High Country News

For people who care about the West

Line of Descent

Management missteps and turf wars have left endangered Mexican wolves dangerously inbred — and desperate for new blood | By Cally Carswell

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Brooke, aka F1472, a 5-day-old Mexican wolf pup born at Brookfield Zoo in Chicago in April, gets a neonatal exam before being tucked into a carry-on bag and flown to Arizona, where she and her brother, Blaze, will be "cross-fostered" with the Elk Horn Pack. CHICAGO ZOOLOGICAL SOCIETY

On the cover

Zana, a 4-year-old Mexican gray wolf, tends to her 1-month-old puppies at Chicago's Brookfield Zoo. Two pups from the same litter were removed in April to be "cross-fostered" with the Elk Horn Pack in Arizona. CHICAGO ZOOLOGICAL SOCIETY

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Editor's note

Can this shotgun marriage be saved?

You don't expect a report from the Interior Department's inspector general to be interesting, let alone insightful, but the newly released *Investigative Report of the U.S. Fish and Wildlife Service's Mexican Wolf Program* manages to be both. The 17-page report was ordered by U.S. Rep. Steven Pearce, R-N.M., on behalf of Catron County, to investigate alleged misconduct by federal staff overseeing the recovery of the endangered Mexican wolf. It reads like the transcript of a marriage mediation session — one that failed.

Catron County's ranching community plays the unhappy wife, who never wanted to have Mexican wolves in the first place. She believes her husband, Fish and Wildlife, only loves her for her habitat, and has deliberately ignored the danger wolves pose to people, concealed information about their whereabouts, clandestinely removed evidence of wolf-killed livestock, and failed to compensate her for losses. Oh, he's also a bleeding-heart animal lover, whose staff and volunteers "were seen crying when one of the wolves in the program had to be killed."

The husband claims that he has bent over backwards to accommodate his wife's extreme lupophobia. There are no documented cases of wolf attacks in the Southwest, he says, and he's only withheld information to protect the wolves from possible abuse. As one federal leader told investigators, "Some staff might have been apprehensive about speaking with ranchers they considered 'mean.' "

The report seems to lead to one conclusion: Due to irreconcilable differences, this partnership is doomed, and so is the Mexican wolf. But that's not what contributing editor Cally Carswell finds reporting this issue's cover story. The wolves are too closely related, and without new blood, they could eventually struggle to reproduce. Unfortunately, some of the most genetically diverse individuals have been killed because of conflicts with ranchers. Wolves raised in contained breeding facilities sometimes have trouble adapting to life in a vast landscape — especially one filled with cows.

Despite this, some progress is being made to reduce tensions: The Mexican Wolf/Livestock Coexistence Council, which includes ranchers and conservationists, was formed a few years ago, and, though underfunded, is helping by better compensating ranchers for livestock losses. But the relationship clearly needs a fresh start.

In April, the U.S. Fish and Wildlife Service committed to publishing new vows in the form of a revised recovery plan by November 2017. That's good news, biologist Mike Phillips told Carswell, but steadfast implementation will be even more critical, along with "a willingness to accept that no matter what you do, some people are going to be frustrated about this, some people are going to be frustrated about that. You're the U.S. Fish and Wildlife Service; that's the way it is." It will never be a perfect marriage, but there's still a chance to save it.

–Paul Larmer, executive director/publisher

Multimedia

#BlackLivesMatter protests across the West

In July, white police officers fatally shot two black men — Alton Sterling and Philando Castile. Then, during a Dallas protest, a sniper shot and killed five police officers. Although the events didn't take place in the West, Western communities, both urban and rural, grapple with racial justice and policing. That was made even clearer as people protested across the region in the following weeks. **LYNDSEY GILPIN**
MORE: hcne.ws/week-of-protests

People on Twitter posted protests from around the West, including tweets from @BLMLA, @JanetRWeil and @bethnakamura.

U.S. Interior Secretary Sally Jewell visits ancient cliff dwellings in McCloyd Canyon near Blanding, Utah, during a tour of the area that includes the proposed Bears Ears National Monument last month. Jewell also attended a public hearing in Bluff, Utah. U.S. DEPARTMENT OF THE INTERIOR

Emotions run high over Bears Ears

On July 16, Interior Secretary Sally Jewell visited Bluff, Utah, for a public hearing on a proposal from five regional tribes to designate the Bears Ears National Monument. The proposed monument is intended to increase protections on 1.9 million acres of federally managed canyons and mesas, land that is archaeologically rich and considered sacred by many Native Americans. Hundreds of people began lining up to comment more than three hours before the hearing began. Despite worries about potential flare-ups, the hearing was impassioned but largely respectful. The divides between critics and supporters are blurry: While the monument, which would be partially managed by tribes, has received substantial Native American support, many tribal members are resistant. Shirley Clarke, a Navajo living in Blanding, Utah, worried that a monument would attract more people and result in more environmental and cultural impacts. Others fear the designation would cut off access to tribal land and traditional piñon-gathering areas. Approximately 70 people spoke during the three-and-a-half-hour hearing, with members of the public chosen by lottery to give input. Just about everyone who spoke clearly cared about the landscape in question and wanted it to be protected to some degree, even those most passionately opposed to the monument. Jewell largely refrained from comment. It's not clear when a decision on the monument will be made, but, with the end of President Barack Obama's term looming, it's likely to be in the next several months.

JONATHAN THOMPSON
MORE: hcne.ws/bears-ears-hearing

Quoted

> "(Congress must) immediately pass universal legislation providing the timely and orderly mechanism **requiring the federal government to convey certain federally controlled public lands to the states.**"
>
> —The 2016 Republican Party platform draft as it read, in part, going into the Republican National Convention in July. The 2012 platform had similar, but slightly more nuanced, language: "Congress should reconsider whether parts of the federal government's enormous landholdings and control of water in the West could be better used for ranching, mining or forestry through private ownership."

JODI PETERSON MORE: hcne.ws/publiclands-vision

905

Number of signatures gathered on a White House petition calling for the firing of National Park Service Director Jon Jarvis. Jarvis is under scrutiny for not taking swifter action to address charges that the agency has a culture of sexual harassment and employee misconduct.

LYNDSEY GILPIN
MORE: hcne.ws/NPSdirector

Trending

What can we learn from Ed Abbey?

Writer Edward Abbey died on March 14, 1989. Several recent books take on his environmental legacy and his difficult views on other issues, particularly women and minorities. *All the Wild that Remains: Edward Abbey, Wallace Stegner, and the American West* seeks insights for today, as forces like climate change threaten the two writers' beloved landscapes. *Finding Abbey: The Search for Edward Abbey and his Hidden Desert Grave* is Sean Prentiss' quest for posthumous advice on how to live a life that is meaningful. And *Abbey in America: A Philosopher's Legacy in a New Century* offers an anthology of perspectives on Abbey.
BY ANDREA CLARK MASON

You say

JANET MOENCH
"His credentials in regard to wilderness are impeccable; other than that, he is simply another human, warts and all."

MIKE ZOBBE
"He inspired me to stand up for the natural world, but he was a bit of a bigot."

LYNN JACKSON
"Great writer, deep thinker. But I wish he had romanticized some place other than Moab. I put a great deal of what has become of Moab (little of it good) squarely on old Cactus Ed's writings about the place."

MORE: hcne.ws/edward-abbey and Facebook.com/highcountrynews

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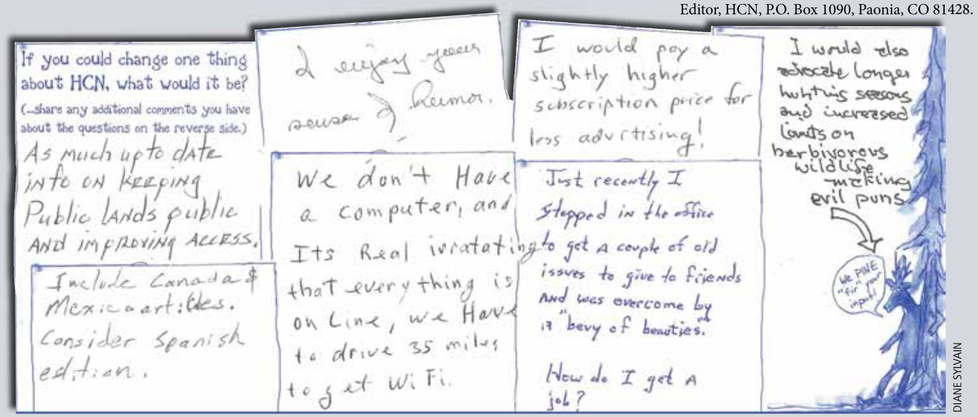

DIANE SYLVAIN

DEAR *HCN* ...

Our annual reader surveys have been trickling in, and as always, they're chock-full of thoughtful criticism, enthusiastic encouragement, and suggestions for widening — or narrowing — our field of view. Here's a sampling of what's on your mind.

Please continue to **hold the spoilers, environmental bandits and money-grubbers' feet to the fire**. This country in the West has been trashed enough.

In this age of information overload, there's such a thing as too much to read. I like *HCN* because it offers **well-considered articles of appropriate depth**. More isn't necessarily better.

Some articles require a small amount of politics to make sense of the writing. **Please keep politics at a low level**.

Greater emphasis on **reporting on misuse of public lands**.

I like the **"homey" style** and regularity of appearance. The more "slick," the less appealing.

Generally, **I read *HCN* cover-to-cover**. It's nice to sit back in a comfortable chair by the woodstove and savor it!

Stop the recitation of Paonia visitors in "Dear Friends" and use the space for content.

I appreciate your efforts to **strike a balance** between reporting on the negative consequences of oil and gas drilling, fracking and impacts to water supply versus the American need for oil and gas production.

A couple years ago, I subscribed (to *HCN*) for our **Verona, Wisconsin, public library**. The librarian tells me the magazine is well-read and frequently checked out.

Add **community dynamics in the changing West**.

I hope you touchy-feely types in Paonia can get used to the fact that **hunting and fishing are important forms of recreation**.

I've been **subscribing for 32 years, and the last year has been the best** yet!

You manage to **piss me off** every issue — one way or another.

(1) More Craig Childs. (2) When you run stories that require imminent management or political action, **provide constructive suggestions** to readers who want to make a meaningful comment.

More focus on **environmental racism/justice**.

Emphasize science more and its influence (or lack of influence) on policy.

I don't care to read about social issues in metropolitan areas.

I love the spirit with which you approach your articles, and the pieces are written with **detail and precision, the facts supported**, etc.

More stories, fewer ads. (I know, I know.)

The overall tone is good — serious, sincere, **without being sanctimonious or morbidly pessimistic**.

Bigger, better photos, and more hard-truth investigative reporting and less fluffy feature stories.

More fact-checking means fewer corrections. **More points of view** means fewer "clarifications" and peevish letters to the editor.

I moved to Michigan and **thought I could do without my *HCN*** subscription. I was wrong.

The "Marketplace" section has long annoyed me. It would be so encouraging to read of **actual employment for a "real, normal" person**, someone with some skills but not of an "executive director" nature. And while I'm at it: Real estate that is affordable for someone outside of the 1 percent, or even 10 percent!

Have at least **one climate-related article** in each issue, with maps.

Let's see a ***High Country News* podcast** in an interesting and thoughtful format.

The **cold, clear, factual reporting** is what keeps me subscribing.

Be somewhat less supportive of consumptive users of public lands — grazers, historic subsistence users, ATV-use expansion, mining, etc. Be a **more forceful advocate for conservation**, even if some Old West ways of life must change.

Stick to environmental issues. I quit donating to your Research Fund when you ran the article on the "Gangs of Zion," Aug. 8, 2005.

I appreciate your reporting of issues in much **greater depth than my local paper** would.

The pictures are good — but, I sometimes wonder if it is really **necessary to give so much space to pictures**.

I read every word of every issue except for your travel issues, which have been a waste of printing the last several years. I have come to **dread the time when the travel issue is printed**.

You have done a good job of reporting the environmental damage and hazards that abound in the West. I challenge you to balance your articles with the **positive side of what is happening**.

The kind of news, essays and thoughtful letters from readers are **simply not found elsewhere**.

The **commenters' rants** on Facebook or Twitter are not helpful and are often misleading or divisive.

Just **keep on keepin' on!** It is all great.

I feel **better informed about our area's political process** because of your reporting.

Do what you must for the publication and your staff so that you remain a viable source and reference on those topics you choose to report on.

Continue truly **in-depth, unbiased investigations**. Minimize "shrill," biased, out-of-context, "enviro," ill-researched junk.

I am acutely aware of **how much work goes into publishing an independent paper**, and what an uphill battle it is most of the time. Kudos to you all for putting out such a reliably high-quality product.

I hope that your view of what journalism is and must remain in a free society will never change.

High Country News

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Dead trees near Bass Lake in the Sierra National Forest in California. U.S. FOREST SERVICE

Forest fatalities

California has an epidemic of dead trees. But should those trees be logged to reduce fire risk?

BY JANE BRAXTON LITTLE

Looking north from Blue Canyon near Shaver Lake, copper-colored forests blanket mountain slopes that stretch ridge after ridge to the horizon. The patches of fading green that dappled these hillsides last fall have merged into an unbroken cover of rust-needled pines. At dusk, when the winds die down, an eerie stillness gives way to the muffled sound of munching as beetles chomp through one tree after another, thousands after thousands.

This is the look — and the sound — of drought.

Four consecutive winters with little to no snowpack, followed by four dry summers, have devastated California's southern Sierra Nevada. At least 66 million trees are already dead statewide, and millions more are expected to die as the drought persists into a fifth summer.

On the Sierra National Forest, up to 90 percent of the mid-elevation ponderosa pines are dead. Weakened by drought, oaks are succumbing to sudden oak death along the central and northern coast, and the disease has moved into the Central Valley. Pines gray as ghosts haunt coastal, Cascade and Sierra foothills. The epidemic is spreading across choice vistas owned by millionaires as well as remote landscapes rarely entered by humans.

And the bark beetles that caused this desolation? They're reproducing at triple the normal rate. Forest ecologists used to consider them a natural part of the forest dynamic — and they are. Stressed by drought and decades of air pollution in overcrowded stands, however, the natural chemicals trees pitch out in self-defense can't keep up with the onslaught of bugs. No one is calling what's happening here natural anymore.

"Nobody imagined this would come on as fast as it has, or be as lethal," says Craig Thomas, conservation director for Sierra Forest Legacy, a coalition focused on Sierra Nevada national forest issues. "And nobody really knows what the hell to do."

Overwhelmed by the die-off, forest management agencies are resorting to a century-old strategy: removing dead trees to minimize future wildfires, which they predict will be inevitable and cataclysmic. Gov. Jerry Brown declared a state of emergency in October, citing a public safety hazard from falling trees and worsening wildfire risks. The tree mortality task force he convened has marshaled a small army to log over 6 million acres.

In June, U.S. Agriculture Secretary Tom Vilsack called for Congress to provide funding to fight the "unprecedented and increased risk of catastrophic wildfires."

It may seem logical that all these dead trees would fuel massive conflagrations. Scientists, however, say climate, not dead trees, drives fire risk. That leaves California poised to log millions of standing dead trees without addressing a central question: Are they actually a fire hazard?

Chainsaws and chippers are already at work in 10 counties clustered along the Sierra Nevada's southwestern slopes. Crews are focusing first on some 230,000 acres of dead trees along roads, in public campgrounds and around communities, a task expected to continue through the summer and beyond next winter.

Nearly everyone supports removing dead trees that can crash onto houses, roads and power lines. It is the next phase

Jane Braxton Little explores science and natural resources for publications including *National Geographic*, *Scientific American* and *The Sacramento Bee* from Northern California. @JBraxtonLittle

THE LATEST

Backstory

Two-thirds of California's water comes from the Sacramento and San Joaquin Delta, heart of a tangled system that routes water to 25 million people and 3 million acres of farmland. Gov. Jerry Brown is pushing a plan to dig two tunnels underneath it to secure water for Southern California during drought — a controversial $15 billion project that farmers, fisheries and wildlife advocates fear will siphon off too much water. The question remains: What if there's just not enough water to go around? ("California's tangled water politics," *HCN*, 12/20/10).

Followup

In July, Brown hired former Interior Secretary Bruce Babbitt — known for making water deals — to help secure federal approval for the project. The same week, **a California water supplier bought five Delta islands for potential tunnel construction.** And though state agencies working on the plan outlined ways to save endangered Delta smelt by restoring wetlands and increasing water outflows, environmentalists say it's too little, too late.

LYNDSEY GILPIN

Islands in the San Joaquin River Delta. DOC SEARLS

As counter-intuitive as it may seem, during extreme drought, green forests may be even more flammable than standing dead trees.

that is controversial. The task force has identified high-hazard areas in both privately and publicly owned forests totaling 6.3 million acres — more than double the combined size of Yosemite and Yellowstone national parks. The computer-generated hazard-tree maps include entire watersheds where mortality exceeds 1.5 percent. Some are in the backcountry far from human habitation.

Critics argue that this is an unacceptably low threshold that poses unacceptably high risks to forests. It could lead to logging in old-growth forests and other stands that are still healthy and not severely impacted by drought, thereby threatening wildlife diversity and disturbing ground cover that nourishes an array of plants and animals. Only a well-tended tree farm would be safe under such standards, says Brian Norwicki, California climate policy director for the Center for Biological Diversity.

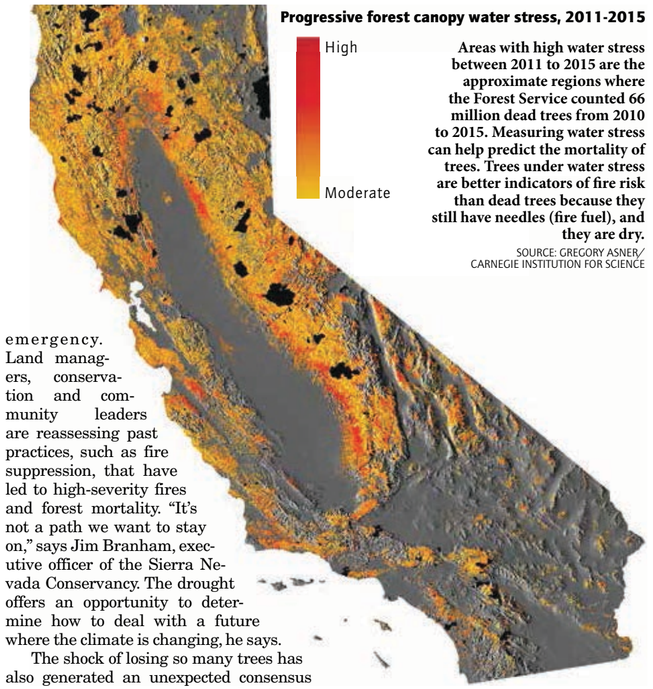
But at the heart of the logging debate is the question of whether dead trees are a fire hazard. The conventional assumption is that insect outbreaks increase wildfire risk because dead trees are more flammable than green ones. That is a conclusion most scientists have long disputed.

Researchers have found that beetle kill, even when it consumes whole landscapes, does not increase the likelihood of the big, hot fires that can wipe out entire stands and leave soils so charred they can't absorb water. Some analyses indicate that dead trees can even reduce fire risks: Once the needles on a bug-killed tree drop to the ground, the most flammable fuel has left the forest canopy. This reduces the source of the flames that spread most quickly from tree crown to tree crown, escalating the scale of the blaze, Garret Meigs wrote in an April study published in *Environmental Research Letters*. The Oregon State researcher found forests impacted by the mountain pine beetle were actually less susceptible to fire for as long as two decades after the trees died.

Hot, dry, windy climatic conditions, not dead-tree density, drive fire risk, scientists say. And not just in drought-plagued California: Between 1979 and 2013, increases in temperature and wind speeds combined with a greater number of rain-free days to lengthen fire seasons worldwide by nearly 20 percent, according to a study published in *Nature Communications*. As counter-intuitive as it may seem, during extreme drought, green forests may be even more flammable, says Dominik Kulakowski, a research professor at Clark University in Massachusetts. Needles lost from the tops of trees are more important to reducing the risk of fire than the standing dead wood, he says.

Whether scientific studies like these will affect California's response is an open question. But the sheer magnitude of the die-off is forcing a focus on forest management that transcends the immediate emergency. Land managers, conservation and community leaders are reassessing past practices, such as fire suppression, that have led to high-severity fires and forest mortality. "It's not a path we want to stay on," says Jim Branham, executive officer of the Sierra Nevada Conservancy. The drought offers an opportunity to determine how to deal with a future where the climate is changing, he says.

A worker cuts the top off a bug-killed tree in the Lake Tahoe area of California. Statewide, drought and bark beetles have killed more than 66 million trees.
RANDY PENCH/THE SACRAMENTO BEE/ZUMAPRESS.COM



Progressive forest canopy water stress, 2011-2015

Areas with high water stress between 2011 to 2015 are the approximate regions where the Forest Service counted 66 million dead trees from 2010 to 2015. Measuring water stress can help predict the mortality of trees. Trees under water stress are better indicators of fire risk than dead trees because they still have needles (fire fuel), and they are dry.
SOURCE: GREGORY ASNER/ CARNEGIE INSTITUTION FOR SCIENCE

The shock of losing so many trees has also generated an unexpected consensus over such issues as returning fire to the landscape to restore forest health. People's minds are changing "as fast as anything I've ever seen," says Thomas, the Sierra Legacy director and an advocate of prescribed fire and managing, rather than putting out, fires started naturally by lightning. "That tells me we're getting somewhere."

These discussions remain contentious, and they are happening under the duress of an epidemic of dead trees in a culture accustomed to suppressing fire. Meanwhile, more trees are turning brown day by day as bark beetles munch their way through another summer. □

Will a Colorado compromise end a water tug-of-war?

Controversial deal for trans-mountain diversion project faces scrutiny

BY SARAH TORY

In 2003, when Denver Water first proposed diverting more water from the Fraser River and its tributaries, officials in Grand County, Colorado, balked. Every year, billions of gallons are piped out of the Western Slope's rivers, bound for the cities and suburbs that sprawl along the dry eastern side of the Rocky Mountains. Grand County contributes the most — 60 percent of its water is sent eastward — and after years of watching their rivers shrink, many locals were less than thrilled at the prospect of losing more water.

It could have been the start of another lengthy court battle, a routine occurrence in Colorado, where east and west have fought over water for decades. But after Denver Water promised to help the Fraser recover from years of depletion, Grand County reconsidered and agreed to let the utility siphon another 18,700 acre-feet (equal to 15 percent) from the river through the existing Moffat Tunnel. When the deal was signed in March 2014, proponents lauded this new collaborative approach to managing Colorado's dwindling — and contentious — water supply. It proved, they said, that the state could meet future water needs without destroying ecosystems. On July 1, the $360 million project celebrated a major milestone in the approval process when it received a key permit from the Colorado Department of Public Health and Environment. The final decision rests with the U.S. Army Corps of Engineers. But meanwhile, threats of an environmental lawsuit are growing — raising questions about the future of other collaborative agreements over water.

"It was hard for people to believe that giving away more water was in our best interests," says Lurline Underbrink Curran, the former Grand County manager and a lead negotiator with Denver Water. But in the end, she says, the decision to compromise offered a better outcome: "Instead of endless court battles, we accepted more water will be diverted out."

For Denver Water, Colorado's largest and most powerful water utility, brokering a deal with Grand County was part of a new business strategy. In 1990, environmentalists killed Denver Water's bid to build the massive Two Forks Reservoir on the South Platte River, ending the utility's dreams of doubling its storage capacity. "In the good old days, Denver Water would just roll over people and not care about the implications," says Jim Lochhead, the utility's CEO. But the Two Forks debacle showed that new forces were coming into play, including growing public opposition to more dams.

A new approach was needed, says Lochhead. "So we went to Grand County and asked how we could develop it (Moffat) with their support." Negotiations began in 2007 and eventually included 18 other Western Slope water providers and municipalities. The end result was two major agreements that pave the way for new Western Slope water development — development that is badly needed, says Lochhead, to bolster Denver's supplies against future drought and climate change.

Both agreements include the usual measures required by law to address the impacts of diversions. But they also include "enhancement" measures that Denver Water proposed to improve the health of the Fraser, which suffers from excessively warm temperatures and sediment-clogged streambeds that have decimated cutthroat trout and other coldwater species, such as sculpin fish and stoneflies.

Still, it seemed like a long shot: How could conditions improve if *more* water was taken? Curran was initially skeptical, but she changed her mind when Denver Water offered to help compensate her county for the impacts caused by previous water diversions. Accepting the deal, she decided, might be Grand County's only chance to secure that help.

Under the agreements, Denver Water will monitor the Fraser on an ongoing basis, tracking temperatures in key streams. When readings spike, the utility will release additional flows to cool the water. In addition, diversions will largely occur during peak runoff season, and not at all during severely dry years.

For critics, however, any deal, no matter how good, is yet another blow to the larger Colorado River system, which is already suffering from overuse. "We don't get involved in compromising," says Gary Wockner, director of the advocacy group Save the Colorado and one of the lawyers preparing a lawsuit. "Further draining the river is not doing things in a new way."

Geoff Elliot, a local watershed scientist, believes that the deal is based on negotiation instead of on science. Taking more water from the Fraser, he warns, will bring the river's ecosystem to the "brink of collapse." No one knows, he says, whether the proposed mitigation measures will be enough to account for all the potential damage. More water diversions could dry up vast swaths of wetlands, for example, but that possibility was omitted from the project's environmental impact statement.

Lochhead believes that the amount of monitoring in the deal addresses such concerns. "We're not looking to develop a water supply that kills the river," he says. "That would be like shooting ourselves in the foot." Still, the deal-making bothers environmentalists — the notion that you can take as much water as you want from a system and then negotiate about how much you'll give back later. "That isn't the way ecology works," Elliot says. "That's the way politics works." □

The Moffat Water Tunnel brings water from Grand County, Colorado, to the Front Range of Colorado, diverting flow from the Fraser River, which is becoming depleted.
MARK CONLIN / ALAMY STOCK PHOTO

Correspondent Sarah Tory writes from Paonia, Colorado, and covers water issues. @tory_sarah

Soil tackifier solution is applied to the dirt around an abandoned uranium mine in Thoreau, New Mexico, to reduce erosion on the contaminated site. ENVIRONMENTAL PROTECTION AGENCY

THE LATEST

Backstory

In 2005, the Navajo Nation banned uranium mining on its 27,000-square-mile reservation. **Nearly 4 million tons of uranium ore had been extracted since 1944, seriously contaminating tribal lands.** The toxic legacy has left tribal members battling respiratory diseases, as well as liver, lung and breast cancers, and many families still await compensation ("On Cancer's trail," *HCN*, 5/26/08).

Followup

In early July, the Obama administration signed an agreement funding Phase II of the Environmental Protection Agency's ongoing effort to clean up the reservation's abandoned uranium mines. **The 16 mines that pose the greatest risk to human health will be remediated, and 30 others will be evaluated for future cleanup.** The EPA has already spent $100 million to remediate 47 homes and screen more than 500 mines since 2008, and estimates for future cleanup costs extend into the hundreds of millions.

PAIGE BLANKENBUEHLER

Columbia River 'shadow tribes' face housing crisis

Feds promise lodging at fish camps — but don't deliver

BY BEN GOLDFARB

Paul Lumley, like many Yakama Nation citizens, grew up fishing on the Columbia River, through which salmon flowed like blood. Though Lumley's family lived north of the Columbia, in Washington's Yakima Valley, his family migrated to the river each fall to set gillnets for valuable chinook. Lumley slept in the truck bed for months at a time, steeped in *eau de salmon*, at Underwood, a small, decrepit fishing camp set aside for American Indian use by the federal government. "It was really rough living," Lumley recalls.

Today, 31 such fishing camps line the river, and hundreds of tribal members flock to them during fishing season. Up to 160 families also inhabit the camps year-round. Lumley now serves as director of the Columbia River Inter-Tribal Fish Commission, a tribal management agency that conducts fisheries research, enforces regulations, and operates hatcheries. Despite its fishy focus, Lumley's agency is also worried about the Columbia's camps — among the quietest housing crises in modern-day Indian Country.

The housing dilemma, like many Northwest tribal fisheries conflicts, has its origins in 1855, when treaties pushed tribes onto reservations far from the Columbia. Though the treaties guaranteed American Indians access to traditional fishing sites, the reservations were anathema to those whose sustenance and culture flowed from the Columbia's waters. White soldiers fought them and settlers murdered them, yet some tribal members remained rooted to the riverbanks, growing gradually distant from their reservation kin. According to the historian Andrew Fisher, "River Indians" today "constitute a shadow tribe, part of and yet separate from the tribal bodies whose fortunes they share."

Correspondent Ben Goldfarb writes from New Haven, Connecticut. @ben_a_goldfarb

Russell Tahkeal walks through the fishing camp at Cooks Landing, Washington, left, where trash piles up and amenities such as running water and toilets are in short supply. The federal government is legally obligated to maintain the fishing sites along the Columbia River. TERRAY SYLVESTER

In 1937, the U.S. Army Corps of Engineers completed Bonneville Dam, flooding numerous fishing sites and villages. But the treaties gave the tribes leverage, compelling the Corps to relocate some families while promising to purchase land and build new homes for others. Similar vows accompanied the subsequent construction of the Dalles and John Day dams. Yet it took the agency nearly 20 years after the completion of Bonneville to set aside five meager parcels for Native American use. The Corps did briefly put some tribal members in World War II-era barracks, but the buildings turned out to be ridden with asbestos.

The situation improved somewhat in the 1990s, when the Corps began construction on 26 new seasonal fishing sites. But the sites still lacked housing. Most resemble bare-bones campsites, endowed with little more than a bathroom, a fish-cleaning station and a boat ramp; many lack running water and electricity. Tribal fishermen drag in generators or bootleg power from the grid.

Although the housing crunch has simmered for decades, in the last several years it has erupted into a full-blown crisis. Record-setting salmon runs have lured more fishermen from the reservation to the river, crowding the sites in summer and fall and straining their deplorable infrastructure. In turn, the tribes have recruited congressional allies to make their case to the Corps, which has acknowledged its responsibility to build new housing. But bureaucracies move slowly, and dispensing reparations for historical injustices has never been America's strong suit. Says Yakama fisherman Randy Settler: "It's not a popular issue to build replacement homes for something that happened 70 years ago."

Poor living conditions are common in Indian Country — more than 5 percent of homes on Native American land lack plumbing, 10 times the national average. Still, Lone Pine, Oregon, a tribal fishing camp 85 miles east of Portland, is a particularly run-down aggregation of trailers and shacks sided with corrugated tin and tree bark. Hubcaps and piles of clothes litter the packed-dirt track; derelict vans and motorboats perch on cinderblocks. A single bathroom serves the 40 permanent residents, whose numbers swell during fishing season. Drug abuse, including meth and heroin, is rampant.

Lone Pine sits on basalt bluffs across the river from the Dalles Dam, which generates power for a nearby $1.2 billion Google data center, among other infrastructure. "How do you think people at Lone Pine feel looking at this huge dam every day, making all those other people rich?" says Lumley, a rangy, cordial man whose voice grows softer the angrier he gets. "When I ask this community if they want a free house, they look at me like I'm crazy. They want water that works, they want someone to come pick up the garbage."

The substandard facilities aren't merely eyesores, they're also hazardous to health and safety — as demonstrated by Lumley's uncle, a wizened, good-humored 86-year-old named Johnny Jackson. Jackson, a chief of the Cascade Tribe, one of the groups that comprise the Yakama Nation, has lived at the Underwood site since the 1960s, when he resisted the Corps' attempts to oust him and turn the landing over to white sport fishermen. "My sisters used to come and help me have a salmon-bake right here," he recalls, standing in the shade of a fish-cleaning station. In September 2014, Jackson's hand-built house caught fire when a faulty fuel line caused his propane tanks to hurtle through the air like bottle rockets. When firefighters arrived, they found that the nearby yellow fire hydrant wasn't connected to any water source. Jackson's home was reduced to charcoal. Now he lives in a trailer.

Lone Pine and Underwood are not unique in their dilapidation — the bathroom in a 3-acre site called Cooks Landing doesn't even have a door, and most of the other 31 sites suffer from similar conditions. But even supplying these spartan services is draining the Corps' coffers: According to Laurie Jordan, a policy analyst for the Inter-Tribal Fish Commission, it costs more than $40,000 per year just to pump the septic tank at Cooks Landing.

The abysmal quarters contrast painfully with nearby North Bonneville. When that town had to be moved in the 1970s to make way for a new dam powerhouse, its mostly white residents secured $35 million for relocation. Today, the community is a *Pleasantville*-esque complex of churches, tennis courts and ball fields.

The Tahkeal family, of the Yakama Tribe, prepare to fish from their home, below. They share a one-room uninsulated home without plumbing during fishing season. Right, Johnny Jackson, chief of the Klickitat Band, and his grand-nephew, Jason Templeton-Jackson, in Underwood, Washington, near the site of the Native village that was inundated by the Bonneville Dam in 1937. TERRAY SYLVESTER

"I'm happy for them," says Lumley as we drive through the hamlet. "But we have people who are owed basic amenities."

After more than 70 years of neglect, new housing may finally be on the horizon. In 2013, a Corps-commissioned report acknowledged that many displaced families had never received relocation assistance, and that the facilities were inadequate. The 2016 iteration of the Water Resources Development Act, biennial legislation that authorizes Corps water projects, includes language about granting relocation assistance to displaced families. In July, congressional delegations from Oregon and Washington also introduced legislation in the House and Senate that would direct the Bureau of Indian Affairs, which owns the sites, to improve sanitation and electrical infrastructure. "These are items that shouldn't wait for longer-term legislative action," says Rep. Earl Blumenauer, D-Ore., one of the bill's authors. "It's extraordinarily frustrating that we've allowed these conditions to persist."

Although passing the legislation will be a tall order in an election year, the housing momentum is gathering. If and when funding arrives, the tribes will face a difficult decision: Who will build and manage the infrastructure? Though the Bureau of Indian Affairs was once responsible for operations, maintenance and law enforcement at the sites, everyone agrees the agency bungled the job — a posted emergency phone number, for instance, sometimes routed calls to an office in Wyoming. These days, those responsibilities are handled by the Inter-Tribal Fish Commission, but it's an awkward fit. "Fish is our middle name," says Lumley. "Housing isn't." Lumley hopes the tribes will create a housing authority to steward the sites. "There's the potential to address the long-term economic development that these people need," he says. "But it needs to come directly from the communities themselves."

More than 150 years after the U.S. Army attempted to dislodge the Columbia River Indians, the river tribes remain in the shadows. Many year-round river dwellers, says Jordan, don't avail themselves of services like welfare, food benefits and energy assistance, which are widely used by reservation residents. According to Wilbur Slockish, a bearish 71-year-old Klickitat chief, off-reservation Indians remain out of sight and out of mind when the salmon aren't running. "The tribe's mentality is the reservation, and it's always been that way," he says. "We're on our own."

Few river dwellers know that better than David Sohappy Jr., a Yakama fish technician whom I meet on a warm sickle-moon evening at Drano Lake — a Columbia River pool formed when Bonneville Dam inundated a historic fishing village in the 1930s. In 1982, when hostilities between the River Indians and the government were near their apex, Sohappy and his father were arrested at Cooks Landing for illegally selling fish to undercover federal agents. Though they pled entrapment, both men received five-year sentences. "I remember him lying awake on his bunk in prison, banging his fist against the wall," Sohappy says.

That Sohappy, once jailed as a poacher, now works as a tribal fisheries manager is a sign of how far the Northwest has come. Salmon runs, though still just a vestige of their pre-dam glory, are stronger than they've been in decades, and fishing has reassumed its prominence in Native life. Fifty years ago, when many runs stood on extinction's doorstep and officers tear-gassed Yakama fishermen for "trespassing," it would have been almost impossible to imagine the Columbia River teeming with Native-owned boats.

Some injustices, however, can never be rectified. Sohappy's own great-grandmother grew up alongside the Columbia, but was forced to move away when her village was drowned by Drano Lake. "She wanted to live near the river," Sohappy says. "She died waiting for the house the government promised her they'd build." □

A morning's catch of salmon on the Columbia River, right. Below, Yakama fisherman Andy Sohappy, left, hauls in a gillnet on the Columbia River with his employee Kyle Brisboi. Sohappy has fought many legal battles to preserve the Native right to fish and live along the Columbia River.
TERRAY SYLVESTER

Seeds of change

Seed storage project takes new approach to tracking plants' response to climate change

BY BRYCE GRAY

After months of searching, Heather Schneider was beginning to despair. The UC Santa Barbara postdoc had been scouring drought-ravaged Southern California for a rare yellow wildflower called the seep monkeyflower, a water-loving native perennial that occupies seeps and small pockets where moisture accumulates. Her goal: to gather some of its seeds and whisk them off to a U.S. Department of Agriculture seed storage facility in Fort Collins, Colorado.

"I literally had people laugh at me when I said I was looking for that species," Schneider says. During the three years she spent, from 2013 to 2015, collecting seeds from around the West, California consistently had lower-than-average rainfall. The dry conditions made it nearly impossible to find the damp environment that *Mimulus guttatus* calls home. Eventually, however, Schneider found a few specimens in Northern California and in other states, and was able to deposit their seeds in Project Baseline's minus-18-degree Celsius freezer.

Until now, most institutional seed-banking initiatives have essentially mimicked Noah's Ark, stockpiling an array of wild species or crop varieties for conservation purposes, to be used only in the event of ecological catastrophe. Project Baseline, however, wants its inventory to be used for research. The hope is that its more than 5 million seeds from 60-plus species can provide future researchers with a genetic snapshot, so that they will be able to identify changes as evolutionary responses to climate change.

Seeds have been gathered from across the nation, but Western species rank high in the project's inventory: Joshua trees, California poppies and purple needlegrass, for example, as well as lesser-known varieties like the seep monkeyflower and elegant clarkia. The collection process is now complete, and, given continued funding, Project Baseline's seed bank should be open for business by 2020. By then, evolutionary changes could begin to be apparent. Researchers can withdraw seeds from the collection and cultivate them for comparison to specimens that have continued to evolve in the wild. They can then study the changes each species exhibits over time.

The project provides a level of experimental control that evolutionary scientists are rarely afforded. In the past, for instance, the absence of well-chronicled baselines has hampered research designed to monitor how specific species have evolved, says Julie Etterson, an associate biology professor at the University of Minnesota Duluth and the lead principal investigator for the project.

Scientists have often had to rely upon "happy accidents," she says, in which researchers stumbled across a few handfuls of old seeds gleaned from frozen Alaskan soils — or even, on occasion, from cleaning out their laboratories' refrigerators. "But we can do better than that," says Etterson. "Instead of being random and arbitrary, we can be really intentional."

With Project Baseline, Etterson and her colleagues can help researchers answer a wide range of questions, shedding light on the variables affecting a plant's ability to adapt to climate change. That requires intensive comparison between different species — common plants versus specialized local species, plants with long lifecycles versus those with short ones, plants that rely on live pollinators versus those pollinated by wind. Even invasive species like rapeseed and black mustard are included, so that researchers can determine whether climate change will enable so-called weeds to become even more dominant.

Researchers made sure that there was ample diversity within every species by drawing from 10 to 20 populations of each, sampling from Northern and Southern regions, as well as from both high and low elevations.

Complications such as drought and wildfire made it harder to find many plants. One collection site in Northern California was torched by a wildfire just 12 hours after Schneider obtained the seeds of two native wildflowers. In other cases, the need to obtain access and permitting slowed down the collection process. Occasionally, researchers finally reached a site only to find that the plants in question had already become locally extinct.

And relocating those species for future comparisons will likely be even more challenging, as the "novel climate regime" now taking hold disrupts their distribution, according to Susan Mazer, a UC Santa Barbara professor and the project's principal investigator in the West. In response, the project has focused on protected wilderness areas, where species are less likely to be impacted by human development.

Now it's up to the next generation of scientists to convert Project Baseline's inventory into a clearer understanding of how plants are responding to climate change. Worsening drought and other stresses are especially likely to leave a lasting imprint on the genetic composition of Western plants. That's why it's so important to preserve a snapshot of the present, right before what scientists expect to be a tumultuous period. "This is the calm before the storm," says Schneider. "Of course, they're always adapting, but they represent a unique point in time." □

Former *HCN* intern Bryce Gray covers energy and the environment at the *St. Louis Post-Dispatch* in Missouri. @_BryceGray

Ryan Lynch, a lab technician for Project Baseline, looks at seeds stored in a seedbank, which is kept at minus 18 degrees Celsius to keep them dormant and preserve them for decades, in Fort Collins, Colorado, left. Bromegrass seeds are germinated to determine the viability of the seed sample before long-term storage, right. The seeds in this project will help scientists monitor genetic changes in plants due to climate change.
BROOKE WARREN

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HARNESSING THE WIND, by Deon Reynolds
Permanent collection at the Nevada Museum of Art, E. L. Wiegand Gallery Archive Collections at the Center for Art + Environment.

In *Harnessing the Wind*, Deon Reynolds captures something rarely shown in photographs: the force of the wind, as well as the eerie beauty of the turbines that channel its power. Reynolds recently donated his photos of three wind power facilities to the Nevada Museum of Art's Center for Art + Environment. In them, lonely white sentinels watch over grassy prairies, rainstorms and mountain ranges, alone and in groups against dramatic backdrops in Nevada, California and Texas. Reynolds says he hopes the collection will open people's eyes to renewable energy, helping them to see the positive effects and potential beauty of incorporating this technology into Western landscapes. The center's director, William Fox, says Reynolds' photos "reveal the intricate engineering behind wind turbines while capturing the character of the places in which they stand." That, he says, is a "delicate and rare balance." **ANNA V. SMITH**

Wind turbines on the Pattern Energy Spring Valley wind site in Spring Valley, Nevada, situated on 7,680 acres of BLM administered land. DEON REYNOLDS

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HCN in the classroom

It's been a long, hot summer, but by the time this issue comes out, we'll all be complaining that it's almost over. If you're an academic type, already contemplating the new semester, you might need an extra mood boost. And we have just the thing: the HCNU classroom program, which provides free subscriptions for you and your students. Professors and teachers of any grade are welcome to sign up. Call us, email **hcnu@hcn.org**, or see **hcn.org/edu**.

Summer's end also brings us closer to Election Day. And while this year's bewildering presidential contest has dominated the news, there are some great Western races to watch, too. *HCN*'s strength lies in our community of readers, so we're requesting your help with political coverage. Which races should we be paying attention to? Call us or tip us online: **hcne.ws/election-coverage**.

We always enjoy visitors to our Paonia, Colorado, headquarters, like **Bryan Burke**, from Eloy, Arizona, who took a break from trail running along the Colorado River to say hello. He's attempting to run the length of the river, along with all tributaries 50 miles or longer. Over the last few years, he's done 2,300 miles and has just 800 more to go. Good luck, Bryan!

Longtime subscriber **Jean Rodeck** came by in early July to share stories from her long career as an interpretive planner at the National Park Service. She's worked at more than 100 parks in the Southwest and Alaska, and though she's been retired for 14 years now, she says she still has "green blood." We don't doubt it, Jean.

In late July, newlyweds **Andrew** and **Natalie Kuhlmann** dropped by. They'd traveled from Cheyenne, Wyoming, to get married in nearby Glenwood Springs, Colorado. Andrew, a senior assistant attorney general for the state of Wyoming, often deals with mining issues, he says, and appreciates our coverage. Natalie is an archives technician for Wyoming, digitizing records and helping the public with research. She was excited to see our stacks of bound *HCN* volumes going back to 1969. Next on the happy couple's itinerary: local wineries and hot springs. Cheers and congrats, Andrew and Natalie!

A few corrections: In a recent story focused on the Latino community and nature, we incorrectly stated that José González applied to Redwoods National Park rather than to a nonprofit organization for redwoods conservation ("A new kind of outdoor group," 6/27/16). In our July 25 issue, we wrote that William Keebler, the Utah man charged in June with attempting to blow up a BLM building in Arizona, had previously scouted the site with Lavoy Finicum, a spokesman for the occupiers at Oregon's Malheur National Wildlife Refuge ("FBI nabs suspected BLM bomber"). That information, published in the FBI's criminal complaint, was incorrect; the agency now says Finicum did not scout the location with Keebler. *HCN* regrets the errors.

—Paige Blankenbuehler, for the staff

Jean Rodeck of Woodland Park, Colorado, visits *HCN*. PAIGE BLANKENBUEHLER

Line of Descent

Management missteps and turf wars have left endangered Mexican wolves dangerously inbred — and desperate for new blood

On a breezy January day, in a double-wide outside Alpine, Arizona, a wolf lay on a large wooden conference table. He was tranquilized but very much alive. His ribs rose and fell, and his body twitched. He was blindfolded and muzzled, and compulsively licked his dark nose. His white, black and cinnamon-colored fur was long and coarse, except around the ears, where it was soft. Veterinarian Susan Dicks massaged his belly. It felt mushy, like raw meat. It felt like he'd had a meal.

The people in the room spoke in whispers and worked quickly. Hands gloved in black latex, a few of them jockeyed around the table, drawing blood, administering vaccines, measuring the wolf's long, pearly canines, and swabbing the dart wound on his rump.

The U.S. Fish and Wildlife Service had captured him during its annual winter census, when agency biologists try to count every endangered Mexican wolf in the forested mountains of western New Mexico and eastern Arizona. His "name" was M1296, "M" for male, and biologists caught him in order to replace his radio collar.

It was remarkable that he was here at all. In April 2013, he stepped in a trap set for coyotes on private land in New Mexico, and it took biologists three hours to reach him. "He had abrasions, broken teeth. He just looked terrible," recalled Julia Smith, who works out of this field office for the Arizona Game and Fish Department. "I thought, 'He's not going to make it.' "

He did make it, though, and even found a mate. Then another setback: In 2014, an unknown gunman shot her. Eventually, M1296 wooed another female, F1439. They

Pups of the Prieto Pack in June, at just over a month old. When a U.S. Fish and Wildlife biologist approached for a quick hands-off assessment and photograph, the pups scurried inside to huddle together for safety at the back of the den.
U.S. FISH AND WILDLIFE SERVICE INTERAGENCY FIELD TEAM

Justin Martens, a wildlife biologist with the U.S. Fish and Wildlife Service, carries wolf M1296 of the Mangas Pack from a helicopter, after the wolf was darted and sedated. Biologists replaced the animal's radio collar before releasing him back into the Gila National Forest.
CHRISTINA SELBY

established a territory, and earned a name, the Mangas Pack. At 74 pounds, M1296 was healthy and well-fed. On a scale of 1 to 5, Dicks rated his body condition a 4.

On the surface, things seemed to be looking up for the entire Mexican wolf population. In 1998, after Mexican wolves were poisoned and shot out of existence here, the Fish and Wildlife Service reintroduced 11 wolves, with the initial goal of growing their numbers to 100. After years of struggle, the population crossed that threshold for the first time in 2015. Biologists counted 110 animals, a 25 percent increase over the previous year. M1296 was among 97 wolves counted in this year's census.

Yet trouble lurks even in these historic numbers. As the population expands, it's also edging toward a genetic crisis, and the larger the population gets, the harder it will be to avert. M1296 is descended from a fantastically successful matriarch called AF521, "A" for alpha. His mate is, too. Their story is typical. In fact, biologists know of only one breeding female in the wild that *isn't* related to AF521. Wolves shouldn't sleep with their relatives for the same reason people shouldn't. Inbreeding can cause dangerous disorders, depress fertility, and even make small populations more vulnerable to extinction. But right now, the Southwest's Mexican wolves don't have much choice. On average, they share about as much genetic material as siblings do. They need new blood, and quick.

This situation arose partly as a matter of legacy: Our conversion from killing Mexican wolves to trying to save them has been fraught and incomplete. Some people idolize *los lobos* and some people resent them, and the Fish and Wildlife Service answers to both. Officials have released wolves to the wild, then yanked them back out, a push-and-pull that is now forcing a sort of reckoning. Can the agency finally surmount the Southwest's complicated politics and ensure a future for the animals?

"The window of opportunity for this species is closing," says Mike Phillips, executive director of the Turner Endangered Species Fund, a longtime partner in Mexican wolf recovery. "The clock is not the Mexican wolf's friend."

BIOLOGISTS OFTEN SAY that restoring wolves to their former territory is less about wolves than about people. Wolves are easy. At one time, they flourished from the frozen Arctic plain to the perpetual summer of Mexico's Sierra Madre. So long as there are animals to eat — moose, elk, deer, javelina, antelope, salmon — and water to drink, wolves will do just fine. Unless people see them as a threat.

Mexican wolves were an exception to this rule in one sense: The animals weren't actually easy. When Fish and Wildlife reintroduced their larger cousins in the Northern Rockies, the agency was able to draw on robust, wild Canadian populations. But by the time the Southwestern subspecies landed on the endangered list in 1976, they were extinct in the U.S., with perhaps 50 still roaming the Sierra Madre. Before they could even consider returning Mexican wolves to the wild, federal biologists had to prevent the animal's total disappearance. To do that, they needed to nab Mexico's last stragglers, and breed them in captivity.

There was one person who knew where to find them: A rangy trapper from Texas named Roy McBride, whom ranchers hired to protect their livestock. "McBride," wrote Rick Bass in *The Ninemile Wolves,* "is such a legend in the Southwest that on both sides of the border a motto developed, 'Let McBride do it.' " McBride hunted cougars in Texas and wolves in Mexico, where they devoured cattle after humans clobbered wild ungulate populations. He once spent over a year chasing the legendary wolf *Las Margaritas*, blamed for killing 96 cows on a single ranch. McBride finally outwitted him by building a fire over a trap, letting it burn out, and placing a scrap of dried skunk in the ashes.

In the late '70s, the Fish and Wildlife Service asked McBride to return to Mexico, this time to capture wolves alive. It was a tough assignment: The country was big and rough, and the wolves were few. He caught just five, and only one female, dubbed Nina. Initially, Nina's reproductive prospects looked poor. For two years, she failed to conceive. Then, in 1981, something clicked. The new litter gave Mexican wolves a chance, if a slim one. Biologists had given up on finding more wild wolves, so they coupled Nina and her descendants as best they could. One pair, Francisco and Sheila, both Nina's grandchildren, reproduced so readily that wolf advocates nicknamed them Adam and Eve.

At the Alpine Field Station, veterinarian Susan Dicks works with the team to take a blood sample, administer vaccinations and take general medical information, before returning M1296 to the wild.
CHRISTINA SELBY

Then came another lucky break. In the early 1990s, genetic tests showed that wolves at a Mexico City zoo and at Tucson's Arizona-Sonora Desert Museum, once suspected of being wolf-dog hybrids, were in fact pure Mexican wolf. They were also highly inbred, but by crossing the Aragon and Ghost Ranch lines with McBride wolves, biologists could stir the gene pool, and delay the perilous effects of inbreeding, perhaps for decades.

The captive population would now have seven founders, not a lot, but a jackpot under the circumstances. "Other populations have recovered from small numbers," says Phil Hedrick, an Arizona State University geneticist, who recommended crossing the three lineages. "We were somewhat optimistic."

Aragon-McBride and Ghost Ranch-McBride parents gave birth to 47 pups between 1997 and 2002. Geneticists call the offspring F-1s, because they came from the crossing of two distinct family lines. And they had an advantage no subsequent generation would enjoy: They weren't inbred at all.

"The F-1s were super wolves," says Rich Fredrickson, an independent population geneticist, who is evaluating effects of inbreeding in the captive Mexican wolves for Fish and Wildlife. AF521 — the female whose genes are so ubiquitous in the wild today — was an F-1 wolf. She was born on May 3, 1997, at a Colorado Springs zoo, where her keepers named her Estrella, Spanish for "star."

As the captive population grew, wild recovery seemed increasingly possible, and Fish and Wildlife turned its attention to the human side of the equation. The agency's unwritten policy was that it wouldn't release wolves against states' wishes. And while Arizona cautiously supported reintroduction over some ranchers' objections, New Mexico Gov. Gary Johnson refused to allow wolf releases into his state. So Fish and Wildlife developed a politically palatable plan. It classified the wolves as a "non-essential experimental" population, providing latitude to remove problem animals, and agreed to free new wolves only on a small swatch of national forest in Arizona. If they wandered into New Mexico, however, they could stay. The so-called Blue Range Recovery Area encompassed 7,000 square miles straddling the states' shared border. If any wolves strayed beyond it, the feds would capture and relocate them, or return them to captivity.

The F-1s offered the best opportunity to re-establish a genetically viable population on the Blue Range. But for the first few years, they were too young and too valuable to release. Even the best breeding isn't insurance against venomous rattlesnakes, speeding vehicles, or humans willing to risk a $100,000 fine to shoot a wolf. So the first wolves to run free in 1998 had pure McBride pedigrees.

Meanwhile, biologists bred the F-1 wolves with each other, with McBride wolves, and with the offspring of F-1 pairs. Once the animals reproduced — depositing their genetic legacies, so to speak, in the bank — they could be released if similar wolves existed in captivity. In theory, it was important to get valuable animals on the ground sooner than later, while they were in their prime, and the population still tiny and easy to mold. Because of the limited gene pool, genetic variation would inevitably decrease with each generation. Parents pass on only half of their genes to each pup, and due to random chance, rare genes can disappear quickly from small populations. Over time, more common genes can be lost, too. But if biologists used the F-1s and their offspring to grow the wild population quickly, they could slow the rate of loss, increasing its chances of long-term survival.

On June 11, 2002, federal biologists released AF521, her mate and seven offspring into a pen in the Apache-Sitgreaves National Forest. Made of nylon mesh, the pen was no match for the anxious wolves' strong jaws, and, as intended, they chewed their way out the same day. Biologists called the new pack Bluestem, after the slender native bunchgrasses growing in the wolves' new home turf.

In the wild, AF521 became "the ultimate super wolf," Fredrickson says. She had pups in 2003, 2004, 2005, 2006 and 2007, successfully raising the 2006 litter even after the death of her first mate. Her offspring grew up to head their own packs — Dark Canyon, Paradise, Hawk's Nest, and to this day, the Bluestem Pack.

Several more genetically valuable packs gained freedom around the same time. "If they were allowed to just be wolves," Fredrickson imagines, the population "might have succeeded in an extraordinary way." But unlike the vast roadless core of Idaho and Yellowstone National Park, where Northern Rockies gray wolves were reintroduced, this was a landscape worked by people, and grazed by cows. It wasn't easy to just let wolves be wolves.

ON APRIL 4, 2005, Barbara and Bill Marks sat down to dinner after dark. The couple lives beside the Blue River in eastern Arizona, on a ranch that's been in Bill's family for 125 years. The Markses keep a garden, eat their own beef, and feel as much a part of their remote canyon as the cottonwoods, willows, alders and pines. They had just hosted a friend's wedding reception, and with the guests now gone, they remarked on how silent the canyon felt.

Then the dogs in an outdoor pen started to bark, and their indoor dogs began agitating to go out. Barbara figured raccoons were getting into a feed bin, so she let the dogs out and sat back down.

"If they were allowed to just be wolves, they might have succeeded in an extraordinary way."
—Rich Fredrickson, an independent population geneticist who studies Mexican wolves

"I opened the door, and the dogs almost knocked me down. Then we saw the wound, and it was like, 'Oh, my gosh, the wolves are out there.' "

—Barbara Marks, Arizona rancher

"All of a sudden, the barking kicked up an octave," and moved closer to the house, she says. "I opened the door, and the dogs almost knocked me down. Then we saw the wound" — four tooth-sized punctures on the hip of Rocky, a large hound mix — "and it was like, 'Oh, my gosh, the wolves are out there.' "

It wasn't the couple's first run-in with the Aspen Pack, released the previous summer and headed by an F-1 male and a female with genes from all three lineages. After a series of incidents on their grazing allotments — cows missing tails, one falling off a bluff, cows bunching together as they do when wolves are around — the Markses moved their pregnant heifers and cow-calf pairs to their home pasture. Feeding them hay was more expensive, but minimized the risk of loss. After the dogs tumbled in the door, though, Bill went out and found a calf with a minor leg injury. Even here, their livestock didn't seem safe. Since the previous September, neighbors had reported the wolves for harassing pets or cattle on several occasions. "None of us slept very well while the Aspen Pack was in here," Barbara recalls.

After growing up in captivity, Mexican wolves had to learn how to be wild, and some seemed too comfortable around people. Such incidents weren't the norm, but they tried people's patience and put locals on edge, says Chris Bagnoli, who led the Arizona Game and Fish Department's Mexican wolf field team from 2008 to 2013. They also fed deep, widespread suspicion of the federal government.

Early on, the state of Arizona pushed for a stronger hand in management, believing the project lacked effective leadership, Bagnoli says. In 2003, Fish and Wildlife agreed to establish a collaborative committee led by Arizona, and including representatives from state, federal and tribal agencies. It assumed the lead in managing the wild wolves. Bagnoli says the goal was to increase tolerance for wolves by improving communication and giving people clear expectations for how management decisions would be made. The Markses appreciated the change. They had never supported the wolf program, but now they at least felt as if their concerns were being heard. Environmentalists, on the other hand, thought the committee catered too much to ranchers.

Whatever the case, when combined with the ban on new releases in New Mexico, the committee frayed the wolves' fragile genetic prospects. In 2005, it adopted a list of so-called "standard operating procedures" for field operations. The 13th item on the list — SOP 13 — outlined how the agencies would deal with problem wolves. It said that any wolf known or believed to have killed three cows in a 365-day period "shall be permanently removed from the wild as expeditiously as possible."

"The sentiment is kind of correct," says Maggie Dwire, Fish and Wildlife's assistant Mexican wolf recovery coordinator. "You want to remove wolves who are repeat offenders." And the protocol was effective, she says, at stopping killings in certain areas plagued by clear predation patterns. But it was also inflexible at a time when the population needed to grow. "It wasn't like it was just removing wolves that killed three cows in two weeks," she says. Wolves implicated in killings months apart — one in January, one in April, one in December — were also targeted, and whole packs were removed, even if only one or two animals in the bunch were at fault.

From 2005 to 2008, federal officials captured 55 wolves, and shot nine. Poachers killed 13 more. The wild population had grown steadily until 2003, but under SOP13, the line stopped climbing and started to zigzag, dropping to 35 animals, spiking to 59. The number of breeding pairs fell from six in 2006, to three in 2007, to two in 2008. "We were removing too many wolves," Dwire says bluntly. And the removals didn't seem to cut ranchers' total losses. In fact, wolves killed cows at a substantially *higher* rate during this period than in previous years.

It wasn't only the numbers that mattered — it was the individual wolves. The Aspen Pack was captured after the Marks ranch incident and moved to New Mexico, where it killed a number of cows. It was yanked for good in 2007. So was the genetically valuable Saddle Pack, which had already lost its original F-1 alpha male — shot in 2004 for killing cows. Adults with three strikes got life sentences. Their pups were eligible for parole, but while many were freed, few survived long back in the wild.

Bagnoli says the removals were necessary. "You can't just say, 'Well, we're going to leave them out there because they're genetically important, too bad for the people who live there.' " Recovery won't work, he says, if humans remain hostile. Since 1998, more wolves have died from poachers' bullets than any other cause.

Still, the genetic consequences of SOP 13 are real. "They removed all the most successful, competitive packs except for one," Fredrickson says. "And that was the Bluestem Pack." Meanwhile, without New Mexico release options, the postage-stamp-sized Arizona recovery zone filled up fast. Unleashing more wolves there was likely to cause strife between packs, or prompt animals to wander outside the zone, forcing the agency to catch them. So while biologists pulled wolf after wolf from the wild, they released just five more new animals from captivity.

The result: As of early 2016, 19 of 21 pairs in the Blue Range contained at least one descendant of the Bluestem Pack. In 11 of those, both wolves were part of the family. Something had to give.

A graphic sign in Reserve, New Mexico. Many residents of the town, in the heart of wolf country, oppose the wolf recovery program. CHRISTINA SELBY

ABOUT AN HOUR SOUTH OF ALBUQUERQUE, Maggie Dwire parked a government SUV at the mouth of a gentle, crumbling canyon in the Sevilleta National Wildlife Refuge. Dwire started working with Mexican wolves as an intern in 2000. She was just out of college, in what she now calls a "wolves-are-amazing phase." She'd heard tidy stories from Yellowstone, about wolves keeping elk on the move, supposedly allowing overgrazed riparian corridors to explode with new life. The reality, it turns out, is more complicated, and Dwire's views have evolved, too. "I went from believing 'Wolves change rivers,' to 'Actually, they're just wolves,' " she said. "Sometimes, I really hate them." Chronic cow-killers frustrate biologists, too.

It was a bright, warm April day, and in the distance, the Rio Grande painted a ribbon of green through the brown, brittle landscape. Dwire and another biologist filled buckets with sawed-off frozen elk legs and five-pound logs of chopped horsemeat, which resembled giant hotdogs. They loaded them into an ATV and drove east, into the canyon, to a halfway house for wolves. In tall chainlink pens, just under an acre in size, were two pairs, the females in each possibly pregnant.

Both the pairs had genes from the wolves found at the Mexico City zoo — the rarest in the wild — as well as Ghost Ranch and McBride heritage. In a couple of months, the feds planned to deploy one of these small captive-born families on yet another genetic improvement mission. This one, though, was unusual: For the first time, the Fish and Wildlife Service intended to openly defy New Mexico officials and release the wolves directly into their state.

It was to be the boldest move yet in the agency's growing effort to get the recovery back on track and avert a genetic crisis. In 2009, after environmentalists brought a lawsuit over the rash of removals, the feds disbanded the state-led committee and abandoned SOP 13. They'd since removed far fewer wolves, and implemented new measures to reduce conflict with livestock.

When a genetically important pack called Middle Fork killed 10 cows within two months during SOP13's phase-out, for example, biologists got creative. Hazing didn't work because the wolves had pups to feed, and therefore couldn't move far, and cows were plentiful in the area. "We literally had a cow trip in their den," Dwire recalled. "That's when we started to come up with, 'Well, what if we feed them? What if we move the cows?' It sort of was part of our turning point in managing for wolves instead of managing for cows." The agency now frequently caches roadkill and logs of horsemeat during denning season to make cattle less tempting, and works with the U.S. Forest Service and ranchers to try to rotate pastures to create distance between denning wolves and livestock.

In 2015, Fish and Wildlife also rewrote its old ground rules, finally allowing new releases in New Mexico, and giving wolves more room to roam. But it still tries to honor the states' wishes whenever possible. So officials asked New Mexico for permits to free the Sevilleta wolves in the Gila or Aldo Leopold wilderness areas.

It was a long shot: While former Democratic Gov. Bill Richardson supported wolf recovery, Republican Susana Martinez has fought hard against environmental agendas since taking office in 2011. That year, her politically appointed Game Commission voted to stop cooperating with wolf recovery altogether.

The same commission declined to issue permits for the wolves' release. In a June 2015 letter, Alexandra Sandoval, the director of the New Mexico Game and Fish Department, pointed out that the feds still lack clear criteria for a successful recovery. Their official plan dates to 1982, before anyone knew if reintroduction would even be possible. And until they clearly state just how many wolves they envision on the landscape, the state won't endorse releases.

Fish and Wildlife's national director, Dan Ashe, was forced to break the impasse. In October 2015, he sent Sandoval a letter of his own. The agency was taking a stand: It could not fulfill its legal obligation to recover wolves without bucking the state and moving forward with the release.

David Parsons, who headed the Mexican wolf project in the '90s, and is now a wolf advocate, says the move was unprecedented. "We haven't seen anything like it since I first took the job in 1990." Until now, he notes, "Virtually every advance in the history of the Mexican wolf program has been spurred by lawsuits that force the Fish and Wildlife Service to do the right thing."

This spring, the state fired back, declaring its intention to sue. Even so, just days later, Fish and Wildlife moved forward with a different, and more unusual, genetic infusion.

ON THE MORNING OF APRIL 23, Regina Mossotti, director of animal care and conservation at the Endangered Wolf Center near St. Louis, Missouri, caught a flight to Albuquerque. Her carry-on was a soft-shell dog carrier, which she slid under the seat. Two 9-day-old wolf pups lay inside, so new to the world they had yet to open their eyes. They could squirm, but not yet walk, and resembled tiny Ewoks, with helmet-shaped heads, short snouts and thumbprint-sized ears. They slept most of the flight.

She was delivering the pups to federal biologists in New Mexico's Gila National Forest, who would insert them into the den of the Sheepherders Baseball Park Pack, or SBP, for short. The pack had five new pups exactly the same age, but the two from Missouri had valuable DNA. The hope was that the SBP pack would raise the foster pups as their own, and in a couple years, that they would go on to breed.

While Mossotti was en route, biologists Allison Greenleaf and Janess Vartanian staked out the den, squinting through binoculars at the wolves. They stayed quiet, being sneaky, not wanting to spook the parents and risk them moving the litter. When their radio crackled

Two Mexican wolf pups, just in from the Endangered Wolf Center in St. Louis, get packed into the Gila National Forest by a team from the Mexican Wolf Recovery Program in April. The team scared off a new mom from the Sheepherders Baseball Park Pack, then mingled her pups with the St. Louis pups so their smells were similar, before placing them all deep in the den as a new, bigger family. U.S. FISH AND WILDLIFE SERVICE

and a voice announced that the Missouri pups were near, they headed for the den, talking in normal voices. The frightened female popped out, and took off.

A vet and another biologist arrived with the pups, and Greenleaf — a petite 5-foot-2 — wedged into a small nook in a rocky outcrop, and grabbed five fur balls from the den. Wearing gloves and long sleeves, her hair covered by a blue bandanna to minimize her scent traces, she handed the pups to Vartanian, who placed them in a burlap sack.

On a nearby tarp, the pups got a quick exam, and then Greenleaf and Vartanian rubbed fur, dirt and duff from the den on the transplants. One by one, they held each pup above the rest and touched their genitals with a wet cotton ball, stimulating them to pee on their siblings, old and new. Wolves can't count, but have an excellent sense of smell, and covering the pups with the same scents would prevent their mom from rejecting the interlopers. The pups went back in the sack and Greenleaf went back in the den, placing them in a tidy pile. Later, signals sent to their computers by the SBP adults' GPS collars indicated that they had moved the pups to a new den.

Biologists also cross-fostered pups in two Arizona dens this spring, with that state's support. Officials there say pups raised by wild wolves will cause fewer problems than captive adults and packs, whose release they now oppose. Jim Heffelfinger, wildlife science coordinator for Arizona Game and Fish, even believes cross-fostering is sufficient to address the genetic issues. "There's no detrimental effect of inbreeding right now," he says. And anyway, adults that are set free aren't guaranteed to survive to breed and enhance the population's genetic makeup, he adds. Indeed, wolves have often been shot or recaptured for bad behavior shortly after release from captivity. "The population is soaring without releases. It's not an emergency."

Fredrickson disagrees. Cross-fostering on its own is "not going to be enough," he argues. For one, the odds are stacked against cross-fostering efforts from the get-go. To even attempt one, Mossotti says, the "stars, moon and planets" have to align. Captive and wild packs have to give birth in sync, so the foster pups are the same age and can blend in convincingly. Biologists have to intensively monitor wild packs to know when mothers den. And pups have just a 50 percent chance of surviving to one year of age.

On top of that, the jury's still out on whether negative impacts from inbreeding are already evident. Fredrickson and others suspect that the feeding of denning wolves could be artificially boosting wild pups' survival, potentially masking inbreeding's effects — and contributing to the population increase that Heffelfinger touts as proof of success. A real strategy, Fredrickson argues, will require not only ramping up releases of captive-born animals, but removing the most related ones from the wild, who will worsen the situation if they keep breeding. In his opinion, the feds should have started yesterday.

"Virtually every advance in the history of the Mexican wolf program has been spurred by lawsuits that force the Fish and Wildlife Service to do the right thing."

—David Parsons, former head of the Mexican wolf project, now an advocate

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Biologist Maggie Dwire releases a Mexican gray wolf that had been living at the Endangered Wolf Center in St. Louis into the wild in the Apache-Sitgreaves National Forest. USFWS

WOLVES ARRIVED IN MICHIGAN'S ISLE ROYALE NATIONAL PARK in the late 1940s, after crossing an ice bridge in Lake Superior. The bridge formed only some years, isolating the population, which became extremely inbred. For years, it fluctuated between 50 and 20 animals, and packs were still producing healthy litters. Some scientists even thought the Isle Royale wolves might be an exception to the rule of small populations, which assumes that inbreeding heightens extinction risk.

Then, in 2009, biologists discovered that the wolves had deformed backbones. That same year, the population started to crash. Some of the wolves stopped reproducing, they killed moose at lower rates, a few died after falling in a mine shaft. Last year, the population was down to three: a male and his daughter, who was also his half-sister, and a younger wolf, likely their pup. That wolf had a hunched back and a short tail. This year, it was gone.

There is another lesson from Isle Royale, though. As it turned out, the wolves were never as isolated as scientists thought. A male crossed the ice bridge in the '90s and dramatically reduced the level of inbreeding. The story didn't end well. Like AF521, he turned out to be a little *too* successful. Still, it doesn't take many new animals to make a difference, and help stave off genetic disaster for a few more generations.

For Mexican wolves, help could some day come from the North: Eventually, a few influential migrants from the Northern Rockies or Great Lakes could make their way down, or be brought by biologists. The Northern wolves are a different subspecies, but even scientists disagree on how important the distinction is.

"I proposed a few years ago, 'Why not introduce that new blood now?' " says Mike Phillips, of the Turner Endangered Species Fund, which maintains a Mexican wolf facility like the Sevilleta, on Ted Turner's Ladder Ranch. Phillips suggested establishing a new captive population, and "salting the Mexican wolf genome" with just a hint of Northern genes. The idea hasn't gone anywhere — yet. But the populations mixed naturally in the past, and it's exactly how Fish and Wildlife saved the Florida panther, once things got bad enough that males' testicles stopped descending. In fact, when wildlife officials decided to introduce a subspecies from Texas to mate with the inbred local cats, they called Roy McBride to catch them.

MAGGIE DWIRE WAS BACK at the Sevilleta pens at sunrise in early July. Morning light glowed behind the canyon wall as she reached into a plywood box and grabbed a pup cowering in the corner. "You're just a little thing," Dwire said in a squeaky voice. The pup stiffened its spine, its eyes bulging, then, as if in protest, unleashed a stream of urine on Dwire's arm. The pup was six weeks old, with a coat that resembled peach fuzz more than fur. She was the sole survivor of her mom's first litter.

Fish and Wildlife had planned to turn this pup and her parents loose this month. Right now, they might have been roaming unfettered across New Mexico's forested hills. Instead, they had joined dozens of other captive wolves in a long and indefinite wait.

Dwire draped a white hand towel over the pup's head and took her to another enclosure, to be vaccinated and tagged. Usually, young pups submit readily, but this one flopped and writhed like a fish out of water. She weighed only five pounds, but Dwire, a fit former college athlete, needed another biologist to help her hold the animal down. Even then, she put up a struggle. "She's a singleton, so she might be pretty feisty," Dwire observed. "Who knows why the other ones died and she survived?" □

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Sometimes, the West must defend itself against itself

OPINION BY ADAM M. SOWARDS

WEB EXTRA
To see all the current Writers on the Range columns, and archives, visit **hcn.org**

The more things change, the more those changes echo on into the future. Today, we need to listen more carefully than ever to a voice from the mid-20th century, that of the writer and Western historian, Bernard DeVoto.

At the recent GOP convention, the party faithful approved a platform that directs Congress to give "certain public lands" to the states. It's an old strategy, trotted out like a broken-down show horse at a county fair.

In the mid-1940s, Western policymakers, mainly Republicans, sought to eliminate the federal Bureau of Land Management, remove grazing areas from Forest Service control, and put public land on the path to state control and private ownership. One privatization bill passed the House in 1946 and even enjoyed the support of Interior Secretary Julius Krug, a Democrat.

Sounding the alarm against these terrible proposals came DeVoto's prescient voice from his "Easy Chair" column in *Harper's* magazine. His warnings are still relevant seven decades later.

The noted writer knew something of the West; he was born and raised in Ogden, Utah, and later wrote prize-winning regional histories. To DeVoto, the land-divestment scheme amounted to a full-frontal assault on the country's entire conservation program. He was right: The naked power grab he warned us about continues today, with stockgrowers now joined by powerful oil and gas interests. They bristle at any restraints on their self-interest and argue that what they call "local control" is always the answer.

But DeVoto identified a deeper problem that had — and still has — the potential to eat away at democracy itself. In summer 1947, the House Subcommittee on Public Lands began holding hearings in picturesque Western towns. Its short-term objective was to stop the Forest Service from reducing the number of grazing permits on public lands, even though overgrazing had seriously compromised many of those rangelands.

The legislative hearings were stacked with sympathetic audiences who had been primed by stockgrower trade journals to believe the worst of any federal agency and to disbelieve "long-haired scientists" who showed that overgrazing was a problem in the West. A slew of so-called experts, ranchers and their politicians made the case again and again for giving free rein to the stock industry. Conservationists and witnesses who agreed with the Forest Service were allotted 10 percent of the time for testimony.

Unfounded rumors that the agency planned to disallow all grazing were permitted without rebuttal. Entered into the record without clarifications or corrections, these fabrications circulated like crumpled dollar bills. Inflammatory rhetoric and showmanship overcame evidence, much as it does in our time. In trying to expose the plot and set the record straight, DeVoto demonstrated that public hearings — just like party conventions — work as political theater.

Back then, as now, a national monument was in the news. In the mid-1940s, Rep. Frank Barrett, a Wyoming Republican who chaired the traveling public-lands subcommittee, hoped to abolish the Jackson Hole National Monument, which is now mostly protected in Grand Teton National Park. Today, Rep. Rob Bishop, a Utah Republican who chairs the House Committee on Natural Resources, hopes to prevent the creation of the Bears Ears National Monument by establishing two national conservation areas instead, a designation that offers less protection from development.

Anti-monument signs at the Bears Ears public hearing, where Secretary of the Interior Sally Jewell heard from people in favor and opposed to a national monument designation.
COREY ROBINSON

Bishop and his supporters like to tout their Utah Public Lands Initiative, which includes an alternative that they call the Bears Ears National Conservation Area. The bill's proponents like the collaborative process it enacts, yet the initiative in its flexible management plans clearly favors grazing and energy producers. The Nature Conservancy, long a partner in the process, recently announced it cannot back this bill. In addition, the Bears Ears Inter-Tribal Coalition, representing dozens of tribes, has declared that it wants the area protected by a national monument. Meanwhile, Bishop has proposed a "Partner Act" that would end the president's power to use the 110-year-old Antiquities Act to create a national monument for the Bears Ears area.

DeVoto saw this coming. There is a clear line from those hearings in 1947 to the ones we're seeing now, in 2016. The ultimate goal then was not just to stop grazing reductions or stymie national monuments; it was to discredit the federal government and its rightful concern for conservation. "The future of the West hinges on whether it can defend itself against itself," DeVoto said.

During this presidential campaign, we can expect the Republican candidate and his followers to cite the party platform and offer yet more half-truths about public-lands management. As DeVoto showed 69 years ago, lies told often enough erode public discourse and weaken governance. "Against such psychology as this," DeVoto implored, "only the force of the ballot can defend the public interest."

Adam M. Sowards is an environmental historian at the University of Idaho.

Writers on the Range is a syndicated service of High Country News, providing three opinion columns each week to more than 200 media outlets around the West. For more information, contact Betsy Marston, betsym@hcn.org, 970-527-4898.

Sex, death and spaghetti

The Ancient Minstrel
Jim Harrison
272 pages,
softcover: $25
Grove Press, 2016.

On March 27, 2016, Jim Harrison died at his home in Patagonia, Arizona, a final poem left unfinished on his desk. Some writers leave too soon; others, like Harrison, depart when they're good and ready. He had lived hard, first in Michigan and later in Montana, where his prodigious appetites combined with his love of hunting and fishing to create a persona both urbane and rugged, a sort of backwoods bon vivant. His face, rough-hewn and canny, was that of a man who had lived several lifetimes. "He was active and creative to the end, but it was time to go: No one was less suited to assisted living," his friend, the novelist Thomas McGuane, wrote in *The New Yorker*.

Although Harrison's oeuvre encompassed screenplays, poetry, essays and food reviews — including an ode to a 37-course French lunch — he's most renowned for his novellas. Harrison has been synonymous with the form since his 1979 masterpiece *Legends of the Fall*, a continent-spanning reflection on betrayal and revenge that paints a kill-or-be-killed portrait of the West. By comparison, Harrison's last collection of novellas, *The Ancient Minstrel*, published just weeks before his death, has a narrower scope: It's mostly preoccupied with pigs.

That Harrison would turn to pigs is fitting, given his own porcine qualities. This is not intended as an insult, for there's much to admire about both pigs and Harrison: their happy hedonism, their keen intelligence, their enviable ability to be "utterly indulgent at the table." The book's first, and titular, novella finds Harrison — or, rather, his rueful, fictionalized stand-in — settled down at a Montana farm to write "a magnum version of *A Thousand Acres*," sneak drinks behind the back of his sharp-eyed wife, and "fulfill his childhood dream of owning his own pig." The gauzy plot wanders through memory and meditation, with occasional flashes of animal husbandry; it's a pleasant and disorienting reading experience, akin to getting drunk in a field on an idle summer day. The sharpest characters are the pigs. One piglet, Marjorie, "collapsed against his body as if they were lovers. … She fluttered her eyes at him and he couldn't help but wink."

Anthropomorphic though Marjorie may be, pigs differ from humans in one important way: So far as we know, they can't conceptualize their own death. Decline and demise, on the other hand, stalk *Minstrel*'s third and final novella, *The Case of the Howling Buddhas*. Although *Buddhas* is nominally about a Zen-like cult operating in Michigan, its real subject is Detective Sunderson, a recurring Harrison anti-hero, who, in this case, both encourages and laments the advances of a 15-year-old girl. When he's not preoccupied with Barbara, Sunderson attempts to cope with his own mortality and decrepitude; he's single, plagued with prostate discomfort, and, if his tryst is discovered, ticketed for incarceration. "The poignant fear was that if he went to prison at sixty-six years of age he likely wouldn't get out until age seventy-six," Harrison writes, "and by then he'd probably be too weak to fish and wade swift rivers." Lust in Harrison's books is usually a joyous, worshipful affair; in *Buddhas*, however, Sunderson comes off as creepy and weak. The author's predilection for pairing nubile Lolitas with dirty old men has never been his most appealing quality, but there's no satisfaction in watching the noose close around the pedophile.

The best of *Minstrel*'s three novellas is the second, *Eggs*, which stars a lissome, brainy and precocious heroine named Catherine. (She's cast from the same mold as Sarah, the star of Harrison's 2009 novella *The Farmer's Daughter*; Harrison has a knack for identifying successful archetypes.) Catherine's saga resembles the globetrotting arc of *Legends of the Fall*: She spends her formative years in London during World War II with her grandparents, who live out the Blitz "in a state of relentless fear"; later, she returns to Montana to run a family farm, yearning for "the old Montana of her childhood before so many rich people moved west." She prefers the company of chickens to men — more domestic animals! — but yearns for a baby. Her flock of hens, and their profligate egg-laying, reminds her of her childlessness. Like Harrison's best work, *Eggs* effortlessly bridges decades; its delight lies in watching Catherine find, lose, and find herself again in the comfort of her land. "It seemed to her that her life was accelerating in a direction she had chosen," Harrison writes, "but at a speed she couldn't quite emotionally encompass."

The speed of life has now swept Jim Harrison away in its current; may we all face our ends so gracefully. Harrison is too introspective to avoid obsessing about death, but his joie de vivre is too great to permit him to wallow in it. In *The Ancient Minstrel*, melancholy is swiftly banished by gastronomy. "It didn't work to try to write about sex, doom, death, time, and the cosmos," he opines, "when you were thinking about a massive plate of spaghetti and meatballs."

BY BEN GOLDFARB

The late Jim Harrison.
ERIK PETERSEN

GONE FISHING

Ten-year-old Jake fishes at Lake of the Woods in Oregon.
INGRID HANSEN

In the 19th century, in a letter to his wife, Leo Tolstoy wrote that "the purest joy of all is the joy of nature." Toward the middle of the 20th century, when I was 8 or 9 years old, my great-grandfather, John Brant, a descendant of Mohawk Chief Joseph Brant, taught me to fish for trout on a creek that ran through his property in western Pennsylvania. I remember the day I landed and released my first brook trout on a fly. Afterwards, as we walked under a clear sky through springtime woods back toward the farmhouse, Granddad, his strong brown arm across my bony shoulder, told me: "Out here, outdoors, in the woods and along the rivers and creeks, is where you'll find most of your happiness." Since that magical day, I've learned, over and over again, in many places and in many different ways, that Tolstoy and Granddad Brant were right.

Now here I am in the 21st century, an old man in southern Oregon fishing with my grandson Jake, who just turned 16. Jake's angling life began 10 years ago, when, using a hunk of salami for bait, he tried and failed to catch a perch that had somehow ended up in the irrigation tank on our property outside Ashland. Not long after that, my wife, Hilde, took him to a nearby lake, where he caught a planted cutthroat trout on salmon eggs. Later that same year, casting an elk hair caddis fly, he landed and released 10 or a dozen fat rainbows in a friend's pond near the North Umpqua River. The following morning, I drove him down to the river, and, after half an hour of fishing a small gray nymph, he hooked and landed his first wild trout at the Fairview Pool.

Our most recent outing together was on the upper Rogue River, water I've been fishing for 50 years. In chest waders and studded boots, we made our way across a shallow riffle and around a car-sized boulder, and finally crossed the narrow bedrock channel that made the chest waders necessary. Jake, at 6-feet-5, had less trouble than I did.

He carried our fly rod, and I carried some truths that I didn't want to share: the knowledge that anadromous fish runs have long been in steep decline for a multitude of exhaustively documented reasons; that the dams and hatcheries built to alleviate the problems have only made things worse; that before Jake was born, there were days when I landed six or eight steelhead a day, and now I feel lucky to hook that many in a year; that back when stoneflies hatched in the water we were fishing today, 30 or 40 trout made an average morning.

We stationed ourselves on a waist-deep gravel bar near midstream. A deep, slow channel ran along the opposite bank. Boulders strewn along its bottom created eddies and crosscurrents where trout could be expected to feed. A few yards below our stand, the widening channel became a gravel-bottomed steelhead riffle.

Jake covered the trout water with a small floating muddler, casting upstream and across, dropping the barbless fly in the likely places. He mended the floating line well, and in half an hour raised three small trout. Two turned away before they touched the fly, and the third took it, but the hook didn't connect.

To cover the downstream riffle, we tied on a steelhead pattern, a No. 6 Skunk. Jake quartered his casts across and down, mended upstream after the line landed, and the fly swung slowly through the holding water. He stripped off a yard of line between casts, and when he had reached his limit took a long step downstream between casts. I wished hard for luck, wanting him to feel for the first time in his young life the elemental surge of a wild, powerful steelhead on a downstream run.

But I wasn't surprised when it didn't happen.

While Jake fished, a small flock of mergansers flew upstream so close over the water we could hear their rapid wingbeats. After the ducks, a whistling osprey circled high overhead for several minutes. A pair of Canada geese trailed by six downy goslings drifted by and stopped across from us to rest behind a curtain of alder leaves that brushed the cold, clear water. All the while, somewhere behind us, a water ouzel sang.

After two hours, as we waded out, the water ouzel's song called a helpful notion of Thoreau's to mind: that many men go fishing all their lives without realizing that it isn't fish they're after.

The water ouzel's song rippled in the air behind us as we left. □

Michael Baughman lives with his wife of 50 years and his extended family in Ashland, Oregon. His eighth book, Grower's Market, *is a novel about combat veterans raising illegal marijuana in the Northwest. It was published in March 2015.*

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HEARD AROUND THE WEST | BY BETSY MARSTON

WASHINGTON

If you thought finding a 6-inch-long rat (12, counting the tail) circling your toilet bowl was an urban legend, think again. Each year, the King County Public Health Department gets up to 80 complaints about toilet rats, reports *The Seattle Times*, and all too often, the humans sound close to panic. "Wife heard scrabbling noises in toilet," said one man. "Lifted lid and saw rat. She screamed! Flushed three times and rat disappeared." The couple did not stop there. They squirted dish soap, flushed repeatedly, and also poured bleach and boiling water down the kitchen sink. Another resident, who called in the middle of the night, sounded almost amused: "Heard a splashing noise at 1:30 a.m. in the toilet. Looked to see a rat doing laps. Within five minutes it had disappeared." One desperate caller considered hand-to-paw combat with the trespasser: "Found a rat in my toilet bowl this evening. It is quite alive, and unhappy to be where it is. … I'll try using dish soap and flushing. If that doesn't work, I guess I'll look for heavy gloves and see if I can remove it that way." No word on what happened next. Rodent-control specialist Don Pace said he understands that finding a rat in the bathroom can be a jarring experience. "It does freak you out because you're not expecting it." He recommended dousing the toilet bowl with dish soap, which breaks the surface tension of the water and makes it harder for the animal to keep swimming. Rats are typically lured into plumbing when food has been poured down a kitchen drain; the animals quickly discover that toilets are an easy way to get into a house. "Toilet rats are egalitarian," the *Times* concluded, as likely to pop up in a mansion as in a modest apartment. Pace said it helps to keep the drain of the kitchen sink clean, using a cup of baking soda and a cup of vinegar, and then rinsing with boiling water. Toilet rats aren't that common, but the article ends with the slightly ominous question: "Will you still leave the toilet seat up?"

CALIFORNIA **Mark Twain would be proud: A frog attains lift-off at the Calaveras County Jumping Frog Jubilee.** SOL NEELMAN
See more weird Western sports online at **hcne.ws/weird-sports**.

COLORADO

If a 2,200-pound bull got loose on the highway and went running wildly through traffic, most of us would run, too — in the opposite direction. But Erin Stadelman, a rancher's wife, confronted the wayward bull, racing in flip-flops up her driveway outside Telluride, Colorado. She described the incident in the *Ouray County Plaindealer*, noting that a state patrolman had already arrived on the scene, but appeared in no hurry to come out from behind his patrol car. So "with the realization that I was on my own," Stadelman picked up a stick, walked toward the animal — aptly named Red Bull — and threw it at him, striking him right between the eyes. That got the big guy's attention. The officer pointed to an open gate, and Stadelman walked toward Red Bull, yelling, "Get in there!" Surprisingly, the animal followed orders and calmly entered the pasture. The Colorado State Patrol does a lot to keep people safe, Stadelman said, but "I guess it was best to let the woman with the stick handle that little traffic problem."

MONTANA

It would have seemed like a true prairie miracle: Life-saving M&M chocolates dropping like pennies from heaven — but, alas, no candy will be involved. The rest of the story is true, however. Prairie dogs, a keystone species that endangered black-footed ferrets rely on for food, are threatened by sylvatic plague, which is spread by fleas. Although individual ferrets can be vaccinated by injection, the UL Bend National Wildlife Refuge in northeastern Montana is much too vast for rangers to cover on foot, strewing vaccine-coated pellets for the prairie dogs. So this September, the U.S. Fish and Wildlife Service plans to use drones that have been fitted out with a "glorified gumball machine," reports the *Guardian.* Every 30 feet, and in three directions, the jerry-built drones will spit out specially made pellets suffused with vaccine. They might not be the M&Ms of rumor, but agency biologist Randy Machett says there's no doubt prairie dogs will gobble them up like candy; lab tests showed that they found the bait "delicious." Only 300 black-footed ferrets remain in the United States, all descended from seven ferrets that were bred in captivity in the early 1980s.

THE WEST

This July, two transgender congressional candidates — both Democrats named Misty — won their primaries as well as a place in future history books. In Utah, Misty Snow, a 30-year-old cashier, is a long shot to unseat Republican Sen. Mike Lee, and in Colorado, Misty Plowright, a 33-year-old IT worker, is running in Colorado Springs against the very conservative Republican Rep. Doug Lamborn. Both women are concerned about progressive issues, including a national $15 minimum wage and booting big money out of politics.

WEB EXTRA For more from Heard around the West, see **hcn.org**.

Tips and photos of Western oddities are appreciated and often shared in this column. Write betsym@hcn.org or tag photos #heardaroundthewest on Instagram.

"Bringing up climate change can be a downer for clients simply hoping to fish a fabled river or see their first glacier. **Scaring the kids or getting crosswise with Dad's political views are also sure ways to blow your gratuity.**"

Tim Lydon, in his essay, "Outdoor outfitters can't stay quiet on climate change," from Writers on the Range, hcn.org/wotr