

High Country News

For people who care about the West

The Campaign Against Coal

Where 'keep it in the ground'
meets 'keep the lights on'

By Elizabeth Shogren



Loaded with coal and overburden, haul trucks navigate the rim of Colowyo's South Taylor Pit outside Craig, Colorado. DOUG MAYHEW

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On the cover

A 240-ton Colowyo haul truck dumps its load of coal for stockpiling above the South Taylor Pit near Craig, Colorado.

DOUG MAYHEW



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Editor's note

The ground game

In October, Colorado became the 24th state to challenge the Clean Power Plan, President Barack Obama's attempt to slow down climate change by cutting carbon emissions from coal-burning plants. Colorado's attorney general, Republican Cynthia Coffman, is behind the lawsuit. Colorado's governor, Democrat John Hickenlooper, is against it. Coffman says it's her duty to challenge the plan and its enforcer, the Environmental Protection Agency. Hickenlooper says that Colorado can achieve the plan's goals and that the governor should have the final say on whom the state sues. He's asked the state Supreme Court to decide.



This kerfuffle should come as no surprise to anyone who lives in coal country. Once a stalwart economic driver for many Western communities, coal is losing ground. Here in Paonia, Colorado, two of the three coal mines operating up the valley recently cut back on production. Our neighbors are losing their jobs, and local businesses are losing money. Some mine workers are trying to stick it out; others have put their homes up for sale and moved on. These are tough choices. We want clean air and a cooler climate, but not at the expense of the family down the street.

Typically, the so-called "war on coal" is actually a war on the plants that burn coal and emit carbon into the atmosphere. That's what the Clean Power Plan is about. But as *HCN* correspondent Elizabeth Shogren reports in this issue's cover story, some activists are now targeting the "supply side" of carbon by challenging the federal coal program in court. They are demanding that the federal agencies involved consider the environmental costs of unearthing coal, burning it, and releasing more carbon into the atmosphere. At least one federal judge has ruled in their favor.

In Western states like Colorado, where coal production hit a 20-year low last year, or Wyoming, where production has fallen 17 percent since 2008, miners are unhappy, to say the least. That's why Colorado, Arizona, Montana, Utah and Wyoming are fighting the Clean Power Plan.

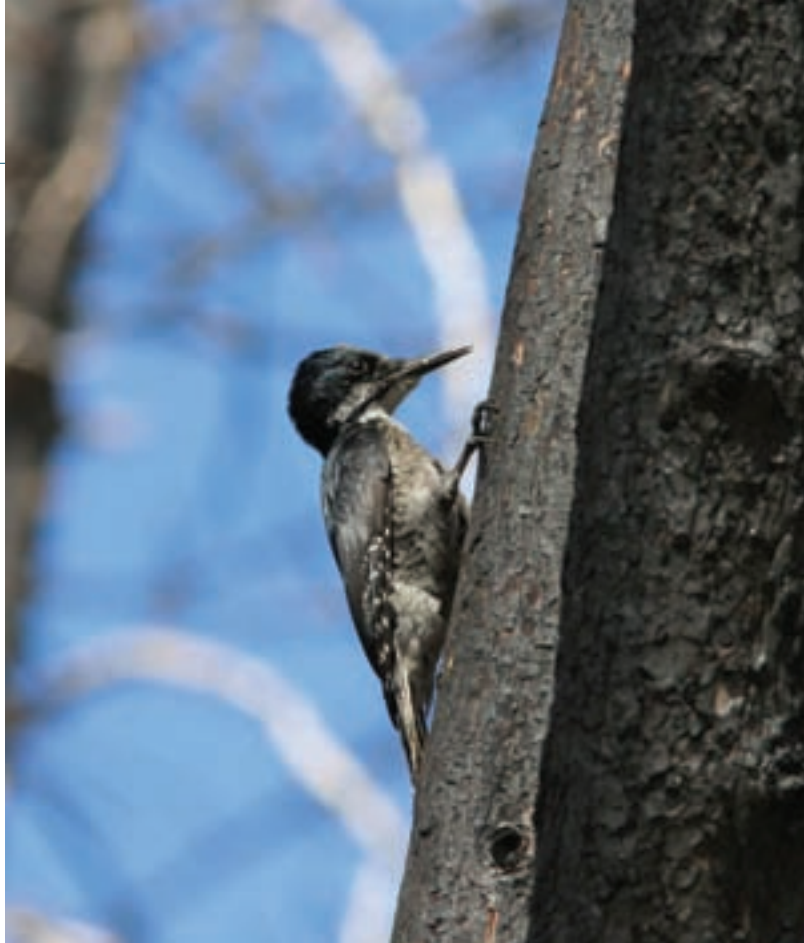
So far, the lawsuits have not slowed coal production, and the outcome of the states' challenge of the plan may be years away. But while we are undoubtedly in for a protracted melee between states, environmental groups, industry reps, unions and others, it's getting harder to imagine the coal industry coming out on top. The owner of the last mine operating at full capacity in our valley, Arch Coal Inc., is on the edge of bankruptcy, facing tough competition from both natural gas and renewables along with stronger regulations.

Coal is still a major power in the region, but green litigators, economics and other outside factors may one day ground it for good. When that happens, it will be a bittersweet moment for the West.

—Brian Calvert, managing editor

A male black-backed woodpecker in the Rim Fire area of the Stanislaus National Forest in California. A lawsuit failed to stop salvage logging in the bird's habitat.

COURTESY CRAIG SWOLGAARD



Log on

Wildfires leave behind burned habitat that is crucial for many species, recent studies show, including the Pacific fisher and black-backed woodpecker. Post-fire logging can shortcircuit post-fire rejuvenation, removing snags and downed trees that wildlife use, while heavy machinery and herbicides can destroy regenerating conifers and other plants. But congressional Republicans are pushing two bills that would speed up so-called "salvage" logging after wildfires. H.R. 2647, the Resilient Federal Forests Act, and S. 1691, the National Forest Ecosystem Improvement Act, would allow widespread logging of burned trees as well as older, unburned trees. They would exempt many such projects from environmental review, and make it much harder to challenge them in court. U.S. Forest Service Chief Tom Tidwell has criticized the bills as limiting public involvement, expediting logging at the expense of other forest uses, and ignoring the biggest threat to national forests — a firefighting budget that siphons money from other essential forest-health programs. **JODI PETERSON** hcne.ws/firelogging

Trending

Grass assassin

For decades, researchers have struggled to find a worthy opponent for cheatgrass, an invasive weed that has overtaken the Great Basin and other parts of the West, converting sagebrush habitat to fire-prone weeds. After 30 years of study, Washington state soil scientist Ann Kennedy has finally found a formidable foe — a native soil bacteria that attacks the plant's roots. In trials, the bacteria was found to reduce the amount of cheatgrass in test plots by half after only three years. The bacteria, dubbed "ACK55," is currently undergoing Environmental Protection Agency registration, and land managers are hopeful they'll one day see the sagebrush sea restored.

GLORIA DICKIE

You say

PAT FINNEGAN
"Seems almost too good to be true. Tremendous ramifications for sage grouse habitat."

CARLYLE CORVIDAE
"I wonder what the long-term economic and environmental impacts of applying this bacteria will be. It seems initially appropriate for application in small-scale conservation efforts, but it still seems only time on a geologic/evolutionary time scale will right the impacts of cheatgrass."

TOM HOWARTH
"Now if they can find a bacteria to kill field bindweed."

hcne.ws/invasive-cheatgrass and facebook.com/highcountrynews

21,000

Gallons of oil that remain in Prince William Sound 25 years after the 1989 *Exxon Valdez* spill, the cleanup of which the Department of Justice calls "a real success story."

O Surviving calves birthed by one group of Prince William orcas since the spill.

In 1991, Exxon negotiated a billion-dollar settlement to help clean up and monitor Prince William Sound, agreeing to a provision that allowed state and federal governments to ask for more money should unanticipated impacts be revealed. In 2006, when it was clear that the oil was more insidious than expected, the U.S. Department of Justice and the Alaska Department of Law asked Exxon for another \$92 million to clean up the oil that was still hampering the recovery of harlequin ducks and sea otters. The company refused, and the case languished. In a 15-minute hearing in federal court in October, the state of Alaska and the U.S. dropped the case. **KRISTA LANGLOIS** hcne.ws/exxon-spill

Five lessons for Indian Country from the Canadian elections

Canada's election was one for the record books: A third-place Liberal party won enough seats to form a government. Aboriginal voters cast so many ballots that in some areas they ran out, and across the country, people demanded a reversal of a decade of Conservative policies. Mark Trahan, a professor of journalism at the University of North Dakota and a member of Idaho's Shoshone-Bannock Tribes, offers his opinion on lessons learned:

- 1 You gotta run to win.** Fifty-four First Nation, Metis and Inuit candidates ran nationwide. The New Democratic Party had the most, 22 candidates, though only two of those candidates won seats, Georgina Jolibois, Dene, in Saskatchewan, and Romeo Saganash, Cree, in Quebec.
- 2 Yes, mainstream politics do matter.** I know, and respect, the argument that Native people should stay out of general politics. Some say there is no difference between any of the parties. Factually, that is not true.
- 3 Turnout is key.** If Aboriginal voters had voted in previous elections, there would not have been a Conservative government. Not voting is a powerful statement. It's the same in the United States. American Indian and Alaska Natives are pretty good voters during presidential election years; then we disappear. That's backwards.
- 4 Elections are not the end of the process.** But they do offer a new beginning. The Liberal Party has many strengths but it's probably not going to be the leader on climate change, stopping the Keystone XL pipeline, or even rethinking energy in a big way.
- 5 Canada, like the United States, needs a better democracy.** This election is considered a huge win for Liberals. But they only won 39.5 percent of the popular vote. The Conservatives had 31.9 percent and the New Democrats earned 19.7 percent. The Green Party captured 3.5 percent — and yet only ended up with one seat. The reason for this, as in the U.S., is the district system, a system that most of the world has rejected in favor of elections that are more representative of all the citizens in a country. **MARK TRAHANT** hcne.ws/5-takeaways

Coalbed methane 'mining'

Coalbed methane is natural gas found in coal seams, and to "mine" it is to drill into the coal seam and extract it, much as one does with conventional natural gas.

JONATHAN THOMPSON
hcne.ws/pumpjack

Video

Worth of Water: Delta

Last May, farmers in the Sacramento-San Joaquin Delta made an unprecedented deal with the state of California, in which they would give up 25 percent of their normal water supply in exchange for a guarantee they wouldn't lose more. In this online video, we check in with one of those farmers and a water manager to learn more about the deal and what water rights mean in the midst of drought. **ZOE MEYERS** hcne.ws/delta-drought



ZOE MEYERS

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A MODEL FOR PLANNING

For over a century, energy development on public lands has put coal, oil and gas extraction at odds with stewardship of wildlife, wildlands and recreational opportunities. As noted in your Oct. 26 piece "Clean Energy's Dirty Secret," the growth of clean energy development has similarly presented challenges for the West. Recognizing the lessons learned and pitfalls of early renewable energy projects built on public lands is important so future efforts can help remedy these problems. For example, the Desert Renewable Energy Conservation Plan and other similar efforts are shifting renewable energy development from a scattered, project-by-project approach that has historically been rife with conflict, to a smarter, landscape-level analysis that facilitates development in more suitable places. This will better protect wildlife and wildlands, not rubber-stamp projects in sensitive habitats, as your article asserts. Renewable energy development on public lands is an important part of the energy future, and we must remain focused on collecting solid data and using science to further improve development decisions.

Dan Smuts

Senior regional director, California
The Wilderness Society
San Francisco, California

SOLAR IMPACTS

Overall, I felt that the Oct. 26 story "Clean Energy's Dirty Secret" approached the issues in a fairly even-handed way. However, I wish the editors had done a better job with one significant issue. The author often conflates the wildlife harms caused by solar thermal power plants with those caused by solar photovoltaic plants in a misleading fashion.

PV plants obviously impact wildlife onsite, but not in as many ways as solar thermal plants do — and especially not in the way that was the focus of the feature. Solar PV plants do not use concentrated sunlight to generate power, and thus do not have the (probable) solar flux problem that the author spends most of her column-inches on.

By not explicitly excluding PV technology, the article unfortunately misleads the reader into thinking that PV has the same problem. It does not.



GRAEME MACKAY/ARTIZANS.COM

As the author surely knows, the amount of PV development is currently larger than solar thermal by more than 10 to 1. There are very few solar thermal power plants in the development pipeline, largely due to their higher costs, but also likely due to their apparently far greater impact on wildlife.

Nick Lenssen
Boulder, Colorado

Judith Lewis Mernit responds:

As I make clear in the story, large-scale photovoltaic solar poses a threat to birds that's potentially just as devastating, and just as poorly understood, as that of concentrating solar thermal. It has been suspected of luring birds to their deaths, possibly by mimicking a source of water in the desert. I specifically discuss how birds were found dead near Desert Sunlight, a large solar photovoltaic facility near Joshua Tree National Park. I also quote a U.S. Fish and Wildlife official about the potential threat of photovoltaic solar plants that stretch for several square miles and reflect light the way lakes do. That agency's forensics lab and the National Renewable Energy Laboratory include photovoltaic solar in their preliminary assessments of the dangers that all types of utility-scale solar power facilities pose. Had I excluded PV facilities, as Mr. Lenssen, an energy consultant, suggests, I would not only have misled readers, but committed an egregious error.

MOTIVE, NOT METHOD

While he does not come right out and say it, Brian Calvert appears to advocate altering the Second Amendment to

the Constitution in his opinion piece "Growing up with guns" (HCN, 10/26/05). To confuse the use of weapons used for hunting with guns used in the commission of violent crimes is a greater stretch than comparing apples and oranges. Furthermore, the Second Amendment has nothing to do with hunting. It states: "A well regulated Militia, being necessary to the security of a free State, the right of the people to keep and bear Arms, shall not be infringed." The intent was clearly not to infringe on the right of the people to bear arms lest the State take our freedoms.

As someone who just recently lost a much-beloved middle-aged stepson to suicide via overdose

of prescription painkillers, I share the author's grief. My stepson had plenty of weapons of all types available. The truth is that when a person's mental state reaches a point of killing one's self, the method is immaterial. The motives and causes of violent crime are what societies need to pay attention to, not the method.

Tom Huerkamp
Orchard City, Colorado

RECREATION, UNLEASHED

There are situations in which leash laws are appropriate on trails, but I encourage the Jackson Hole task force ("Heard around the West," HCN, 10/12/15) and others to consider their effect on off-leash recreationists. Places off-leash recreationists can legally engage in their activity are often limited in number, accessibility and quality. For many (perhaps most) of them, on-leash or non-dog recreation is not a substitute.

A recent survey conducted for Oregon's State Trails Plan provides some perspective. When asked their favorite trail activity, a greater percentage of trail users indicated off-leash walking/running than indicated horseback riding, mountain biking, or on-leash walking/running. People who engage in off-leash recreation do so more days of the year, more hours per day, and at higher aerobic levels than those who engage in on-leash recreation; this leads to public health benefits.

I encourage everyone wrestling with this issue to find solutions that address diverse citizen interests over the long term, rather than pursuing "easy fixes."

Kreg Lindberg
Bend, OregonHigh
Country
News

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What would a super El Niño mean for the American West?

The weather event follows Earth's two hottest years on record

BY GLORIA DICKIE

The last major El Niño to hit California was catastrophic: Throughout the winter of 1997 and 1998, rain, snow and powerful winds battered the state's interior, while towering waves hammered the coast. In the wake of the storms, mudslides lurched down slick mountainsides and floodwaters rampaged through homes. Clear Lake, in Northern California's Lake County, saw its highest water level since 1909, flooding portions of Lakeport, 90 miles north of San Francisco. That El Niño brought one of the wettest winters in state history, caused more than \$550 million in damages, and claimed 17 lives. This year's El Niño may very well follow in its footsteps.

"The 2015 El Niño has quickly built up its strength," says Jeff Lukas, a researcher with the Western Water Assessment arm of the Cooperative Institute for Research in Environmental Sciences. Overall, "this year looks like the third strongest since 1950."

An intermittent weather event that begins in the Pacific Ocean's warm equatorial waters, El Niño tends to skew weather patterns across the West whenever it hits. And even though this year's is predicted to be one of the most severe in the last century, each El Niño manifests differently, Lukas says.

The National Oceanic and Atmospheric Administration released its winter weather outlook in mid-October, providing a glimpse of what's to come. Southern California may see torrential rains, while the Pacific Northwest's drought could worsen, if warm and dry conditions persist there. The Southwest may see a wetter, cooler winter, and the Rocky Mountain region may see a bit of everything, depending on topography.

"California is on pins and needles," says Klaus Wolter, a scientist with NOAA's Earth System Research Laboratory. While above-average precipitation could help ease the four-year drought, the anticipated rainfall will likely only affect Southern California. But the state relies on the northern Sierra Nevada snowpack for more than 60 percent of its water supply. "There's the question of how they're

going to get most of their moisture," Wolter says. All the region really needs is one or two big precipitation events. "There is the potential this could make a positive difference," he says. "Except for the people who have to deal with mudslides."

Across the Golden State, projects are already underway to clear debris from basins and flood-control channels. But public works personnel haven't been able to adequately address some of the piles left after the devastating 2015 wildfire season. Steven Frasher, a spokesman for the Los Angeles County Public Works Department, says that while the county is preparing as best it can, some damage is inevitable. There's no stopping the rain, changing the area's steep mountains and deep canyons, or reversing fire destruction.

"In burned areas, the rainwater won't soak into the ground because the topsoil has been crystallized by the flames, and there's no vegetation left to hold the soil back," Frasher says.

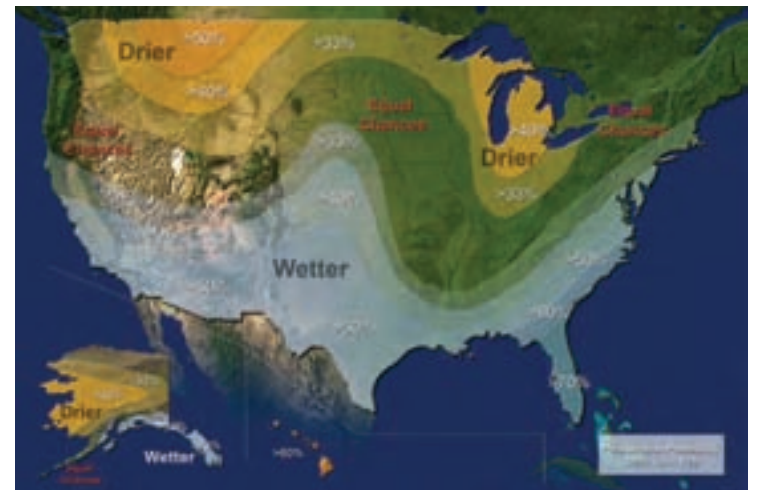
Emergency managers in the Southwest face similar challenges. Past El Niño events have brought nearly three feet more snow than average to areas like Flagstaff. On the Navajo Nation, people can become stranded when mucky roads become impassable during storms.

Meanwhile, in the Pacific Northwest, rivers are running dry, mountain snowpack is at a record low, and more than a million acres of forest have burned away. Here, El Niño could be devastating as well.

"It's not very good news at all," says Karin Bumbaco, the assistant Washington State climatologist. Going into the winter, the Pacific Northwest's reservoirs are already a little lower than normal, and less precipitation means states won't catch up in time for spring.

As a result, agencies are working to reduce water consumption and updating drought contingency plans. If there's less snowpack to cool and moisten the ground, the region's forests will be especially vulnerable to fire next summer. "Rain is nice," says Kathie Dello, deputy director of the Oregon Climate Service. "But ultimately what we really want is snow."

Then there's the matter of what role climate change will play.



The National Oceanic and Atmospheric Administration's 2015-'16 winter outlook for moisture, top, and temperatures, bottom. NOAA

"This El Niño is immersed in the warmest phase of our planet since (recordkeeping began) in the 19th century," Martin Hoerling, a NOAA meteorologist, says. "The last big El Niño was almost 20 years ago, and the planet has warmed a fair amount since then." Scientists have struggled to determine how climate change will influence El Niño; last year, a *Nature Climate Change* study found that global warming could double the frequency of "super El Niño" events, though the overall number was unlikely to increase.

The current hurricane season in the eastern Pacific is "classic El Niño," Wolter says, but powerful hurricanes like Patricia, which hit Mexico in late October, mean that storms can hold onto their intensity as they move north and east, bringing torrential rains into the American Southwest.

All of this, Wolter says, is simply part of the "flavor" of El Niño. And that's to say nothing of La Niña, El Niño's sister event, which can follow with equally wonky weather. At this point, climatologists can't predict what will happen late next year, but Wolter notes there's about a 50-50 chance we could see conditions flip, ushering in a whole new set of problems. □

"The last big El Niño was almost 20 years ago, and the planet has warmed a fair amount since then."

*Martin Hoerling,
NOAA meteorologist*

Gloria Dickie is an HCN intern. @gloriadickie

THE LATEST

Backstory

Revised Statute 2477 was passed in 1866 to allow settlers to build roads across public land. Many Western counties later exploited it to reopen long-abandoned routes to motorized travel, even in national parks and wilderness study areas ("The road to nowhere," *HCN*, 12/20/04). Utah filed its first right-of-way lawsuit against the Bureau of Land Management in January 2004, claiming a road in Juab County. Although it was denied, **22 other Utah counties eventually filed R.S. 2477 claims on 36,000 miles of rural roads.**

Followup

On Oct. 13, the U.S. Supreme Court declined to hear Utah's appeal of a "test case" involving a handful of Kane County roads, meant to resolve issues common to many of the lawsuits. The decision preserves a lower court ruling, which found that since the routes in question were already open, there was no reason to transfer ownership to the counties — thereby undermining their chances of claiming other such roads.

SARAH TORY

Skutumpah Road in Kane County, one of the roads named in a suit filed by Utah against the federal government over access. NICK ADAMS



Neal Clark of the Southern Utah Wilderness Alliance overlooks a gas pad on BLM land near the Island in the Sky entrance to Canyonlands National Park. SARAH GILMAN

Drill here, not there

The BLM unveils its landmark effort to balance oil and gas with recreation and conservation around Moab, Utah

BY SARAH GILMAN

Neal Clark has been watching his feet a lot this fall day. The young environmental lawyer chose flipflops for today's tour of the Utah desert with the blithe self-assurance of someone comfortable outdoors. Remarkably, he's stumbled into thorns only once. Now, he cautiously threads a gap between banks of cryptobiotic crust. The castle-like colonies of microorganisms anchor the thin topsoil; no conscientious environmentalist would crush them. But Clark pauses: Just ahead, an oil rig towers on a patch of earth scraped bare to accommodate trucks and equipment. "There's something ironic about tiptoeing around crust next to something like this," he says wryly.

That incongruity stretches far beyond this spot. Clark, who works for the Southern Utah Wilderness Alliance, is pointing out Bureau of Land Management parcels that are being developed for oil and gas near Canyonlands National Park, Dead Horse Point State Park and some of the other scenic areas that have made nearby Moab an outdoor recreation mecca.

Fidelity Exploration & Production Company has 31 oil wells here, most drilled in recent years. Though the National Park Service and BLM credit Fidelity with keeping its facilities as low-impact as possible, many feel the development illustrates why the BLM should plan much more carefully where and how drilling is allowed. "This is one of the most spectacular places on the planet," Clark argues. "It doesn't make a lot of sense to allow oil companies to disturb this landscape."

Hoping to strike a better balance, in August, the BLM released a draft "master leasing plan" for nearly 800,000 federal acres here that would significantly curtail future development near national parks, trails and other sensitive sites. It proposes to put 145,000 acres off-limits, up from 753,

and to increase the acreage where surface energy infrastructure is prohibited from 134,000 to 306,000. "This is a turning point for the recreation world," says Ashley Korenblat of Moab's Western Spirit Cycling. "Suddenly we have standing."

BLM policies have long favored oil and gas. Last year, The Wilderness Society found that 90 percent of the agency's Western lands were open to leasing. The Moab plan is part of a five-year-old Obama administration effort to give more weight to other interests. Proponents say its zoning-style approach is a model for how to resolve conflicts between drilling and other values — including wildlife, hiking, biking and even four-wheeling — by heading them off before they start.

But only seven of the dozen master leasing plans underway in Wyoming, Colorado and Utah have been finalized, most this summer. None have yet been implemented, raising questions about how the approach will fare if the next administration swings right. "It really matters what BLM leadership is going to do, come 2016," says Matt Lee-Ashley of the Center for American Progress, who was deputy chief of staff to former Interior Secretary Ken Salazar. "Hopefully, by then it will be a tool that the agency is more experienced and comfortable with, and it will survive regardless of whether political winds change in D.C."

Master leasing plans sprang from the notorious 2008 Utah oil and gas lease auction where environmental activist Tim DeChristopher bid on parcels near Canyonlands, Arches National Park and Dinosaur National Monument to keep them undeveloped, and ended up in prison. At Salazar's order, a team reviewed 77 contested leases and found that some should never have been auctioned, while others merited stronger restrictions.

Those problems were systemic, says then-BLM Director Bob Abbey. "We in-

herited an oil and gas program where over 50 percent of leasing decisions were being protested and litigated. There was no certainty for anyone."

Field offices leaned heavily on their resource management plans — blueprints for managing huge landscapes that tend not to account for on-the-ground nuances, such as whether potential leases are within sight of trails. Unless plans explicitly withdrew land from leasing, companies could nominate it and the BLM would go ahead, worrying about mitigation when companies applied to drill. "That's not a good approach," Abbey says. "There are areas where natural, cultural and even visual resources are so valued that you need to do a better job up-front analyzing whether a certain area should be leased at all. Because once you lease it, you're committing it to development."

So in May 2010, the agency instituted reforms that, among other things, required field offices to undertake master leasing plans for areas that met certain criteria: They needed to be substantially unleased, have mostly federal mineral rights, possess hydrocarbon reserves, and have the potential for significant conflicts with clean air, recreation, wilderness or other values.

But the reforms proceeded at a sluggish pace. The Deepwater Horizon oil spill happened just a few weeks earlier, diverting officials' attention to strengthening offshore policies. The BLM's massive sage grouse planning effort began that year, too, and many field offices were tangled in resource management plan revisions.

Financial constraints didn't help: Utah BLM put four other plans on hold so it could finish the high-profile Moab plan. Utah's congressional delegation and its state government opposed the effort. And there was reluctance within the BLM itself: "It was a brand-new concept in an area that the agency has historically not exercised a lot of discretion," says Nada Culver, director of The Wilderness Society's BLM Action Center. "The attitude was that we have to keep everything open in case the oil and gas industry wants it."

Even so, the concept gradually caught on. In some parts of Colorado, including North Park, South Park and a small chunk of the state's southwestern corner,

Please see **Master leasing**, page 23

Beaver fever

A biologist figures out how to keep beavers alive on Western landscapes

BY BEN GOLDFARB

When Chomper and Sandy met in a concrete pen in Winthrop, Washington, it was love at first sniff.

He's an inquisitive 44-pound male, busted for felling apple trees. She's a lustrous red-blond, incarcerated for killing cottonwoods. Sandy had first been paired with an inmate named Hendrix, but they lacked chemistry. So her handlers transferred her to Chomper's enclosure, where she nestled among woodchips and dug into apple slices.

The lovers are wards of the Methow Valley Beaver Project, a partnership between the U.S. Forest Service, the Washington Department of Fish and Wildlife and the Methow Salmon Recovery Foundation that, since 2008, has moved more than 300 beavers around the eastern Cascades. These beavers have damaged trees and irrigation infrastructure, and landowners want them gone. Rather than calling lethal trappers, a growing contingent notifies the Methow crew, which captures and relocates the offenders to the Okanogan-Wenatchee National Forest and state land.

Why would Washington invite ditch-clogging nuisances — so loathed that federal Wildlife Services killed 22,000 nationwide in 2014 — into its wildlands? To hear Methow project coordinator Kent Woodruff tell it, beavers are landscape miracle drugs. Need to enhance salmon runs? There's a beaver for that. Want to recharge groundwater? Add a beaver. Hoping to adapt to climate change? Take two beavers and check back in a year.

Decades of research support Woodruff's enthusiasm. Beaver wetlands filter sediments and pollutants from streams. They spread rivers across floodplains, allowing water to percolate into aquifers. They provide rearing grounds for young fish, limit flooding and keep ephemeral creeks flowing year-round.

"We want these guys everywhere," says Woodruff, a white-stubbled Forest Service biologist with an evangelical gleam in his blue eyes. On this sweltering July morning, he watches as wildlife scientists Catherine Means and Katie Weber hoist Chomper and Sandy, now caged, into the truck that will convey them to the



Okanogan-Wenatchee. "We want beavers up every stream, in all the headwaters."

Since the project launched, six Washington entities, from tribes to nonprofits to state agencies, have followed its lead. While Northwestern ecologists were once content to let the critters recolonize creeks on their own, today's land managers are surgically transplanting them to the places they're needed most. But first, they must induce the wandering rodents to stay put — and Woodruff has come closest to mastering that art.

Humankind shares a sordid history with *Castor canadensis*. Fur trappers pillaged North America's rivers, slashing beaver populations from more than 60 million to 100,000. Not until the 20th century did we begin to regard the creatures as more than pelts. In the 1930s, the federal government employed 600 beavers alongside the Civilian Conservation Corps to control erosion. A decade later, Idaho officials parachuted 76 beavers into drought-afflicted areas.

Few latter-day biologists advanced the cause as far as the University of Wyoming's Mark McKinstry, who relocated 350 beavers between 1993 and 2002 to bolster riparian areas. Deer, moose and elk flourished in revived wetlands. Ranchers, their hayfields lush thanks to rising water tables, rejoiced.

But success had its costs. Beavers — "fat, slow, smelly packages of meat," in McKinstry's words — make delectable meals for coyotes, cougars and bears. Newly released beavers, which must navigate unfamiliar terrain without a sheltering lodge, are especially vulnerable. McKinstry established 16 colonies, but he had to release an average of 21 beavers per site.

That's where Woodruff came in. Since arriving in the Okanogan in 1989, he'd focused on birds, installing nesting platforms for owls. But he yearned to leave an enduring legacy, and in 2008 his opportunity

arrived. John Rohrer, Woodruff's supervisor, had been relocating beavers on a small scale since 2001 — even digging a holding pool in his own backyard. Meanwhile, the Washington Department of Ecology wanted to improve regional water quality. Woodruff thought beavers could help. He offered to expand Rohrer's endeavor.

Beavers, Woodruff knew, were family-oriented: Three generations share a lodge. Though scientists tried to relocate entire units, catching some solo beavers was inevitable. Once released, lone animals face grave peril as they wander the landscape searching for companionship. Woodruff believed matching captive beavers with mates might encourage them to stay put upon relocation. He needed a rodent love motel.

He found one at the Winthrop National Fish Hatchery, a U.S. Fish and Wildlife Service facility that churns out salmon and steelhead. The hatchery's oval raceways, with their flowing water and gnaw-proof concrete walls, made perfect pens. Woodruff built island-like cinderblock shacks and started moving in eligible bachelors and bachelorettes.

"This is the beaver Hilton," he says as we wander the hatchery. "No predators, good food, clean shavings." Beavers cruise like submarines, bubbles rising from matted fur. A battle-scarred male named Half-Tail Dale eyes us from his hut's doorway, dexterous hands curled.

Because the crew traps more male troublemakers than females, some, like Dale, must be released before hooking up. Yet most find soulmates. "A lot of programs catch 'em in one place and immediately release in another — there's no effort to form compatible groups," says Michael Pollock, an ecosystems analyst at the National Oceanic and Atmospheric Administration. "The care separates the Methow program."

The beavers don't always cooperate: One turned up near Canada, 120 miles from

Please see Beavers, page 23

Biologists with the Methow Valley Beaver Project release a beaver named Big Bella into a tributary of 8-Mile Creek in the Okanogan-Wenatchee National Forest. See a video of Big Bella's release at hcn.org.

SARAH KOENIGSBERG/
THE BEAVER BELIEVERS

"We're not smart enough to know what a fully functional ecosystem looks like. But (the beavers) are."

—Biologist
Kent Woodruff

Guerrilla trail work

One man's off-the-books effort to improve access to public land

BY JEREMY MILLER

Uncommon Westerner

Name Richard Coots

Age 62

Hometown Weed, California

Vocation Retired U.S. Forest Service law enforcement officer; new mountain manager, Mount Shasta Ski Park

Hobby Restoring neglected backcountry trails

Signature backcountry cuisine India pale ale-marinated Southwestern chicken breasts, cooked over an open fire

On a bright April morning, Richard Coots parks at a trailhead of the Pacific Crest Trail in Northern California's Shasta-Trinity National Forest. He's not here to hike, but to do what he calls "legal monkey-wrenching."

Just down the road is a padlocked gate protecting an inholding owned by John and Robert Fischer, heirs to the Gap and Old Navy empire and proprietors of the McCloud Fishing Club, seven miles away. The problem, as Coots sees it, is that the gate also blocks public access to hundreds of thousands of acres of public lands surrounding the road. So for the last few years, he's been discreetly restoring two forgotten trails nearby.

His backpack is loaded with food and supplies, and tools are lashed to his bicycle. Coots is short and powerfully built, with round, youthful features. In his green camouflage, he might be the Robin Hood of the public lands. As a law enforcement officer with U.S. Forest Service for 33 years, he practically lived along the area's rugged trails and logging roads, pursuing backcountry marijuana growers. (Once,

he physically subdued Ethan Crosby, musician David Crosby's brother, on a grow.) After retiring in 2004, he kept haunting neglected footpaths, making them usable again. "Some people do yoga and others swim laps to stay in shape," Coots says. "I cut trail."

His work exists in a legal gray area, though, and is not authorized by the Forest Service, according to Carolyn Napper, ranger for the Mount Shasta and McCloud districts. Napper says her agency welcomes volunteers but oversees their work carefully. She says there's no way to know if Coots' work conforms to agency standards — whether he's mindful of endangered species, for instance.

Coots simply shrugs. "I'm not down here cutting pirate trails," he replies, pointing out that both paths appear on U.S. Geological Survey topographical maps. "I'm providing access by maintaining what the Forest Service has neglected."

A century ago, the Tom Dow and Tom Neal trails brought pack trains from the Upper Sacramento River Valley to mining and logging camps along Squaw Creek and the McCloud River. Today, the area is a fisherman's paradise, with trout

streams that wend through old-growth stands of hemlock, fir and cedar. The land along the McCloud's lower reaches is a haven for the well-heeled — Levi Strauss and William Randolph Hearst both owned plots here — but its upper watershed is almost entirely public. The only access road, however, is blocked by the Fischers' gate.

It's part of a larger trend: According to the Center for Western Priorities, private inholdings and roads block access to over 4 million public acres in six Western states. But Mike Jani, land manager of the Fischers' club, says this road predates the U.S. Forest Service. Visitors are welcome to travel it by foot or bike but not by car, Jani says. Coots responds, "There's an atmosphere of trespass beyond (the gate)."

He skirts the gate, shovel and saw blades clattering against his bike, and plunges down the road. Coots' well-concealed camp, where he sets up a tent, is not far away. He pedals a few more miles to the end of the Tom Dow, a spur that descends into a valley from Girard Ridge, which is accessible from roads and the Pacific Crest Trail. Using the Tom Dow, you can reach the valley without encountering the gate.

Coots crosses Squaw Creek, blue and bone-chillingly cold, and slides on heavy gloves to clear a section near the McCloud property line. The scenery is low-key, with no spectacular vistas. The beauty lies in small and subtle things — the purple shimmer of orchids in a rockslide, or the elegant undulations of the streambed. "It's just plain wild back here," Coots says, snapping thorny limbs.

The area's remoteness doesn't deter marijuana growers, though. He's found four grows in the area; in fact, there's a 300-pound rototiller stashed in high brush just off the trail. "A few more feet on the trails back here would probably mean less of this nonsense," he gripes, kicking the machine with a thud.

The following day, at the Tom Neal Trail, Coots uses a rock to hammer in a small wooden sign that he inscribed himself. Indistinguishable from a Forest Service trail marker, it reads "P.C.T. 6."

The Tom Neal is better defined than the Tom Dow, but after a couple miles it grows faint and eventually is blocked by fallen trees. Coots starts up his chainsaw and heaves logs off the trail. Pretty soon, the path is cleared to where it begins its ascent to Girard Ridge. "I'm getting there," Coots says, gazing uphill.

One can't help asking: Why go to all the trouble? Better access means more people; Coots will no longer have the place to himself. It's the principle that matters, he explains, the idea that public lands are no longer public if private interests can hinder access. "There are ways to protect this landscape and also the public's right to use it," he says. □



Richard Coots takes a chainsaw to a fallen tree in California's Shasta-Trinity National Forest to maintain access to old trails. JEREMY MILLER

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Justas Bavarskis,
former *HCN* editor,
taking a break. LORNA WILKES

High Country News: Tragedy and transition

The second in a series celebrating our 45th anniversary

The horse appeared on the highway in the darkness "with all the feral dignity of a grenade," remembers Dan Whipple. It was August 1978, and Whipple and three other *HCN* staff members were returning home to Lander, Wyoming, after a concert — Beethoven's *9th Symphony*.

The car swerved to dodge the horse and careened off the road. *HCN* editor Justas Bavarskis died instantly; the three others lay badly injured in the silent night. Hours passed; a lone coyote was the only passerby.

Whipple nearly died, and spent days in the hospital. Reflecting on the accident in 1989, he describes Bavarskis' death as "so tragic that ... I can't construct any meaning to it." But he and the other *HCN* staffers — Marjane Ambler and Jazmyn McDonald — were deeply moved when readers donated over \$30,000 toward their medical bills.

Even before the accident, *HCN* was in transition. An energy boom was roaring across the West, and "many of the abstract problems *High Country News* had earlier warned about had become real," former *HCN* editor Joan Nice wrote in 1989. "Most of the big dailies in the West had their own environmental reporters. Did the region still need *HCN*? Maybe, we decided, if it became more lively, provocative and perceptive."

Bavarskis — a seasoned writer with a sharp wit — had those qualities. Ambler recalled how he "sloshed through ankle-deep mud in a uranium mine" and pursued leads at the union bar. The accident that killed him occurred just a few short months after he arrived.

So Geoffrey O'Gara stepped in as editor. He stretched *HCN*'s environmental news into more literary terrain, improved the tabloid's design and appearance, raised salaries and bought new typesetting equipment. He also solidified *HCN*'s nonprofit model, establishing a board of directors and acquiring tax-exempt status — a rare and complicated legal move at the time.

Nice stepped back from *HCN* after having a child. When O'Gara moved on to broadcast journalism, Whipple took over, though a year later, in 1983, he decided to leave as well. He told the board of directors that he knew of nobody in Lander able to lead the newspaper onward. *HCN* now stood on the threshold of its greatest transition — the move to Paonia, Colorado.

To read more about Justas Bavarskis and the accident, plus articles from the *HCN* archives selected by Geoffrey O'Gara and Dan Whipple to highlight their time at *HCN*, visit hcn.org/45.

MARSHALL SWEARINGEN



HCN staff in the early '80s, from left, Jill Bamberg, Carol Jones, designer Kathy Bogan, who redesigned the tabloid newspaper, and Dan Whipple. MIKE MCCLURE

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THE NORTHERN LIGHTS: CELESTIAL PERFORMANCES OF THE AURORA BOREALIS

By Daryl Pederson and Calvin Hall; essay by Ned Rozell

123 pages, paperback: \$19.95.

Sasquatch Books, 2015.

The vibrantly colored photographs of Daryl Pederson and Calvin Hall give the reader an impressive tour of Alaska's northernmost skies in *The Northern Lights: Celestial Performances of the Aurora Borealis*. Writer Ned Rozell's introductory essay takes a brief look at some of the science behind the phenomena: "The sun continually spews a solar wind," he explains, and eventually "that breath flows over marble Earth like a stream curls around a rock." Rozell touches on the reasons behind the aurora's various colors — the great red aurora, for instance, is caused by solar flares — and is particularly intrigued by reports of a strange hissing and humming heard during the displays. Photographers Pederson and Hall clearly know the thrill of discovery that kept turn-of-the-century miners "hacking at frozen gravel through the dark winter," and their extraordinary images reveal that Alaska's skies are as boundless and beautiful as its harsh and lonely landscapes. **PAIGE BLANKENBUEHLER**

A corona aurora explodes above the Chugach Mountains, left. An aurora, seen from Old Glenn Highway south of Palmer, Alaska, fills the sky, below. DARYL PEDERSON AND CALVIN HALL



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Fall visitors

El Niño has brought a wet autumn to western Colorado, and with snow dusting the nearby West Elk Mountains, it's about time to break out the sweaters. Lucky for us, then, that reader **Jon Krecker** visited the office on a warm day, or we'd have never seen his T-shirt. Not in recent memory has a reader visit invoked such rampant jealousy among staff as when Jon came in from Longmont, Colorado, sporting a vintage purple *HCN* shirt from 1995. Jon had obtained the shirt — featuring the old mountain goat logo — at a 25th anniversary party and had clearly taken good care of it. Thanks for the flashback, Jon, and for your longstanding care and support — and for preserving the T-shirt, which had scarcely faded. And we want to thank all the other friends who stopped by recently.

Anne Pennington, who moved to nearby Delta in August, was in Paonia having lunch with her granddaughter, **Miranda**, before popping in. Though she's a longtime subscriber, she had never been to our office before. Don't be a stranger, Anne! Faithful subscribers **Julie Sullivan** and **George Whitten** of Saguache, Colorado, who passed through Paonia on a sort of mini-vacation, have several interesting links with *HCN*. When they started an apprenticeship program at their organic grass-fed cattle ranch in the San Luis Valley, our classifieds section was the first place they advertised. It turns out that one of the first apprentices they hired for that ranch, **Laura Jean Schneider**, is now the writer of our online series "Ranch Diaries."

Our soggy October weather didn't bother **Susan Sellers**, who's from the rainy town of River John on the bay coast of Nova Scotia. She and her brother, **Benjamin**, from Carbondale, Colorado, are both new subscribers who grew up in the West and were in town visiting our

local wineries. We're happy to encourage sibling bonding, especially over a glass of good wine. Other recent welcome visitors were **Dave Mayhew**, from Hite, Utah, and **Robyn** and **Ed Ceyson**, from Woodstock, Georgia. Thanks for stopping by!

CORRECTIONS AND CLARIFICATIONS

A few things to clear up, thanks to vigilant readers of our Oct. 26 edition: On page 3, in our scientific integrity graph, the numbers on the left axis fell out of alignment with the ticks on the graphic. See the corrected version here: hcne.ws/political-usfws. Also, although Valles Caldera National Preserve is now managed by the National Park Service, it's not a national park per se. In a story on getting salt out of the Colorado River, the cost of not having the Paradox Valley Unit would be \$19 million annually; \$457 million is the amount saved in damage since the unit went into operation in 1991. And "Growing up with guns" should have stated that Brian Calvert's first firearm — not rifle — was a shotgun.

—Brian Calvert for the staff



Jon Krecker and his vintage 1995 HCN T-shirt. BROOKE WARREN



THE CAMPA

Lee Boughey, spokesman for Tri-State Generation and Transmission Association, surveys Colowyo's South Taylor Pit coal mine located outside Craig, Colorado. DOUG MAYHEW



IGN AGAINST COAL

FEATURE BY
ELIZABETH
SHOGREN

Where 'keep it in the ground' meets 'keep the lights on'

About a dozen local guys, several in camouflage baseball caps, are playing pool or slouching on maroon vinyl barstools in the dim light of the Popular Bar in Craig, Colorado. We're in the heart of the state's coal country, a country that feels like it's at war. Nearly everyone here on this August Monday night is a laborer, electrician or retiree from the nearby coal mines or the big coal-fired power plant at the edge of town. The loud music is punctuated by the sharp clack of pool balls.

The two clean-cut young men, whose pool game I've interrupted, at first seem willing to talk to a reporter. They've worked in both surface and underground mines, they say, and have young families to support. They explain how important coal is to their community. Then, unexpectedly, the taller one, whose T-shirt's cut-off sleeves reveal sculpted arms, erupts in anger and threatens me for invading his bar. Implausibly, he seems to want to fight a middle-aged female reporter. The photographer who accompanied me appears and deftly distracts the man.

The other miner, Nick Craig, has a compact build and short blond hair. Unruffled by his friend's hostility, this Iraq war veteran calmly explains that tempers have been short here ever since a judge threatened to shut down a nearby surface mine called Colowyo. "Coal is our life," Craig says. "You can't just turn it off. If you do, this town is dead." At another table, a big man with a grizzled goatee pauses, pool cue in hand, and declares that he'll never again drink any New Belgium beer. In fact, several local bars and restaurants are boycotting the popular Fort Collins brewery because it has donated to WildEarth Guardians.

But most of their ire is directed at Jeremy Nichols, WildEarth Guardians' climate and energy program director. Nichols has become a household name here — a rare feat for an environmentalist — since he sued the federal government for approving Colowyo's expansion without considering its impact on the climate. By doing so, he thrust Craig into the center of the struggle over the government's coal program, and made the locals painfully aware of how precarious their livelihoods are.

Nichols, 35, is among the most audacious of a small but growing group of activists determined to overhaul and eventually shut down the federal coal program to help avert a climate crisis. Some 40 percent of the coal used to generate electricity in the U.S. comes from federally owned reserves mined by private companies. The companies pay more than \$1.5 billion per year in royalties and other fees to the federal government, money that's shared with the states. Despite President Barack Obama's commitment to make the U.S. a world leader on climate change, the coal program, run by the Bureau of Land Management, has largely escaped reform. Nichols wants to expose the contradiction between the administration's climate agenda and its coal program by relentlessly attacking one mine expansion after another.



WildEarth Guardians' Jeremy Nichols poses above a coal train on the tracks that carry Powder River Basin coal through Denver.
THEO STROOMER

"The only surefire way we see to make the federal coal program consistent with our need to combat climate change is to start to keep it in the ground," Nichols says. "We shouldn't be authorizing any more coal mining in this day and age, with our understanding of climate change and our need to reduce greenhouse gases. The Interior Department shouldn't be making it easier for the industry to mine and burn coal."

There's a clear logic to this approach: If you don't want carbon in the air, leave the raw materials that produce it in the ground. Yet environmentalists and government agencies have so long ignored this supply-side strategy that it is considered downright radical, in the everyday sense of the word as well as its literal meaning — that is, getting at the root of the problem. For decades, environmentalists have tried to rid the air of pollution caused by fossil fuels, but they've always targeted combustion, working to clean up exhaust pipes or smokestacks, rather than shutting down oilfields or coal mines. The Sierra Club's "Beyond Coal" campaign, for instance, figures it accomplishes more by closing coal-fired power plants. So it dedicates only about

\$1 million of its \$30 million annual budget to trying to keep coal in the ground, says Bruce Nilles, campaign director. Accordingly, the centerpiece of Obama's climate agenda, his Clean Power Plan, focuses on smokestacks, with the goal of reducing greenhouse gas emissions by an estimated 32 percent from 2005 levels by 2030.

But recently, the battle against climate change has moved up the production chain. Activists started focusing on transportation of fossil fuels, trying to halt the construction of new export terminals for coal and liquid natural gas and the Keystone XL pipeline, which would move tar sands from Alberta, Canada, to Southern U.S. refineries and ports. If you can't get the fuel to market, why take it out of the ground? The heart of the anti-Keystone movement is the group 350.org and its founder, Bill McKibben, who told *Rolling Stone* that "effective action would require actually keeping most of the carbon the fossil-fuel industry wants to burn safely in the soil." One study published in January in the journal *Nature* calculates that more than 80 percent of extractable coal reserves needs to stay in the ground to avoid warming Earth above pre-

industrial levels by more than 2 degrees Celsius, or 3.6 degrees Fahrenheit.

So it makes sense for the so-called War on Coal to directly target supplies. For years, Nichols had little company on this battlefield. But a string of legal victories and the success of the anti-Keystone protests have encouraged bigger environmental groups and their supporters to join in. Others remain poised in the wings. The reinforcements broaden political support for the keep-it-in-the-ground movement. And it needs it: The raw hostility and fear I encountered at Craig's Popular Bar show that coal communities will not give up without a fight. The miners put a human face on the story, bolstering the fossil fuel industry's considerable financial and political heft.

Still, due at least in part to Nichols' doggedness, the Interior Department finally is grappling with the federal coal program and the way it hamstringing U.S. efforts to fight climate change. Says the Sierra Club's Nilles, "What's exciting is there's new momentum in an area that has seemed intractable."

NICHOLS, A LANKY MAN with a sparse beard and glasses, spoke to me in the

brick ranch house he shares with his wife and two kids in Golden, Colorado. A native Westerner, from Boise, Idaho, he has long been passionate about preserving the region's wild landscapes, an ideal he inherited from his father, a Bureau of Land Management engineer. Nichols dropped out of the University of Wyoming in 2000 to become an activist and protect Wyoming's national forests from clear-cutting. Since then, he has moved from one environmental issue to another, pursuing each of his successively more ambitious goals with brash single-mindedness, another trait he inherited from his dad. One of his major successes was pushing the Environmental Protection Agency to write the first federal regulations for air pollution from natural gas drilling in 2012.

Despite his lack of formal education, Nichols has a keen grasp of environmental law and policy, which he picked up on the job after realizing how powerful federal laws can be if used aggressively. In recent years, Nichols has obsessively tracked government approval of new leases to mine fossil fuels and repeatedly sued over them.

In 2012, he learned about the proposed expansion of the West Elk Mine into the Sunset Roadless Area in western Colorado's North Fork Valley, coincidentally home to Paonia, *High Country News'* headquarters. The mine is underground, so the expansion itself would not have too much impact on the roadless area. But nearly all underground mines must vent naturally occurring methane for safety reasons, usually through wells drilled from the surface. That would require building roads into a scenic stretch of undeveloped national forest. And the coal in the North Fork is especially rich in methane, a potent greenhouse gas, which the mine expels in large amounts directly into the air.

"That was beyond offensive to see our federal government playing a role in letting that happen," Nichols says. "To see this kind of industrial development happening here, it got us riled up."

Nichols was scanning a preliminary environmental assessment of the proposal when he noticed something new, an analysis of the social costs of releasing the methane into the atmosphere during mining. (The analysis did not address greenhouse gas emissions from coal combustion.) But when the final version was published in 2013, that part had vanished. "It set off our environmentalist radar," Nichols recalls.

In its place was the kind of language the BLM often used to rationalize the omission of climate impacts: "Standardized protocols designed to measure factors that may contribute to climate change, and to quantify climatic impacts, are presently unavailable."

WildEarth Guardians and other environmental groups sued to block the expansion, citing the disappearance of that greenhouse gas analysis, along with

several legal issues. "We were trying to throw everything at the wall to see what stuck," Nichols says. "What stuck was climate." U.S. District Judge R. Brooke Jackson, the same judge who handled the Colowyo case, ruled in the environmental groups' favor. His decision hinged on the disappearance of the social cost of carbon analysis. It was "arbitrary and capricious to quantify the *benefits* of the lease modifications and then explain that a similar analysis of the *costs* was impossible when such an analysis was in fact possible and was included in an earlier draft EIS," Jackson's ruling states.

No one was more flabbergasted by the government's decision to omit that analysis than the BLM economist who prepared it, David Epstein. "That was extremely frustrating to see the final analysis pulled," says Epstein, who spoke on the record about this for the first time with *High Country News*. Epstein left the BLM last year, discouraged by his inability to effect change from the inside. Jackson's ruling refers to Epstein by name, but until I brought the ruling to his attention, Epstein was unaware of his cameo role in the epic struggle over the coal program's future.

Epstein's experience reflects a larger reality: Without clear guidance from Washington, BLM officials have handled coal's climate impacts in a helter-skelter fashion. Epstein's analysis focused on the greenhouse gas emissions released at West Elk, in order to obtain an estimate of the economic cost of dumping methane into the atmosphere. Methane is the main component of natural gas. "As an economist, it almost personally irks me that there's a valuable commodity or resource that's being wasted, because that's what happens when you're releasing it into the environment," he says.

Epstein, who at the time worked for the BLM's Colorado office in Golden, remembers acting on his own without encouragement or criticism from his bosses. But both the coal industry and environmentalists saw his draft as groundbreaking and sent in hundreds of comments, either objecting to it, supporting it or arguing that it failed to go far enough. West Elk's lawyer — apparently hoping to show how preposterous calculating the costs of emissions from coal extraction would be — argued that if the BLM was going to estimate the costs of methane emissions, it also should count the costs of all the carbon that would be released when electricity was generated from that coal — a very large number.

Epstein doesn't know who yanked his analysis from the final draft, or why. As for the boilerplate language that replaced it, Epstein says, "It is illogical at best and possibly dishonest to persist in using that analysis." He says BLM leaders were reluctant to move beyond business as usual, despite the fact that Obama, their boss, had set ambitious goals for reducing emissions, particularly methane. "I don't know how to square those two points,"

Epstein says.

He left government feeling ineffectual. But his analysis empowered Nichols, giving him the hook for his first big legal victory in the effort to reform the federal coal program. Says Nichols, "That somebody within the agency was honest and willing to put their integrity first like that was huge."

THE COAL-FIRED POWER PLANT pictured on Craig's welcome sign shows how central coal is to the identity of this town of 9,000 in the state's northwest corner. Craig was hardly a dot on the map when the big surface mines started pulling millions of tons of federal coal out of the ground; first Trapper in 1954, then Colowyo in 1978. A large underground mine, Peabody's Twentymile, opened nearby in 1983. The mines feed Craig Power Station and the smaller Hayden Generating Station, and ship coal as far away as Florida.

Colowyo, 26 miles south of Craig, is central to the area's long romance with the federal coal program. Mine manager Chris McCourt drives me to the edge of the enormous pit, 1,000 acres across and 450 feet deep. Glistening black coal lies in bands between layers of gray rock. From up here, the steady stream of coal-hauling vehicles look like tiny matchbox trucks. But the tires alone are twice as tall as I am. Each truck carries 200 or more tons of coal.

The mine's coal provides enough electricity to supply more than a half million homes. Colowyo and other local mines together employ about 1,000 people, and the power plants another 570, according to the Economic Development Council of Colorado. Many other jobs in the region depend at least partly on the industry. Tri-State, Colowyo's owner, pays about \$12 million in federal royalties and local and state taxes each year.

For several months this year, that all seemed imperiled by Nichols' most significant triumph yet. In May, Judge Jackson gave the Interior Department 120 days to rectify its failure to analyze not just the emissions from the mining, but also the impacts of the greenhouse gases and other pollution that would be caused by burning its coal. Without such an analysis, the mine would be forced to shut down.

It was a big victory for Nichols, but one that revealed a major obstacle for the keep-it-in-the-ground campaign: The blunt economic blow its success would deal to mining communities. Pollution-control efforts rarely cause such clear-cut economic harm, and in fact, sometimes do the opposite. Getting automakers to install catalytic converters in vehicles created an entirely new industry, and plenty of jobs. Cutting power plant emissions requires installing pollution-control devices, for example, or building a natural gas-fired unit to replace a coal-burning one. But shutting down a coal mine eliminates jobs directly, first in the mines and then all down the industrial chain that

"The only surefire way we see to make the federal coal program consistent with our need to combat climate change is to start to keep it in the ground."

—Jeremy Nichols,
climate and energy
program director for
WildEarth Guardians



Tri-State Generation and Transmission's 1,300-megawatt Craig Station power plant, top, powered by coal from the local mines, sits above Craig, Colorado. Above, Kasen Davis (front), son of Kim and Nick Davis, along with brother Chad, in their new home, purchased just before a lawsuit was brought against the Colowyo Mine where Nick works as a lab technician. At right, Craig Power Station employee Craig Hagar shoots pool at the Popular Bar.

DOUG MAYHEW



relies on the coal, from railroads to power plants. And that, in turn, makes the anti-coal activists seem like insensitive foes of working-class people. Western communities are used to hardrock-mining and petroleum busts, but the coal reserves are so huge that those mining jobs had seemed permanent.

The judge's ruling stunned Craig. "We were just flabbergasted," says Nick Davis, a lab technician at Colowyo. Davis, his wife and two sons had just moved from a singlewide trailer into their dream house when they heard about it. Now, he fears for his job. Davis knew that cheap natural gas and Obama's new air pollution regulations for coal-fired power plants were reducing demand for coal nationally. But he hoped that Colowyo, which has a long-term contract with Craig Power Station, would be immune. An EPA official came to town last fall and assured local people that coal would have a place under the Clean Power Plan, which gives states wide leeway to craft plans to reduce emissions — the agency projects that 27 percent of the nation's electricity still will come from coal in 2030, down from 39 percent in 2014. But the judge's ruling threw all that into doubt.

In July, even as Craig was reeling and its citizens garnering sympathy from the national media, Nichols was quoted as saying, "My initial reaction is, 'Tough shit.'" He says he was not dismissing the plight of the people of Craig, but rather referring to local politicians who criticized the Interior Department for not appealing the ruling. Still, the comment reinforced the notion that this was a battle between environmentalists who love nature more than humans, and an industry that has long provided stable, high-paying jobs to American workers.

Colorado Sen. Michael Bennet and Gov. John Hickenlooper, both Democrats, sided with the miners, urging Interior Secretary Sally Jewell to do everything in her power to keep the mine open. The Office of Surface Mining went into overdrive to fulfill the judge's ruling and issue a new environmental assessment before a September deadline. The government concluded that burning Colowyo coal to generate electricity would release about 9 million metric tons of greenhouse gases a year. But it also said that would have an insignificant environmental impact, because that pollution would be a fraction of 1 percent of global emissions. Nichols may have raised the bar for environmental assessments, but the coal will keep coming out of the ground, and the carbon will keep going into the atmosphere.

Despite the reprieve, Craig remains on edge. "What could be down the road? It's a scary time," says Davis.

AND IT MAY BE GETTING SCARIER. In a major energy address in March, Jewell promised to begin more thoroughly weighing the climate impacts of drilling and mining. "Helping our nation cut carbon pollution," she said, "should inform

our decisions about where we develop, how we develop and what we develop.” This summer, she launched a national listening session on the future of the coal program, asking whether Americans should get more return for federal coal. But there’s a bigger question as well: How do we manage our coal program in a way that is consistent with our climate change objectives?

Meanwhile, the Interior Department has repeatedly defended its coal program. This summer, it defeated a lawsuit aimed at making it assess the cumulative climate impacts of its coal program. Later, it prevailed against another suit that would have forced the government to quantify the climate costs of massive new leases at two Powder River Basin mines that are among the world’s largest.

The administration’s lack of resolve has created confusion for frontline officials at Interior and in the Forest Service. Jim Bedwell, director of recreation, lands and minerals for the Forest Service Rocky Mountain region, was charged with assessing the greenhouse gas impacts and social cost of carbon of the West Elk mine expansion following Nichols’ successful lawsuit. Yet “there’s no uniform methodology” for doing so, he says.

Bob Abbey, who headed the BLM from 2009 to 2012, says the White House Council on Environmental Quality has failed to provide clear guidance. In 2010 and again in 2014, the council released drafts on how all agencies should calculate the effects of greenhouse gas emissions and climate change when conducting environmental reviews, but the White House office has yet to produce a final document. In the meantime, each BLM field office improvises its own approach. This is true for oil and gas leases as well as coal. “I think that has led to this inconsistency that is not beneficial to anyone,” Abbey says.

Nichols has been relentless in highlighting that inconsistency. In a protest against 2015 oil and gas lease sales in Utah, he demonstrates just how differently various BLM offices treat fossil fuels and climate change. Despite the scientific consensus on the anthropogenic causes of recent global warming, some environmental assessments from Utah BLM offices insist there is uncertainty over emissions’ impact on climate. In contrast, the BLM’s Four Rivers Field Office in Boise made a detailed social cost of carbon calculation for five parcels being offered for lease in Idaho.

Current top officials at BLM and Interior declined to be interviewed on the record for this story. But, speaking on background, one Interior official acknowledges the problem and, like Abbey, blames the White House: “It really has been confusing. There is no final guidance on this yet. We’ve been given the leeway to apply it, if and where it makes sense. But because there is no requirement to apply the social cost of carbon ... it’s applied inconsistently or not at all.”

Some former senior Obama adminis-

tration officials have advocated introducing new fees on federal coal: “The price for taxpayer-owned coal should reflect, in some measure, the added costs associated with the impacts of greenhouse gas emissions,” former Deputy Interior Secretary David Hayes and Harvard University professor of economics James Stock, a former member of the president’s Council of Economic Advisers, opined in *The New York Times* in March. In the June speech that launched her presidential campaign, former Secretary of State Hillary Clinton spoke of plans to charge new fees for fossil fuels, protect miners’ pensions and create economic opportunities as coal jobs disappear.

Abbey suggests that the administration’s failure to align the coal program with the president’s climate agenda ultimately comes down to economics and politics: “They can say all the right things in public relative to climate change and the need to reduce dependency on fossil fuels. They’re also realizing those sources of energy are very, very important to our nation’s treasury.”

Over the last 10 years, the federal coal program raised \$12 billion in royalties and other payments. About half of that went to the states where the mines are located, where it is used for schools and other local priorities. Industry also sways policy: Coal companies spend millions backing candidates, primarily Republicans, in every election, peaking with \$15 million in the 2012 election cycle, according to the Center for Responsive Politics. They also spend millions more every year lobbying Congress — \$17 million in 2012.

Early in the Obama administration, it looked like Congress might pass a cap-and-trade law to rein in greenhouse gas emissions nationwide. But Republicans nixed that when they took back the House in 2010. Obama vowed to use his executive authority instead. But court challenges and fervent congressional opposition threaten his biggest initiative, the Clean Power Plan. “I will tell you this: The fossil fuel industry is very powerful in this nation and throughout the world,” Abbey says. “I think it’s an indication that it’s going to require a different type of leadership for us to get to where we need to be.”

IN AUGUST, THE INTERIOR DEPARTMENT holds a listening session on the coal program in Gillette, the heart of the nation’s biggest coalfield, the Powder River Basin. As a measure of how important federal coal is to Wyoming, the state’s entire U.S. congressional delegation plus its governor gather in a local auditorium. Jeremy Nichols is here, too, deep in hostile territory, sitting about halfway back and listening intently.

At other listening sessions — in Montana, New Mexico, Colorado and Washington, D.C. — people have urged federal officials to raise royalty rates and give Americans their “fair share” from

publicly owned coal, which they argue is underpriced. Companies pay 12.5 percent on what they sell out of the mine — the same percentage the government gets from oil and natural gas on federal land, and far lower than what most states receive for fossil fuels on state land. Critics charge that in too many cases the coal is sold first to affiliated middlemen, who resell or export it at higher prices, thus shortchanging the government and the taxpayers. New leases are often next to existing mines, so typically just one company bids, keeping the price low. Many advocate raising royalties enough to reflect the true toll of emissions, including worsening droughts, forest fires, natural disasters, flooding and heat waves — a price high enough to keep fuels in the ground.

But in Gillette, almost everyone passionately defends the coal program. One after another, politicians, miners, school officials and locals beg Interior not to increase royalty rates or otherwise curtail it. Nichols is one of the few environmentalists present. His mission is part outreach and part opposition research. He wants to understand coal communities so he can defuse the political backlash that threatens to thwart his objective. “There are people behind what’s happening here, not that we lose sight of that, but it’s important (for me) to be exposed to that,” he says. “It helps us in trying to figure out how do we sell a keep-it-in-the-ground message in a way that acknowledges the humanity that is affected. That’s a challenge, and the only way you can do it is if you’re genuine about actually listening to people.”

People like Penny Russell, 46, who drives a huge coal truck. “The truly sad part is a large portion of us will lose everything for no valid reason,” she says. Russell earns triple what she made in retail before starting at Cloud Peak’s Cordero Rojo Mine a decade ago, enough to help her extended family. “We don’t want to be forced onto welfare in Gillette. We want to work and pay our way through life without asking for government assistance.” Nichols, however, remains unapologetic. He’s motivated by his concern about the many ways global warming could disrupt the lives of his own children and everybody else’s.

Outside, coal companies stage a rally in opposition to the Clean Power Plan, environmentalists’ lawsuits and proposals to raise royalties. Richard Reavey, a vice president of Cloud Peak Energy, which mines federal coal in Wyoming, says the war on coal is about “crybaby billionaires” — major donors to environmentalist causes — getting Democratic politicians to protect their investments in renewable energy since they can’t get Congress to pass a climate change law.

Although Nichols’ battle began as a lonely effort, the broader environmental movement has started to join him. “Over the last two years, you’ve got a lot of groups that have started to engage on the

“We don’t want to be forced onto welfare in Gillette. We want to work and pay our way through life without asking for government assistance.”

*—Penny Russell,
Powder River Basin
coal mine worker*



A dragline excavator piles coal in the Black Thunder Mine — which sold more than 100 million tons of coal in 2014 — in Wyoming's Powder River Basin. EVAN ANDERMAN

supply side of the climate fight,” says Nathaniel Shoaff, a Sierra Club lawyer and occasional partner with Nichols in lawsuits against the federal coal program.

Microsoft-cofounder and philanthropist Paul Allen bankrolled a lawsuit in November 2014, challenging the Interior Department to assess the cumulative climate effects of the entire federal coal program. In late August, the U.S. District Court for the District of Columbia sided with the administration and dismissed the case. But the plaintiffs, Western Organization of Resource Councils and Friends of the Earth, filed an appeal.

In August, Nichols lost what was arguably his biggest case. WildEarth Guardians and the Sierra Club had challenged big lease sales at the Black Thunder and North Antelope Rochelle mines, both in Wyoming's Powder River Basin. The Obama administration argued that even such massive leases would have no significant impact on the climate, and the judge, a Reagan appointee, agreed. Meanwhile, the BLM's Buffalo field office authorized the leasing and mining of 10 billion tons of coal from the Powder River Basin over the next two decades without weighing the costs of the pollution that would result, or considering options that would keep some of that coal in the ground. BLM officials say their decisions are justified by their court wins and the importance of federal coal, especially to

Wyoming, where it brings in several hundred million dollars in revenue a year, a large portion of the state budget. “It’s a very large monetary issue for the state of Wyoming,” says Duane Spencer, who manages the BLM's Buffalo field office.

But Nichols remains undaunted. This fall, he and other groups won a case involving a large surface mine in Montana, when U.S. District Court Judge Dana L. Christensen ruled that Interior failed to consider environmental impacts when it OK'd mining. Nichols and the Sierra Club appealed the Wyoming ruling, and he's optimistic about an ongoing case in New Mexico. His group also challenged another mine expansion, this one in Utah, and filed a sweeping case targeting mines in Wyoming, Colorado and New Mexico and accusing the federal government of violating the law by failing to consider their cumulative climate change impact. “We’re in the courtroom, we’re scrapping it up and being adversarial,” he says. He's convinced that if the federal government is forced to scrutinize the true environmental costs, it inevitably will conclude that mining the public's coal is not in the public interest.

That is unlikely under the current regime, however. Jewell told reporters this fall that the administration may rewrite rules to give Americans a bigger take from the coal program. But she won't add a price to federal coal to reflect climate

change, nor will she keep federal fossil fuels in the ground. “There are millions of jobs around the country that are dependent on these industries, and you can't just cut it off overnight and expect to have an economy that is in fact the leader in the world,” Jewell said at a *Christian Science Monitor* breakfast in Washington. “It oversimplifies a very complex situation to suggest one could simply cut off leasing or drilling on public lands and solve the issue of climate change.”

In late September, Nichols took a rare trip to Washington to rally with activists from Greenpeace, Friends of the Earth, 350.org and other groups outside the White House. They delivered a letter for Obama, signed by scores of organizations, which called on him to keep federal fossil fuels on the ground.

I met Nichols in a park outside the Interior Department headquarters. He had just come from a meeting with senior Interior officials and was still wearing a suit. He said little about the meeting, but was clearly elated that his once-lonely crusade had attracted support and given him entrée into the halls of power in Washington. “The Interior Department has finally acknowledged, OK, something needs to be fixed here,” Nichols said. “We have a window of opportunity to get something that's pretty big — something that puts the federal coal program on the path towards keeping it in the ground.” □



Correspondent Elizabeth Shogren writes *HCN's* DC Dispatches from Washington. @ShogrenE

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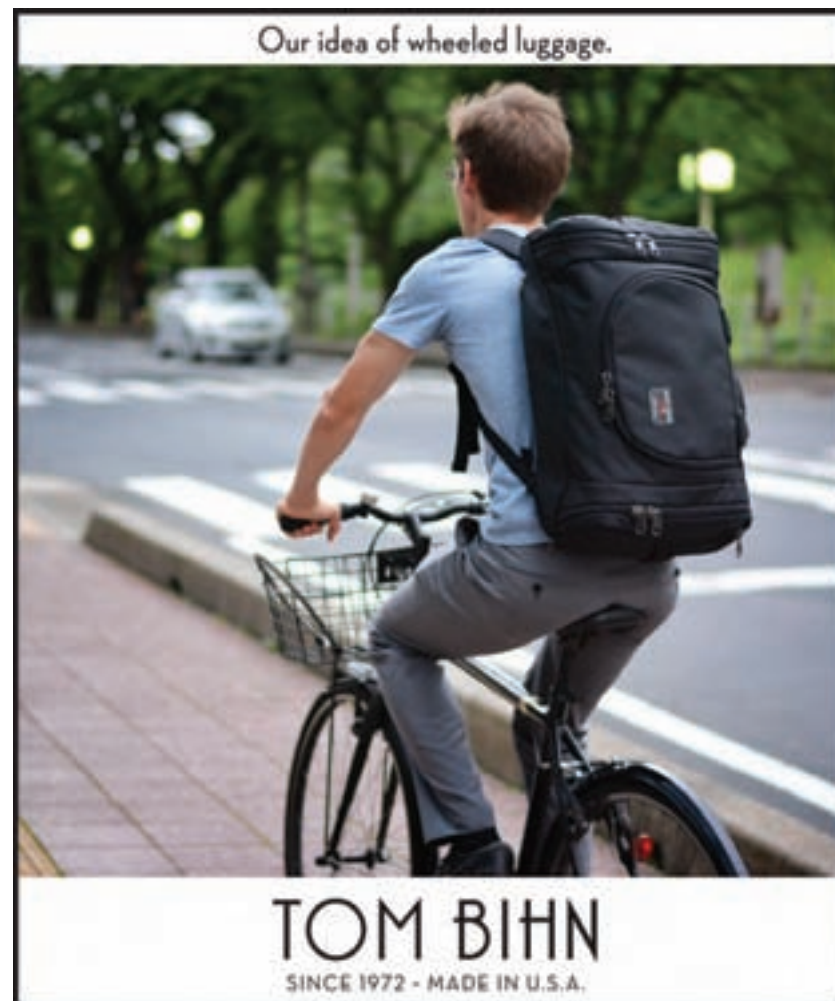


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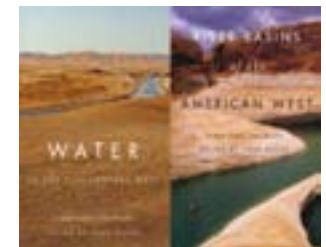


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the BLM had initially resisted undertaking a master leasing plan. Now, however, those areas have completed plans or have begun processes for them. And even though conservationists feel some plans don't go far enough, progress has been made toward resolving conflicts. Thanks to the protections laid out in one Colorado master leasing plan adjacent to Dinosaur National Monument, for example, some regional and national environmental groups aren't fighting BLM's allowance for 15,000 new wells in that region, Culver says.

Meanwhile, "lease sales have generally been more thoughtful," says Steve Bloch, Southern Utah Wilderness Alliance legal director. Indeed, the number of leases offered nationwide has dropped by half since 2008. The recession has something to do with that, but the proportion of leases protested has fallen steadily too, from 41 percent in 2010, to less than 20 percent in 2014.

Landscape-level planning takes time, says former Interior Deputy Secretary David Hayes: "You have to walk before you run. And (master leasing plans) are moving at a nice walking pace here." Abbey, however, admits disappointment: "None of us anticipated the amount of time it would take the agency to complete."

Moab's plan has moved particularly slowly because it's among the most complex, tackling mining for potash, a potassium fertilizer, as well as oil and gas. The agency also included a substantial extra step in the public process, collecting feedback on a suite of possible approaches before creating the draft plan. An independent stakeholder group provided additional support, outreach and feedback.

The resulting draft plan's preferred path forward increases protections over the entire area, closes unleased BLM lands near Arches and Canyonlands to mineral development, and creates buffers around popular climbing and canyoneering areas, trails, cultural sites, popular filming locations, viewpoints and access roads. Still, conservationists worry that it gives managers too much leeway to waive some protections, and that it doesn't adequately safeguard a popular stretch of the Green River that winds through Labyrinth Canyon.

Companies and trade associations, meanwhile, dismiss the argument that leasing plans provide more certainty. The regulations are redundant, argues Fidelity's Tim Rasmussen: "We think (the Moab plan) penalizes energy development without considering the socio-economic benefits that it brings to the area." It's also unclear how far the BLM will go in imposing the new pro-

tections on existing leases when companies apply for drilling permits.

But the benefits of the intensive public process are clear. The Moab City Council has endorsed the plan. And after three incumbents were swept from the Grand County Council last fall, that body withdrew its request for the BLM to leave things as they are, though it hasn't commented on the new plan. Even Utah may be softening. In 2013, it hired Brad Peterson to be its first director of outdoor recreation, giving that industry a much stronger voice in state government. "So far, my general take is that support for the (Moab plan) is tentatively growing," Peterson says. As the state's powerhouse recreation economy expands, "people are starting to understand what the benefits would be in the future."

One of those benefits is increased local input on leasing decisions, which could help them stick regardless of who's in the White House. Even the growing movement among conservative states to take over federal lands is about wanting local control over management, Peterson points out. "The master leasing plan in South Park was proposed by the county with the backing of three Republican commissioners," adds Culver. "Once you let people see that they have a voice, it's very hard to take it away." □

Beavers, continued from page 7

its release. Still, the Methow crew has established families in 39 places using 329 beavers — less than nine per location, well below half of McKinstry's ratio. Methow workshops have become a rite of passage for beaver traffickers: The week after my visit, Woodruff hosted scientists from six states.

The day before Sandy and Chomper's scheduled release, Woodruff drives up dirt roads to McFarland Creek. Two furry engineers, released just last spring, have erected a dam here that would impress the Bureau of Reclamation: half the length of a city block, solid as a brick wall, dogwoods sprouting from its ramparts. Downed aspen clogs the swamp; the funk of decomposition fills the air. The fly-fisherman in me is horrified.

Still, life is thriving. Woodruff cups his ear to the chatter of a Swainson's thrush, a warbling vireo, a song sparrow. Moose, frogs and salamanders haunt nearby ponds. "Places like this, where things are dying and growing, are where the wetland machinery is functioning," Woodruff says, pointing out bear tracks. By that logic, many iconic trout streams — fast, pellucid, narrow — are relics of Europe's 19th century hat fetish.

Restoring historic landscapes could hedge against a modern problem: climate change. Last winter, the Cascades' precipitation fell as rain rather than snow, instigating a water-storage shortfall that left farmers and salmon parched. "Hundreds of billions of gallons come from those snowpack faucets, but the reservoir is going dry," Woodruff says. "How can we capture that water? The propagandist in me says: I know."

Still, beaver fever has spread slowly. Oregon classifies beavers as predators, the same despised category as coyotes, when they're found on private land. California unofficially denies they're native to the Bay Area and Southern California, despite evidence to the contrary. In 2012, even Washington prohibited moving beavers from the state's

rural eastern half to its densely settled west. The message: Keep the pests away from people.

Relocate a beaver to an unfriendly area, warns Joe Cannon, beaver project leader at the Lands Council, a Spokane-based nonprofit, and you likely doom it. "There's still cultural fear," Cannon says. "I hear the word 'infestation' sometimes, like they're rats."

Back in the Methow Valley, Woodruff's team has reached Bear Creek, Sandy and Chomper's prospective home. A blue haze from Canadian wildfires blankets the basin. Woodruff warns Means not to park on dry grass, lest the sizzling muffler ignite a blaze.

Fire is never far from the crew's mind. In 2014, the Carlton Complex tore through this spot, charring lodgepoles that cling to the draw. Yet the inferno regenerated ecosystems, too. Today, aspen shoots line Bear Creek, providing prime beaver food. In turn, Woodruff hopes the creatures will quell fire by dampening meadows and drowning flammable understory.

First, Sandy and Chomper have to settle in. The humans — Woodruff, Rohrer, Means, Weber,

and biologists Julie Nelson and Torre Stockard — slap aside thimbleberry as they hike upstream, totting the beavers like royalty in metal palanquins. Eventually they reach the final ingredient in Woodruff's recipe: a human-built lodge. The structure will shield the beavers from predators until the immigrants construct a permanent home.

"You don't know how it's gonna go until they're in there," Weber worries as the team lowers the cages. "When you come back and see them nearby, you get teary-eyed." The beavers waddle into the fort — smelly meat packages already yearning to reshape their environment. *Homo sapiens* and *Castor canadensis*, it occurs to me, have much in common. We hear squeals inside the lodge. Woodruff optimistically interprets them as delight.

"The Methow Valley has 15 to 20 percent of its historic beaver population," Woodruff estimates as his muddy crew hikes back through the aspen. Returning to 100 percent is impossible — the region is too altered, the resistance too fierce. But even 40 percent will reshape the land. "We're not smart enough to know what a fully functional ecosystem looks like," he says, wiping his brow. "But they are." □



A beaver in the holding ponds at the Methow Valley Beaver Project, where it will stay until it's relocated back into the wild.

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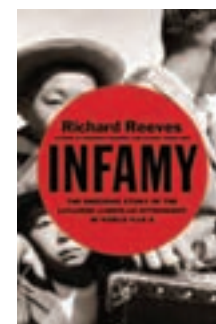
Supreme Court justice Earl Warren, generals and other prominent officials.

Reeves was inspired to write *Infamy*, he explains in the introduction, after he drove through a desolate area of the high desert in Southern California and passed a sign that read, “Manzanar War Relocation Center.” This relic of the past haunted him: “I finally decided to write this book when I saw that my country, not for the first time, began turning on immigrants, blaming them for the troubles of the day.”

Xenophobia reigned then much as it did after the 9/11 terrorist attacks. Horrific scenes in California, Oregon, Washington and Arizona mirrored events in Nazi Germany: FBI agents barged into private homes, and soldiers herded Japanese Americans into railroad cars bound for 10 relocation centers located primarily in the West, ranging from Heart Mountain in Wyoming and Topaz in Utah to Amache in Colorado, Gila River in Arizona, and Minidoka in Idaho. Barbed wire and machine gun-toting guards kept them imprisoned until the war was almost over. More than 1,800 died in the camps.

The epilogue notes that, almost 50 years later, the U.S. government paid \$1.2 billion in reparations to the survivors. “The money was a pittance compared to the billions in 2014 dollars American Japanese had lost, but in the end, it was not about money,” Reeves concludes. “It was about getting a formal apology from the government for stealing liberty and the pursuit of happiness.”

BY ERIC SANDSTROM



Infamy: The Shocking Story of the Japanese American Internment in World War II
Richard Reeves
368 pages, hardcover:
\$32.
Henry Holt and Co.,
2015.

The Greatest Generation at its worst

In his heartbreaking new book, *Infamy: The Shocking Story of the Japanese American Internment in World War II*, California writer Richard Reeves reminds us that wars have a frightening tendency to spawn racial prejudice. The incarceration of 120,000 Japanese Americans has been relegated to a footnote in U.S. history for 70 years. *Infamy* is a not-so-gentle reminder of that tragedy.

Backed by a daunting wealth of research, Reeves documents the systemic racism behind internment, the military and political leaders who launched it, and the massive toll it took on immigrants

and their children in the wake of the Dec. 7, 1941, Japanese attack on Pearl Harbor.

“Soon after Pearl Harbor,” Reeves writes, “Caucasian shopkeepers joined the farmers in outspoken hatred, with signs saying ‘This restaurant poisons both rats and Japs’ and ‘Open hunting season for Japs.’”

Infamy generally portrays first-generation Japanese Americans and their immigrant parents as patriotic U.S. citizens who happened to have the “wrong” physical features. The campaign to evacuate them from the West Coast was led by President Franklin D. Roosevelt, future

Knock-out punch

Each chapter of Colorado writer Erika Krouse’s sharp, fresh debut novel of love, street fighting and deep-rooted disaffection begins with a brief parable from martial arts lore or Asian folk traditions. In one, a squirrel tells a bird that he knows 15 ways to escape a fox. The bird, however, knows only one way: He flies. When a fox appears, “The fox’s jaws closed on the squirrel as it was trying to decide which of the 15 things it should do. The bird had already flown away.”

Krouse’s protagonist, Nina Black, is a woman who knows one thing, and that is fighting. As a teenager in Grand Junction, Colorado, she escaped an abusive father when she began to get serious training in martial arts from a gifted Vietnam veteran.

Now in her late 20s, having left her family with no forwarding address, Nina

leads an isolated existence in a rundown apartment off Colfax in Denver, earning a precarious living by going to bars, approaching men she suspects are cads, and then, when they make a move on her, beating them up and stealing their wallets. “Nina thought of herself as a kind of pool shark,” Krouse writes, “except she didn’t play pool. ... She was an enforcement officer, collecting small fines from men who violated the social contract.”

Nina’s secret collection of purloined wallets is nearing a hundred when she beats up a steroid-fueled man named Cage — a crooked cop who was once a mixed martial arts champion. She ends up not only with his money, but also with his badge, and he responds by beginning to pursue her in a seriously menacing way. All this happens just as her childhood crush, Isaac, turns up in Denver

with the 8-year-old orphaned niece Nina never knew she had, the daughter of her dead twin brother.

Isaac is a successful actor in commercials who is as well-meaning as Nina is dangerous and as responsible as she is unreliable. Still, love begins to grow between the three members of this off-kilter family, just as Cage threatens to destroy Nina for good.

With its tough one-woman-fighting-machine protagonist and its radical upheaval of expected gender roles, *Contenders* veers far from standard patterns and continually surprises the reader. Krouse’s wit, erudition and precise language make *Contenders* a pleasure to read even when it achieves K.O.-stark darkness before — finally — lifting its head toward the light.

BY JENNY SHANK



Contenders
Erika Krouse
328 pages,
softcover: \$15.95.
Rare Bird, 2015.

Back to the basics

An ode to germs, guts and gardens

“We might say that the earth has the spirit of growth; that its flesh is the soil.”

— Leonardo da Vinci

The location is beautiful and the soil sucks. I live below the first buckle of foothills of Colorado’s Rocky Mountains, waves of mountains to the west and grasslands in all other directions. The only problem? The dirt is as bad as the view is good. Instead of the deep brown rich soil that other locations on the planet naturally enjoy, this stuff is composed of sand and clay. But even worse, underneath the thin top layer of soil that supports all the glorious grama and bluestem and sage is, well, rock. Rock and more rock.

It’s good that the view is so inspirational, because it’s given me patience during the 10 years I’ve spent trying to foster soil that was gardenable. Like many people, I’ve been busy and harried, but I also had a vague but purposeful plan: Building soil that would foster vegetables, vegetables that would foster good health.

More or less, this all worked in a haphazard way. Despite the weeds, the drip-irrigation system that got pulled all over the place by the dog, and the persistent plentiful deer, there was, in fact, a nice crop of veggies.

But then catastrophe struck. It struck in the way that catastrophe often does: in a series of unrelated chaotic events. My particular calamities involved a septic tank, a bulldozer, an infected tooth and antibiotics. From the chaos of all that, I learned to sing songs of praise to microorganisms, both in my garden and my gut.

It started with an ice storm, which froze the ground, which caused the septic tank to burble out foul-smelling contents in the middle of winter. The appropriate people were called; a new septic tank, they told me, would cost nearly \$10,000, and, more painfully, would need to be moved because of new regulations. The only place to put it, they added, was where the garden bed now sat.

After years of amending the soil, I found that news disturbing, but then, *voilà!* I had the excellent idea to ask the gentlemen to save this stuff; they could scrape and bulldoze it to the side or something, right?

But no. Alas.

The crew came while I was gone on a short errand, and before I returned, my hard-earned soil was buried in a huge pit many feet below the surface of the ground. I stood on top of the rocky “parent material,” as it is called, and stared down at it, as if my vision might penetrate and bring up the dark good soil below. The stuff below me had no organic material, no nothing. The chickens, who had followed me out there, looked up at me. Then they looked down at the crappy soil, looked up at me again. Not even they liked this soil. No bugs in it — nothing really to do except take a dirt bath.

People who live in such areas will understand my sorrow. All those pickup loads of manure, compost, even gently relocating worms from the street in the hope they would loosen the com-

pacted soil (and because I felt sorry for them). All that again?

But I didn’t have time to grieve, because I also had an aching face. Soon after, and yes, nearly \$10,000 later, the correct two teeth had been identified, root-canaled, infected, my gums cut and stitched, infection again, a perforated sinus cavity, gums cut and stitched again, and then finally pulled. Which required round after round of antibiotics. Which caused my stomach to hurt, because my good microorganisms had been killed, too.

My guts were as barren as the dirt outside.

When things look bad, I figure, a person can check out, or she can stand defiantly and shake her fist at the skies. I opted for the second. Fixing these two problems — the barren garden dirt, the barren guts — became related, not only in the sequence of time, but in the very core of the way they functioned. Indeed, soil fertility and human health are directly related; the word “human,” after all, is related to “humus,” meaning “earth or soil.”

Humans are just beginning to understand exactly what that means — both the human gut and the layer of dirt are somewhat unexplored territory. There are 100 trillion bacterial cells in a human body, 10 times the number of human cells — on a DNA level, at least, we are more microbial than human. There are 100 million to 1 billion bacterial cells in one teaspoon of healthy soil, which makes me think Leonardo da Vinci had it about right: “We know more about the movement of celestial bodies than about the soil underfoot.”

There’s been a paradigm shift of late, wherein the terms “microbiology” and “neuroscience,” formerly two disciplines that rarely came into contact, are almost colliding headlong in the same sentences. Recent science suggests that several health problems may be related to a disruption in this relationship between bodies and the microbial symbionts with whom we co-evolved. Like garden dirt, our guts need microorganisms — but due to our farming and eating and kitchen practices, we aren’t getting that good broad spectrum of bacteria anymore. And that, ultimately, is related to dirt.

So I turned my attention to the soil. As someone who is always a little too busy, and a little haphazard, I have never quite known what exactly I am supposed to be doing to my garden dirt. But I do have the vague sense that garden dirt is supposed to be dark and full of organic matter, and I also believe that perfectionism is dangerous, and that it’s best to stick to the general idea, which is this: Stewarding good soil is one of those good things to do; fostering humus is fostering humanity. The more humus, the more fertile the soil is. Indeed, humus is the most critical aspect of soil composition, and humus is not what I had.

So I started over again: Food scraps out to the compost bin, manure brought in, the chickens let loose to scratch and scat. Slowly, over the course of winter, and into spring, things started



to decay. By spring, that parent material looked at least semi-gardenable.

Meanwhile, I was trying to help amend the microorganisms in my guts, too. They do more than digest food; the little creatures in our digestive tract help our immune system and might even be responsible for our mood, stress and temperament. As acclaimed science writer Michael Pollan points out, when gut microbes from easygoing, adventurous mice were transplanted into the guts of anxious and timid mice, those mice became more adventurous. And it's the gut microbes in locusts that cause locusts to swarm — the microbes release chemical signals that cause locusts to physically change in shape and develop a radical new behavior. The expression “thinking with your gut” is truer than we thought.

I moved from Clindamycin to Z-Pak to others, but my teeth did not heal, and the seriousness of my predicament started to grow. My stomach really hurt as the microbes died. The scariest part was this: One course of antibiotics may bring shifts in the population of bacteria, but usually, the guts can recover. Several rounds of antibiotics, though, can change your gut forever.

So out went the sugar and processed foods, and in came foods with prebiotics and probiotics. I ate yogurt, garlic, lemon, beets, sauerkraut. And I went back out to the garden — I've always been an advocate of relaxing the sanitary regime in

homes, washing veggies less and spending more time in dirt and with animals, thereby deliberately increasing exposure to what Pollan calls the “great patina of life.”

In the end, the “great patina” solved both problems. And pretty quickly, too. Within a few months, the garden soil was better. Turns out, it's not so hard to parent the parent material, after all. My health improved, too. For a mere \$20,000, I sometimes joke, I've had a crash course in the deep appreciation of the power of microbes to do their dance of health. I now feel it in my bones: We are from the soil and we'll go back to the soil. While here, we can work to steward both body and earth.

Lately, I've been standing in my garden and watching the sun set over the blue waves of foothills. The garden offered up plenty. The deer sometimes walk by, a bear leaves evidence of its wanderings, the golden retriever pounces at the occasional falling yellow cottonwood leaf, the chickens wander. All of it mixed together — the view, the garden, the body, the life — is a territory no longer hostile. A home. □

Laura Pritchett's most recent novel, Red Lightning, was just released. This essay is from an anthology entitled Dirt: A Love Story (University of New England Press), which was released this fall. See www.laurapritchett.com and www.dirtalovestory.com



Onions drying for storage, above. A woman prepares her garden beds with mulch, left.

BROOKE WARREN, TOP.
FRANCESCA YORKE/GETTY



HEARD AROUND THE WEST | BY BETSY MARSTON

MONTANA

Call him intellectually curious or just plain lost, but a black bear recently sauntered through the halls of Bozeman High School as easy as you please. An open garage door apparently beckoned, and the bear was first spotted in the cafeteria at 7:30 a.m. Video taken by foreign exchange student Leon Uebelhoeer showed the bear “strolling” down a hall of the high school, reports the *Bozeman Daily Chronicle*, with students gingerly keeping their distance. According to Bozeman police officer Rick Musson, who helped usher the bear back outside, “It was a nice, pretty black bear (and) didn’t show any sign of aggression.” No word on what classes the bear was interested in.

ALASKA

A quirky map provided by the Alaska Robotics Art Gallery assures tourists that “Juneau is a safe community and the locals are friendly so your chances of getting stabbed or shot are vanishingly slim.” But bears, it seems, are a dime a dozen, so the map offers this advice: “Running into bears is not uncommon. Don’t worry; you’re unlikely to be eaten. If you see a bear, don’t approach it, don’t feed it, and back away slowly.” One final bit of wisdom: “If you can’t find a place to drink in downtown Juneau, you’ve had too much already.”

WYOMING

The headline in the *Cody Enterprise* for the “All Camps Celebration” at Heart Mountain, where some 10,000 Japanese Americans were interned during World War II, was “Sadness, not bitterness.” Yet those interned had ample reason to resent what their government did to them, reported Janice Downey. One of the 250 people reuniting in late August at what is now the Heart Mountain Interpretive Center, for example, was Takashi Hoshizaki, a 1943 graduate of Heart Mountain High School. Hoshizaki was drafted in 1944 and would have joined about 5,000 other Japanese Americans in the war effort in Europe, had he and others from the camp not refused to go. But “I thought it was very un-



UTAH A rose by another name. TED MCGRATH

fair,” he recalled. “My parents were still behind barbed wire.” At the trial, his defense was as simple as it was futile: “Let our parents go home and get our constitutional rights back. Then I will gladly serve.” Hoshizaki was imprisoned for three years, though later on, in 1953, he served in the armed services during the Korean War, working in a highly classified position on biological and chemical warfare. The switch from being imprisoned to receiving top-secret clearance felt “absolutely crazy,” he recalled. In a welcoming talk to the group, former Wyoming Sen. Alan Simpson summed up our nation’s racist policies toward Japanese American citizens this way: “There was never a single case of espionage by a Japanese American during the whole war, so what a feckless exercise it was.”

IDAHO

Congratulations, Ilah Hickman, 14, for hanging in there for five years on behalf of the Idaho giant salamander. Lawmakers first killed a bill in committee that would have made the 12-or-more-inch-long critter the state amphibian, but later reconsidered, sending the bill on to the governor. Gov. “Butch” Otter was kind enough to include Hickman in the bill-signing ceremony, inviting her to sit behind his desk and joining in selfies with Hickman and her high school friends.

ARIZONA

In Nogales, Arizona, just over the border from Mexico, a smuggler made a big mistake Sept. 8. In the hour just before dawn, the drug runner’s pilotless drone or ultralight aircraft — no one knows for sure — released a 26-pound package of marijuana worth \$10,000 in the wrong place, dropping it on the carport of the house where Bill and Maya Donnelly and their three teenage daughters were sleeping. At first, they thought the thump was thunder, but later that morning Maya found a black-plastic-wrapped package in the smashed dog bed that — fortunately — had not been occupied by Hulk, the family German shepherd. Donnelly immediately called 911, a decision her friends later teased her about, reports the *Nogales International* newspaper. “That’s what everybody says: ‘Why did you call 911?’ But how can you have a clear conscience, right?” Nogales Police Chief Derek Arnson said it was the first time in three years that he’d heard of a load of drugs hitting a building: “Someone definitely made a mistake,” he said, “and who knows what the outcome of that mistake might be for them?”

IDAHO

Talk about lucky! The unidentified pilot of a single engine plane that “stopped working” flopped down without wheels on a major interstate through Boise right as rush-hour traffic began, reports the *Jackson Hole News&Guide*. The pilot had plenty of fuel but somehow forgot to switch to a second tank, and this shut down the engine of the Cessna T210K. The forced landing at 7 a.m. in the dark ended with only minor damage to the plane’s propeller, and not a single hapless commuter drove a vehicle into the plane.

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](https://www.instagram.com/heardaroundthewest) on Instagram.



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“ Perhaps these are decent reasons to carry a gun. While it’s rare, wild animals do attack people. **But I think he should leave the hardware home and take his chances on the trail.** ”

Elliot Silberberg, in his essay, “Love your neighbors, man or beast,” from *Writers on the Range*, hcn.org/wotr