against.”

NOBODY KNOWS HOW MANY wells have dried up in Sunizona, let alone the entire Willcox Basin, which covers 1,911 square miles in Arizona’s southeast corner, near the New Mexico border. But between 2014 and 2019, records from the Arizona Department of Water Resources (ADWR) show that around 20 wells in the Sunizona area were deepened after drying up. In the entire basin during that time, records show that 57 wells were deepened, but interviews and anecdotal accounts place the number at more than 100.

While pinning the decline of any individual well on a neighboring well or wells is next to impossible, evidence is mounting that the decline of the underground



aquifer here has accelerated since Riverview’s arrival. The company has drilled about 80 wells in the Willcox Basin since January 2015, and added six more in the Douglas Basin, just to the south, since it started buying land there in October 2020. Most of the wells

Thousands of dairy cows crowd the Coronado Dairy’s feedlot in the Kansas Settlement area near Sunizona, Arizona (top). Cattle graze in a pasture on the VanDerPol family farm in Kerkhoven, Minnesota. The family grows organic crops, hogs, grass-fed cattle and free-range laying hens (bottom).



are at least 1,000 feet deep, and three are close to half a mile deep — deeper than any other well in the area. Many of them lie near Sunizona's barren wells.

Kevin Wulf, a spokesperson for Riverview, acknowledges that the dairy's water use is a factor, but he insists it's hardly the only one to blame.

"I get it," Wulf said as he led reporters on a tour of the dairy in early 2020. "We're the big target." Wulf, a clean-cut former elementary school teacher, looked out at the 90-cow milk carousel, which turned slowly like a merry-go-round. "The rumor is: You're here to suck the valley dry. And then you're going to leave. We don't want to do that."

In the spring of 2018, Wulf and his wife, who are members of the Apostolic Christian Church in Morris, Minnesota, relocated to Arizona. The Apostolic Christian

Church in Tucson had put out a call for new members, and Riverview's Arizona operations were expanding. The landscape is very different, he said, but "if you're doing what you know God wants you to do, anywhere is great and can be an awesome place."

In just a few years, Riverview has utterly transformed the appearance and economy of the Willcox Basin. The company bought out nearly 30 local farmers and easily became the basin's biggest grower. It employs 200 people in Arizona and has even built on-site housing for the foreign workers among them.

In January 2015, Riverview paid \$38 million in cash to buy the Coronado Dairy, a locally owned operation in the Kansas Settlement area, about 10 miles north of Sunizona. It also bought 6,474 acres of surrounding land.

As of publication, the company

has purchased nearly 51,000 acres in the Willcox and Douglas basins, according to Cochise County land records, spending more than \$180 million, nearly all in cash. Much of the property was existing farmland the dairy company bought to grow feed for its cows.

The Coronado Dairy is now home to 70,000 Jersey-cross heifers, young cows that have not yet lactated. To drive down Kansas Settlement Road is to watch an entire mile of them tick by like a flipbook: honey-brown ears, big doe-eyes, flicking tails. In a barn set back from the road, another 7,000 dairy cows are milked twice daily.

When night falls, high-powered floodlights illuminate the feedlot. It is the only such lighting in a place known for its dark skies and glittering stars, and members of the local astronomy club say that it has impacted stargazing. When asked about the light pollution, though, Wulf said Riverview uses significantly fewer lights here than it does in the Midwest.

In 2019, the company built the Turkey Creek Dairy, a few miles north of Sunizona. It's even larger, with 17,000 small white hutches housing calves from 2 to 90 days old. At full capacity, it will hold 9,000 dairy cows and 120,000 heifers.

Riverview's critics say the Minnesota corporation was drawn here by the same freewheeling political climate that has brought so many pistachio and pecan farmers to the valley from California and other states. In Arizona, there are no regulations concerning how much water farmers can pump in rural areas. The groundwater pumping in five urban areas in the state's midsection, including Phoenix and Tucson, is controlled and metered under the Arizona Groundwater Management Act, a pioneering state law passed 40 years ago. But that law bypassed rural areas entirely; it doesn't even require water-use metering.

"The only reason the water tables are dropping is because more entities are pumping — because there are no rules," Kristine

Uhlman, a retired University of Arizona hydrologist, said. "Too many entities have moved in to pump the free water. Take what you want; all you need is the money to drill a well, the deeper the better."

According to Wulf, however, Riverview didn't come to Arizona because of the lack of water regulations; it was attracted by the dry climate and the large amount of available farmland. "Because water usage and conservation is important to us, no matter where we're located, the water use regulation in Willcox was not a determining factor," he said. "We think about water and talk about water everywhere we're at."

MORRIS, MINNESOTA — The sunrise bled orange over the icy Pomme de Terre River and farm fields glittering with new February snow. Inside Riverview LLP's flagship dairy, 10,000 cows waited for the feed truck. Some curled their long black tongues around the railings of their pens, but mostly they idled quietly, something that Natasha Mortenson — who works in community outreach and education for Riverview — cited as evidence of their contentment.

At one end of the barn, pregnant cows stood in isolated birthing pens; a placenta lay in the bedding near one postpartum cow, glistening the red-purple of mammalian birth. In the "nursery," one still-wet calf, its umbilical cord dangling, wobbled against a worker, who tilted back its small brown head to insert a tube of colostrum that would reach all the way to its stomach.

At just a day old, the calves will be strapped into tiny vests, machine-lifted into a semi-truck, and transported 10 miles away to the company's calf facility. A few days later, they are trucked more than 1,000 miles to New Mexico (if bound for the beef market) or Arizona (if destined for dairy).

The Riverview company was started by the Fehr family, who began a crop and beef farm in 1939. In 1995, seeing opportunity

in the dairy industry, they established their first 800-cow dairy and became an LLP, a status that allowed for multiple owner/investors. One of those investors was the Wulf family, some of whose members attended the same church — the Apostolic Christian Church — and owned a beef cattle operation. In 2012, Riverview officially merged with Wulf Cattle. Today, Riverview has three linked but separate divisions — dairy, beef and crop — and at least 25 facilities across five states: Minnesota, South Dakota, Nebraska, New Mexico and Arizona.

Throughout the Morris dairy, laminated posters remind employees to BE KIND and BE SAFE — referring to animal treatment and workplace safety — and list the company’s core values: Candor, Integrity, Keep it Simple, Spirit of Humility, and Strong Work Ethic. Riverview’s Kevin Wulf said each core value is biblically inspired. “*Candor*, for example, means being open with one another, not talking about each other, but talking to each other for better understanding,” he said. “*Integrity* is about doing the right thing. Knowing that God is always watching.”

But Riverview was at the center of a 2019 *Milwaukee Journal Sentinel* investigation into the trend of U.S. dairy farms abusing the TN visa program by recruiting college-trained Mexican veterinarians for high-skilled jobs as animal scientists — only to give them various low-skilled jobs, such as milking cows or cleaning. And, according to OSHA documents, three of Riverview’s foreign workers have been killed in work-related accidents; in each case, the company was fined for safety violations. (According to Wulf, Riverview has reduced its OSHA-recordable incident rate to 0.98%.)

Mortenson said that the Fehrs were particularly intrigued by dairy operations in the South, which were much larger than traditional Midwestern dairy farms. The Morris dairy alone produces



approximately 390,000 pounds of milk per day, enough to fill six tanker trucks. The company said that all of its milk goes to make cheese. “We’re really bullish with the market,” Mortenson said.

In the past four decades, the livestock industry has undergone an enormous transformation. Farms have become larger, more mechanized and more consolidated. In the U.S., a handful of companies produce the vast majority of beef, pork and poultry. For those studying consolidation trends, it seems clear that dairy is next.

Modern U.S. agriculture was hugely influenced by Earl Butz, secretary of Agriculture under Presidents Nixon and Ford, who championed corporate agriculture

and export-oriented commodity production. He famously encouraged farmers to “plant fencerow to fencerow” and “get big or get out.”

Donald Trump’s secretary of Agriculture, Sonny Perdue, echoed these sentiments at the 2019 World Dairy Expo in Madison, Wisconsin, a state that lost 10% — more than 800 — of its dairy farms that year. “In America, the big get bigger and the small go out,” said Perdue. “It’s very difficult on economies of scale with the capital needs and all the environmental regulations and everything else today to survive milking 40, 50, 60 or even 100 cows.”

Despite a 55% nationwide decrease in dairy farms between 2002 and 2019, cow numbers have held steady while fluid milk volume has increased, the result of fewer farms operating on larger scales. Between 2012 and 2017, Minnesota lost 1,100 dairy farms. Meanwhile, during those five years, Riverview built three Minnesota mega-dairies, a feedlot in South Dakota, and started calf and dairy operations in New Mexico and Arizona.

At first glance, it seems reckless for a dairy company to expand during a dairy crisis. But experts point to what happened in the hog and poultry industries in the 1990s, saying it’s a tried-and-true strategy to capture the market when it’s depressed.

“Whether it’s pork or chickens

Linda Rieke, James Kanne’s daughter, feeds calves as her sons, Connor, 6, and Kobe, 3, look on at the family dairy farm in Franklin, Minnesota (top). An aerial view of Riverview’s flagship dairy outside of Morris, Minnesota. Riverview has three divisions — dairy, beef and crop — and owns at least 25 facilities in five states (above).

or turkeys in the past, that's how they all took over," James Kanne, a sixth-generation small dairy farmer in Franklin, Minnesota, said. "They expanded when the market was down. And then when the market came back up, none of the little guys could get back in again."

And Riverview is not done growing. A crop farmer in Dumont, Minnesota, who asked to remain anonymous because of the small community, said that a Riverview official visited his home and shared plans to build a 24,000-cow dairy one mile away. The official offered to buy the farmer's corn for feed, and to sell manure to him as fertilizer, but the farmer declined. "I said, 'I'm not very interested in that, because you're not paying enough for the product, and you're charging too much for the manure.'"

The farmer was also horrified by the idea of so many cows so close to his home: the odor and air quality, wear and tear on the roads, manure leaching into the streams and rivers, and the demand on the groundwater supply. "It's scary they're going to come in here and suck that much water from the ground," he said.

According to research by Dara Meredith Fedrow, a graduate student at the University of Montana, Riverview used more than 570 million gallons of water in 2017 — about one-quarter of the total consumption by hog and dairy CAFOs in Minnesota.

The Dumont-area farmer also questioned Riverview's "never-ending supply of money" at a time when so many dairy farmers are going out of business.

The 24,000-cow dairy has not yet been built but, according to state records, the company applied for a permit to build a 10,500-cow dairy approximately 130 miles north of Dumont. Additionally, an application for another 10,500-cow dairy approximately 100 miles east is up for state approval.

"They never seem to stop," the farmer said.

During the summer of 2014, however, one Minnesota

community did fight back, organizing against Baker Dairy, a 9,000-cow operation proposed by Riverview. "I never was one of those that took on a cause and became vocal, but I didn't have a choice," said Chokio resident Kathy DeBuhr, who was shocked to learn that the huge dairy would be built just a mile from her house.

DeBuhr had many concerns — milk tankers chewing up the roads, increased dust, air and water pollution, and the strain on the aquifer — but the biggest one was being downwind of so many cows. "I don't think I would have been able to sell my house."

The Baker Dairy proposal was slated for an August public hearing before the Citizens' Board, the decision-making arm of the Minnesota Pollution Control Agency (MPCA). Since 1967, eight members of the public and the MPCA commissioner have been tasked with reviewing industry proposals and determining whether to require additional environmental impact studies.

"No one thought we had a chance at all of influencing the Citizens' Board," said DeBuhr.

But Jim Riddle, who served two years on the board, wrote in an op-ed that Riverview's proposal had multiple unresolved issues. Among other things, it lacked data on how its "massive water draw-down would impact existing crop and livestock farms in the area." The board voted unanimously to require a full environmental impact statement.

After the EIS was ordered, Riverview withdrew its proposal, and the Baker Dairy was never built. For DeBuhr, the outcome was bittersweet. While it marked a rare win for ordinary people fighting big business, there were consequences for the Citizens' Board.

As reported in the *Minnesota Star Tribune*, Riverview's Brad Fehr "said the ruling prompted him to spend two weeks airing his concerns" with industry trade groups. In turn, Riddle said, corporate agricultural interests pressured

state legislators to eliminate the Citizens' Board.

"Soon after voting to require an EIS on Riverview, in the dark of night, at the end of a session on a bill unrelated, without any hearings or public debate, the Citizens' Board was abolished," Riddle said. "So that told me that Riverview has tremendous political influence over both parties."

Kevin Wulf said that while the denial of the Baker permit was the catalyst for the elimination of the board, Riverview was "not involved in that pressure or in that process."

SUNSIDES, ARIZONA — At the Sunsites Community Center, 12 miles east of Sunizona, approximately 50 people sat in folding chairs, their eyes trained on Kristine Uhlman, the hydrologist, as she flipped through a PowerPoint presentation. The workshop, in February 2020, was about a topic of intimate concern to attendees: The health and future of the aquifer beneath their feet.

Like most southern Arizona aquifers, the Willcox Basin aquifer is basically a big tub, composed of fill eroded from the surrounding mountain ranges, Uhlman said. With every monsoon storm, the fill material is reworked, carrying finer grains of silts and clays toward the center of the basin, and leaving coarser sands and gravels at the edge.

To explain the aquifer's rapid decline, Uhlman used an everyday metaphor — a savings account.

"If your water is old, and it's not being recharged on a regular basis, that's a savings account," Uhlman said, scanning the room. "You're taking water out of a savings account that's not being recharged with routine input."

Ideally, your monthly salary recharges your checking account, enabling you to plan with the predictability of a reliable income, she said. This permits a specific kind of spending, including depositing funds into a savings account. But "when you live off your savings account, you manage your money

differently," she said. "Like in retirement, you are always aware that your savings account is nonrenewable, and you spend with care."

Surrounded by five mountain ranges, the Willcox Basin's aquifer amounts to a bountiful savings account. Before large-scale agricultural pumping began around 1940, up to 97 million acre-feet of groundwater was stored there, according to a 2018 ADWR report — enough to supply Tucson, the nearest major city, for 970 years and then some.

The abundant groundwater has long attracted farmers and ranchers, as has the unique composition of the aquifer itself. Unlike most groundwater basins in Arizona and throughout the Southwest, the Willcox Basin's aquifer is largely fresh below the first, salty 100 feet, said Uhlman. There may be several thousand feet of fresh groundwater underneath.

But between 1940 and 2015, extensive pumping by farmers seriously depleted the savings account of the Willcox Basin, removing 6.2 million acre-feet of groundwater and lowering the aquifer by 200 to 300 feet, the ADWR report said.

The sharpest declines were in the Kansas Settlement area, where Riverview's Coronado Dairy now lies, although they were recorded before Riverview arrived. No comprehensive analysis of water-level declines has been done since 2015. But a former ADWR official said that the rate of decline appears to have increased since then, to 3 to 5 feet per year in the entire Willcox Basin, compared to 2 to 4 feet per year from 2010 to 2015. The Sunizona area is also seeing significant declines.

In 2015, basin water users pumped about 240,000 acre-feet, about four times more than the aquifer gets in recharge, said Keith Nelson, an ADWR hydrologist who oversaw the department's 2018 study. Additional wells have since been drilled, so the overdraft could now be bigger, he said.

"Overpumping, or overspending from a savings account, means you don't give a damn," Uhlman

said. “Or perhaps you have six months to live, and you don’t want anyone to inherit what you worked hard for.”

The overpumping has driven out a few farmers. As Riverview drilled deeper, they feared they’d also have to drill deeper — something they couldn’t afford. So they sold out to the dairy.

For 25 years, Glenn Schmidt farmed cotton and alfalfa on 166 acres, a mile south of Coronado Dairy. Four years ago, he and his wife, Linda, sold the land to the dairy colossus for \$1.3 million.

“They were drilling deep wells right beside me,” Schmidt, who is 65, said. “At my age, I didn’t see how I could spend \$2 million on new wells and try to compete. I had (a well) that was 600 feet. The rest of them were 400- to 500-foot wells. Theirs are 1,200.”

Before Riverview’s arrival, Schmidt’s profits and yields rose for 10 years after he started planting new cotton varieties. “We weren’t ready to quit,” he said. “We’d just got new equipment. When they started drilling those deep wells, it ruined my dream.” He had imagined renting his farm to his two sons and living off the rent money. But, he said, “The boys had to leave, to go find jobs. One of them landed in Kansas, one in Oregon.”

Joe Salvail also felt he had no choice in 2015 but to sell his land after farming alfalfa for 19 years. His well was dropping more than 7 feet a year, and the water level hovered at 480 feet deep. A new well would have cost him \$125 per foot. “I knew I was going to have to eventually put in a new well,” he said. “I didn’t have the money to do it.”

Shortly before Salvail sold almost all of his 320 acres to Riverview for just over \$1 million, the company drilled a new well just a half-mile north of his land. “They went down 1,300 feet, and they’re pumping 1,800 gallons a minute out of that well now,” he said. “They’re irrigating with (multiple) center pivots pulling water from that well, and I was having trouble

to get enough water to irrigate one.”

But Salvail and Schmidt harbor no bitterness. “I’m glad (Riverview) came by,” Salvail said. “It helped me. I have no problems with them. They gave me a decent offer.”

Schmidt said that the sale allowed him to leave before things inevitably became worse. “If they wouldn’t have bought my farm, and they kept drilling the wells, I’d have been out of business,” Schmidt said.

In Arizona, even the farmers who praise Riverview as a good neighbor and job creator say they’re worried because the local economy now depends so heavily on it. John Hart, who farms 10 miles north of the Coronado Dairy, estimates that 70% of the basin’s economy is tied to agriculture, and that Riverview owns one-third of the 60,000 to 70,000 acres farmed in the basin. Riverview is by far the biggest employer in the area.

“It’s kind of like Walmart moving into town,” Richard Searle, a former county supervisor who grows pistachios 15 miles from the Coronado Dairy, said. “If you have 20 farmers and one goes broke, it’s not a huge impact. You have one entity like the dairy, and if they have a problem, it will have a huge economic impact on the valley.”

KERKHOVEN, MINNESOTA—

Afternoon sunlight spilled into the living room through a window still ringed in Christmas garlands, across a piano, a smattering of books and the suspender-clad shoulders of Jim VanDerPol. Outside, a few beef cows ambled across a snowy pasture. VanDerPol, 73, grew up in this farmhouse, and returned to it in the 1970s with his wife, LeeAnn. They raised their children here, and then began their own small farm business, Pastures A Plenty, which today sells grass-fed beef and pork to restaurants and customers across Minnesota.

The VanDerPols used to be surrounded by working family farms, but the 1980s farm crisis drove many of them out of business. Then came the ruinous drought of 1988. And the 1990s brought

corporate consolidation of the hog industry, which drove prices down to 8 cents a pound. Those years were “a confirmation of my politics,” Jim said. “And I got that from my dad, who always figured that anybody that wore a suit was on the other side (and) they’re all out to get you.”

Today, the VanDerPols can drive for miles in any direction and remember the people who used to live and farm there. “I sometimes think the right way to say it is that there are ghosts in the land,” Jim said. “It’s a lot lonelier than it was.”

The new farm crisis has roiled farmers nationwide, and dairy farmers arguably have been hit the hardest. Yet there are five giant Riverview operations within 10 miles of the VanDerPols’ house and another within 15 miles.

Riverview’s Louriston Dairy, home to 10,000 cows, is just two miles away. The *Star Tribune* reports that its cows “drink enough water to drain an Olympic-sized swimming pool in just over two days, and produce enough manure to fill one every three days.”

“What impacts people doesn’t count for very much” in our society, Jim said. That makes it hard to fight operations like Riverview. You can point out that people are being pushed out of business, schools are under stress, communities are struggling, he said, “but those are all people arguments, and they get discounted.”

He has more faith in the land itself fighting back. “It seems to me that the thing that’s apt to tear Riverview apart ... (is) the need to pay more particular and more individual attention to every square foot of the earth as we’re using it.” One day, he said, we’ll realize that: “No, we can’t milk dairy cows that way, because it costs the earth too much.”

As they sat at their kitchen table, the VanDerPols talked about the tangible and intangible costs of Riverview’s arrival: the loss of neighbors, the still-unknown environmental impacts, and the already-noticeable change to the

night sky due to the 24/7 lights from the facilities.

“In the wintertime here, especially when it’s still or quiet, (the stars) are so bright at night ... I mean, it just goes on forever,” said Jim. But now, he said, “That place is lit up like a Christmas tree.”

Jim lifted his spoon and paused. “If people looked at the stars more, they’d probably be able to see their way through to some real solutions.”

A few days earlier, a thick fog froze lace-like into the trees as dairy farmers gathered in a pub in Greenwald, Minnesota, population 238. The occasion was a dairy crisis meeting, co-hosted by the Land Stewardship Project (LSP), a nearly 40-year-old nonprofit that promotes sustainable agriculture and an “ethic of stewardship.” Event organizers expected 50 farmers, but nearly 130 showed up.

Every seat was taken, so farmers leaned against a wall hung with paintings of ducks and spilled into an overflow room. They signed postcards asking state legislators to place a moratorium on new dairies with more than 1,000 animal units — “until the water pollution threat posed by these large operations and the price-depressing effects of overproduction are both addressed,” Matthew Sheets, LSP’s farm crisis coordinator, said.

A state bill was introduced in the Minnesota House of Representatives in March 2020, but stalled in committee. If passed, it would have prevented new or expanded dairies with more than 1,000 animal units until June 2024.

The meeting served as a somber eulogy for the family-owned dairies lost in recent years — and a rallying cry on behalf of those still hanging on. Mega-dairies are partly to blame for the industry-wide economic crisis; their massive overproduction of milk has saturated the market, driving down prices well below the cost of production.

Richard Levins, professor emeritus of applied economics at the University of Minnesota,

addressed the room in a soft voice. “Unfortunately, the ‘there’s room for everybody’ argument doesn’t work so well in dairy,” he said. “It’s a matter of simple mathematics.” Bringing in a 5,000-cow dairy doesn’t increase the demand for milk, he explained — it simply replaces 50 100-cow dairies. “We’re playing musical chairs.”

Some see the loss of small dairy operations as inevitable. In February 2018, Marin Bozic, a dairy economist at the University of Minnesota, testified before the state agriculture committee on behalf of Minnesota Milk, an industry trade group. “I anticipate out of 3,000 dairy farms left in the state, probably over 80% are last generation dairies,” Bozic said. “We are going to see a number of dairy farmers that are no longer competitive.” He cited Riverview as a “prime example” of a competitive business model.

But expanding isn’t an option for most dairies, Levins said in a phone call. “That’s like telling a local hardware store to become a Walmart. You can’t do it.” The story isn’t about small dairies getting bigger, he said. “It’s about enormous operations coming in and putting everyone else out of business (because) there’s only so much business to go around.”

And communities change when agriculture consolidates, Levins said. It decreases “the economic activity on Main Street. And of course, it decreases the number of people that go to church, go to school, go to the hospital, that sort of thing. So the consolidation in the dairy leads to consolidation in all of those services as well.”

At the meeting, dairy farmer James Kanne described himself as a “survivor,” the last of the dairies still operating from his childhood. He said mega-dairies compete directly with small dairy farmers for the few remaining processors. And while processors charge small dairies to pick up their milk, they pay premiums to mega-dairies that deliver tankers’ worth of product.

Kanne is hanging on, but it’s

not easy. His daughter and son-in-law recently returned to the farm to help. “This morning, I was brushing my granddaughter’s hair before she was getting ready to get on the bus, and this evening we will have supper together.” He paused. “And that is what we need. We need family. We need community.”

Heads nodded across the packed room.

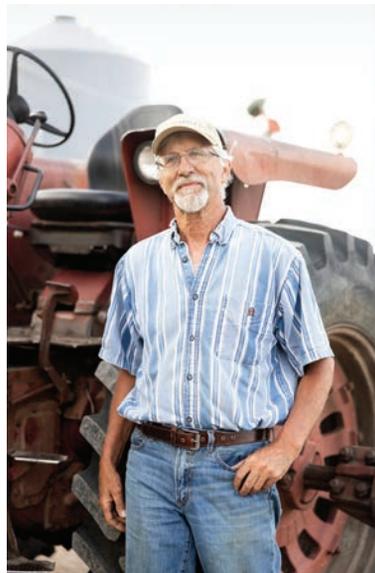
AGRICULTURAL WATER use jumped in the Willcox Basin through the 1960s into the middle 1970s, peaking at over 300,000 acre-feet a year. Then, water use crashed through the 1980s and 1990s to as low as 110,000 acre-feet per year, as farming went into a national economic decline. Meanwhile, well levels in the basin fell so far that for many farmers it was no longer economical to pay for pumping.

Starting around 2000, water use started rising again. It hit 172,000 acre-feet by 2014, U.S. Geological Survey statistics show. From 2015 through 2017, the most recent year statistics are available, agricultural water use rose 18.2%, compared to an 8.7% increase from 2012 to 2015.

Riverview’s arrival and land purchases could have been a contributing factor in the increase in water use. Between January 2015 and the end of 2020, 407 new wells were drilled in the basin; 19.6% of these were Riverview’s. The company also inherited hundreds of existing wells through land purchases and now owns nearly 19% of the 799 wells registered in the basin from 2014 through 2019.

Some individual wells in the Kansas Settlement and Sunizona areas have shown some of the worst declines in Arizona, Frank Corkhill, ADWR’s now-retired chief hydrologist, said. One Kansas Settlement well dropped 30 feet between 2015 and 2017, while another dropped 45 feet between 2014 and 2017. Two wells each fell 17 feet in 2017 alone — one in Kansas Settlement and one in Sunizona, Corkhill said.

Records show that the



Anastasia Rabin lives in Elfrida, Arizona, where her farm is now almost completely surrounded by Riverview LLP-owned properties (top). James Kanne on his family farm in Franklin, Minnesota (center). Jim VanDerPol on the family farm in Kerkhoven, Minnesota (bottom).

aquifer has dropped faster since Riverview’s arrival. The Arizona Department of Water Resources monitors 49 “index” wells in the Willcox Basin annually. Of these, 37 declined faster from 2015 to 2020 than from 2010 to 2015, while 12 declined at a slower rate or rose during the more recent period.

At *High Country News*’ request, Thomas Meixner, the University of Arizona’s hydrology and atmospheric sciences department head, reviewed the index well data and said that, in general, “The decline in water levels appears to be accelerating (since 2015). It’s not uniform. Different wells do behave differently. But on average, they are going down at about 6 feet a year now, compared to a little less than 4 feet in 2015.”

There’s no doubt that the Southwest’s protracted drought, aggravated by climate change, has also played a role, he said.

Altogether, southern Arizona’s aquifers lost more than 5.7 million acre-feet of water from 2002 to 2017, with both drought and agricultural pumping playing a role, according to a study published last November in the journal *Water Resources Research*.

But since pumping in the Willcox Basin has far exceeded the level of recharge, Meixner suspects that it’s a bigger factor in the decline than drought and climate change.

Riverview, however, said its water use is 25% less than that of the farmers who previously farmed the same land, due to more efficient irrigation methods. The company has installed two types of nozzles on each of its 200 irrigation center-pivots. Wulf said they manually switch them out throughout the growing season. “That takes a lot of work,” he said. “It’s labor-intensive.”

Riverview works with a third-party hydrologist to monitor its wells to better understand what is happening in the aquifer, he said.

“We recognize the value of water in Arizona and continually search for new innovations to

reduce water usage per acre.”

Even so, the company refuses to disclose its actual water use. Wulf calls it “our private business.”

He also said Riverview favors more regulation, including state legislation that would require metering of all rural wells — legislation that so far has gone nowhere.

And some question Riverview’s assertion of a 25% drop in water use. Two longtime farmers in the area, Salvail and Hart, say that while many farmers who sold to Riverview generally grew one crop per year, Riverview has switched to growing summer and winter crops, boosting its water use.

“They’ll put in a wheat crop and follow it with corn,” Hart said. But Riverview isn’t the only grower adding crop cycles; other local farmers are following suit, due to declining crop prices and the increasingly popular practice of “cover-cropping” — planting non-food crops to enhance soil health and prevent erosion, he said.

Many Sunizona residents say Riverview’s conversion of thousands of acres of vacant land to farmland has also boosted its water use. Wulf said that the land Riverview purchased was destined for tree or crop production. “We will continue seeking ways to conserve water on the land we farm,” he said.

AT A MARCH 2020 groundwater presentation in Sunsites, Bruce Babbitt, former Arizona governor and secretary of the Interior under Bill Clinton, was the keynote speaker. He regretted that rural areas, including the Willcox Basin, were left out of the 1980 Groundwater Management Act when it passed under his direction.

The root of that problem lies in the act’s drawn-out, highly complex creation — a process that took years.

“That act didn’t just fall out of the sky. There was as much controversy then as there is now,” Babbitt said.

A groundwater study commission spent three years trying to

compromise among the state’s warring mining, farming and urban interests, but got nowhere. In desperation, Babbitt recalled, he gathered seven people representing all factions behind closed doors, where “we met twice a week, went through this line by bloody line, and ended the impasse.”

They split five areas of urbanized central and southern Arizona into state-run active management areas, each with authority to impose conservation rules on residents, businesses and farmers living in the path of urban growth.

Once the group finished with that, “we were so exhausted” that rural areas were left out of the law, Babbitt said.

This was just fine for many rural leaders, including those from the Willcox area, who didn’t want to be regulated. Besides, at the time “rural Arizona didn’t appear to be in any immediate crisis,” Babbitt recalled.

“We thought that eventually, we will authorize ADWR to do the same thing, in rural Arizona. We could not have been more mistaken. The statutes we passed have proven to be unworkable for the rest of the state.”

The Willcox Basin’s agricultural economy was so volatile for the next three decades that the lack of regulation didn’t seem to matter. But by the middle 2010s, California tree-nut and alfalfa farmers were relocating to the area, and many homeowners’ wells were drying up. In 2014, the state water agency held a public meeting in Willcox, where more than 50 people complained about well problems. At least 40 homeowners completed questionnaires, describing how their wells had dried up or appeared in danger.

A group of farmers, ranchers, rural residents and government officials then formed a working group that spent months producing a carefully negotiated compromise proposal to create a groundwater conservation area for the basin.

Under the plan, those who had pumped groundwater within the last five years would be

grandfathered in, while new landowners would face strict limits on future pumping. Most new wells would be reviewed to ensure that they wouldn’t dry up surrounding wells. All well owners would be required to install water meters and report their use to the state. Those using more than 35 gallons per minute would have had to pay an annual fee, to be used for water conservation programs.

But the proposal ruptured the community, dividing neighbors and friends, and it was ignored when it reached the Legislature.

“Today there is not much consensus to do anything,” Hart, the farmer, said. “The guys leading that effort in 2015 got so beat up among their peers, nobody wants to talk about it anymore. If anything is going to happen on the water issue, it has to come from the state.”

Kevin Wulf agrees. “We support state regulation,” he said in a phone call. “We feel like it is more fact-based and less emotional. We feel like if everyone is reporting water usage, we would have a lot more accurate picture of what is happening around water.”

When Babbitt spoke in Sunsites last March, however, he urged the Legislature to give county governments authority to develop their own water management plans.

While the 1980 Groundwater Act was a top-down mandate, “most of the things we do in this state, in this country, in communities, start the other way,” Babbitt said. “We tend to address problems from local governments on upward, to try to find consensus and a path forward. It’s your future, your community, your economy and your neighbors.”

But in both 2020 and 2021, Arizona’s Legislature not only spurned bills like those that Babbitt suggested; it even refused to grant them committee hearings. The same fate awaited bills that would have required water metering in rural areas or made it easier for the state to close off a water-imperiled area to new farmers.

The water forum at which Babbitt spoke was organized by

Peggy Judd, a Cochise County supervisor representing the Willcox Basin. Judd, a longtime supporter of Riverview who lauds its economic benefits, opposed new regulations for years, calling them an intrusion on property rights. She now supports them, because the well declines are growing more severe.

She has formed a new working group to hammer out a water plan behind closed doors. Meanwhile, three Sunizona residents who have had to haul water or else deepen their wells are trying to form a water district to tax homeowners to pay for a well system for the community.

For now, though, the water outlook for the area where Riverview operates is gloomy at best. According to ADWR’s 2018 groundwater study, which is based on a computer model, up to 24 million acre-feet of water will be pumped out of the entire basin by 2115, and water levels could fall by as much as 917 feet in the Kansas Settlement area from 1940 to 2115. Even though as much as 78 million acre-feet may remain, much of it will be so deep that it may not be practical to remove it.

Big farmers like Riverview will be able to get water for a long time because they have the money to keep drilling deeper, Uhlman, the hydrologist, said. Homeowners and smaller farmers won’t be as fortunate.

“These companies have the deep pockets to have longer straws that go down deeper in the aquifer,” she said. “The individual family farmers who originally homesteaded the land — they can only go as deep as their pocketbooks.”

ELFRIDA, ARIZONA — In May 2021, a rare storm obscured the Dragoon Mountains behind a wall of rain. After a year of scant precipitation — just 8.35 inches of rainfall in Willcox in 2020, compared to 12.18 inches in an average year — the roadside grass remained golden-brown.

Thirty miles southwest of



Water pipes are piled near a new pivot irrigation system on land recently acquired by Riverview LLP in Elfrida, Arizona (top). A sign in southeast Arizona warns of the deep crevasses that can occur as the water table drops (center). Anastasia Rabin walks through a section of her property that she said has been desertifying even more rapidly since the arrival of industrial agriculture in the area (bottom).

Riverview’s Coronado Dairy, Anastasia Rabin stood in the yard next to her small herd of goats and scanned the horizon. She has lived in Elfrida for nearly a decade, and watched as industrial farming appeared in the valley. First it was corn, then the California-owned nut operations — and now, Riverview.

In late October 2020, Riverview purchased its first Elfrida property — nearly 4,700 acres for \$20 million. Since then, Riverview has amassed a total of just over 9,100 Elfrida acres for close to \$36 million. Kevin Wulf said Riverview plans to farm corn and wheat to feed its cows, but “there are no current plans to build a third dairy in the Elfrida area.”

A few months ago, Rabin started noticing land-use changes in the immediate area. Many neighboring farms have sold to new operations, most recently Riverview. The dairy now owns the grain bins towering in the distance and the gravel quarry next door. Across the road, newly assembled irrigation pipes sprawled across one of Riverview’s recently purchased fields. When Rabin looks west across the valley, she can see a flurry of activity: mesquite cleared, wells drilled, pivots installed and fields scraped bare. Loose sand and dirt have been pushed into enormous piles.

Recently, Rabin woke to a dust storm. She stood in her yard and took a phone video of a wall of dust so thick that it blocked the mesquite trees and mountains. “This spring, the dust storms were a full-scale natural disaster,” Rabin said, adding that such storms have become more frequent since the arrival of larger farms and the massive land clearing. She kicked at the ground, covered in several inches of beach-like sand, whorled in patterns by the wind. In some places on her property, as much as two feet of sand has accumulated.

“This is desertification in action,” Rabin said — the transformation of a once-biologically diverse landscape into a hotter, drier and much less hospitable environment.

KRISTINE UHLMAN RECALLED that after she gave her water talk in Sunsites, Gary Fehr, Riverview’s board president, left her a phone message. He said that Riverview has a 30-year investment in the area and wondered if the water would run out sooner than that.

“I told him no; as long as you have the money to keep the deep wells, you won’t run out of water,” Uhlman said.

Wulf, however, said that Fehr was asking about the current wells that Riverview is replacing, not hinting that the company would leave the area in 30 years. “The new wells we are drilling today will likely have a similar 30-year lifespan, which prompted the question,” Wulf said.

Wulf insists that in both Arizona and Minnesota, Riverview “wants to be good neighbors.”

“We sit at kitchen tables at every single neighbor’s house,” Riverview’s Natasha Mortenson said. “We do community meetings and allow people to come ask questions. We feed people burgers and have a sit-down. Does that mean that every single neighbor loves us? No, it does not mean that. But that’s life.”

But dairy farmer James Kanne said that Arizona and Minnesota are connected by a set of hidden costs, imposed by Riverview. “Whether it’s groundwater in Arizona, or freshwater that’s being compromised, or our roads being abused ... it’s a matter of the cost being put onto people who don’t even realize they’re paying the price,” he said. “It’s a very insidious way of doing business.”

In both places, residents are pleading with state and local officials to *do something* — enact groundwater pumping restrictions, or place a moratorium on large livestock operations. So far, though, no one appears to be listening. ☀

This article was supported by the Economic Hardship Reporting Project.

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HCN

Jalen Bazile and Rachel Olzer at Elevenmile Reservoir near Deckers, Colorado. Adam Andres Pawlikiewicz Mesa

(continued from page 11)

“The river raises kids,” Real Bird said. The two reminisced about long, lazy days out at the river, running home with berry-stained lips and sunbaked skin.

The river holds deep cultural and spiritual significance for Wellknown Buffalo and Real Bird. In the Sundance, a traditional healing ceremony, participants are given a paste made from cattails, found along the river, before they break a days-long fast with river water. At the sweat lodge, water plays a central role, and, as children, Wellknown Buffalo and Real Bird fed the river leftover food in an act of prayer and respect. Now an Apsáalooke elder, Wellknown Buffalo is troubled by the state of water on the nation, especially its implications for her grandchildren. “That was our way of life,” she said.

In June, Apsáalooke youth at the Guardians of the Living Water camp learned how to conduct a water quality assessment on the Little Bighorn River in Crow Agency, Montana.

“They say water is life, and it is — you need water to stay alive. But water also provides life for everything else that keeps you alive.”

IN EARLY FEBRUARY, the Crow Tribe reached an agreement with the U.S. Bureau of Reclamation on a new water system that would supply treated water from the Bighorn River to all tribal communities. The plan was first outlined in the Crow Tribe Water Rights Settlement Act of 2010, which also included legislation to improve irrigation infrastructure for farmers. Since then, the agency has completed a couple dozen irrigation projects. No progress has been made on the new water system, however. Shane Schieck, the Bureau of Reclamation supervisor for the project, said the delay was partly caused by high turnover among principal engineers. But it’s also because the agency’s irrigation projects are “low-hanging fruit,” he said — smaller, less complex and easier to build than an 800-mile water system.

Under the new agreement,

the federal government will begin laying pipes and building a treatment facility within the next five years. “We will be that much closer to delivering clean water across our lands,” wrote Crow Tribal Chairman Frank White Clay in an email to *High Country News*. “Having ready access to it will be a game changer for thousands of our people across the reservation.” But while this should provide clean water for Crow families, the river itself will remain under threat. And some who grew up here, like Three Irons, question the feasibility of connecting all six of the reservation’s political districts — which span 2.3 million acres — to a single master water system.

After visiting the Walkses’ house in May, Three Irons stopped by his childhood home. He sat near his family’s sweat lodge, next to the Little Bighorn’s slow, snaking currents and gangly cottonwood trees. He recalled submerging himself in its waters, watching over the sweat lodge as a child, seeing it burn down one day and, eventually, rebuilding it. Because the river

is polluted, his family no longer brings water up from its banks for the sweat lodge; instead, they lug it down from the house. The new ritual is tinged with the knowledge of what the river is now, compared to what it has been and the uncertainty of what’s to come. “I offer prayers in the morning, even in the office,” Three Irons said. “Not only for my family, but for the well-being of tribal members here. I pray that we find a solution, or else we’re able to figure out how to provide them with water at the current moment — not five years from now.”

Working with other tribal members and scientists, he wants to track the exact sources of pollution in the river over the coming year. In the meantime, he’ll continue to visit homes like the Walkses’ to help families secure clean, running water. “It’s everything. It’s the bloodline for the reservation,” he said. “Wherever there’s water, there’s going to be a lot of people around it. Hopefully, they respect it, cherish it, take care of it, revive it. Hopefully, we can clean it up for the future.” ☀



Neo-noir under smoke

In *Something New Under the Sun*, climate change is the ultimate criminal backdrop.

BY PIPER FRENCH

WE ALL KNOW THE FIRES ARE COMING, but we'll pretend otherwise for as long as we can. By the time you read this, the sky above Los Angeles will most likely be bad again: dark, acrid, laden with soot. But right now, as of this writing, it's early June, and the air is clear. In LA, denial has its own season. For now, it lasts from November until July.

In *Something New Under the Sun*, the latest novel by the writer Alexandra Kleeman, this uneasy balance has been further disrupted by the acceleration of climate change. Now, the hills of California are on fire all year long. A biblical drought has run the state dry, so its denizens drink WAT-R, a hyper-commodified substitute. The haves, meanwhile, keep bottles of genuine water from exotic and ever-diminishing ice shelves stashed away in their mansions in the hills. In Kleeman's world, the personal is political is ecological. Individual despair, systemic corruption and eco-apocalypse all threaten, and denial persists unabated.

Patrick Hamlin, the book's protagonist, is a writer with one good novel to his name. He arrives in LA believing that he will creatively consult on its film adaptation. Instead, he ends up a production assistant, watching helplessly as his magnum opus, a moody rumination on place and loss, is turned into a schlocky horror movie. After Hamlin clashes with the film's mercurial vedette, Cassidy Carter, the two form an uneasy truce, teaming up to investigate a conspiracy involving two purported film producers and a host of mysterious "Memodyne" clinics cropping up across the city — there's a strange new malady going around, and young and old alike are losing their memory. (Must be something in the WAT-R. ...)



Gabriella Trujillo / HCN

Kleeman entwines the threads of several established LA genres. In one sense, *Something New Under the Sun* is a frontier tale for the end of the Anthropocene. Patrick has gone west, as many have done before him, chasing a dream that will dissolve — quite literally — into smoke. The first few chapters are a funny, if clichéd, send-up of Hollywood. (Cassidy is a former child star most recently known for assaulting a paparazzo with a used tampon.) As Patrick and Cassidy embark on a series of investigative forays to marginal warehouses across LA, the novel becomes California neo-noir, tipping its hat to Raymond Chandler and Thomas Pynchon. Patrick is one of the genre's less-compelling guides: Philip Marlowe if you replaced his grit with petulance, or Doc Sportello minus the loopy charm. But his neurasthenic passivity is an unsurprising response to a world whose ills include not just greed and corruption but a world-historical catastrophe. Kleeman shows how climate change is the ultimate noir subject: Human action and inaction tragically combine to produce a fate as sure as an incoming asteroid.

By the historian Mike Davis' count, LA had been destroyed 138 times in literature and film by 1998. But Patrick and Cassidy's LA isn't (yet) the backdrop to all-out apocalypse — it's just a world in which everything is several degrees shittier. This is no longer the stuff of science fiction: We have all already had to get used to a reality that is worse than it was, though we still have so much more to lose. "There was no bottom to land on," Cassidy thinks, "just gradations of badness that felt more like home the longer she dwelt in them."

This inexorable slouch toward disaster lowers the stakes of the conspiracy, which

comes off as an unsurprising, if nefarious, byproduct of a world with widening inequality and ever-diminishing resources, rather than something in possession of its own propulsive energy. Patrick and Cassidy eventually solve the mystery, but it doesn't matter. In the novel's third act, Hollywood and the petty malfeasance of human beings fall away, replaced by a series of existential journeys into the unknown. Kleeman has hinted at scenes of interpersonal resolution — a romance, a reunion — throughout; now, she forecloses on them. The narrative pulls away from its tight focus on individual characters; instead, there is a recapitulation of the beginning of life on earth, a memory of a kidnapping, a walk into the desert. This third-act upending of both genre and conventional narrative structure elevates the novel into something much stranger and more transcendent than is obvious at the outset. It is here that Kleeman really shines.

This dissolution recalls a scene that occurs much earlier in the novel. As Patrick waits in the lobby of a Memodyne clinic, his mind oscillates rapidly between two dark suspicions: "the ominous feeling he's been having all week that *nobody is in charge*, alternating with the fearful certainty that *the ones in charge are not on my side*." Which of these is more terrifying: that our overlords are evil, or that they're asleep at the wheel? What's worse — a vengeful god, or no god at all? ✨

Something New Under the Sun

Alexandra Kleeman

368 pages, hardcover: \$28

Hogarth, 2021.



Production still from *Reservation Dogs*.
Shane Brown / FX

PREVIEW

There's a new Indigenous TV show coming your way

Reservation Dogs is the latest product of an exciting new era of Native self-representation.

BY JASON ASENAP

SEMINOLE/MUSCOGEE CREEK filmmaker — and now showrunner — Sterlin Harjo called me from the cab of his pickup truck while he was out running errands around Tulsa, Oklahoma. It's a town he loves in a state he loves, the place where he has made most of his films. And the feeling is reciprocated; he now has a spot on the Oklahoma Walk of Fame, just in front of the city's local art-house theater, Circle Cinema. Not too long

ago I would have been able to just shoot him a text and schedule a quick interview. (Full disclosure: Harjo and I are friends.) But now, given his busy schedule, I had to go through his assistant to schedule a meeting. Because of a time mix-up on my end — he was in Oklahoma; I was in New Mexico — Harjo Zoomed me from his phone. While he drove, we talked about his exciting new coming-of-age project for FX Networks: *Reserva-*

tion Dogs. He was in no hurry to get home: "I got a plumber in my house, so it's perfect timing."

He was busy editing the last episodes for *Reservation Dogs*, which recently premiered at the Tribeca Film Festival. Harjo directed three episodes, Navajo filmmakers Sydney Freeland and Blackhorse Lowe each directed two episodes, while Tazbah Chavez, who is a citizen of the Bishop Paiute Tribe, directed one. In fact, all the directors and writers are Indigenous, and Indigenous people are involved at every level of production. It's a genuine, one-of-a-kind breakthrough.

The idea for the show came about when Harjo and his good friend, the multi-talented Maori creative force Taika Waititi, realized they both had interesting scripts that shared the same themes. Waititi pitched an idea for a series to FX. Harjo expected to hear back in about a year, assuming he was lucky, but his agents contacted him just three days later with an offer.

Reservation Dogs is a comedy about four Indigenous teenagers in Oklahoma and the small town/reservation mischief they get into. It's based on the kind of stories that Harjo and Waititi often shared. "We always told each other stories from

home and laugh, and it's always funny stories and never depressing shit. We wanted to reflect that and make a show that was a comedy. There's real issues that they deal with, but they handle it through humor." The four lead actors, who range in age from 14 to 17, are all Native American: D'Pharaoh Woon-A-Tai (Ojibwe), Devery Jacobs (Kanien'kehá:ka Mohawk), Paulina Alexis (Alexis Nakota Sioux Nation), and Lane Factor (Caddo and Seminole Creek).

Selling the project proved easier than expected, and Waititi was scheduled to shoot the pilot, but then COVID-19 hit, and everyone had to be sent home. "Of course, a Native show happens, and a worldwide pandemic shut us down," Harjo said wryly. But FX was committed, and after a break, production resumed. Because of the pause and the change in schedule, however, Waititi was no longer available to direct, so Harjo stepped in and took over the pilot. When it was time to bring in other directors, he looked no further than established filmmakers he already had confidence in. Just as Waititi had opened doors for Harjo, Harjo wanted to do the same for his fellow Native filmmakers. "Sydney is almost a freaking veteran of TV directing now, so I wanted her to be there to help set the tone. I wanted Blackhorse and Tazbah to shadow and see Sydney directing the

first episodes. But really it was just opening the door for them. And trying to get them into TV directing. It's a hard racket to get into."

Blackhorse Lowe is a Tulsa Artist Fellow. His first feature film, *5th World*, premiered at Sundance in 2005, but *Reservation Dogs* is his first foray into directing for TV. I spoke to him after he wrapped up shooting in Tulsa and was getting ready to head to New Mexico to location scout for his next feature film. Lowe summed up his experience in a rush of long, excited sentences that hinted at his larger feelings. "There are no words for me right now, but really positive and excited and just looking forward to the show coming out and people seeing it and receiving it in a positive way and seeing something that hasn't been seen before." He recognizes how special the moment is. The two episodes he directed feature two well-known Indigenous actors, Gary Farmer and Wes Studi, and comedian Bill Burr, of whom Lowe is a fan, makes an appearance later in the season. "There's a whole lot of cool people in the show."

Directing for TV is quicker than directing for film; Lowe's episodes of the 30-minute show had to be completed in four days. "Nine pages a day," Lowe said, adding that "with COVID restrictions, you're only allowed 10 hours on set." The schedule was fast-paced, but Lowe had a larger budget than he's used to working with. Indie films, in comparison, are often a scramble: "We were always limited by funds, time, availability of people," Lowe said, "whereas with TV, you're given all the toys to play with, and the professionals. So there really was nothing in my way other than myself; the sky was the limit."

Lowe generally likes to keep things close to the vest, but his enthusiasm bubbled over

when he spoke about the show. "It was all magic," he told me. "Productions like this don't come together this magically, but in this case it did, and everyone was just awesome which is very unique. You don't get that on most film sets — there's always something going on — but everyone was just awesome."

Reservation Dogs and the new Peacock TV series *Rutherford Falls* mark a new era of Indigenous representation, in which Native people are in the writers' room telling the story as well as behind the camera, directing the action. Both series are comedies, but *Reservation Dogs* is the more obviously cinematic of the two. "I think it's important to have both shows," Harjo said. "It's cool they have that different sort of vibe."

There's a fair amount of cross-pollination between the two shows. Devery Jacobs appears in both, while Migizi Pensoneau (Ponca/Ojibwe) has a role in *Rutherford Falls* and also writes for *Reservation Dogs*. Writer Tazbah Chavez works on both shows, as does Bobby Wilson (Sisseton-Wahpeton Dakota), who both acts and writes.

"It was crazy that FX let us do that," Harjo reflected in his truck as he headed home for his appointment with the plumber. "It was just kind of a dream come true."

And it's not over yet, not by a long shot. This is just the beginning of a new era of Native representation, Harjo believes. "It's an exciting time right now," he said. "There's all these shows coming out. There's going to be a lot of shows, and all of them are different. That's what's cool, and I think that's what's going to solidify our place in TV. Hollywood and the public is going to see there's no end to the stories that we have." 🌸

Production still from *Reservation Dogs* (below left).
Shane Brown / FX

Sterlin Harjo, a Seminole/Muscogee Creek filmmaker, artist and podcaster, is one of the creators of *Reservation Dogs* (below right). **Shane Brown / FX**



The fragile freedom of an open sky

A writer remembers the joy — and pressures — of a childhood spent in Utah.

BY TOPE FOLARIN

ABOUT THREE MONTHS INTO THE PANDEMIC, I found myself standing at the window of my condo near downtown Washington, D.C., cradling my newborn. Outside, the sun was rising. The world seemed plastic. Nothing moved. Absent the usual commotion of honking cars, barking dogs and fast-walking humans, the empty thoroughfare was as quiet as a photograph, yet somehow eerie, as if a black-and-white still of a barren nighttime scene had been colorized and converted into day.

I was on paternal leave, helping with our newborn and a newly homebound 3-year-old, and my wife was back at work, which meant she was back at her laptop. Like everyone else, we'd been forced to shrink and edit our lives to fit inside four walls. This place was still home, but we rarely uttered the word anymore. Home was supposed to be a place you returned to after engaging with the world. What did home mean now? We were still trying to figure that out.

Not that we had nothing to do. I'd never been busier; almost every minute of my day was booked. Feeding the baby, changing her diapers, loading the dishwasher, unloading the dishwasher, reading to the toddler, putting on *Sesame Street* (and rewinding it, because the 3-year-old had to hear a particular song a second time) — an unceasing run-on sentence of survival.

The one thing we avoided was going outside. At the beginning of the pandemic, my wife and I had committed to taking a long walk every day so the kids could feel the sun on their faces. But going outside was no longer a frictionless experience. We became hypervigilant the moment we ventured beyond our door. *Don't touch that! Move away from him!* After a few weeks,

we silently agreed we needed a break from the process of taking a break.

Everything had changed, but one change took me by surprise. While I was stuck inside, a few of my memories — memories that had never surfaced before — became searingly vivid. I burrowed into them whenever I had a spare moment. One in particular brought me great comfort, and as I stood at the window that morning, I summoned it, unsure why it was so meaningful. It was simple: My brothers and I pause after a long day of playing basketball outside. For some reason, as if on cue, we all turn to face the Wasatch Mountains. No one speaks, we just stand there, and after an unnaturally long period of silence — at least for three teenage boys — my youngest brother slaps the ball out of my hand, and we start playing once more. I had no idea where this memory came from — I couldn't even be sure it was real — but over the next few days, it prompted me to remember all those years when I spent most of my time outside.

I was born to two Nigerian immigrants in Ogden, Utah, and for the first 13 years of my life, northern Utah was my home. We lived in various cities — Bountiful and Farmington and Salt Lake City — and each time we moved, I forgot the details of our previous apartment. But I always remembered how I felt when I was outside. “Outside” was never tied to a particular location; we played against an unchanging backdrop of plain suburban homes, each of them presiding over perfectly green and manicured lawns. What mattered most to me was the action: the fact we could do almost anything we wanted, that when we were outside our parents were distant, limited gods whose powers waned the farther away from home we wandered. That, when we

were outside, we were free.

When I was 8, we moved back to Ogden. As ever, my father was chasing work. He had recently remarried and now faced the prospect of providing for a bigger household: my stepmother, my brother, my two stepbrothers and me. One day, he told us he had an idea. He had visited a long-haul trucking company and asked them how they cleaned their trailers. He learned it was an expensive, complicated process. My father informed them he could do it for a fraction of the cost, and they agreed to give him a shot. In the following days, we accompanied him as he purchased a high-pressure water cleaner and a leaf blower. He told us he had created a new kind of job.

We often went to work with him. At first, we were awed by the seemingly endless parking lots and the rows and rows of identical trailers, each one dark and incomprehensibly large inside. He worked every day except Sunday, regardless of the weather, and my brothers and I usually accompanied him. Sometimes we were pelted by rain and snow; sometimes, the sun burned through our thin clothes and marked its territory on our backs. My father would leap into a trailer with his leaf blower, run to the back, and blow the debris toward the mouth, where my brothers and I waited with plastic bags, collecting the rotting food and wooden pallet shards and nails. We'd stand back as he blasted the trailers' ribbed floors with the high-pressure water. Then we'd pick through the gunk for more trash to dump into our bags, until, almost an eternity later, we were finally done.

In the summer, my father stopped cleaning trailers and sold ice cream instead. Every now and then, he drove long miles to deliver packages for various corporations. But his trailer-cleaning business was the one constant. After a few months of accompanying my father to work, I no longer associated life outside with freedom. Even when I played basketball in the sun with my brothers and friends, I knew my leisure had been sponsored in part by my father's labor. What I sensed but could not express, not quite, was that the fun times I spent outside were a kind of illusion, that beneath the sheen of sun and laughter was our grimy reality, a kind of purgatory that my family — and only my family, it seemed — had to endure.

I admired my father for his boundless energy and incredible work ethic, for the fact he never paused to rest or even catch his breath. But we all saw how red his eyes were, and how difficult it was for him just to lift his legs into and out of his car. I had no desire to spend my life doing the same. As he worked, my father would tell us he had to spend his days this way because



Krystal Quiles / HCN

he hadn't been able to finish college — that if we wanted a different life, all we had to do was excel in school. I thought about the long hours my mother spent at the hospital working as a nurse. I knew her job was incredibly demanding, perhaps more so in certain ways than my father's, but at least she never had to worry about outlasting the elements. I thought about my friends' parents, who worked office jobs. I had no idea what people did inside an office, but I'd learned from TV that it involved sitting at a desk and occasionally gossiping with coworkers. Frankly, it looked easy.

I followed my father's advice and worked hard in school. As I grew older, I spent less time outside, and by the time I finished graduate school, I had cultivated in my mind the perfect vision of an indoor life, a life of offices and museums and hotels and conference centers.

What I realized years later, as I stood at the window and cradled my newborn, was that the pandemic had granted me the opportunity to live a heightened version of the life I'd once wanted. Now, at last, I was always inside. But I needed more. I wanted to feel the sun on my

face, that simultaneous feeling of emptiness and wholeness that surged through me whenever I glanced up at the sky. I knew my children were too young to remember much of anything about this moment. But I knew that at some point in the future, my children, too, would find themselves in an uncomfortable circumstance, and they, too, would reach for images from their past to search for clues about the way forward. I could not offer them the Wasatch Mountains, at least not yet, but the park just down the street would do fine for now.

I called my wife and 3-year-old. We put on our socks and shoes, and our masks. We all took a deep breath and, like astronauts descending from a spaceship to the soil of a dying planet, we tentatively ventured outside. ✨

Tope Folarin is a Nigerian American writer based in Washington, D.C. He serves as executive director of the Institute for Policy Studies and the Lannan visiting lecturer in creative writing at Georgetown University. His debut novel, A Particular Kind of Black Man, was published by Simon & Schuster.

Even when I played basketball in the sun with my brothers and friends, I knew my leisure had been sponsored in part by my father's labor.

Heard Around the West

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

BY BETSY MARSTON

THE WEST

“Hot enough for you?” That’s the traditional summer greeting for Westerners meeting at the grocery store or in front of the post office. But from Portland to Phoenix these days, as the thermometer consistently ratchets above 100 degrees Fahrenheit, the response might just come with an expletive. Now a new study of human-caused climate change’s effects on the Greater Yellowstone Ecosystem tells us that what’s going on might be even worse than we imagined. As Jonathan Thompson notes in his *Land Letter*, the study found that the Yellowstone region’s average temperature is not only the highest it’s been in the last 20,000 years, “it’s likely as warm now as it has been in 800,000 years.” In addition, “The mean annual temperature has increased by 2.3 degrees Fahrenheit since 1950, and could jump by another 5-10 degrees by 2100.” For farmers and gardeners in the area bordering Wyoming, Montana and Idaho, there’s a silver lining: The growing season has increased by about two weeks. Unfortunately, that only helps if there’s irrigation water, and we’re already too worried about climate change to even think about that.

CALIFORNIA

The Los Angeles man accused of stealing an adorable — and extremely endangered — ring-tailed lemur from the San Francisco Zoo last October has been charged by federal prosecutors with violating the Endangered Species Act, reports ABC News. Cory John McGilloway, 31, is accused of snatching the animal from a zoo enclosure; pictures on his phone

show him walking the lemur on a leash and driving with it on his lap, reports *The New York Times*. “At some point, under circumstances that are unclear, man and lemur separated,” the paper added. The missing lemur, called Maki by zookeepers, was later discovered in a playground south of San Francisco. What alert scientific type was smart enough to identify the animal? Preschooler James Trinh, 5, that’s who, who yelled: “There’s a lemur! There’s a lemur!” Though James was sure the big-eyed animal was a lemur, some adults from the Hope Lutheran Day School were skeptical. That’s because “coyotes, skunks, raccoons” have all visited the playground, school director Cynthia Huang told the *San Francisco Chronicle*. The zoo had been searching eagerly for Maki because the 21-year-old lemur was arthritic and needed special care. Once

back home and no longer hungry, agitated or thirsty, Maki returned to his “normal lemur self,” said a zookeeper. And James, who told a news reporter that he knows a lemur when he sees one because he likes the way they look, received a certificate of honor from the San Francisco mayor. Grateful zoo officials also gave him a lifelong zoo membership and his very own lemur, one that’s neither arthritic nor endangered because it’s a stuffed animal. Meanwhile, the lemur-napper faces a possible sentence of a year behind bars and up to \$50,000 in fines. He was arrested after police investigating a shoplifting saw him drive off in a stolen dump truck.

NEVADA

Karen England, founder of a group called the Nevada Family Alliance, said she’s concerned about teachers “contradicting the lessons

taught by parents at home,” reports *The Week*. That includes teaching “critical race theory.” Fortunately, England knows just how to prevent it: She wants teachers to start wearing body cameras. The cameras would ensure there’s “a record that could be viewed by appropriate parties,” she said. No word on how those “appropriate parties” would be selected, but we hope they wear body cameras too; their discussions might prove educational.

THE NATION

Many of us have a favorite Swiss Army knife tool: toothpick, tweezers, corkscrew — take your pick. Until recently, though, it’s a safe bet that few people considered using their ingenious knives like, say, an assault rifle — to kill as many people as possible as quickly as possible. But in a 94-page opinion, Judge Roger Benitez of the Southern District of California, a George W. Bush appointee, made that bizarre comparison as he ruled California’s 30-year ban on assault-style weapons unconstitutional. Like the Swiss Army knife, he explained, the AR-15 semiautomatic rifle is “good for both home and battle ... the popular AR-15 rifle is a perfect combination of home defense weapon and homeland defense equipment.” The judge blamed the media for perpetuating false stories of “murderous” AR-15s, reports the *Los Angeles Times*. In California, Benitez asserted, “murder by knife occurs seven times more often than murder by rifle,” though he failed to specify if Swiss Army knives were involved. Second Amendment advocates applauded the ruling, which is certain to be appealed. ☀



Armando Veve / HCN

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#IAM THE WEST

STEVE VON TILL
Musician, poet,
elementary school teacher
Spirit Lake, Idaho

Most of my poetry and music — and even my choosing a profession like teaching — is based on an unquenchable longing for a deeper connection to something meaningful in this age of mindless distraction. By tapping into the raw spirit of creativity, I believe we can re-establish a connection to the great mystery, the Mother Earth, the creatures we share it with and ultimately ourselves. People think it's disparate if you're a heavy punk rock musician, label owner and elementary school teacher, but if you grew up with your heroes being warrior poets — people focused on the higher aspects of humanity — what else are we evolving for if not for art, music, poetry and education?

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

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