

# High Country News



RIVER  
REVIVAL

LAKE POWELL  
ON LIFE SUPPORT

UTAH'S WAR  
ON COUGARS

THE SOCIALIST  
HISTORY OF  
THE WEST

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# HighCountryNews

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Mike Abraham walks through the yard of his home, which is still in a state of disrepair almost a year after flash flooding devastated Ruidoso, New Mexico. **Paul Ratje / HCN**

# Know The West.

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# Enough to go around

**YOU KNOW THE FEELING** when you think to yourself, *It just doesn't get any better than this? Everything in its right place.* It feels like winning the lottery. I had a moment like that not too long ago during a week in Joshua Tree National Park. I am comfortable traveling off-trail and had found my way to a place I've dubbed "The Gumdrops." After taking far too many photos, I kicked back in the shade of a pine tree and marveled at my good fortune — to be in that place at that time, with the sun slanted just so and the rocks around me all aglow, thinking, *Just this. This is enough.*

It was a pretty uncomplicated moment. I had a daypack with some salami and cheese, plenty of water, a map, a first aid kit and an extra layer of clothes. I'd bed down that night in a tent that I've had for 30 years, in a sleeping bag of the same vintage. In a world as complex as ours, it's remarkable that the best of times can be so simple — that so little can feel like enough.

Reconsidering the concept of what is enough is going to be an important part of facing the future, as a region and as a society. It can be hard enough to learn to live within our own means, and yet this moment requires that we also learn to live within the bounds of what our ecosystems can handle and inspire our friends and neighbors to do the same. This is especially true when it comes to natural resources. When people feel entitled to take more than their share, it can leave a place utterly ruined — whether it's a tiny pond, a teeming ocean or an entire planet. For these reasons and more, it is best to practice restraint. To tread lightly and leave some for others. To divert limited resources to those most in need.

I'd brought all the water I needed on that trip to the Mojave Desert, where washes only flow in the immediate aftermath of rain. I'd planned my meals and brought clothes that could be layered to suit the weather. With a little forethought, I had all I needed. *Everything in its right place.* It's appealing, isn't it? Simplicity and restraint. Wonder and awe. The best days of our lives are not about things but the people and places we love. And making sure there is enough to go around.

**Jennifer Sahn**, editor-in-chief

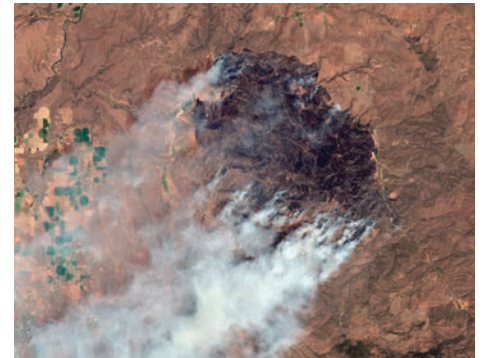


Diego Mendoza-Moyers / El Paso Matters

## Nukes and AI require 1.4 million gallons of water a day at New Mexico lab

In a state that's already short on the resource, Los Alamos National Laboratory expects to double its water use.

By Alicia Inez Guzmán



Gallo Images via Getty Images

## Wildfires are torching state budgets

Oregon allocated \$10 million for the 2024 wildfire season, which cost more than \$350 million.

By Kylie Mohr



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# A Tale of Two Rivers

## FEATURES

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BY JACLYN MOYER | PHOTOS BY SARAH KOENIGSBERG

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Why the state is planning to kill 'as many cougars as possible.'

BY KYLIE MOHR




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**ON THE COVER**

This aerial view of the South Fork of the McKenzie River shows the river flowing as a single channel (background) into a restored section of the river (foreground).  
**Sarah Koenigsberg / HCN**

Cargo vessels wait along the lower Columbia River beyond the Astoria-Megler Bridge before continuing upriver through the federally maintained navigation channel, a route kept open through ongoing dredging.  
**Amiran White / HCN**

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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](mailto:editor@hcn.org)**

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### THE SUBTLE MAGIC OF ART

I'd just like to acknowledge the time and talent taken by your graphic designers in formatting your print issues. Although I'm not always a fan of some of the graphics chosen to illustrate a story, I really appreciate the layout: the mix of photos and illustrations with text, the details, like the little pinecone graphic in the May 2026 issue. Whoever creates that subtle magic deserves a pat on the back.

**Linda Paul**  
Boise, Idaho

### IN PRAISE OF PINECONES

A great round of applause and a huge thank-you to pinecone cowboy Daniel Keeley (Pinecone Cowboys, May 2026). I hope he gets a huge raise for his difficult, dedicated work to reforest our landscape.

The article was very informative and well written. I had no idea all this was happening in the tree canopies of the West. It's heartbreaking to read the negative results of the loss of government funding, lackluster support from this administration, and what appears to be poor

*“Will we ever learn the importance of respecting and catering to the needs of Mother Earth?”*

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Forest Service management. Will we ever learn the importance of respecting and catering to the needs of Mother Earth?

**Katherine Brown**  
Cortez, Colorado

I was raised in Porterville, California, and spent my early years running around the Sierra Nevada among the giant sequoias. In 1965, I was a foreign exchange student to a family in the Black Forest in Germany. Exchange students were encouraged to bring gifts that represented our

hometowns and give them to the local people. Porterville was the headquarters of Sequoia National Forest, so I took several envelopes of giant sequoia seeds. I remember the rangers were dubious about my story that I was going to take the seeds to Germany to plant in the Black Forest. They thought it was the wrong elevation or the wrong climate and soil. Despite the size of these big trees when they are mature, their seeds are almost like dust, and they are very difficult to grow. I do not know how the seeds that I took were harvested. Perhaps some '60s era pinecone cowboys?

As it turned out, a relative of my host family in Germany was a horticulturalist in a local arboretum, and so I gave him an envelope of the seeds. He was able to germinate them in a greenhouse, and then he planted the seedlings throughout the arboretum. Since then, I have been back several times to see my *Riesenmammutbäume* (“giant sequoias” in German) and have been interviewed a few times by the local village newspaper. There was always interest in anyone who came to the Black Forest with these unique trees. I can report that “my” trees are thriving in the

Black Forest, and today it would take probably a dozen or more people to join hands around their bases. In decades or centuries to come, I hope people will gaze at these enormous and beautiful trees and wonder how they came to be in the Black Forest.

**Ken Longley**  
Kenmore, Washington

### NO WATER, NO LIFE

Utah is the worst I've seen it in 50 years of living here, and our politicians, developers and realtors are pushing more development (“The winter that wasn't,” May 2026.) And the market is saturated with existing homes for sale.

**Paul Kendall**  
Via social media

### THE MYTH OF ENERGY DOMINANCE

Cogent piece on dependence (“War exposes the energy dominance lie,” March 26, 2026). Put the kibosh on “independence.” I often find myself surprised at the lack of emphasis put on resource conservation as it applies to future use. Do we simply not care?

**John Chambers**  
Via email



### “THE ART OF THE CRUISE”

*High Country News* won a 2026 ASME Award for Design, Photography and Illustration in the Best Independent Magazine Cover category for our May 2025 issue, featuring “The Art of the Cruise” with extraordinary photographs by Gabriela Campos.



Burned trees and the ruins of a home along Gavilan Canyon Road in Ruidoso, New Mexico, in May.

REPORTAGE

## Managed retreat in a mountain town

Homeowners in Ruidoso, New Mexico, are signing up to move out of harm's way.

BY ANNIE ROSENTHAL  
PHOTOS BY PAUL RATJE

**LINDSAY SEXTON** and her husband, Corey, spent years planning their move to Ruidoso, New Mexico. The tiny mountain town had long been a weekend refuge for the couple

and their young son, its pine forests a quiet place to hunt, ski and escape the desert heat. In 2024, they found their dream home: a sprawling ranch house on the meandering Rio Ruidoso.

On the summer day they planned to close on it, two wildfires broke out just outside of town. Though the Salt and South Fork fires destroyed 1,400 structures, the Sextons' new home was spared. But the morning after the family moved in, a firefighter knocked on the door. "He was like, 'Y'all need to go,'" Lindsey recalled. After just a few inches of rain, the normally sleepy creek had jumped its banks, and a flash flood was headed their way.

The fires had torched vegetation and seared the soil that typically absorb rainfall, turning the mountain slopes around Ruidoso into dangerous runways for mud and debris. As monsoon season hit full swing, the floods kept coming. The Sextons built an 8-foot sandbag barrier between the river and their home. Then, last July, a record-setting 20-foot wall of brown water rounded the riverbend. Corey helped rescue two people trapped in the water. But as the river rushed by, he saw a small child pulled under and swept away.

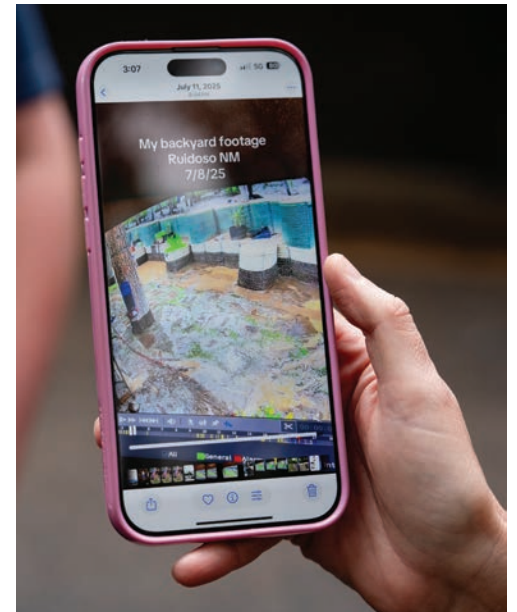
That 4-year-old girl was one of three people lost to the July 8 flood, which damaged hundreds of homes and upended lives throughout a community already struggling to recover from disaster. Experts warn that more danger lies ahead: Flood risk can intensify for several years after a blaze, and heavier rains could be even more devastating. Now, the Sextons want out. But they don't feel good about selling their house to another family. "Somebody else buys it, and then they're in the same predicament," Corey said, looking around the living room they've given up decorating. "I don't think that anybody, honestly, should be on the river."

**LOCAL OFFICIALS** share his concern. This spring, they announced a plan: With help from the U.S. Department of Agriculture, Lincoln County is offering to purchase at-risk properties at pre-damage rates and demolish or relocate the houses, permanently converting the land into open space to act as a buffer against future floods. With \$235 million in funding secured, officials hope to buy some 400 properties from willing sellers — a proposal that could dramatically



Corey (center) and Lindsey Sexton stand with their son, Brodey, 12, in front of large sandbag barricades in their backyard in Ruidoso (left).

Lindsey Sexton shows video footage of a flash flood that breached the barricades around her family's home last year (below).



reshape the 8,000-person town.

Since the late 1980s, voluntary buyouts like these have helped tens of thousands of U.S. homeowners across all 50 states escape flood-prone homes on riverbanks and coastlines, including after catastrophic hurricanes like Sandy and Harvey. But Lincoln County is among the first places in the country to use buyouts specifically to address post-fire flooding. As climate change exacerbates these compounding disasters across the Western U.S., the community's new effort offers one path forward for mountain towns fighting to survive.

Ruidoso is a conservative place, not one where you'd expect leaders to welcome what some Facebook commenters have deemed a government "land grab." Harlan Vincent, the region's Republican state representative, was initially skeptical of buyouts. A hard look at the economics helped convince him. Before last summer's flood, New Mexico had already allocated \$100 million toward recovery from the South Fork and Salt fires. Now, Ruidoso's mayor estimates that recovery could cost a billion dollars. Even with tens of millions promised in federal aid, it didn't

seem responsible, fiscally or otherwise, to keep rebuilding in areas that would flood again and again.

Lincoln County was already working with the USDA's Natural Resources Conservation Service (NRCS) on mitigation strategies like debris removal and aerial seeding. The agency also offers a buyout program, though it had never been used following a fire. But Lincoln County met the criteria: It urgently needed to restore its watershed and protect life and property still in imminent danger after a disaster. NRCS accepted the county's buyout proposal and agreed to pay up to 75% of the costs.

Local officials hope a new state fund can help make up the rest. This spring, Vincent and other lawmakers convinced the New Mexico Legislature to set aside \$70 million for land acquisition, restoration and disaster recovery — including potential state matches for local governments that have received federal emergency grants. "When you go up against Mother Nature, it's not going to work out so good for you," Vincent told me. "We're trying to get along with her."

That doesn't mean giving up on

flood-prone areas. Instead, Lincoln County officials say buyouts could help Ruidoso recover its outdoor economy — by designating new public land. Vincent estimates that the community has lost more than \$100 million in tourism revenue following the floods. Creating a new riverside park equipped with water retention and safety features like dams and detention ponds could help draw visitors back to town. "Think of the opportunities we can build around that," Vincent wrote in a January op-ed in the *Ruidoso News*. "(M)ore places for people to walk and picnic with their families, fish in the river, and see healthy wildlife populations."

While buyout programs in other states have created trails, wetlands and parks in floodplains, that kind of proactive planning is still atypical, said Liz Koslov, a University of California-Los Angeles sociologist who studies buyouts. "A lot of the time, it just looks abandoned," she said. "What happens to land has totally been an afterthought."

Thoughtful landscape design is especially important in wildfire country, Koslov said. Open space helps protect against flood damage, but if it's left unmanaged, overgrown

vegetation could pose new fire risks. In a community facing multiple hazards, simply abandoning land is not an option.

**ONE AFTERNOON** in early March, Lincoln County Manager Jason Burns drove me around the back roads of Ruidoso, pointing to homes with broken windows that sagged toward the water. “We’re gonna open this all up,” he said, to make sure “we don’t have more homes floating down the river.”

To be eligible for a buyout, applicants have to meet NRCS requirements — including U.S. citizenship and permanent access to at-risk property. From there, it’s up to the county to decide who to prioritize. Burns and his colleagues have categorized more than a thousand vulnerable properties into five tiers based on existing damage and future risk. The county plans to focus on applicants in the first two tiers — people whose homes have been completely destroyed or severely damaged.

This is where buyouts inevitably get messy. At a packed public meeting in late March, residents peppered Burns with questions: How would an appraiser assess the value of homes that have washed away? Would second homes be eligible? What about the mobile home parks whose displaced residents did not own the land they lived on?

By early May, the county had received more than 300 applications from property owners, Burns said. Just over 150 had been

deemed preliminarily eligible, and appraisers had begun visiting properties. But how many people would end up participating in the program was still unclear.

Residents have their own complex calculus to consider. Just across the river from the Sextons, a man named Mike Abraham showed me around his backyard, which was buried beneath silt and debris. The floodwater line came up nearly 3 feet on his house. “I’ve been through four disasters, each time trying to rebuild,” he told me. “This last time has decimated me completely.”

Abraham spent months after the July flood bouncing between hotels and friends’ places. Now, he’s camped out in the two undamaged rooms in his house, without heat or running water. Still, he’s not ready to leave. The property has been in his family for 45 years, and he’s lived here for two decades. With more mitigation infrastructure, he thinks the worst impacts of future flooding could be avoided. And he worries that a buyout wouldn’t cover the cost of a new home in the area, where housing stock is limited.

That concern is real and common, said Miyuki Hino, who studies climate adaptation at the University of North Carolina at Chapel Hill. “Especially for lower-resourced households, just being handed a check is not enough to really make the move a success,” she said. Without careful consideration of what comes next, a buyout can end up

exacerbating inequality and fracturing the community it aims to preserve.

Abraham wasn’t sure what it would take to convince him to leave this home. As we stood talking in the yard, two elk wandered over, just across the river. We watched as the animals folded their legs and lay down in the sun. “What price do you put on that?” Abraham asked. “What price do you put on waking up every day and seeing nothing but beautiful life?” ✨

*Annie Rosenthal is a correspondent for High Country News, focused on rural communities, climate change and life in the U.S.-Mexico Borderlands. Previously, she was a Virginia Spencer Davis fellow at HCN.*

*This is the first in a series of stories about the Ruidoso buyouts. Next, we’ll explore what equity and fairness might look like during a buyout process.*

*This reporting was supported by the Institute for Journalism and Natural Resources.*

A warning sign along Cedar Creek Drive in Ruidoso (below left).

Manufactured homes are still in disarray in a part of Ruidoso that experienced extensive damage during flash flooding last year (below right).





REPORTAGE

# Bureau of Indian Affairs faces reorganization

The planned shake-up would deepen funding and staff cuts.

BY ANNA V. SMITH  
ILLUSTRATION BY J.D. REEVES

**THE BUREAU OF INDIAN AFFAIRS** is facing a significant overhaul, including further staff cuts, but as of press time, the details still have not been released. The plan, which was first discussed publicly at a congressional hearing in March, will “make significant cuts to the staff critical in administering programs and distributing funding to tribal nations,” said Mark Macarro, president of the National Congress of American Indians and chairman of the Pechanga Band of Indians. “This action has been done without consultation with tribal nations and without consideration of the impact it will have on the delivery of programs and services.”

The information comes after a year of intensive reorganization at the Department of the Interior, which houses the BIA, that has already led to a 11% reduction in the agency’s workforce. It also comes amid budget discussions for the next fiscal year, in which the administration has separately proposed to cut around \$744 million from the budget and reduce 760 more staff positions from the BIA, a 21% decrease.

“We urge the committee to encourage Indian Affairs to reverse course and engage in robust and collaborative consultations with tribal nations before taking any action that would imperil the already understaffed Indian Affairs workforce,” Macarro said.

In an emailed statement to *High Country News*, Assistant Secretary for Indian Affairs Billy Kirkland said, “Indian Affairs is committed to upholding federal responsibilities to tribal communities. Under President Trump’s leadership, we are prioritizing maximizing resources and enhance operational effectiveness across the organization to cut bureaucratic waste. These efforts reflect our commitment to streamlining government operations while ensuring that Indian Affairs efforts remain strong, effective, and impactful.

“This administration believes that a more effective path forward is one that reduces federal overreach and empowers tribal governments to tailor solutions that best meet the unique needs of their communities,” he said. “This shift in approach will ultimately foster greater self-governance and more responsive, culturally relevant services.” Multiple requests for additional information from the Bureau of Indian Affairs, including details of the plan or what the timeline is for the reorganization, were not answered.

The Bureau of Indian Affairs has gone through an enormous amount of change since it began as part of the U.S. Department of War in 1824, and today the majority of employees are Native people. Several previous administrations reorganized it, often without consulting with tribes. “DOI has chosen to shut the tribes out of the consultation process,” Tex Hall, then-president of the National Congress of American Indians, told members of Congress in 2004, speaking about the BIA’s

reorganization plans, adding that “tribal leaders want change, contrary to what you may hear. We want change. We want improvement in the system and in the way DOI manages trust funds and trust resources. However, tribal comments and suggestions concerning reorganization have fallen on deaf ears.”

The agency’s plan to reorganize and cut more employees is a departure from what it told the Government Accountability Office (GAO) last December. At that time, officials said there were “no plans to reorganize or further reduce the workforce,” although “existing functions might need to be restructured or realigned to achieve administration priorities.”

In a report published in January, the GAO found that the Trump administration’s efforts to reduce federal staff had resulted in the Bureau of Indian Affairs losing 13% of its workforce from January to July 2025, while the Office of the Assistant Secretary for Indian Affairs lost 27% and the Bureau of Indian Education lost 5%. The cuts also impacted central BIA offices: The Pacific Regional Office lost 29% of its staff, while employees in the Southern Plains office were reduced by 26%, and the Alaska Regional Office saw a reduction of 22%. In a different report from February, the GAO found that BIA staff had already shown a pattern of decline since 2022, with a 10% annual attrition rate, affecting tribes’ ability to access \$385 million in funds from President Joe Biden’s landmark Inflation Reduction Act.

The Coalition for Tribal Sovereignty — an alliance of 18 tribal organizations — warned about the impacts these cuts would have on Indian Country in a letter to Interior Secretary

Doug Burgum. They pointed out that the staffing reductions had abruptly ended long-term relationships between federal staff and tribes and caused delays in time-sensitive correspondence, along with a shortage of personnel with the ability to release federal funds to tribes. Funding and programs for tribal nations are legal obligations based on treaty rights, “for which we prepaid with our lands and resources,” the coalition wrote. “Indian Country is deeply concerned about DOI’s silence with respect to how it will fulfill its trust and treaty obligations to Indian Country, given that the Administration’s actions have already resulted in a substantial loss of institutional knowledge and expertise at DOI with respect to Native issues.”

Despite the cuts, there has been no clear evidence of cost-saving, the government’s primary argument for reducing staff and reorganizing. The GAO noted that as of December, Indian Affairs officials had yet to analyze projected cost savings from the cuts. In April, the nonprofit Public Employees for Environmental Responsibility similarly found that Interior had not conducted such an analysis for the department. This “confirms that the reorganization was not about saving money, but about inflicting trauma and greater control over public employees by people who want to dismantle our public lands system,” said PEER Executive Director Tim Whitehouse.

The agencies in the Interior Department that serve tribal nations aren’t the only ones that have been deeply impacted by staffing cuts. At the March congressional hearing, Intertribal Timber Council President Cody Desautel

(Colville) stated that the Office of Tribal Relations within the USDA already lost about 75% of its staff in the past year. That office is the primary contact point for tribal nations for issues ranging from tribal consultation on policies and co-stewardship agreements to tribal food programs. Desautel added that the Forest Service had improved consultation recently and seemed to be open to partnering with tribal nations, but that staffing was a serious issue. Additional staff losses could also occur within the USDA as it moves forward with its own proposed reorganization. The department held two tribal consultations about its plans last fall, during the last government shutdown.

Tribal leaders voiced strong opposition to such a reorganization, *Government Executive* reported, citing the department’s failure to consult with tribal nations before introducing the plan and the disruption in services the reorganization would cause, adding that despite any cost-saving that might result, tribes would be negatively impacted in the long run. According to a summary of the consultations, one tribal leader described the reorganization as “a failure of USDA to adhere to its own consultation policy,” while another stated that “mass relocations will destroy irreplaceable knowledge about Treaty rights, forest conditions, and working relationships built over decades, and new staff unfamiliar with the land will make mistakes.” ❁

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

FACTS & FIGURES

# DANCING WITH DEAD POOL

The megadrought forces a reckoning at Glen Canyon Dam.

BY JONATHAN THOMPSON  
ILLUSTRATIONS BY  
EMMA MARY MURRAY

**IN 1956, CONSTRUCTION** of Glen Canyon Dam began. The dam would generate hydropower, promote recreation and keep silt from filling up Lake Mead, but its main purpose was to create Lake Powell to serve as a water savings account and even out the Colorado River's fluctuating flows. By storing water during wet years for use during dry ones, it would help the Upper Basin states comply with the Colorado River Compact and ensure that the river's flow at Lee Ferry was not depleted "below an aggregate of 75,000,000 acre-feet for any period of ten consecutive years."

Now, all its functions — except capturing silt — are imperiled, and, ironically, the dam itself may cause the Upper Basin to violate the compact's non-depletion clause.

More than two decades of drought have nearly drained Lake Powell's savings account. This winter's lack of snow has made things worse, forcing federal dam operators to take extraordinary measures to keep the reservoir from dropping below critical levels this summer and preserve its hydropower production and Glen Canyon Dam's viability as a water storage facility. But once downstream releases are reduced, the Upper Basin could end up violating the compact.

Both the compact and the dam were developed for a much more abundant river. Now, increasingly arid times are poised to render both obsolete. ✨

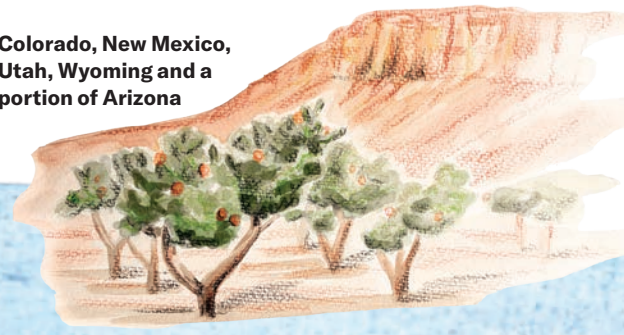
SOURCES: Bureau of Reclamation, National Oceanic and Atmospheric Administration, Natural Resources Conservation Service, U.S. Geological Survey, Central Arizona Project.

## UPPER BASIN

Colorado, New Mexico, Utah, Wyoming and a portion of Arizona

### 4 million acre-feet

Approximate annual consumptive water use by the Upper Basin states.



## GLEN CANYON DAM

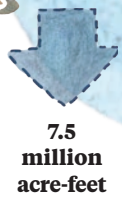
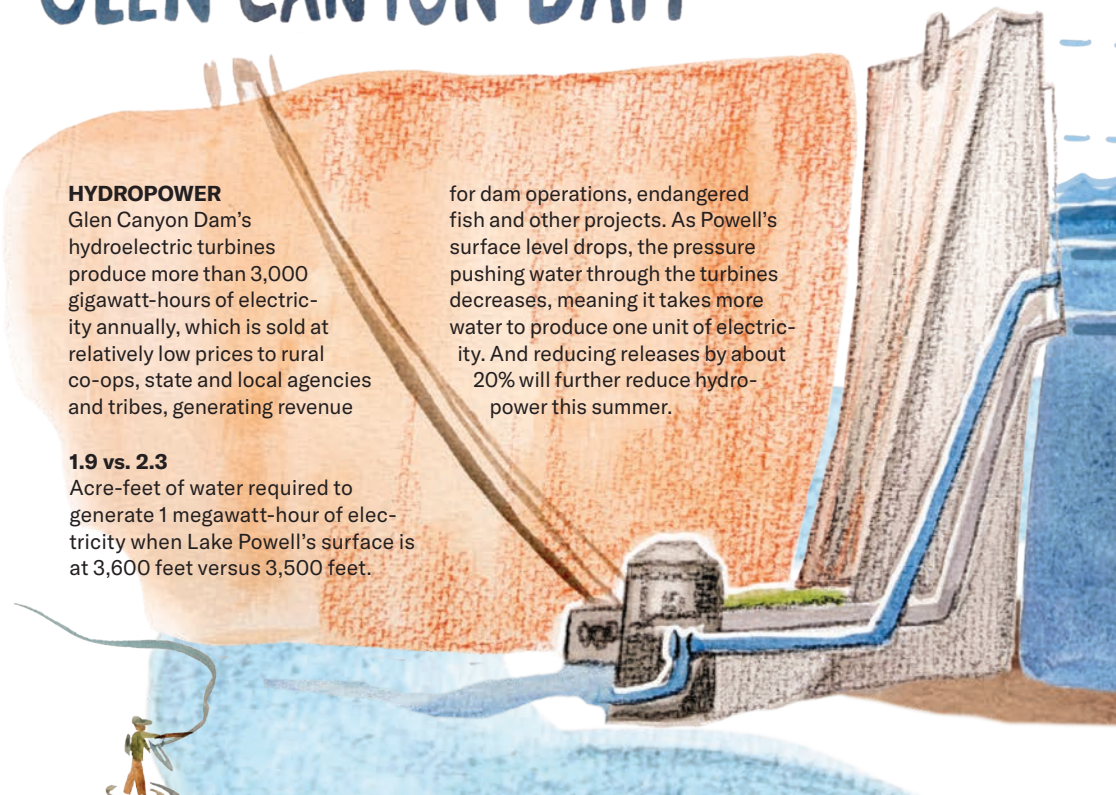
### HYDROPOWER

Glen Canyon Dam's hydroelectric turbines produce more than 3,000 gigawatt-hours of electricity annually, which is sold at relatively low prices to rural co-ops, state and local agencies and tribes, generating revenue

for dam operations, endangered fish and other projects. As Powell's surface level drops, the pressure pushing water through the turbines decreases, meaning it takes more water to produce one unit of electricity. And reducing releases by about 20% will further reduce hydropower this summer.

### 1.9 vs. 2.3

Acre-feet of water required to generate 1 megawatt-hour of electricity when Lake Powell's surface is at 3,600 feet versus 3,500 feet.



7.5 million acre-feet

Average amount of water the Upper Basin must permit to flow to the Lower Basin states — or release from Glen Canyon Dam and Lake Powell — each water year, according to the Colorado River Compact. With the 750,000 acre-feet guaranteed to Mexico by treaty, that comes to 8.25 million acre-feet per year.



6 million acre-feet

Amount of water Reclamation plans to release from Glen Canyon Dam this water year, putting the 10-year aggregate at about 79 million acre-feet and potentially leaving the Upper Basin in violation of the Colorado River Compact. It also means less water in Grand Canyon for fish and recreation.

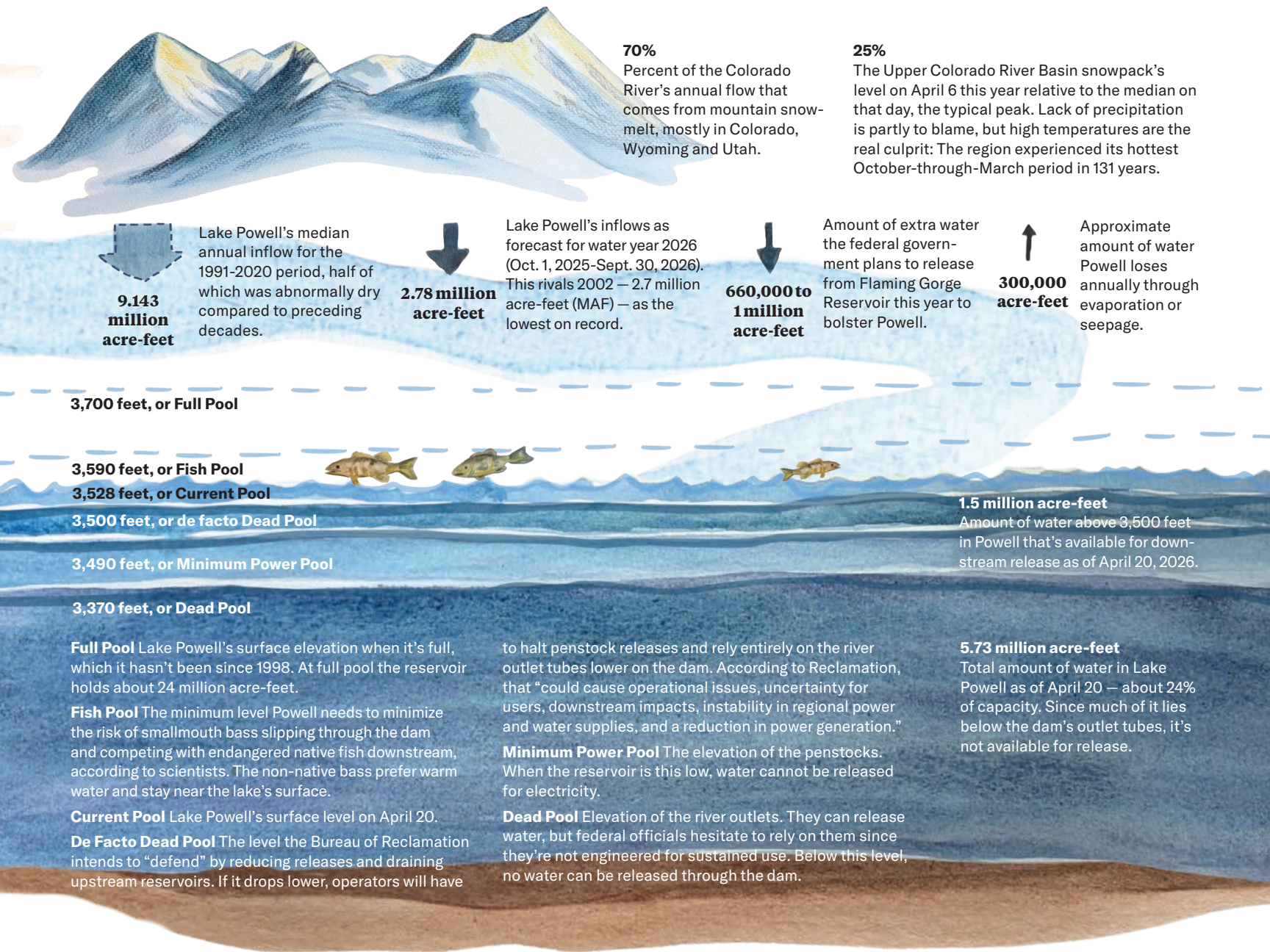
## LOWER BASIN

Arizona, California and Nevada

### 6.23 million acre-feet

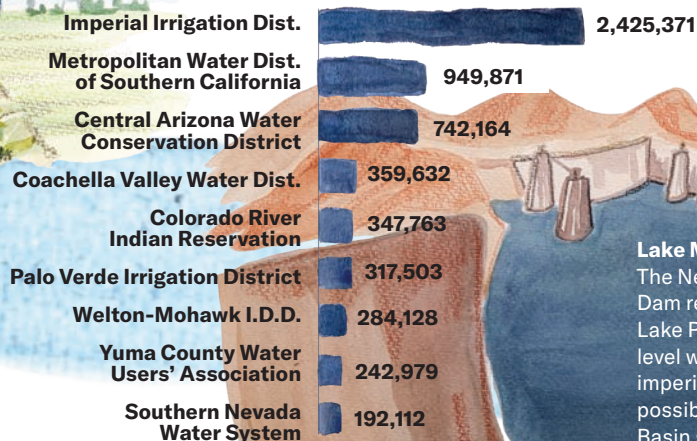
The Lower Basin states' consumptive Colorado River use in calendar year 2026, as forecast by Reclamation, not counting the projected 1.45 MAF for Mexico or the amount of reservoir evaporation.





While the Upper Basin diverts water from the Colorado and its tributary via dozens of small outtakes, the Lower Basin delivers most of its Colorado River water via a handful of large diversions and canals, namely the **Southern Nevada Water System, Central Arizona Project, Colorado River Aqueduct, All-American Canal and Gila Gravity Main Canal.**

**LOWER COLORADO RIVER TOP WATER USERS**  
Consumptive use in acre-feet (Forecast CY 2026)



**Lake Mead**

The Nevada reservoir behind Hoover Dam receives nearly all its water from Lake Powell, meaning that its surface level will also drop further this year, imperiling hydropower production and possibly triggering additional Lower Basin shortages.



## REPORTAGE

# Utah's controversial new mountain lion study

Why the state is planning to kill 'as many cougars as possible.'

BY KYLIE MOHR

**ANDY RICE** is perhaps the last person you'd expect to care about mountain lions. A shepherd near Boulder, Utah, he said that over the past decade, mountain

lions — also called cougars — have killed about 100 of his sheep, costing him tens of thousands of dollars.

But Rice is deeply upset

about the Utah Division of Wildlife Resources' new approach to mountain lion management. Starting late last year, the state has been paying hunters and trappers to kill as many mountain lions as possible in six of the state's 30 hunting units as part of a state-led study of how predator removal affects mule deer and bighorn sheep populations. The study, which is scheduled to continue year-round through 2029, is funded in part by sportsmen's groups.

"My concern is that the government that I pay into, and the conservation organizations that I've trusted my whole life as a hunter in Utah, are willfully creating programs that are destructive to our

communities," Rice told *High Country News*.

Hunters and trappers began killing mountain lions in some units last October, according to Utah Division of Wildlife Resources (DWR) spokesperson Faith Jolley, and as of March 19, they had killed 45. Updated numbers have not been publicly released. Meanwhile, last December, DWR biologists began capturing and collaring mule deer for monitoring.

"The use of the word 'study' appears to be hollow and disingenuous — rather this is an extermination campaign masquerading as science," said Elliot Ross, a *National Geographic* explorer and photographer who lives in southern Utah near Rice.

**WILDLIFE MANAGERS** in Utah are under mounting pressure from state legislators to reduce the populations of mountain lions, bears and coyotes in the state. In 2020, the Legislature passed H.B. 125, which orders the DWR director to cull mountain lions when deer and elk populations fall below a given size. Jolley said the herds in the six units have been below target size for several years, though DWR wasn't mandated to take action until the law went into effect in May 2025.

Though Utah has allowed recreational hunting of mountain lions for decades, hunters were generally limited to killing one per season. In 2023, in a last-minute amendment to a wildlife bill, the Legislature lifted seasons and bag limits on mountain lions. Now, anyone with a general hunting license can shoot, trap or snare mountain lions with no limits all year long.

The current study is a cooperative effort among scientists, sporting groups and the state wildlife agency. Two Brigham Young University biologists have offered to lead the data analysis and assist with ungulate captures and other fieldwork, but a contract between the university and DWR has not been finalized.

This year, the study's hunters and trappers are funded by two nonprofit hunting and conservation groups, the Utah Wild Sheep Foundation and Sportsmen for Fish and Wildlife. While mule deer are

the primary focus, the bighorn sheep that live in three of the six management units will also be studied.

Each organization contributed \$150,000 toward the project's \$300,000 cost for fiscal year 2026. The money pays for two predator-management specialists at the Utah Department of Agriculture and Food and one predator-management biologist at DWR. Additional funds will come from a federal tax on hunting equipment and state fees for big-game hunting permits.

The study's total cost is hard to estimate, Jolley added, given that the state already monitors mule deer. But a project proposal submitted to DWR by the BYU researchers and obtained by *High Country News* estimates that it will cost a total of \$1.29 million, with BYU contributing \$281,604.

The state's mountain lion removal effort is expected to last at least three years, according to the official project summary. The study will continue through December 2029, with data analysis occurring in 2030 and 2031.

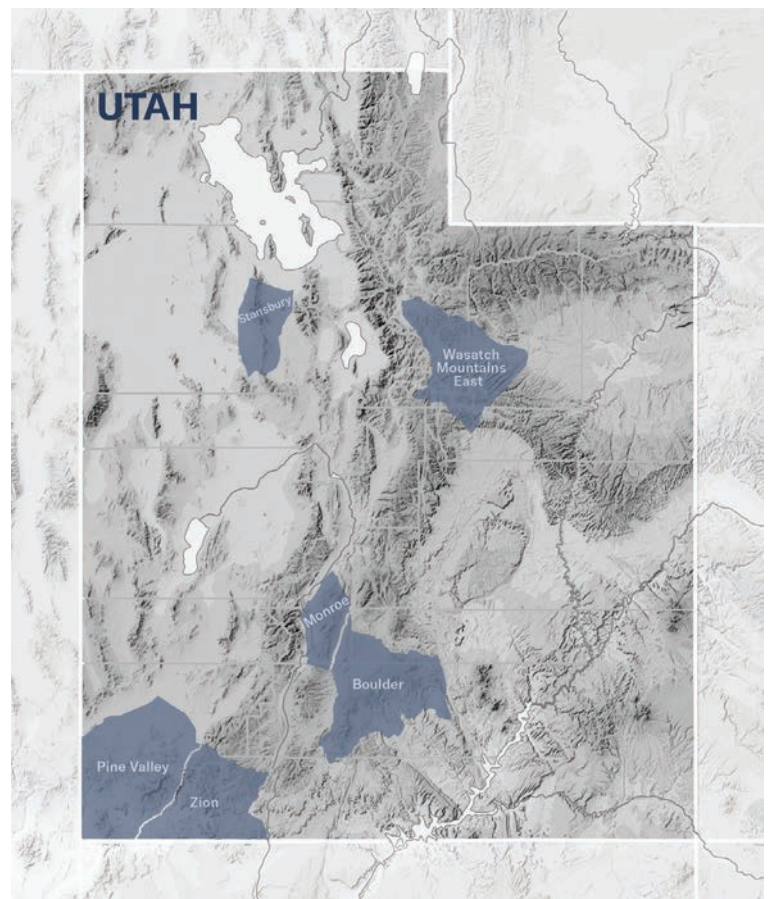
**THOUGH THE DWR** posted its project summary in October 2025, Rice and other concerned Utahns didn't learn about it until December, when a recreational lion hunter's dog walked into a snare and died, prompting the hunter to call the wildlife agency and then tell others what he'd learned. (The units are still open for recreational hunting, though

the DWR has since posted some warnings about traps and snares.) "The fact that the public wasn't given the opportunity to get involved or even comment on this is a big red flag to me," said Denise Peterson, founder and director of Utah Mountain

Lion Conservation, a nonprofit organization that encourages coexistence with mountain lions.

"Because this is a mandated action we are choosing to study — rather than a change in rule or management — there is no requirement to allow for public

*"The fact that the public wasn't given the opportunity to get involved or even comment on this is a big red flag to me."*



A mountain lion photographed by a trail cam operated by Utah Mountain Lion Conservation (opposite). **Courtesy of Utah Mountain Lion Conservation**

The six hunting units in Utah where state-paid hunters and trappers can kill unlimited numbers of mountain lions through 2029 (right). **Source: Wikipedia, Utah Division of Wildlife Resources**

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*“The use of the word ‘study’ appears to be hollow and disingenuous — this is an extermination campaign masquerading as science.”*

Mountain lion cubs in central Utah (right). **Courtesy of Utah Mountain Lion Conservation**

comment or input,” Jolley said, adding that public comment was allowed at December regional advisory council meetings and at the state wildlife board meeting in January.

Jolley said the removal is justified by 10 years of data on mule deer survival and mortality. But at a January meeting of the DWR Wildlife Board, wildlife managers acknowledged that the majority of mule deer decline in the state is due to factors such as plant quality and habitat loss, rather than predation.

Mountain lions are primarily nocturnal and prefer rugged habitat, so it’s hard — and costly — to count them. Jolley said their numbers in Utah have been declining since 2016, when the adult population was estimated to be 1,900. The most recent estimate, in 2024, was 1,100.

Critics believe there should be a limit on the number of lions harvested to avoid pushing the population too low. But according to Jolley, there are no limits on the number of lions that could be killed in the course of the study because the goal is to “remove as many

cougars as possible.” DWR is confident that, despite the removals, “there will always be a viable cougar population on those units,” Jolley wrote.

State wildlife managers won’t measure total mountain lion populations directly, simply noting the number of lions killed by the state and recreational hunters. If they conclude that the big cats aren’t responsible for decreasing deer populations — if, say, malnutrition proves to be the problem instead — critics say that dozens of mountain lions will be dead anyway, and for no good reason.

**DOES KILLING PREDATORS** to save prey animals work? “It’s a question managers and scientists in the wildlife field have been asking for probably a century,” said David Stoner, an ecologist at Utah State University who is not involved in the DWR study.

Research published in 2011 by Mark Hurley, a now-retired Idaho Fish and Game wildlife research manager, found that removing mountain lions in Idaho had “no strong effect” on mule deer population growth.



“What drives deer populations is largely weather,” Stoner said.

Rice said he’s already seeing the effects of the project in Boulder, Utah. “You can’t kill your way out of problems,” Rice said. “You solve one problem and create another every single time.” In early March, one young lion was seen swiping a cat off a porch; another got stuck under an unsecured chicken coop and was euthanized by state wildlife officials. The Boulder hunting unit is the largest in the study area, and as of March, hunters and trappers hired by DWR had removed 15 mountain lions

from it, including some females. “You kill mothers and have offspring that can’t take care of themselves,” Rice said. “We are literally seeing the consequences of it in real time.” ✨

*Kylie Mohr is a correspondent and contributing editor for High Country News writing from Montana.*

*This story is part of High Country News’ Conservation Beyond Boundaries project, which is supported by the BAND Foundation and the Mighty Arrow Family Foundation. [hcn.org/cbb](http://hcn.org/cbb)*

■ DEAR FRIENDS



Benjamin Rueck, above, climbing in Penitente Canyon, located in Colorado's San Luis Valley.  
**Photo courtesy of Dan Holz**

Mia Axon, right, at Sinks Canyon State Park in Wyoming.  
**Photo courtesy of Greg Davis**



## All signs point up

**Mia Axon** and **Benjamin Rueck** traveled very different paths on their way to becoming world-class rock climbers. Mia was captain of the gymnastics team at the University of Michigan and a conservatory-trained harpist — ideal for developing a strong body, strong fingers and a gift for memorizing complex sequences of movements. “I’m a kinetic learner,” she told me recently.

Ben, on the other hand, dug graves in tiny Loma, Colorado, where he grew up, and scrubbed toilets in return for a membership at the local climbing gym. He developed strong arms and a propensity for upward motion: He later managed that gym and now owns his own.

Mia went on to become a two-time national champion

sport climber and a top finisher in World Cup and X Games competitions. (Climbers will appreciate that in 1996, she was the first woman in the U.S., and the fourth in the world, to climb a 5.14a. “Hanging on by your fingernails” pretty much captures it.)

A generation later, Ben traveled the world as a sponsored athlete, with “first ascents” from Brazil to Madagascar. He was among the first climbers to be allowed access to the crags in the Qingfeng Valley, at the boundary of Zhangjiajie, China’s first and largest national park. (The expedition is the subject of a short documentary film that will tie your stomach in knots.)

Both these wall climbers now work at *High Country News*.

After retiring from full-time climbing, Mia worked in fundraising at a long list of nonprofits, ranging from The Nature Conservancy and the Colorado Outward Bound School to the National Museum of Wildlife Art, the ACLU and the universities of Michigan and Colorado. She’s been acting as our director of philanthropy for about a year and a half, helping us streamline and focus our fundraising efforts and take good care of all of you *HCN* supporters.

Ben, too, has retired from professional climbing, heeding the adage, “There are bold climbers and there are not old and bold climbers.” He joined us in April as revenue products manager, focused on increasing other forms of income, from ad sales and sponsorships to group subscriptions and a few new ideas that are still in development.

**CONDOLENCES:** We were sorry to hear of the death of long-time *HCN* reader **William “Scott” McKay** of Nephi, Utah. Scott was a middle school science teacher who “loved rivers, wild places, and wild things, particularly raptors and other birds,” according to an obituary shared by his brother **Tom**. When he wasn’t piloting a raft or surveying raptor nests, Scott played the flute for the Nephi city orchestra and served, along with **Sharon McKay**, his wife and fellow teacher, on the board of the Children’s Justice Center, which offered a safe space for traumatized children.

To honor Scott’s life, Juab School District staff and students took part in a day of service, and Nephi’s mayor, Justin Seely, issued an Arbor Day proclamation. “If you would like to honor this remarkable man,” his family members wrote, “go pick up some litter in a public place, play some John Prine, take a hike, do a good deed for someone, look up at the birds, and always recycle!”

— *Greg Hanscom,*  
*executive director & publisher*

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We’ll do our best to get it into the Community Pages.

William “Scott” McKay in the wild.  
**Photo courtesy of Sharon McKay**



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# A Tale of Two Rivers

*Part I:  
The Columbia*



# A RIVER ROBBED

**More than a century of dredging by the U.S. Army Corps of Engineers  
at the expense of tribal and aquatic communities.**



# OF SEDIMENT

BY  
JOSEPHINE  
WOOLINGTON

has transformed the Columbia River estuary

## **THE STORY OF PEOPLE** and the lower Columbia River has always centered around canoes. Varying shapes and styles were built to navigate the river's varying shapes and elements. There were canoes for shallow water and deep water, canoes to cut through currents and travel upstream, canoes for clamming, fishing and whale hunting.

Chinookan canoe construction reflected the diversity of the region's people and the lower Columbia, comprising a vast 146-mile estuary from the river's mouth to the western Columbia River Gorge. The most famous and largest canoes measured up to 60 feet long, designed to navigate powerful wind and waves near the river's mouth and big enough for three tons of people and cargo. Among the smallest were 10- to 14-foot canoes made for gathering wapato, a wetland plant with emerald, arrowhead-shaped leaves and edible potato-like tubers. The boats were sleek, light enough to carry under one arm and ideal for the slow-moving shallow waters around present-day Portland, where wapato thrived.

Canoes decorated the river's sandy shorelines. Villages lined its banks. Before the 1800s, no levees separated the waterway from the floodplain. No dams blocked salmon. Cold water roared over rapids and sighed through the estuary. Braided channels thick with insects and songbirds curved through marshy bottomlands. Minnows, suckers and sturgeon filled the clear backwater tidal sloughs. These extensive channels snaked through the broad estuary like veins from the region's heart, the Columbia, known as wimal to upper

Chinookan peoples and iyagayt! imal to the lower Chinookans at the river's mouth. The habitat supported one of the world's largest salmon runs, when 10 to 16 million salmon and steelhead returned from the ocean to spawn in their ancestral rivers.

The Columbia sustained so much life in part because of an often-overlooked element of river ecology: sediment. Tiny particles of sand, silt and clay built and maintained the estuary's wetlands. When rivers are allowed to twist and turn and spill out of their banks, nutrient-loaded sediments settle across floodplains. Deltas, sandbars and marshes form. These habitats support not only plants and fish, but also human cultures; Chinookan peoples along the lower Columbia comprised one of North America's densest civilizations. International commerce flourished for millennia, fueling emporiums like Celilo Falls. Canoes carved to handle the river in all its complexity carried tubers, hides, shells, beads and salmon. Moving sandbars created some of the most productive fishing sites. "The sediments and the soils are the foundation of humanity," said Roger Amerman, a geologist, artist, elder and citizen of the Choctaw Nation of Oklahoma who specializes in Columbia Plateau tribal histories.



"Not just our culture, but all cultures.

"If that's poisoned or removed," he said of sediment, "we're impoverished, in every kind of way."

But the early United States saw the millimeter-sized particles as an obstacle to economic growth. In 1824, when Congress tasked the U.S. Army Corps of Engineers to "improve" navigation on the nation's rivers for commerce, sand impeded the cargo vessels that replaced Chinookan canoes. Sand grounded ships with drafts so deep that



they scraped the riverbed. The Columbia's powerful mouth was especially dangerous, where river and ocean currents collided, creating sandbars hidden below white water and earning it the nickname "the graveyard of the Pacific."

By the 1860s, the Corps, a military and civil-works engineering agency within the U.S. Army, started dredging the riverbed to create a 107-mile international shipping channel through the estuary, from the river's mouth to Portland. The agency installed

During low tide on the Columbia River, Chinook tribal members push a traditional style canoe called *Skakwal* (which means "Lamprey Eel" in Chinuk wawa) toward the sea during the annual First Salmon Ceremony.

**Amiran White**

A barge moves equipment off Rice Island (*opening spread*), which was created by sand dredged from the Columbia River Shipping Channel near Astoria, Oregon. The island is one of many locations the U.S. Army Corps of Engineers uses to deposit dredged sand.

**Nathan Howard / The Columbian**

dozens of water-control structures that altered the flow and sediment, squeezing the waterway into a narrow, faster channel suited for vessels heavy with gold, wheat and timber. Later, between the 1930s and 1970s, the Corps and the U.S. Bureau of Reclamation built a series of hydropower dams upriver that further inhibited water and sediment to flood the estuary while also severing fish migration, devastating salmon populations and tribal lifeways.

The Corps helped fulfill the long-held

colonial vision of the Columbia as an imperial river. Before Europeans even saw the waterway, they dreamed of “the Great River of the West,” as the French labeled it on maps, where profits would flow. While Chinookan peoples built boats to fit the river, the Corps built the river to fit boats. That legacy endures today, here and along the country’s other largest rivers, through flood control, dredging, navigation locks, dams, jetties and levees.

At 43 feet deep and 600 feet wide, the Columbia’s current channel is nearly three times its natural depth and half its width in places. Wetland-replenishing sediments are largely trapped behind upriver dams like Bonneville. Sand that slips past the concrete barriers is dredged out and piled elsewhere in and along the river. A 2005 report by the National Marine Fisheries Service, the agency tasked with overseeing salmon recovery, found that dredging and filling in wetlands has been one of the major causes of habitat loss in the estuary over the last century. Seventy percent of the river’s marshes have been eliminated. More than one-third of its salmon and steelhead populations are extinct, and those that remain are at risk, listed under the federal Endangered Species Act.

The Corps has long framed dredging as

a necessary chore that causes minimal ecological and cultural harm. Each year, under the agency’s command, 6 to 9 million cubic yards of sediment, mostly sand, is vacuumed out to keep giant freighters packed with wheat, petroleum, fertilizer, cars and electronics — \$31.2 billion worth of goods — moving up and down the lower river. So much sand has been removed — piled on land, on river islands, in the river outside the shipping channel, in the ocean — that officials now say they’re running out of places to put it. If too much sand piles underwater in bars or shoals, the Corps would have to issue draft restrictions for commercial vessels, limiting their cargo. “We’ll eventually reach a point where we’re not keeping up with the shoaling to maintain that channel,” said Dan Robledo, who is managing the Corps’ 20-year, \$578.7 million plan for dumping sand. The agency published its final report in early May.

In an emailed statement, Kerry Solan, public affairs chief for the Corps’ Portland district office, wrote that while the lower Columbia has been altered by a “variety of factors or parties,” the agency’s navigation mission can “contribute positively to the estuary’s health.” The Corps claims it can rebuild wetlands using dredged sand,

although it lacks a restoration plan and budget. Tribal leaders warn that the agency’s plan will continue to harm culturally significant and treaty-protected species, like salmon, lamprey and sturgeon, especially as the ongoing climate crisis warms the river and weakens its flow.

“There’s a misleading effort made to say this is necessary for the economy,” said Kathleen George, a tribal council member and ceremonial fisher for the Confederated Tribes of Grand Ronde, which includes several Chinookan bands whose ancestral homelands span much of the estuary. Commerce has always flowed on the river, not in steel cargo containers but in canoes. “It is often presented as if the economies of the people who rely upon salmon and steelhead and sturgeon and lamprey are not important,” she said.

“We are prioritizing other values on the back of our river.”

**UP CLOSE, TAN, WHITE AND GRAY** flecks of quartz sparkle and sift softly through your fingers. Depending on where you are on the river, the grains vary in size. Downstream of the Cowlitz River near Longview, Washington, pumice and other volcanic sediments from the 1980 eruption of Mount St. Helens still thicken the river. The sand is lighter, finer, measuring about .2 millimeters. Other tributaries deliver coarser sands, sometimes up to 4 millimeters.

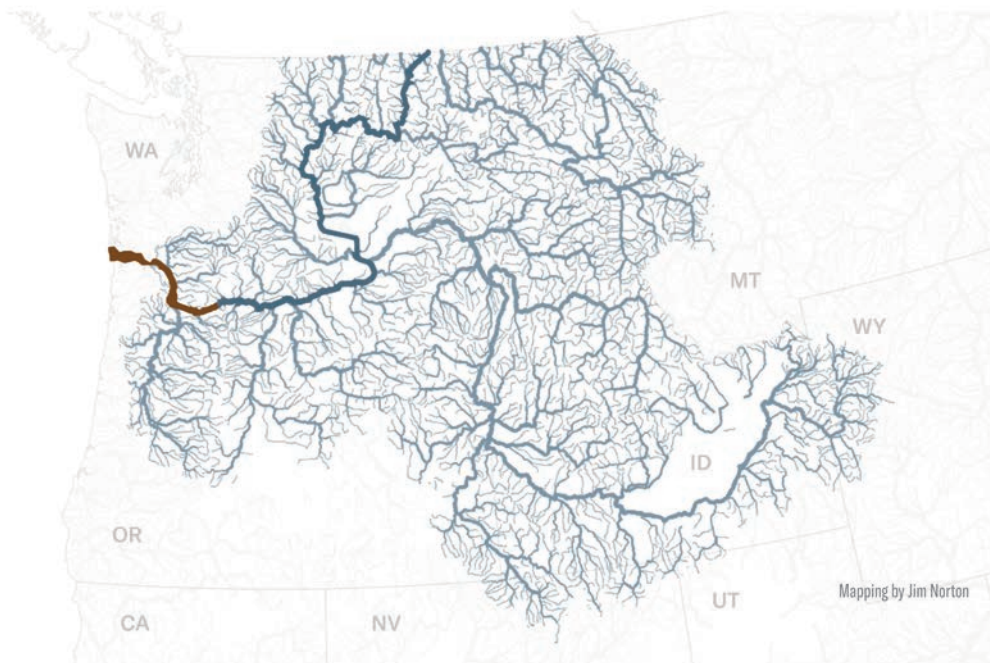
Underwater, sand settles. Miniscule transparent crustaceans that feed salmon find shelter here. Young eyeless and toothless lamprey burrow their tubular bodies in the grit, while 800-pound, 12-foot-long sturgeon — the ancient “grandfathers of the river,” George calls them — use their chin whiskers to locate critters in the murky bottom.

A natural riverbed has texture. Thick mud-like sediments entomb tree snags. Currents tug and pull sand into mounds.

Like all major rivers, the Columbia carries sand and other sediments. From its glacial headwaters in southern British Columbia, it churns through granite mountains, snatching quartz from rugged landforms and eventually pounding it into sand. Along its 1,243-mile journey, through high-desert basalt plateaus and the deep forested gorge cut by the waterway through the Cascade Range, the river is joined by a dozen major

## The Columbia River Basin

The Columbia River and the **heavily dredged area** downstream from Bonneville Dam.



tributaries that contribute more sand along with glacial and lowland gravel, silt and clay. The Columbia gathers and grinds these sediments from as far away as the Grand Tetons and exhales them into its estuary, primarily from April to July, when snowmelt and heavy spring rains swell the river to its highest flow, called the spring freshet.

Sediments are deposited when water slows down, commonly at riverbends, like at Kelley Point Park in North Portland. The landscape has been heavily altered by the Army Corps at the now-channelized confluence of the Columbia and Willamette rivers. Here, the hard basalt of the Tualatin Mountains forces the Columbia to curve northward, creating the notch of Oregon's northwestern corner. As the river navigates the bend, sediments drop out. Before the Corps, sand could spread out, then smaller silts and clays settled on top, creating mushy new ground. Sand itself lacks nutrients, but the finer-grained materials are packed with phosphorus and nitrogen that encourage plant growth, replenishing and sustaining wetlands.

The process of eroding and building land is fundamental to a river, a constant if slow-moving geographical revision. Over millennia, mountains become tidal marshes. At Kelley Point and other sandy beaches, visitors can still hold this history — minuscule quartz fragments possibly 300 million years old — in a single handful of sand.

In the upper Chinookan language, the Kelley Point Park area is known as wakshin, “the dammed-up place.” Sandbars, snags and marshes created wetlands so dense that, in the early 1800s, Lewis and Clark initially missed the present-day entrance to the Willamette. Chinookan canoes, their bows and sterns chiseled with elaborate images of animals, were pulled up along the shorelines of nearby sandy islands. At that time, Kelley Point essentially connected to Sauvie Island to the north. Only during high water, like the spring freshet, would the land masses separate into an obvious confluence like today's.

This was the first place that the Army Corps reshaped in Oregon, beginning in the 1860s. Portland-bound ships frequently bottomed out just downstream, where the river was sometimes only 6 feet deep. Portland officials tried to dredge the shifting

The seagoing hopper dredge *Clatsop*, circa 1938, doing maintenance dredging at the Skamokawa Bar on the Columbia River.

**U.S. Army Corps of Engineers**



An aerial photo from 1938 shows the Sand Island Pile Dike System. This island was a traditional Chinook fishing location.

**U.S. Army Corps of Engineers**

sandbars but petitioned Congress to send engineers from the Corps to take over. “The amount of commerce to be benefited by the completion of this work is very great,” said Major Robert Williamson, who oversaw the Corps’ first projects along the Columbia and Willamette. Like many early Corps leaders, Williamson graduated from West Point, the U.S. military academy overseen by the Corps, which created a steady stream of engineers to, among other missions, transform the nation’s waterways. Before the Civil War, he surveyed portions of California and Oregon for railroad routes. But shipping heavy materials, like wheat from eastern Oregon, Washington and Idaho — still among the Columbia’s primary exports — was cheaper by water, even after transcontinental railroad lines arrived.

By 1869, under Williamson’s command, the Corps dug a 17-foot-deep channel using a Portland dredge vessel. The gray sand filled marshes to build port facilities, and throughout the Portland area, people “with real estate stars in their eyes” used river sand to create developable land, historian

*While Chinookan  
peoples built boats  
to fit the river, the  
Corps built the river  
to fit boats.*

The Port of Portland’s pipeline *Dredge Oregon* works the mouth of the Columbia River near Astoria, Oregon, in 2017.  
**U.S. Army Corps of Engineers**

and Portland State University professor emeritus Carl Abbott said.

To eliminate sandbars, Williamson supervised the construction of wing dams, or pile dikes. The structures, still visible today, comprise a series of logs that reach toward the middle of the river diagonally across the current, gathering sand and diverting the flow away from the shoreline and toward the shipping channel. The water’s increased velocity scours loose sand in the riverbed.

Over the decades, the Corps built 233 wing dams on the lower Columbia and created 15 islands from scratch, many of which span several thousand feet, strategically placed with one goal: narrow the river and quicken its flow.

Still, local officials and industry leaders craved an even deeper Columbia. Portland shippers lobbied the Corps for a deep riverbed and safe passage through the river mouth to accommodate bigger ships, helping ports compete with those in deep salt water, like Seattle and Vancouver, B.C. In 1878, the Corps dredged the Columbia to 20 feet. By 1976, after vessels ballooned with



the advent of steel shipping containers, the river was dug to 40 feet.

In the 2000s, the Corps deepened the channel to its current 43 feet. The additional 3 feet allowed companies to pack 10,000 more tons of cargo onto ships traveling to and from China, Japan, South Korea, Taiwan, Australia and elsewhere. Their bottoms narrowly skirt the riverbed, sometimes by just 2 feet. “Would I rather have a 50-foot channel?” Bill Wyatt, former executive director of the Port of Portland, told *The Oregonian* in 2010. “Yeah. But we’re going to make 43 feet work.”

Today, Kelley Point Park is a sliver of green at the tip of North Portland’s industrial thumb. Freighters dwarf the cottonwood trees and leave wakes that slap the shorelines. Hyundais fresh from South Korea glitter at the neighboring Port of Portland terminal. Tugboats hum. The park marks the present-day confluence of the Willamette and Columbia, but the waterways’ joining was constructed by the Corps. Where marsh vegetation once thickened Kelley Point’s northernmost beach, a wing dam stretches out. It looks more like an abandoned dock than a water-control device. Currents whirl around the logs where cormorants perch.

To the untrained eye, the river looks natural, a blue-gray expanse flowing toward the ocean much as it has for millennia. The Corps’ changes are immense, yet subtle. Reshaping sediment isn’t as brazen as the walls of concrete that block the Columbia upriver. “People think the river is free-flowing once we get past the dams,” said Rachel Cushman, secretary-treasurer of the Chinook Tribal Council and a citizen of the Chinook Indian Nation, whose unceded homelands surround both the Oregon and Washington sides of the river west of Longview to the river’s mouth. “It’s very much engineered to flow the way that it does.”

**DREDGE OREGON** operates 24 hours a day, six days a week, with a crew of around 45. The barge, owned by the Port of Portland, is among a small dredging fleet that slurps sand in the shipping channel primarily from June until December. Its 11,000-pound steel sphere penetrates the riverbottom, churning sediment like an industrial eggbeater. As sand loosens, particles plume in an aquatic dust storm. Vibrations rattle the riverbed.

Sand is vacuumed into a pipe, at about 15 feet per second, and spewed as far as two miles away. Few nearby residents notice.

“If dredging is working well, you won’t know about it,” *Dredge Oregon’s* navigation director, Don Tjostolvson, told a local news reporter in 2024. Ships travel in and out, he said. The economy flows.

As a riverbed is hollowed out, though, complex relationships break down. With a deeper channel and less friction from fewer sandy bumps, mounds and bars, salt water can reach farther up the estuary, and water levels around Portland are lower, according to a 2019 study by Portland State University researchers.

Creatures living in or close to the riverbed — young lamprey, sturgeon, crustaceans, crabs and clams — can get sucked into dredge pipes and killed, according to the U.S. Fish and Wildlife Service. When sand is dumped on land or in the river outside the channel, piles can bury and suffocate critters. “We are completely displacing that benthic component of the river system,” Kathleen George of the Grand Ronde said, meaning the river-bottom species that form the basis of the food chain. “The Corps has very little understanding of those impacts.” Fish and Wildlife officials also acknowledged that the Corps has not studied dredging’s effect on aquatic species in the Columbia. The Corps declined to comment.

Lamprey, a traditional food for Columbia River tribes, are of particular concern. These ancient eel-like fish migrate to and from the ocean, like salmon. For five to seven years, juveniles bury themselves in river sediment, feeding on microorganisms. But now, George said, “we see lamprey numbers year after year declining.” There were once several million, but today fewer than 20,000 return to Bonneville Dam, according to the Columbia River Inter-Tribal Fish Commission. Less than 15% can navigate past the dams.

Research in other rivers may provide some insight. A 2018 study conducted for the Corps in California’s Sacramento-San Joaquin River Delta, for example, found that dredge pipes suctioned a significant number of lamprey, invertebrates and other fish species. In the early 1970s, as some of the first dredging studies were performed, Fisheries and Oceans Canada estimated that in

spring 1974, about 26,000 juvenile salmon were killed on a single day during dredging in the lower Fraser River in British Columbia. In several cases, researchers halted operations when they found the pipes inhaled substantial numbers of salmon and ooligan, or smelt, though some dredge companies didn’t comply.

In its review of the Corps’ plan for dumping dredged sand in the lower Columbia, Fish and Wildlife determined that it would harm some aquatic species, including lamprey. “These activities can have substantial and lasting effects on both fish and benthic communities, particularly in light of climate change,” officials wrote, recommending further Corps studies. The National Marine Fisheries Service concluded that while the Corps’ dredging and sand disposal is expected to “adversely affect” the region’s federally threatened and endangered salmon, it’s unlikely to jeopardize their long-term survival. That assessment, George said, allows ongoing damage to salmon and cultural sites along the river. “We need to do more to help salmon recovery by working to rebuild numbers,” she said, “not create more injury or further delay long-needed improvements in an already broken system.”

Tribal leaders and federal officials are also concerned about contaminants. Dredging may expose fish to banned toxins still present in the sediment, including PCBs, chemicals used in products ranging from plastics to motor oils. These substances have been found in the river’s clams, fish, otters and fish-eating birds, federal officials noted. As sediments suspend in the water, toxins may be released and consumed by bacteria, insects and small organisms that fish eat, cycling through the food chain. In a 2007 study led by the National Marine Fisheries Service, juvenile chinook salmon from the Columbia’s mouth contained the highest concentrations of PCBs found in any Oregon and Washington estuaries. Lamprey and sturgeon also have elevated levels of PCBs and mercury, prompting advisories from the Oregon and Washington health departments against eating either species.

Currently, the Corps tests sediment every five years. Officials assert that the sand is clean, but tribal leaders urge more testing, given the sheer amount of sediment moved — several million cubic yards annu-

ally. Tribal opinions differ concerning what contaminant levels are safe, said Cushman, of the Chinook Nation. For the Corps, “The standards are in favor of capitalist endeavors,” she said.

**UPRIVER, A DIFFERENT** sediment story has unfolded.

Behind Bonneville Dam, the river has become “a sandbox,” as Yakama Nation research scientist Bill Sharp, who is non-Native, described it. Cold water from tributaries like the Klickitat, Hood and White Salmon flows into the mid-Columbia, bringing with it glacial sand and silt. But instead of meeting a fast-flowing river that delivers sediments to the estuary, the particles hit a series of warm lakes created by the Corps’ hydropower dams.

In this stretch, the Columbia runs through a rocky gorge. For millennia, the rugged basalt outcroppings allowed Native fishers to net 100-pound chinook salmon at places like Celilo Falls, near the present-day town of The Dalles. To improve power generation and barge navigation, the Corps in 1957 constructed The Dalles Dam eight miles downstream from Celilo. As the dam’s steel and concrete gates closed the morning of March 10, one of the oldest continuously inhabited places in North America was drowned by the afternoon. The dam is

*With so much sediment piled behind the dams, dredging this stretch of the river is one of few ways the Corps could cool the water and improve habitat.*

“People think the river is free-flowing once we get past the dams,” said Rachel Cushman, secretary-treasurer and citizen of the Chinook Indian Nation (*below*). “It’s very much engineered to flow the way that it does.” **Amiran White / HCN**

“Fishing for Salmon at Celilo Falls” (*facing*) shows traditional fishing methods used by Indigenous peoples in the Pacific Northwest at Celilo Falls on the Columbia River. **OSU Special Collections & Archives / cc via Wikipedia**

among 18 federally owned hydropower facilities on the Columbia and Snake rivers mainstem that desecrated cultural sites and villages, displacing tribal communities.

When the dam was first constructed, its pool reached 60 feet deep, a tribal fisherman told Sharp. Now, it’s 15 feet. As wildfires rip through eastern Washington, Oregon and Idaho, more sediment spills into the Columbia. About 70% of the sand carried by the Columbia can’t pass through, Portland State University professor David Jay told *The Columbian* in 2018. The river is clogged, hot and shallow, Sharp said, and “bad things happen.”

The dangers once posed to cargo ships by sandbars on the lower river have now been passed upstream — and onto tribal fishers. Boats run aground on sandy shoals, damaging engine equipment. Over the years, Sharp said, several fisherman friends have died.

Sandy deltas create hazards for fish, too. Young salmon travelling downstream from tributaries meet the Columbia in a sand-choked confluence where shallow pools heat well above a lethal 68 degrees. Eleven years ago, hot water killed about 250,000 endangered adult sockeye — nearly all of the run — as they tried to return to their Idaho spawning grounds.

With so much sediment piled behind the dams, dredging this stretch of the river is one of few ways the Corps could cool the water and improve habitat. For years, tribal leaders have asked the agency to dig the mouths of several tributaries, but the Corps has yet to do so. The agency conducts some maintenance dredging to keep the mid-Columbia shipping channel 14- to 27-foot deep, extending to Lewiston, Idaho, on the Snake River. Only barges with shallower drafts can travel on locks past the dams.

In October, leaders from the Columbia River Inter-Tribal Fish Commission (CRITFC) met in Astoria in a room overlooking the 4-mile mint-green bridge across the river’s mouth. Ships passed by, but one stood out. “That boat out there,” a member noted, “that’s a dredging vessel.”

Bronco Jim Jr., a CRITFC commissioner and chief of the Kamítpa Band of the Yakama Nation, watched the dredge. Cargo ships the size of a city block anchored nearby. “That’s big money there, that’s priority,” he said. “But when it comes to native species and what we’re talking about in our





concerns, there's no priority."

A Yakama Nation councilman once joked to Jim, "Tell them there's gold in there, and maybe they'll dredge it."

**FEW RIVERS AND HARBORS** across the country are naturally deep enough for cargo ships. Nationwide, the Corps digs 210 million cubic yards of sediment from waterways every year to clear pathways for the massive vessels. The agency holds the most power over earth-moving in the country, fundamentally altering slow geologic processes and turning them into political acts. The consequences of moving so much sediment are unknown and understudied, as noted in *Silt Sand Slurry*, a 2024 book that examines dredging practices. Congress authorizes the Corps' work and mission, but the federal government lacks a long-term nationwide dredging plan. There is no established maximum depth that the Corps could dig the Columbia. With salmon near extinction and climate change expected to diminish the river's already weakened flows, some federal

scientists and tribal leaders have urged the agency to consider alternatives.

A "paradigm shift" is needed, Cowlitz Indian Tribe Chairman William B. Iyall wrote in a 2024 public letter in response to the Corps' proposed plan, urging officials to take a hard look at whether the river's current 43-foot depth is ecologically and culturally viable. The Corps could opt to dredge less, he wrote. More goods could be delivered via rail or air. Ships could decrease their drafts.

But any broad change would have to come from Congress, Portland district officials said in an emailed statement. And from the agency's standpoint, its work is not necessarily at odds with a natural river. When the agency digs sand from the shipping channel and spews it elsewhere, the sand is still in the system, Hans Moritz, a hydraulic engineer for the agency, said, though its placement is controlled. "We try to keep the river fed with sediment in a judicious way," he said.

"If I have to explain to someone what I do

for the Columbia River, I help manage sediment for the river, by the river, of the river.

"It's a symbiotic thing."

In the 1990s, ecosystem restoration was formally adopted as part of the Corps' civil works mission. Lt. Gen. Henry Hatch said at the time that engineers held "most of the keys to the solutions of the world's environmental problems." Much of the restoration challenge, though, lies in undoing the agency's own extensive river reshaping that began long before federal officials understood the concept of ecology.

When Congress authorized deepening the Columbia to 43 feet in the early 2000s, the Corps pledged to restore wetland habitat. But many projects never panned out, a 2010 investigation by *The Oregonian* found. The Corps declined to say whether any wetlands have since been restored. A 2024 report by the U.S. Government Accountability Office found that over the years, the agency has failed to inform Congress about the status of mitigation projects for fish and wildlife.

Under its new plan, the Corps has

proposed rebuilding marshes by spraying sand across several thousand acres of shallow water and shoreline habitat in the lower Columbia. Few, if any, studies on the river have found that the Corps' dredged material has improved wetland habitat, especially for salmon, though a Corps official cited a 2025 study showing that sand placed on river islands has provided nesting habitat for the streaked horned lark, a federally threatened songbird. Dredged sand is coarse and doesn't hold the nutrients that facilitate plant growth. And immense changes to the river's flow — through dredging, wing dams, levees and dams — have caused invasive plants to thrive. Much of the estuary's greenery is non-native reed canarygrass and purple loosestrife, plants that threaten to colonize any open space, including newly dredged sand piles, tribal leaders and Oregon and Washington fish and wildlife officials warn.

Scotch broom, gorse and European beach grass have taken over Sand Island at the river's mouth, a traditional Chinookan fishing site in what's now called Baker Bay, near Ilwaco, Washington. "There's really beautiful historic photos of people seine netting over there," said Cushman, describing nets that extended horizontally across the water, with floats on top and weights on the bottom, catching salmon fresh and fat from the ocean. Chinookan peoples had numerous trading posts and villages where fishers seine-netted along the lower river. It made up the river economy, she said.

In the 1930s, the U.S. military removed Chinookan people from Sand Island to make way for the shipping channel. The Corps stabilized the sand, installing wing dams and pilings to help ships navigate the mouth. Invasive plants took hold. While the Corps controls the sand, Cushman said, "they're not caring for the actual place."

According to Cushman, Chinookan tribal members have no say in federal river management as they've been fighting for sovereignty and federal recognition since first signing treaties with the U.S. government in 1851 that were never ratified. The tribe briefly regained recognition in 2001, only to have the federal government strip it away 18 months later. The Corps does not consult with Chinook leaders, Cushman said, though other federal agencies, like the Fish and Wildlife Service, have agreements with the tribe.



Large vessels move along the Columbia River between Portland and Vancouver in May, part of the river traffic made possible by an engineered shipping channel. Ongoing dredging keeps the channel deep enough for cargo ships even as tribal leaders and federal officials continue to raise concerns about its ecological and cultural costs. **Amiran White / HCN**

Grand Ronde's elected officials said they were not consulted during planning for the proposed dredge project, George said. In a written statement, the Corps did not acknowledge this but said that it is committed to "conducting robust, meaningful government-to-government consultation with all federally recognized tribes."

The lack of consultation leaves cultural sites and resources at risk. Of the Corps' 106 sites where it plans to spray dredged sand along the lower river, about half have not been surveyed for cultural resources, the Corps' report showed. There's a "high likelihood" that cultural resources would be present, requiring future surveys, though some



sites have limited access and impacts may be unavoidable, the report stated.

But what the Corps considers a cultural resource differs from tribal definitions. Katherine Pollock, the Corps' Portland district archaeologist, said that fish, including salmon, are not legally a cultural resource. "That doesn't mean we don't care about

them," she said. "We do. They just get looked at from the biological perspective."

Such a definition is "inappropriately narrow," George said. Cultural resources comprise not just archeological objects. "They are steelhead. They are sturgeon. They are lamprey," she said. They are a healthy river.

**LAST YEAR**, in late June, dredge pipes delivered a slurry of sand and water just a few hundred feet from the Columbia. Bulldozers flattened the pile into a settling pond about the size of a football field. Dan Robledo, the Corps' project manager, gestured toward the massive gray mound — 300,000 cubic yards of sand freshly dug from the river, across from Kelley Point Park. A vessel blared its horn, and the single note echoed across the smooth silver water.

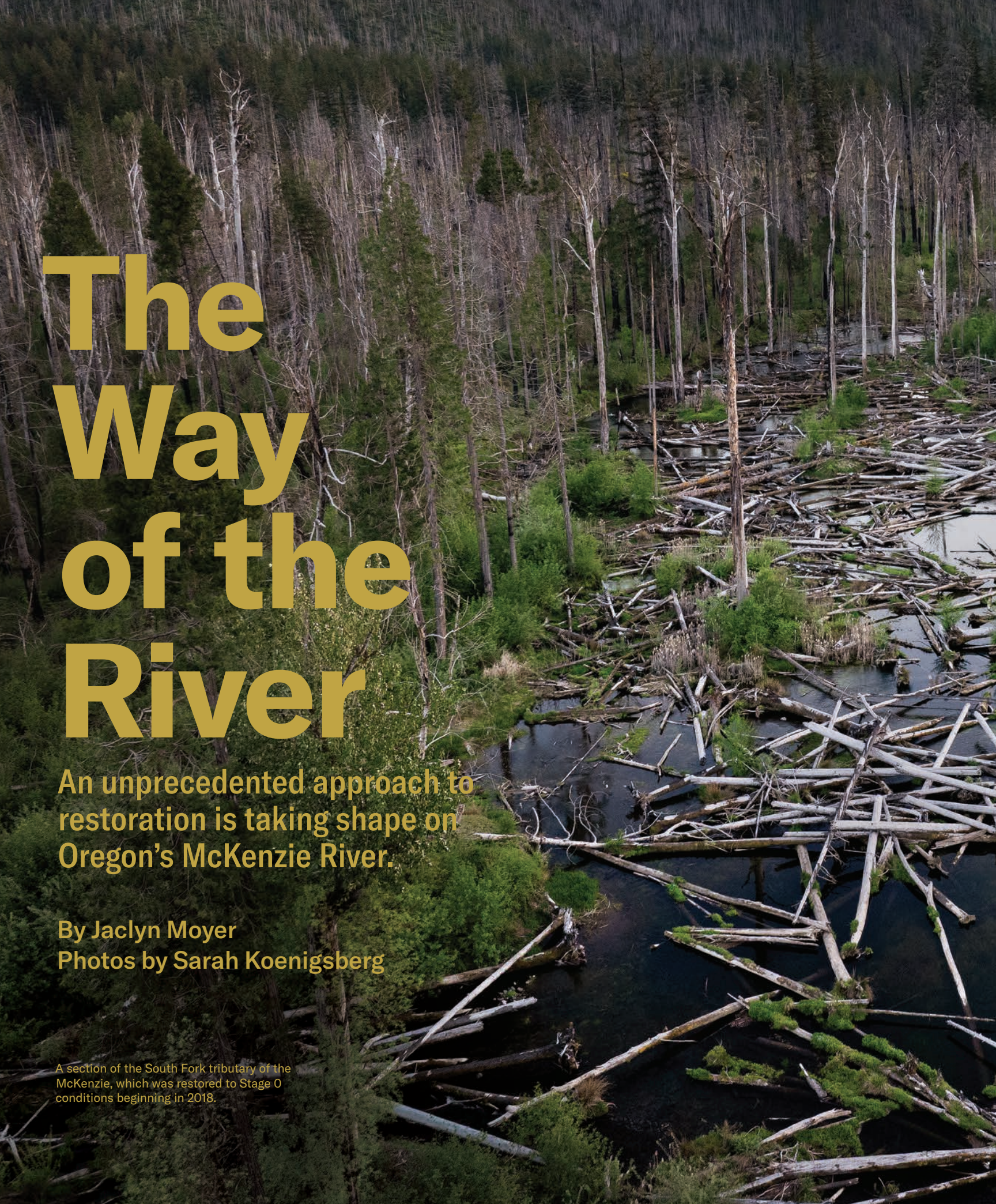
Over the years, the pile will amass more gritty girth. Some of the sand mountains along the river stand 60 feet tall. The shoreline resembled a construction zone, the early process of laying foundation.

For Robledo and others at the Corps, dredging the Columbia River is straightforward. Congress has charged the agency with a duty. The U.S. economy needs a deep river. "We have the mission to maintain the navigation channel to enable the use of this major transportation artery," he said.

The Corps has deepened and channeled so many rivers across the country — the Sacramento, Columbia and Mississippi, among others — that the work has transformed the visible memory of what a river is, what it looks like and who it serves. Kelley Point, now a place where two large bodies of water meet, where differing paths converge, is deeply scarred by colonialism. Differing values imposed on the river have all but erased the cultural landscape. It has become just as difficult to remember a river's true dynamic nature as it has to recognize its undoing.

The landforms built by the river's sand — Sauvie Island and Kelley Point — still exist. The geologic ingredients for extensive marshes, where wapato once grew and canoes cut through the shallow, slow-moving water, are still present. The Tualatin Mountains' navy ridgelines border the river, guiding it north as it has flowed since the volcanic rock blanketed the landscape. The river still bends and slows here, still has the potential for sand to spill out and build something new. ✨

*Josephine Woolington is a writer and musician in her hometown, Portland, Oregon. She is the author of Where We Call Home: Lands, Seas, and Skies of the Pacific Northwest, which won a 2024 Oregon Book Award for Nonfiction.*

An aerial photograph of a river restoration site. The river is filled with a large pile of driftwood, including logs and branches, which has been placed there to restore the river's natural flow and habitat. The surrounding forest is a mix of dead, grey trees and some green, living trees. The water is dark and still, reflecting the surrounding forest.

# The Way of the River

An unprecedented approach to restoration is taking shape on Oregon's McKenzie River.

By Jaclyn Moyer  
Photos by Sarah Koenigsberg

A section of the South Fork tributary of the McKenzie, which was restored to Stage 0 conditions beginning in 2018.



# A Tale of Two Rivers

*Part 2:  
The McKenzie*



**AN HOUR'S DRIVE** east of Eugene, Oregon, Quartz Creek pours down the flanks of the Western Cascades, across a widening valley and into the McKenzie River. One morning last August, I stood on a bridge spanning the creek and watched thunderheads boil up over a distant ridgeline, trying to wrap my head around how this place became itself.

One version of its story goes like this: Some 12 million years ago, the Earth's crust thrust upward from beneath a volcanic plateau. The plateau buckled, forming the rough shape of a mountain range. Over millennia, rain and ice sculpted this shoulder of rock, carving narrow canyons into steep terrain and carting the eroded sediment downstream to deposit across gentler slopes. In these broad depositional valleys, like this section of Quartz Creek, water spread across the land to create wetlands laced with branching channels. Chinook salmon, bull trout and Pacific lamprey hatched and grew in the slow-moving water. Some migrated to the Pacific and returned years later to spawn, bringing nutrients from the sea to nourish riparian forests of cottonwood, fir and hemlock. Frequent windstorms, wildfires and landslides toppled trees, strewing them across the valley bottom. Beavers moved the wood into dams, forming ponds and redirecting water.

All this may sound like chaos, but the relentless flux sustained a kind of stability, preventing any single channel from becoming dominant and maintaining a mosaic of deep pools and turbulent confluences, sandy bars and gravel beds, fast flows and slow side-channels. The landscape supported an equally diverse range of biota, which, in

turn, supported people. Native tribes and bands, including the Kalapuya, Mollala, and Warm Springs, lived year-round at lower elevations and came here in summer to fish, hunt, and gather huckleberries and hazel.

In the mid-1800s, Euro-American settlers arrived. By 1860, the U.S. government had forcibly removed local tribes — whose descendants belong to the Confederated Tribes of Grand Ronde, Confederated Tribes of Siletz Indians and Confederated Tribes of Warm Springs — to reservations, and settlers began harvesting the forests. Quartz Creek, like many area streams, presented an obstacle, with its swampy floodplain and unpredictable flows. So the newcomers dug drainage ditches, built berms and raised roadbeds. Like wool spun into yarn, the creek's many threads began to draw together. In turn, the valley was remade: The concentrated flow deepened its channel, while the rest of the floodplain grew drier. Fewer downed trees reached the water, and accelerated currents flushed sediment through the valley, leaving scarce calm pockets for fish. Lamprey declined. Chinook salmon and bull trout vanished altogether.

Transforming Quartz Creek's unruly flow into something closer to a ditch must have entailed a lot of labor, something I found myself pondering as I stood on the

bridge that August morning and watched another group of humans hard at work. With the help of modern technologies — excavators, LiDAR, GPS mapping — they hoped to undo the efforts of their predecessors and remake the valley, again.

The project is the latest phase of a river restoration effort begun a decade ago in the McKenzie River watershed. It uses a new approach called Stage 0, which aims to turn canal-like channels back into dynamic wetland-stream complexes by regrading parts of a valley's floor. It's a bold process, requiring a tremendous disruption of the existing landscape. Studies of the long-term effects of this approach have not yet been completed, and the project's scale is unprecedented. As geomorphologist Gordon Grant put it, "It's a full-on field experiment."

The McKenzie River is beloved by boaters, anglers and environmentalists alike, and many are uncomfortable with using it to test this highly invasive restoration technique. Others see it as a chance to repair some of the damage done to the watershed, before it's too late.

The McKenzie River once supported some 110,000 Upper Willamette River chinook salmon, a threatened native fish integral to the tribal cultures and ecological health of the Columbia River Basin. Now, the McKenzie's population is just under 2% of that historic abundance — and it's the largest remaining wild population, our best hope for the species' recovery. Without intervention, some analyses predict the population could be extinct by 2050. "We know we don't know everything," Elizabeth Goward, community engagement manager for the McKenzie River Trust, told me. "But if we don't act now, we could lose this species."

**BRIAN CLUER STARTED FLYING** airplanes as a teenager. He spent hours in the cockpit, looking down at the land surrounding his Idaho hometown. So perhaps it's no surprise that he became a fluvial geomorphologist, someone who studies how rivers and streams sculpt the Earth's surface.

As a student, Cluer learned the principles established by pioneers in the field — including Luna Leopold, son of famed

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Images of Quartz Creek (*facing*) made in 2025 (*top*) and in 2026 (*bottom*) show how quickly the river basin was transformed following the Stage 0 project restoration.



conservationist Aldo Leopold — who had studied river systems in the mid-Atlantic. They had concluded that undisturbed streams resembled meandering single channels, an archetype that would inform both restoration goals and the collective imagination: When we picture a pristine river, most of us see a winding ribbon of clear water between defined banks.

In the '90s, an enterprising hydrologist named David Rosgen began championing a restoration method called Natural Channel Design (NCD), which used formulas based on these seminal studies and exhaustive site assessments to attempt to determine how an impaired stream could be reshaped into its natural stable form. At the time, federal regulations had begun allowing developers to “mitigate” negative environmental impacts by restoring habitats elsewhere, setting river restoration on track to becoming the multibillion-dollar industry it is today. NCD was widely embraced by private companies and public agencies, including the Environmental Protection Agency. Though Rosgen’s designs were intended to allow for some movement over time, his disciples often hardened banks with riprap and boulders, locking the channels in place. Some of these projects became infamous failures when floodwaters destroyed the fixed forms. Overall, Cluer said, many NCD projects fell short of their ecological promises.

“When you think about rivers in that way, you always get a wiggly, single-thread channel,” Cluer told me. During his decades of flying, he’d come to believe “there was something in nature much more wild and broad and spread out and chaotic and undefined than that.” He’d noticed remote river valleys that lacked defined channels and looked more like big wetlands. “That got my creative thoughts going,” he said.

In 2008, two geologists published a paper in *Science* affirming Cluer’s hunch. The authors revisited the mid-Atlantic streams studied by early geomorphologists and found they were not, as assumed, “natural.” Instead, they’d been shaped by mill dams, thousands of which were constructed across the region by Euro-American settlers beginning in the late 1600s. Though no longer visible, these dams had significantly altered valley floors. The single-channel archetype, the authors concluded, was an artifact of human manipulation.

Meanwhile, researchers in the Western U.S. and elsewhere were digging deeper into historic accounts and using new technologies, such as LiDAR, to better understand a given landscape’s particular history. Though circumstances differed from place to place, their conclusions were similar: Many pre-colonial streams likely looked less like winding ribbons and more like multi-threaded wetlands. Combining this growing heap of research with their personal experiences, Cluer and another fluvial geomorphologist, Colin Thorne, started developing an updated model of stream evolution. Theirs began not with a single channel but with a wet valley floor webbed with streams. They dubbed this new starting point Stage 0.

**WHILE THORNE AND CLUER** were developing their theoretical framework, Kate Meyer, a fish biologist then with the Forest Service, was tasked with improving fish habitat in the McKenzie watershed. She and her team sought to restore a tributary called Deer Creek. Like Quartz Creek, it had endured decades of logging and “stream cleaning,” a misguided effort in the 1960s and ’70s to improve river health by removing logs and debris. Wood was all but eliminated from the system, and berms confined the stream to a straightened,

high-velocity channel — “essentially a firehose,” Meyer said.

Working with the McKenzie Watershed Council, Meyer’s team planned to restore the creek by adding wood to the channel, using logjams to slow water and trap sediment. “It was what everyone was doing at the time,” she said. But the results were consistently underwhelming. High-energy streams often washed out the wood, and even when logjams remained, sediment accumulation could take decades.

There was, Meyer knew, another way. In eastern Oregon, her colleagues had been trying a new approach: Rather than working to improve existing channels, they were getting rid of them altogether. The idea had arisen in 2002, when Paul Powers, another fisheries biologist with the Forest Service, visited an NCD restoration project in the Siuslaw National Forest that had recently been disrupted by a landslide. Initially, project leaders viewed this as a catastrophic setback: the dirt had ruined the channel they’d designed. But when Powers visited, he found that the slide had dispersed the stream across the valley bottom, creating slower flows, increased wetlands, and plentiful fish rearing habitat. He began trying to replicate this outcome at Whychus Creek in central Oregon, intentionally directing flows out of the channel and into the floodplain.

In 2014, Meyer attended a river restoration symposium where Cluer and Thorne presented their new paper on Stage 0. “It was a total epiphany moment, to see the concepts we were working with as practitioners described from the theoretical perspective,” she said. When Powers joined the Deer Creek team in 2016, he suggested they try it there. Meyer was excited, but also nervous. “I thought, ‘You mean we’re just going to bury the stream?’”

They started small, dismantling levees and using the material to fill sections of the channel. The stream immediately spread across the floodplain, creating multiple slower-moving channels and deep pools. In the unfilled reaches, by comparison, little changed. When Meyer and Powers invited Cluer and Thorne to visit their projects, the researchers were stunned to see their theories enacted in practice. “I thought, ‘Oh my goodness, these people are actually doing it,’” Thorne told me.

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*“I thought, ‘You mean we’re just going to bury the stream?’”*

Emboldened by the support of Thorne and Cluer and the improvements in Deer Creek — in 2017, chinook salmon were found spawning in the creek for the first time since 1993 — Meyer and her team were eager to try a larger project. In 2018, they began work on the South Fork tributary of the McKenzie, planning to restore a 200-acre stretch to Stage 0 conditions. By then, practitioners like Meyer and Powers had developed a working methodology.

The first step, which may also be the most contentious, is to identify an appropriate site. Stage 0 is suitable for low-gradient, historically depositional valleys where streams can spread across their floodplains without disturbing infrastructure. But how much gradient is too much remains debated, and understandings of landscape histories are ever-evolving. Next, practitioners use clues such as relic wetlands or stands of old-growth trees to approximate the valley floor's shape before it was altered by settlers. Using LiDAR, they map the precise present-day topography, compare it to the target shape, and create a grading plan. Fish are trapped and relocated downstream, and the river is temporarily diverted into a side channel. Then, operators use bulldozers and excavators to reshape parts of the valley floor, filling channels and removing levees. Logs and woody debris are arranged across the floodplain, some partially buried and others left to move freely. The wood both creates habitat and slows water, functions that are crucial as vegetation regrows. Lastly, the diversion is removed and the stream is released to disperse across the valley floor, where it begins the work of rebuilding the riverscape.

**LIKE MOST RUTS**, channels are hard to get rid of, and the process isn't pretty. When I visited Quartz Creek in August, the landscape looked downright devastated. A muddy stream flowed alongside hundreds of acres of dusty soil strewn with dead wood: giant logs, tangled branches, heaps of slash. "People say, 'This isn't Stage 0, it's *Ground Zero* — it looks like you nuked the place," Thorne told me. But Lara Colley, a local resident and the floodplain restoration projects manager for the McKenzie Watershed Council, was smiling proudly when she met me on site. In an orange vest and hard hat, she fanned her arm toward a mostly empty staging ground.

"They're all gone!" she said, meaning the logs. Until a few weeks ago, some 6,700 logs and pieces of wood had been stacked here; now, they were distributed across the floodplain. Colley, who dressed as a log last Halloween, had amassed the wood from Forest Service and Bureau of Land Management lands where trees had been thinned for wildlife habitat or removed after recent wildfires. "I could've looked at a log and told you where it came from," she said.

Since the Forest Service and the McKenzie Watershed Council began collaborating on Stage 0 projects in 2016, the

chemicals associated with removing it. "We consider the river part of our infrastructure," Fricke said during my visit to Quartz Creek. "Preventing the problem is so much better than dealing with it later — we're helping protect our future selves."

The natural resources department of the Confederated Tribes of Warm Springs has provided feedback on the project. "Stage 0 offers a holistic view of restoring river wetland corridors that reflects the Tribes' goals for creating sustainable fisheries populations," tribal fisheries biologist Logan Bodiford said in an email. "Our hope is that this

## Restoration on the McKenzie River

The **Columbia River Basin**, the **Willamette River Basin** and the Stage 0 restoration sites in the McKenzie watershed.



Eugene Water and Electric Board (EWEB) and the McKenzie River Trust have joined the project's leadership, and several other people and organizations have contributed to the effort. Each collaborator brings different perspectives and resources, Goward told me, enabling the work to persist despite recent federal layoffs and budget cuts. "I like to describe it as an ecosystem," she said.

For EWEB — a public utility that supplies drinking water from the McKenzie River to 200,000 people in the Eugene metropolitan area — stream restoration is part of protecting water quality. "Quartz Creek has always been our chocolate milk," said EWEB's Water Resources Supervisor Susan Fricke. During high flows, the creek often ran brown with sediment, taxing EWEB's filtration systems. Spreading the flow across the floodplain will allow sediment to drop out before it reaches the mainstem, saving the utility the cost and

project will better enable tribal members to exercise their treaty rights and access culturally significant resources."

The design for Quartz Creek was led by Meyer, who left the Forest Service in 2025 to co-found a restoration consulting company, Franklin-Clarkson Timber Co., the private timber company that owns most of the land around the creek, provided access to it via a 50-year stewardship easement. The National Oceanic and Atmospheric Administration funded most of the \$9.5 million project with a \$7.6 million grant (made possible by the Infrastructure Investment and Jobs Act). And the actual dirt moving and log placement was done by Haley Construction, a family-run heavy construction company based in Lebanon, Oregon, which also holds the state record for hauling the longest log, a 135-foot behemoth.

With less than three months of dry

weather to complete the project and so many moving parts — 20-some crew members, 11,200 cubic yards of slash, acres of dirt, a flowing river, all those logs — running the construction site was not easy. “It’s like directing an orchestra, getting everyone working together in a timely fashion,” Randy Haley, co-owner of Haley Construction and son of its founder, told me. “And in harmony!” Ashley Haley, project manager and Randy’s daughter, added, laughing. Restoration projects are demanding, she said, but “it’s very rewarding to do something that benefits the community and wildlife.” Many on the Haley crew agreed. “One man recently retired after 47 years of working for us,” Randy told me, “but he comes back to work every summer just to be part of these projects.”

When Randy’s parents started out in 1958, they worked primarily in timber, building roads and hauling logs. Over the past seven decades, the company’s focus has mirrored shifting societal priorities: The Haleys have put in bridges, built dams, taken out dams, and, for the past 35 years, undertaken an increasing number of river restoration projects. “You have to be able to adapt to changing needs, to reinvent yourself,” Randy told me.

Today, Haley Construction uses its logging expertise to repair some of that industry’s damage. “The knowledge of how to work with wood, in forests and around waterways, all that now lends itself to flood-plain restoration,” Ashley told me. “But we can’t condemn the loggers,” Randy added. “They were doing a job they believed was right, at the time.”

Watching the Haleys’ machines scrape at a bald valley floor that had, not long ago, been a green riparian corridor, I found it hard not to wince. It didn’t help that as far as I could see in most directions, the mountainsides were cloaked in standing dead trees: More than 173,000 acres surrounding Quartz Creek were severely burned in the 2020 Holiday Farm Fire.

This fire, it turned out, played a key role in advancing the Stage 0 work in the watershed. For one, it provided ample available logs. It also made the work more palatable to some onlookers. “It’s easier to bring heavy equipment into a scorched valley, harder to drive a bulldozer into a beautiful



second-growth forest,” said Goward. But perhaps most significantly, the fire illuminated one of Stage 0 restoration’s most compelling co-benefits. The blaze burned through the 200-acre restoration site on the South Fork of the McKenzie, at the time the largest Stage 0 project ever implemented. Preliminary observations indicate that while unrestored areas suffered uniform, severe burning, the restored region burned in patches, allowing wildlife to take refuge during the blaze and the forest to recover more quickly. In some parts of the restored reach, the wide expanse of water functioned as a fire break. “We didn’t expect this to be part of fire resiliency,” Fricke said, “But it was.”

Over the course of my afternoon at Quartz Creek, the thunderheads had drifted closer, and as we left the job site, they dropped fat shadows on the ravaged valley floor. Fricke pointed to a line in the dust: bobcat prints. The trail led to the water’s edge, then vanished.

**WHILE IT CAN BE HARD TO WATCH** the construction of a Stage 0 project, the concept’s appeal can be equally hard to resist. Faced with the mess we’ve made of ecological relations, who hasn’t longed for a fresh start? This approach, down to its nomenclatures (Stage 0 or, as it is sometimes called, “valley reset”), seems to promise just this: an opportunity to return to the beginning — to *before* the beginning. A chance to shake the Etch-a-Sketch and start anew.

Advocates and critics alike caution against this framing. “We don’t expect to put everything back to the way it was before Lewis and Clark,” Thorne told me. “What we’re doing is empowering nature — by which I mean birds, amphibians, trees, plants, bacteria, everything — to get to work on the riverscape again, to be able to make and remake it continuously.” The result, advocates believe, will be an increased diversity of habitats and biota that will strengthen the watershed’s resilience to new climate extremes. “Will it come out like it did



before? Probably not,” Thorne said. “It’s a different world now, a different river, a different catchment.”

Critics argue that historic Stage 0 landscapes aren’t just impossible to recreate, but, in most places, likely never existed at all. David Rosgen, now 84 and still involved in implementing NCD projects around the country, believes the web-like stream networks described as Stage 0’s starting point occurred only in extremely low-gradient valleys and deltas. In those landscapes, he told me, Stage 0 restoration can work. “But a good idea applied as a universal solution is a bad idea,” he said. He believes that places like Quartz Creek and the South Fork of the McKenzie are too steep to have ever maintained wetland-stream complexes, and thinks these rivers would be most stable and ecologically beneficial as meandering channels.

With its emphasis on allowing natural processes to shape streams, Stage 0 runs counter to Rosgen’s method. But Gordon Grant, who recently retired from a 40-year

career as a research hydrologist with the Forest Service’s Pacific Northwest Research Station, sees similarities in the rush of enthusiasm for each. “There’s a particular bandwagon effect that seems to associate with restoration,” he told me.

Grant spent his career studying how Western Cascades streams respond to logging, dams and climate change. “If there is any river system on Earth I have any claim to even modestly understand, it is the McKenzie,” he told me. So when he learned of the Stage 0 work there, he began looking into it. “I’ve never tried to restore a river, and have nothing but admiration for those who do,” he said. “But I don’t necessarily worship at the same church as the restoration community.”

A self-proclaimed science geek, Grant describes the landscapes being created on the McKenzie as “novel geosystems.” “There’s nothing in the history of these creeks that looks like that,” he said. “I like experiments; it’s how we learn things, how we get better.” But experiments, he told me,

Haley Construction crews move logs into place during the restoration process on Quartz Creek in June of last year (left).

Kate Meyer, design lead for the Quartz Creek project, climbs on a log pile while visiting the site in May.

warrant careful study before widespread implementation. From “stream cleaning” to NCD projects gone wrong, there’s no shortage of cautionary examples, he said. “So let’s stand back and ask: What potential risks are being set into motion here?”

Grant, who authored a paper titled “When do logs move in rivers?” is especially concerned about what a severe flood might do to the large wood used in these projects. Mobilized logs can wreak havoc on infrastructure — bridges, dams, docks, embankments — and endanger boaters and swimmers. Though Stage 0 projects are designed with grate-like logjams intended to trap wood within the restored reach, the

systems are far from foolproof, especially in high-energy mountain stream systems like those in the McKenzie watershed. “The potential for mischief has not been fully reckoned with,” Grant said.

When I visited his office last winter, Grant stood at a whiteboard and, in a valiant attempt to explain fluvial dynamics to a journalist with a thin physics background, painstakingly drew out basic equations:  $Q \text{ (flow)} = \text{Velocity} \times \text{Depth} \times \text{Width}$ . I did my best to follow along, but my eyes were drawn to a poster taped to the side of a file cabinet: an outline of a face with the words “Bang Head Here.” Still, I understood enough to get Grant’s point. Floodwaters are shockingly powerful, capable of lifting enormous logs and tossing them downriver as if they were pool toys. When the last major flood hit the McKenzie, in 1996, Grant was there to watch. “The stream you visit at low-flow, moderate-flow, even big winter flow, is nothing like what you see in an extreme flood,” he said. “And a 100-year flood means each year we have a 1 out of 100 chance it will happen. That’s a significant risk.”

There are, of course, risks involved with leaving things as they are — extinctions, worsening wildfire impacts, diminished water quality. Which risks are acceptable, Grant pointed out, “has a lot to do with who’s sitting at the table.” On this project, he told me, “it’s mostly people trying to make the world better for fish.”

**A FEW DOORS DOWN** from Grant’s office, I met Rebecca Flitcroft and Brooke Penaluna, two research fish biologists with the Forest Service’s Pacific Northwest Research Station. Though salmon drive the Pacific Northwest’s restoration economy, Flitcroft told me, “The biggest gap in the literature on Stage 0 is actually around the question of: What *does* this do for fish?” Fish are notoriously difficult to monitor, so researchers often assess impacts by measuring changes to habitat. “The assumption is: if you build it, they will come,” Flitcroft said.

So far, research suggests that Stage 0 projects can, in fact, build it. A study of 17 sites across Oregon and Washington found that Stage 0 restoration increased low-velocity rearing habitat, broadened the wetted area of valley floors by several factors, and increased the overall production of



Seven years after this section of the South Fork tributary of the McKenzie was restored to Stage 0, willows and other riparian vegetation are flourishing in its floodplain.

macroinvertebrates, essential components of salmonid food webs.

These shifts may benefit not only salmon but Pacific lamprey, a native fish of particular cultural significance to Indigenous communities. Historically abundant in the Columbia River Basin, lamprey were an important food source for many regional tribes, but their populations have declined dramatically. Lamprey share many habitat needs with salmon and, like salmon, provide vital ecosystem benefits. Larval lamprey filter-feed in river sediments for up to 10 years, purifying water and cleaning gravel beds in the process; adults transport marine nutrients to freshwater creeks. Until recently, however, lamprey have received little attention from non-Native conservationists.

Not all the findings of the Stage 0 study were glowing. Salmon need cold water, and researchers found that temperatures tended to rise after restoration. Sediment composition shifted from coarse to fine — which can be great for lamprey, but can clog salmon gills and fill in the gravel beds needed for spawning. eDNA analysis showed increases in overall aquatic biodiversity, which includes not only native species but invasives. “When you open up a channel, you open it up to everybody,” Petaluma said.

Still, the biggest question is what happens in the long term. Though a Stage 0 project can be constructed in just a few months, the real work of restoring the river begins only after the excavators depart and the water returns. Will these sites cool as shade trees regrow? Will the composition of sediment shift? Will the logjams stay put?

Luke Whitman leads the Oregon Department of Fish and Wildlife’s effort to monitor



changes in Upper Willamette River chinook populations over time. Immediately after the South Fork Stage 0 project was completed in 2018, he told me, the number of spawning beds skyrocketed from 44 in 2018 to 272 in 2019. By 2025, the count had fallen to 58. “They’re still slightly above pre-restoration numbers, but the higher levels haven’t been maintained the way we’d hoped,” Whitman said. The reason is unclear, but he suspects it’s due to the Cougar Dam, which lies upstream of the restoration area and prevents scour flows, the floods that historically rearranged sediment and vegetation. “I don’t think we’re getting enough water to keep some of the new channels active, to keep moving things around,” Whitman told me. Still, he believes Stage 0 is a worthwhile experiment. “We’ve got to get creative wherever we can on the McKenzie. Not just with restoration, but with dam management, too,” he said. “Wherever we can take a shot, we should try.”

**IN THE LAST WEEKS OF 2025**, heavy rains drenched the Western Cascades. In Deer Creek, powerful flows moved wood throughout the restored reach. “It was both very exciting, because it was the most change we’ve seen on any project yet, and at the same time concerning, because we ended up with longer stretches where wood moved out,” Meyer told me. Without logjams to slow water in these places, the river could start down-cutting into a single channel again. In an ideal system, the deluge that washed out the logs would also bring in wood from the surrounding forest. But here, where the catchment has been logged for decades, downed wood is scarce, and the trees are much smaller.

“Originally, we thought it would just take one intervention and then you could walk away forever,” Meyer said. But river systems are nested inside larger systems, and many of the processes involved — wood and gravel recruitment, flood scouring — are still impacted by logging and dams. Restoration alone can’t fix all the processes, Meyer told me. “So we need to acknowledge that, and think more about long-term stewardship where we monitor and manage these sites over time.”

Thorne agreed. “There aren’t any one-and-dones for rivers,” he said. But he cautions against rushing into action. It’s hard to break a Stage 0 project, he said. “It can be rearranged, the wood and sediment moved around, but nature will repair it over time.” After a moment, he added, “Or it won’t. And the creek will be set on a different trajectory than the one we had in mind.”

**IN LATE JANUARY**, I returned to Quartz Creek with Goward. Bright sun slipped between clouds, warming the day to an unseasonable 60 degrees. Snow covered distant peaks, but only a dusting powdered the nearer ridgelines.

I stood again on the bridge spanning the creek. The valley still looked disheveled, piled with tangles of logs and mounds of slash, but the dusty wasteland of last August was replaced with flows of clear water. Braided streams curled across the valley, parting around logjams and lapping at mounds of newly deposited sand.

Watching the creek, I thought of something Gordon Grant told me. He’d turned

from the equations scrawled on his whiteboard and said, “You can’t model something like Quartz Creek.” Because of the high-energy flows and the complexity introduced to the system — the unprecedented amount of wood, the intersecting paths of flow — “it’s beyond the capacity of our hydraulic computational fluid dynamic models. ... It’s unpredictable.” He’d meant the words as a warning, which they certainly are. But they’re also a promise. Unpredictability, after all, is another word for possibility.

Humans can’t control the outcome of a Stage 0 project any more easily than we can disentangle ourselves from it. Instead, the process requires that people participate alongside a host of other actors — trees and rain, stones and fish, beavers and mayflies — allowing unforeseeable interactions to shape the future river. Here, vulnerability and hope are entwined.

Except for a few scattered firs, nearly all the trees stood leafless. Some had lost their foliage for winter, but most were dead. With snowpack lingering at a record-breaking low, the next wildfire season was already looming.

After the Holiday Farm Fire, Goward told me, locals were devastated: “People looked around and thought, ‘This place will never be the same again.’” Below us, the stream rippled over gravel, and I could hear the pebbles — pulverized bits of the volcanic plateau that once lay here — clinking against one another. At the water’s edge, blades of new grass emerged through heaps of slash. “Everything around us is changing,” she said. “What we’re trying to do is restore the river’s ability to change with it.” ✨

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# How to touch a star

The electrifying allure of a tide pool creature.

BY ELIZABETH WEINBERG | ILLUSTRATION BY PAUL KIMPLING

**GO TO A ROCKY WEST COAST** beach at low tide, and you'll see a constellation of small, glassy pools of water, the residual ocean left behind when it was tugged away by the moon. These pools are an ecotone, the space where two habitats — ocean and shore — collide, and they are rich in biodiversity. Peer past the mirror of the water's surface, and you'll find a forest of algae and sponges sheltering sea stars, urchins, anemones, baby fish and more.

The giant green anemone, *Anthopleura xanthogrammica*, is one of the most ubiquitous tide pool denizens, emerald and starry and found from Baja California to Alaska. At first glance, it seems more plant than animal, an electric green sunflower waving its petals beneath the glassy water. But those petals are in fact tentacles, six or more rings of them, which the creature uses to pull food into its central mouth. It has a columnar body rather than a stem, and no roots, only a foot it uses to cling to a rocky surface. A giant green anemone hardly ever relocates once

it finds a suitable home.

When the tide goes out, exposing an anemone, the creature curls up upon itself, gathering its arms into its center, like a yellow dandelion closing to the night. The giant green anemones that cling to the sides of rocks droop when closed — bulbous gelatinous gargoyles. Those on horizontal surfaces turn to orbs. When closed, an anemone can survive the harsh drought of low tide, waiting for long hours between visits from the sea.

When the tide returns, the anemone unfurls, each tentacle waving independently in the water like a dancing ribbon. It's a deadly beauty: The tentacles are armed with stinging cells, ready to grasp its prey and inject it with neurotoxic venom.

A brief list of creatures the giant green anemone considers food: bushels of California mussels, prized from the rocks by beating waves. Sea urchins, crabs, barnacles, their hard indigestible shells spit out from the same mouth that took them in, flecks adorning an anemone's sticky surface like oversized glitter. Marine worms and small fish, snatched from the water while swimming or scooting past. And, at least twice on record along the Oregon coast, juvenile birds, a cormorant and a gull that died in their nests and tumbled off the cliffs into the waiting maw of an anemone.

Up against the anemone's stinging cells, or cnidae — pronounced without the c, like the stinging nettles they are named for — few creatures stand a chance. A single anemone body will have hundreds of tentacles, each with tens of thousands of tiny cnidae. When prey brush against a tentacle, each cnida harpoons out an even tinier organelle that pierces the prey and shoots out a little capsule containing venom. Brush a tentacle with your

finger, and it feels like Velcro, a little hug of barbs trying to pierce your hand but unable to find purchase through the leather of your skin. But if the prey is soft-bodied, unprotected — a naked mussel, for example — I imagine the anemone delivers brief agony before complete immobility sets in, destiny locked into place.

The only part of the human body a giant green anemone can sting is the tongue. The hands, the arms, the feet, the face: The rest of the body is invulnerable to this flowery sea creature's stinging cells. But the tongue — that seat of the voice, of speech and song, of noises sparked by joy and laden with sorrow — is tender, unprotected, naked. You are open to risk and pain and barbs if you're willing to lower it to the sea.

I did it, once. It was a dare by a marine biologist friend. On a cold and windy evening on the Oregon coast, the sun setting orange and pink over the ocean, I knelt beside a rocky pool. In an act of giddy benediction, I opened my mouth and pressed my tongue gently to a giant green anemone, the strangest kiss I'd ever shared. At first there was the familiar hug, the needle press of tentacles — then a piercing, the strangest buzz, a stinging vibration coursing through my mouth.

That feeling stayed for half an hour, a zinging along the tip of my tongue. A little bit of electricity, passed from the anemone to me. ✨

*Elizabeth Weinberg is a queer essayist and science communicator based in Portland, Oregon. She's the author of Unsettling: Surviving Extinction Together, which examines the climate crisis from a queer perspective.*

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*The giant green anemones that cling to the sides of rocks droop when closed — bulbous gelatinous gargoyles.*



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## LIFEWAYS

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



# Plants make good neighbors

To feel at home in a new landscape, get to know the local flora.

BY LAURELI IVANOFF

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**THERE WERE LOTS** of cottonwoods. Some birch and spruce. I didn't yet know them as individuals, the shade and companionship they'd give, but they were friendly. And welcoming, in their familiarity. Like cousins, green with life. Especially the aspens, who felt the most charming and easy in a teasing way, with their flapping leaves that said, "Hello." To me, the newcomer in town.

Last summer, walking down a small slope on the dirt path near my house felt like stepping through a portal. To life and breath and soil. Away from busy cars. Powerlines. Sidewalks. The mail-order-kit houses erected in the 1950s during the oil boom, all lined up, one after another. Away from neighbors I felt shy around and mostly didn't know yet. In the neighborhood we'd chosen because it was known to be uncharacteristically neighborly. Where there is, however, a standing, though unenforceable, restrictive covenant, which says: "The property hereby conveyed shall not be sold or alienated in any manner whatsoever to other than Americans of the white race."

So, as you can imagine, entering that portal meant entering the familiar world of the good nature of trees, who always welcome. And other plants that didn't abide by often cruel, made-up human rules.

Daily walks, wherever I am, have always been important for me. My therapist friend tells me that walking is a form of somatic therapy. Body healing that calms the nervous system. Movement that allows us to process emotions and trauma. I know I need these walks, and I know I enjoy them more when I'm surrounded by the quiet of trees and growing plants that are ever-changing throughout the summer.

So I was surprised when I looked down at the forest floor of my new walking route on the trail system of Alaska's largest city and felt like a stranger. I knew the ferns. But I didn't yet know the difference between *pushki*, or cow parsnip, and devil's club, two showy plants with leaves as big as Thanksgiving platters. I hadn't yet realized that *pushki* has a soft, hollow green stem while devil's club has a strong, dark brown, spine-covered branch-like stem. Other patterns of new-to-me plants pushed out from the soil, and I wanted to know them, too. If I knew who they were,

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S'áxt', also known as devil's club, surrounded by ferns along a trail in Girdwood, Alaska.  
**Erin Ggaadimits Ivalu Gingrich**

maybe I could gather the courage to get to know some new people, too.

My introduction to having a relationship with plants wasn't on a trail but in Gram's kitchen, as a kid. If I had a cough or sore throat, Gram gave me a mug one-quarter full of a brown cold tea. Though we grandkids didn't like the astringent, bitter medicine taste of *sargiq*, or wormwood, we drank what Gram gave us, because Gram knew best. Now I pick the tall stalks every fall to dry upside-down in my kitchen, then store them in jars to make tea for my family whenever we catch a cold or have a sore throat. And today, whether I'm walking on the Anchorage trails or back home on the river beach in Unalakleet, I am drawn to the plants, knowing that many are helpers, some are food, and a few, like rich purple monkshood, are straight-up deadly.

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## *New-to-me plants pushed out from the soil, and I wanted to know them.*

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On my new neighborhood trail, in a place where I felt like a foreigner, I knew I needed to be introduced. Like at a dinner party. Or a backyard barbecue get-together. I needed a casual, safe situation where introductions were expected.

**SO, NATURALLY**, I met devil's club, or S'áxt', as it's known in Tlingit, at the hospital clinic. The same place where I get penicillin shots for strep throat, estradiol patches and progesterone pills for perimenopause, and colonoscopies.

The Alaska Native Medical Center has a Traditional Healing Clinic, where Indigenous healers provide counseling, physical services, a healing garden, talking circles and cultural classes. For two months, I saw a healer every week to relieve pain in my shoulder and hip. She offered a class on making a healing salve out of devil's club. I immediately signed up and waited, impatiently, for my introduction to a plant I knew was important to local and Southeast Alaska Native peoples.

Seven or eight of us met in what felt like a lab in early summer. White 5-gallon buckets sat on the table filled with stalks of brown, thick, spiny, crooked stems. Our instructor told us to pick the stalks in early summer and to wear leather gloves to protect our skin from the plant's sharp spines, which contain a sap that can cause blisters and pain. In fact, most people who come across S'áxt' avoid it at all costs because any spines that become embedded in one's flesh can cause a severe infection. Devil's club's scientific name is *Oplopanax horridus*, or "horrid, armed ginseng." A proper introduction to this plant was necessary.

Our instructor, Ruby, is Tlingit and was introduced to S'áxt' by her grandmother, who made tea from the cambium in her kitchen. Ruby taught us to scrape the spines and outer skin off the stems with a spoon. We then peeled the next layer, the smooth cambium, off the stalk in white tendrils. This was the medicine. Like *sargiq*, which I knew, S'áxt' could be made into tea for colds and sore throats or a healing salve for aches and pains and a long list of ailments. The plant teaches me that even the most feared and aggressive-seeming life can be soft and have something to share if you take the time to get to know it.

I left the clinic with cambium ready to soak in a carrier oil like grapeseed or olive. In the fall I mixed the oil with Vitamin E oil and beeswax from some Anchorage friends who keep backyard bees. I gifted a tidy jar of the salve to them and shared others with more of my friends and family. I kept a small tin case of it for any rashes, cuts or achy joints at my house.

Later in the summer, my husband, young son and I went biking along the Anchorage trails. Among the ferns, in the golden sunlight that filtered through the birch and cottonwood branches, I saw some large showy leaves on a plant taller than me. Cone-shaped clusters of small red berries dotted the cacophony of plants, showing off their glory at the tail-end of the season. I smiled. And said, "Hello," to S'áxt'. Happy to know them. Feeling like I was no longer a total stranger in a new place. I was getting to know my neighbors. ✨

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

# The surprising socialist history of the Rocky Mountains

How the West's reddest states were influenced by socialism.

BY JEFF GUAY

**AFTER KATIE WILSON** was elected mayor in Seattle and Zohran Mamdani triumphed in New York City, *USA Today* warned its readers that America's new socialist mayors "have big plans to be generous with *your* money."

Wilson was unapologetic. "I've been a socialist for a very long time," she told *Jacobin* magazine, "since before it was cool to be a socialist."

Whether you consider them cool or dangerous, radical or inept, socialist mayors are not a new phenomenon. During the early 20th century, the Socialist Party of America was a viable third party, especially in the West, part of a broader workers' movement that ranged from traditional unions to the more radical "Wobblies," or Industrial Workers of the World (IWW).

I grew up in Utah and now live in southwest Montana. These stridently red states were once fertile ground for a brand of socialism centered around worker solidarity, public health and progressive attitudes toward equality and class. But the region's prevailing narrative — Western individualism and conservatism — tends to obscure this rich labor history.

When I was a kid in Park City, Utah, in the 1990s, it was already a resort town, though less so than it is today. But underneath its ski slopes lay a pattern of mines, like a subterranean rune telling the story of a time, not too long ago, when Park City was very different. In public school, we learned the mining history of the Wasatch Mountains; the region's labor history was ignored.

In 1902, however, the Western Federation of Miners (WFM) endorsed the Socialist Party platform, and the Park City chapter later

invited Mary G. Harris Jones — Mother Jones, co-founder of the IWW — to speak at the 1907 Labor Day parade.

Park City's mines were deadly, but the closest hospital was in Salt Lake City. "Injured miners had to travel by train to Salt Lake City to get treatment," writer Gerald McDonough, grandson of Bartley McDonough, the local WFM president, told me recently. "By the time they got there, they'd died."

After an explosion at the Daly West Mine killed 34 miners and injured several others, the WFM fought for the establishment of Park City's first hospital. What does it say about the companies that profited from some of the world's deadliest workplaces that it required union agitation after a disaster to establish a city's first hospital? And why had we never learned about this in school?

According to Utah historian John Sillito, the dissonance between the labor history of places like Park City and its present image as a rich person's playground is no coincidence.

"The interests that controlled Park City then continue to control Park City and its

history," he told me over Zoom. "It's in no one's interest in Park City to advertise something other than snow."

And yet Utah, the state that continues to re-elect Republican Sen. Mike Lee, who groundlessly blamed the murder of a Minnesota lawmaker last year on "Marxists," was once home to a successful Socialist Party.

Lee is a member of the Church of Jesus Christ of Latter-day Saints. In *A History of Utah Radicalism: Startling, Socialistic, and Decidedly Revolutionary*, Sillito and his colleague John McCormick note that more than 40% of the state's socialist membership in the early 20th century was Mormon and that, from 1900 to 1920, Utahns elected more than a hundred socialists in more than two dozen cities as mayors, county commissioners, city councilmen and justices of the peace. Part of the reason? Mormonism.

When the LDS church moved West, it established the United Order in many towns, a centrally planned economic system that asked business leaders to relinquish ownership to the collective, pool their resources and provide communal labor.

Most Utah socialists were classic "sewer" socialists, focused on local reforms in sanitation, sewage and public health. In Bingham, Utah, for example, socialist officials expanded sewers, established a city dump with regular garbage collection and required electrical utilities to insulate power lines.

In those days, socialism flourished throughout Nevada, Colorado, Idaho, Utah and Montana, especially in places where mining created massive income divides. The socialist who was elected mayor of Butte, Montana, in 1911 and 1913 left behind a balanced budget, improved sanitation and safer streets.

My grandfather, who became a Butte

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*Socialists of the early 1900s dared ask the question: What obligation does a corporation have to its workers, and what does it owe the community?*



**IDAHO**

Here's a hare-raising news story. While releasing rabbits into your neighborhood might seem like a harmless way of getting unwanted pets out of your, um, hare, rabbits have a tendency to, well, behave like rabbits, swiftly propagating and eventually taking over, which is what happened in the Boise Bench, a prime residential area located above downtown Boise. In the last several years, the proliferation of libidinous *Leporidae* has become an issue, and some residents are not particularly hoppy about it. "They ate my shrub," Melody Haile told *Idaho News* 6. "It's a problem. They're really taking over now." The bunnies are burrowing under her bungalow, tearing up her yard, eating macramé lawn chairs and digging big holes next to the foundation. "Now, we routinely walk the house and make sure they're not digging at the house." Humane Society representative Kristine Schellhaas thinks the bunny abundance might be owing to Easter, noting that rabbits "are really great gifts when in chocolate form (but) not necessarily an animal you want to get." The Humane Society is asking people to surrender their unwanted bunnies at the shelter instead of letting them frolic around freely. Or better yet, think twice before getting into the bunny business.

**CALIFORNIA**

If you plan on visiting the coastal paradise of Montecito, California, the sixth-most expensive ZIP code in the U.S., be sure to drop by what locals have dubbed the infamous "Pig House." It isn't hard to find: Just a few blocks from Butterfly Beach, the home is truly hog heaven, featuring a menagerie of swinish tchotchkes and farmyard furbelows both inside and out — even a backyard grill shaped like a big



## Heard Around the West

Tips about Western oddities are appreciated and often shared in this column. Write [heard@hcn.org](mailto:heard@hcn.org).

BY TIFFANY MIDGE | ILLUSTRATION BY DANIEL GONZÁLEZ

"pink oinker," *SFGATE* reports. Nikki Grosso, the 77-year-old owner (and curator) of the Pig House, estimates that there are about 6,000 pigs "scattered around her home," making her porcine property really stand out in what she calls "hotsytotsy Montecito," home to many wealthy celebrity types. Grosso's pig accrual started when she was living in Los Angeles in the 1960s. One year she gave her husband, Ronald, a "cheeky" ceramic pig for his birthday — Ronald was a police officer — and the collecting took off from there. But she really went whole hog after they moved to Montecito in 1993, though Grosso stopped collecting pigs after Ronald passed away in 2019. "There were too many

by that point," she said. There have been mixed reactions to her "piggy paradise" over the years, with some neighbors calling it an eyesore while tour buses often stop outside to take photos. In any case, Grosso is planning to sell both the home and her collection in the near future and move back to LA. If you're in the market for some unique curly-tailed knick-knacks, you're in luck: She will likely sell her treasures online.

**MONTANA**

T. rexes and stegos and velociraptors, oh my! The Museum of the Rockies in Bozeman, Montana, hosted its 5th Annual Dinosaurs and MOR! Festival, March 27-29. There were panels, workshops,

keynotes and kid-friendly activities, and participants who completed paleo-related activities received passport stamps from various stations on the Montana Dinosaur Trail — including the Rudyard Depot Museum and Montana State University's Dead Lizard Society — as well as a Junior Paleontologist Certificate signed by MOR's paleontology curator, John Scannella. The speakers' list featured a "who's who" of paleontologists, field experts, museum curators and biologists from around the U.S. and Canada. Check out the Museum of the Rockies webpage, <http://museumoftherockies.org/signature-events/dinos>, and the Montana Dinosaur Trail, <https://mtdinotrail.org/>. And plan on attending next year with your binoculars, pith helmet and (maybe) some velociraptor repellent.

**IDAHO**

What do you do when your state bans pride flags from government buildings? Answer: Come up with a creative alternative. That's precisely what happened in Boise after Republican Gov. Brad Little signed HB 561, a law that prohibits the flying of any flags that are not "pre-approved." To comply with it, City Hall took down its pride flags — which had flown for over a decade — and then wrapped its flagpoles in LGBTQ+ pride colors and hung up a rainbow-striped banner that reads "creating a city for everyone." The city stated that the decision was made in order to "demonstrate our unwavering commitment to the people that call Boise home," KTVB reported. In addition to the ingenious workarounds at City Hall, light displays featuring the light blue, pink and white of the transgender pride flag were installed around the building's windows and perimeter, illuminating Boise's downtown at night. ✨



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# #IAM THE WEST

**CAMERON COCHEMS (HE/HIM)**  
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TSA workers are exhausted and concerned. Not only did they have to worry about not getting paychecks for months, now the Trump administration wants to privatize the TSA. When we see them going after different agencies, we're like, "They're picking us all off one by one." What we have to do is come together and stick together. In the West, there's a lot of anti-union and anti-federalist feeling, so being a part of a union and the federal government and still being able to succeed in Idaho speaks volumes. A lot of people who aren't involved in unions want to be supportive: We've gotten thousands of dollars in gift cards, and an empanada place, Tangos, had a free food day for us. All across Idaho, we've had donations like that. It's heartwarming; it makes me feel like there still is community and people do care about each other.

Do you know a Westerner with a great story?  
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