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High Country News
For people who care about the West

Little Big Bird

The greater sage grouse is at the center of the biggest experiment in the history of the Endangered Species Act. ... And the clock is ticking.

By Jodi Peterson

August 17, 2015 | $5 | Vol. 47 No. 14 | www.hcn.org

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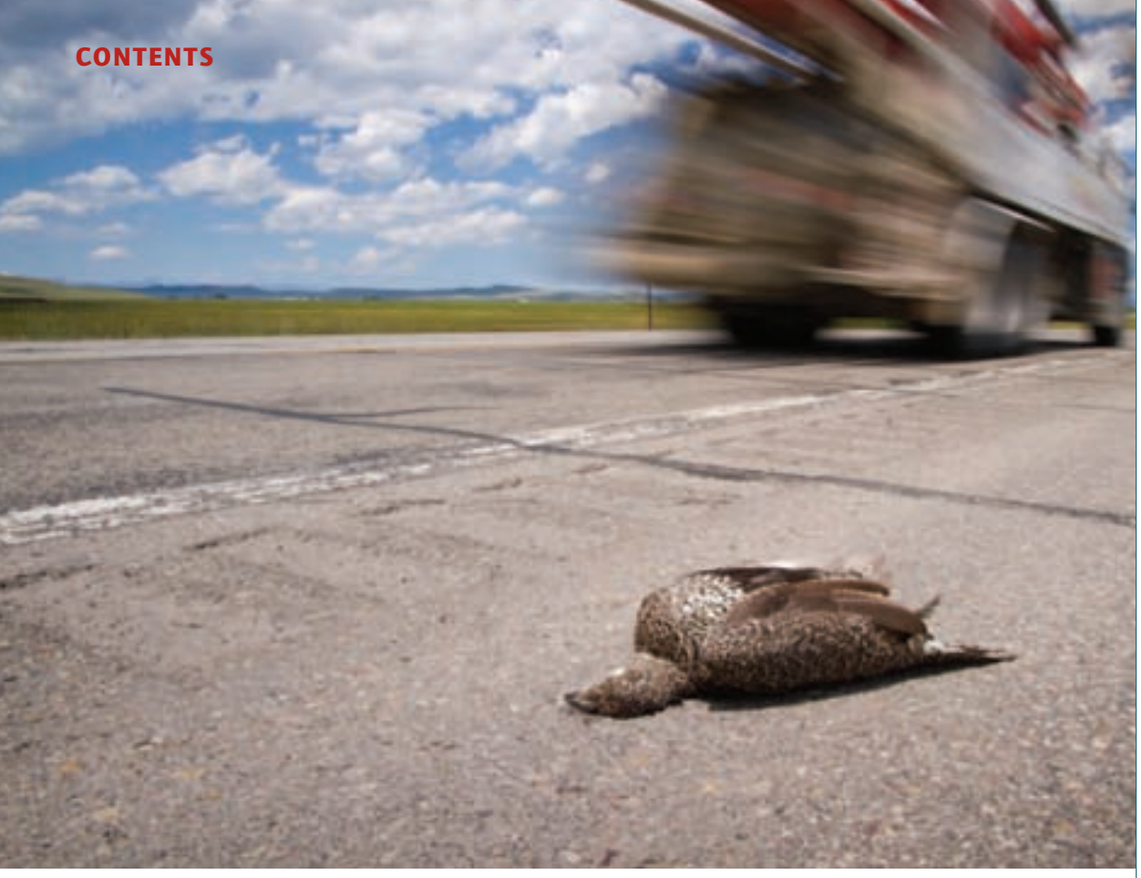

A sage grouse lies dead in the Jonah Field area of natural gas development in Wyoming. JEREMY R. ROBERTS/CONSERVATION MEDIA

On the cover

A male sage grouse displays at the Bluebank lek east of Worland, Wyoming.
DOUG DANCE
NATURE PHOTOGRAPHY

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Editor's note

The hammer that never fell

Twenty years ago, I got into an argument with a wildlife biologist over the Endangered Species Act. Environmentalists, he said, were abusing the law in their quest to create an ecologically pristine West devoid of loggers, ranchers and other salt-of-the-earth Westerners. By relentlessly pushing the federal government to protect ever more species and habitat, and then suing when they didn't get their way, they were paralyzing already-strapped federal agencies and alienating the green movement's natural allies — namely, the ranchers who control so much of the West's prime wildlife habitat.

I pointed out that without the law, and the environmentalists who were using it, logging companies would have razed the last remnants of ancient forests in the Pacific Northwest without a second thought, wiping out not only the northern spotted owl, but also a whole range of species that depend on that ecosystem. In the process, they would have destroyed the resource base of their own industry. The law, I argued, is necessary: How else can citizens put the brakes on ecologically mindless exploitation?

We never came to agreement, but a decade later, in 2002, the themes of our debate resonated in *High Country News*' first major story about "the next spotted owl," the greater sage grouse. From a scientific perspective, the finicky denizen of the West's rapidly declining "sagebrush sea" clearly qualified for federal protection. But a listing could mean new restrictions for energy companies and thousands of ranchers across 11 states.

Many predicted a political fiasco that would simply encourage Congress to gut the law, but 13 years later, as Senior Editor Jodi Peterson reports in this issue, something remarkable has happened: Instead of hunkering down for an endless legal battle, ranchers, biologists, land managers, environmentalists and even energy companies are working together to conserve and restore millions of acres of private and public lands for the bird — and by extension the ecosystem it depends on. The progress, led by far-sighted biologists and greased by millions of taxpayer dollars, has been so rapid and extensive that Interior Secretary Sally Jewell says her department will do everything in its power to not list the bird, whose status comes up for re-evaluation in September.

The U.S. Fish and Wildlife Service may eventually be forced to list if the grouse's numbers — now around 400,000 — continue to decline. But even if that happens, Peterson says, the work already done by the diverse stakeholders will serve as a solid foundation for any federal recovery plan. There should be few surprises, and less of a reason for the usual fear-mongering over-reactions.

That our nation's strongest environmental law might function better as a catalyst for ecosystem-wide conservation than as last-minute CPR for individual species is a development that I imagine my debater of yore would wholeheartedly embrace. It is surely a sign that the West is finally maturing.

–Paul Larmer, executive director/publisher

The Royal Dutch Shell-leased icebreaker *MSV Fennica* approaches the St. Johns Bridge in Portland, where climbers hang in an attempt to prevent the ship from passing on its way to deliver equipment critical for oil drilling in the Chukchi Sea, off the north coast of Alaska.
© STEVE DIPAOLA / GREENPEACE

Danglers vs. drillers

On July 31, dozens of kayaks and canoes gathered under a bridge on Portland, Oregon's Willamette River, to block the passage of a ship headed for oil drilling in the Arctic. The so-called "kayaktivists" were protesting the government's recent approval of Shell's plan to drill in the Chukchi Sea, where the risk of a spill remains high. Similar efforts are growing in the Pacific Northwest, an important transportation hub that coal, oil and gas must pass through to reach international markets. A few months ago, kayaktivists surrounded a Shell drilling rig in Seattle's Puget Sound. Still, admits one protester on the Willamette, "we can only fight them off for a day or two." After a 40-hour hold-up, the *MVS Fennica* made its way to the sea. **SARAH GILMAN** hcne.ws/ORshellno

$12 billion

Amount in coal royalties and revenues generated on federal lands over the past decade and split with states

$850 million

Amount taxpayers lost from 2008-2012, according to a new report, because federal royalty rates are below market value

At the first of five public sessions to discuss the future of the federal coal program, Interior Secretary Sally Jewell and other officials got an earful — mostly from its critics. A recent report found that current royalty rates shorted taxpayers, and many of the speakers called for higher rates. Several said the royalty rates should reflect the climate impacts of coal, which could make it too expensive to extract. Meanwhile, a bill introduced in the Senate could close loopholes that keep royalty rates low for companies. Four more listening sessions will take place, in Western cities from New Mexico to Montana. **ELIZABETH SHOGREN** hcne.ws/fed-coal

A flood of cars

In mid-July, an El Niño-fueled flash flood ripped down Tex Wash near Desert Center, California, wrecking a bridge and closing a section of I-10, the major artery linking Phoenix with Los Angeles. The closed stretch of road normally sees 25,000 or more cars per day, all of which were shuttled onto a five-hour detour. The trucking industry was hit hard, as were the freeway towns that have come to rely on passing travelers. Yet, surprisingly, the event didn't spur calls for more transportation options linking Western cities, such as rail lines or even new highways. **JONATHAN THOMPSON** hcne.ws/flood-lessons

Moving 12-month total of vehicle miles traveled in the U.S.

SOURCE: U.S. FEDERAL HIGHWAY ADMINISTRATION AND STLOUISFED.ORG. ICON: ANDREW SEARLES/THENOUNPROJECT

3%

Amount over a century by which carbon storage capacity could be reduced in Southwestern forests due to drought. "Three percent is not very much if it's five trees. It means something different if it's thousands of trees," says one forest ecologist. **CALLY CARSWELL** hcne.ws/dry-trees

Video

City cats

Are mountain lions becoming more habituated to humans? Or are they as aloof as ever? Colorado researchers are tracking the big cats to see how they're adapting as cities encroach further into their habitat. See the latest in the Wild Science video series, *Mountain Lions on Colorado's Front Range.* **DAKIN HENDERSON** hcne.ws/mtn-lions

DAKIN HENDERSON

"At night, they've come into town and maybe made a kill ... killed a raccoon or deer or something. They feed on it, then they slip back out to the open space."

—Mat Alldredge, Colorado Parks and Wildlife researcher

Trending

The 2015 fire season hasn't broken any all-time records – yet

This year's fire season has been an odd one: The Southwest has burned less than the Pacific Northwest, California and Alaska, and more than 82 percent of the total acreage burned has been in Alaska. The 2015 fire season started off with a bang. As of the first week in August, 40 fires over 100 acres in size were burning in Western states. But whether this year sets any national wildfire records will depend on how fires unfold this fall. **BY GLORIA DICKIE**

You say

DAVE DECKER: "CalFire has been pretty good at 'managing' fires in my neck of the woods, so far this year."

ANN SNYDER: "Southern Oregon is on fire again this year in forests that haven't burned often enough, nor been logged recently, so the fires are burning hotter, and with more people living out there, there are more people in danger."

HELEN NOWLIN: "Alaska's tundra is drying out, and quick!"

hcne.ws/2015fires and facebook.com/highcountrynews

Send letters to editor@hcn.org or
Editor, HCN, P.O. Box 1090, Paonia, CO 81428.

SELLING THE WEST

Your latest cover about the West being SHREDDED made me nauseous — not because of the vertigo-inducing image of bikers perched at cliff edge, but because it reminds me that enjoyment of Western public lands is becoming impossible (*HCN*, 7/20/15). Since my backpacking days are over, my solitude-seeking trips now tend to yield annoyance and irritation instead of joy. I gave up on places like Moab years ago, but now it seems everywhere, no matter how remote, suffers from too many people and machines.

I don't know how to make this sound less like another rant from another old grouch — maybe by pointing out the hypocrisy of media treatment. For every hand-wringing article or study about how to attract more kids to the backcountry and entice more people of all kinds to the parks, there is a story lamenting destruction of places that are being loved to death. We can't have it both ways.

I would like to see fewer programs and advertising to attract more people into the outback, such as Utah's "Mighty 5" program, which has overwhelmed already-crowded national parks. Those who deserve the wild will find it on their own, with a little initiative. Let's stop inciting herd-based industrial tourism and glamorizing adventure "sports." (Even colleges compete for applicants by pitching outdoor recreation. Look at the ads in *HCN*.) But the cat is out of the bag, and there is money to be made selling nature and adventure. I'm just glad I saw it when the going was good, and I didn't need a reservation or have to wait in line.

Dennis Slifer, aka "Slickrock Slim"
Lexington, Virginia

PAT BAGLEY/THE SALT LAKE TRIBUNE. CAGLECARTOONS.COM

A CULTURE OF PRIVILEGE

I wanted to give you feedback on the "Living the Dream" article (*HCN*, 7/20/15). When someone is profiled who only earns $1,800 a summer, it tells me: "This is someone who has a support structure in place to be able to live on that little money." It's someone who does not need to support other family members and does not have debt — conditions that do not apply to the vast majority of people in this country.

This reminds me how far we have to go to really recognize just how exclusive this culture can be. It's not intentional, but there are not many people — black, brown OR white — who can identify with the lifestyle and choices depicted in that article. By not recognizing that, you miss an opportunity to include more people in the dialogue — and maybe even turn people off.

I see that *HCN* has a diversity statement. That is great, and important. I challenge you to continually ask yourselves how the articles you publish — the framing, the assumptions, the conclusions — may perpetuate a culture that has traditionally excluded all but the most well-off, and white, Westerners.

Erin Uloth
Bellingham, Washington

ACKNOWLEDGING THE LAWBREAKERS

Sarah Tory's July 2 article, "End of the Trail Wars," ends with, "We reach an intersection where a big Forest Service alert sign warns us that the trail is closed except to pedestrian traffic. 'Rama' stops and looks around briefly, 'Well,' he says, a mischievous glint in his eyes, 'I can't resist.' " Why you choose to express recognition (bordering on praise) for "Rama," a "bandit" trail rider, is incomprehensible. He is choosing to invade on his mountain bike a pedestrian trail where he endangers hikers enjoying a peaceful walk. Writing this is a poor editorial choice. Please consider using your energy to acknowledge those who abide by the law and are creating legal, sustainable, popular trail systems.

Lee Rimel
Edwards, Colorado

NO ADS FOR THE AVERAGE READER

After I read the news in your July 20 special recreation issue, I read all the ads. They were about one-third of the print content. What's in the ads for me? I'm 20 years over the 55.6 median age of readers, make a little less than the median household income ($63,750), and my M.A. makes me well-educated. I own a 12-year-old SUV, camping supplies and clothes (albeit raggedy), and an abiding love of cheap adventures in the empty wild lands. These ads were mostly for the young and wealthy. They could get expensive environmental educations or travel with high-priced eco-tours to well-known and loved places (like wolf-watching at Yellowstone). The only cheap tour I found was for free day trips if I joined IdahoConservation.org. Unfortunately, I live in Oregon.

Diane Sward Rapaport
Burns, Oregon

STANDING UP FOR REGULATIONS

Reading the special recreation edition, a theme came through to me: It is understandable and even honorable to push the envelope, stretch the rules, and even break them now and then in the interests of pursuing the right to recreation. Whether biking, BASE jumping, skiing, etc., rules and restrictions are un-American, even when they exist to protect our wild places, and those who challenge them are maverick rogues. I had an eerie sense that somewhere there's a mirror-image publication written for the extraction industries and ranchers. There, regulations that protect our wild lands are to be challenged and dismantled because they are un-American and restrict corporate growth and profits. It's OK to frack anywhere, drill and lay pipelines, exterminate predators so that ranchers can run their livestock on public lands. Our wild places are under pressure on the one side by the profit motive, and on the other by the recreation urge.

Anthony Ricketts
Santa Fe, New Mexico

High Country News

High Country News is a nonprofit 501(c)(3) independent media organization that covers the issues that define the American West. Its mission is to inform and inspire people to act on behalf of the region's diverse natural and human communities.

(ISSN/0191/5657) is published bi-weekly, 22 times a year, by High Country News, 119 Grand Ave., Paonia, CO 81428. Periodicals, postage paid at Paonia, CO, and other post offices. POSTMASTER: Send address changes to High Country News, Box 1090, Paonia, CO 81428. Subscriptions to *HCN* are $37 a year, $47 for institutions: **800-905-1155 | hcn.org**

Printed on recycled paper.

To bee or not to bee

Beekeepers vs. invasive species rules on federal lands

BY GLORIA DICKIE

Paul Limbach checks one of his beehives in Colorado's White River National Forest, where he has been keeping bees since the 1970s.
GLORIA DICKIE; BEE CLOSE-UP RGBSTOCK, CC VIA FLICKR

Every 10 days, Paul Limbach loads teetering beehives onto his white flatbed truck and follows dusty roads through the White River National Forest up to the alpine meadows of the sprawling Flat Tops Wilderness Area.

It's a long drive from his home in Silt, Colorado, but the Flat Tops are one of his favorite places to work. Here, rolling fields of purple lupine, yellow coneflowers and wild geranium abut thick aspen forests. In a good year, the days are just long enough to transform a honey trickle into a golden flow.

Limbach, a 68-year-old second-generation beekeeper, has been running bees in the Flat Tops since the early 1970s, when a Forest Service friend let him stack a few experimental hives in exchange for a jar of honey. Since then, he's expanded to six locations in the White River, paying roughly $100 a year per location in permit fees. Though Limbach typically gets less than 30 pounds of honey here, his bees have been able to evade colony collapse disorder, the syndrome that has decimated hives nationwide.

Getting more bees into such pristine habitat is a central part of the Obama administration's new pollinator strategy, released this past May, which promotes beekeeping on federal land as a means to help the honeybee. For the growing number of local hobbyists as well as the shrinking number of commercial keepers, this could be a sweet deal after years of wading through bureaucratic miasma to get a permit. But there's just one problem: Honeybees, or *Apis mellifera*, aren't native to the United States. That means they're subject to federal invasive species rules, which could take precedence over the pollinator strategy.

Prior to the new plan, getting a permit to place hives on federal land was lengthy, frustrating and costly. Limbach is the only national forest permittee in his state; he was grandfathered in when beekeeping rules were formalized in White River in 1979. There are just 126 active permits on Western national forests, 102 of them in California, and 63 authorized permits on BLM land in the West. Those numbers could increase under the new strategy — good news for the beleaguered and beloved honeybees, though perhaps not for native pollinators.

A growing body of research blames honeybees for transmitting diseases, such as deformed wing virus, to increasingly rare native bumblebees. Such pathogen transmission is compounded when bees are moved from stable summer sites to California's Central Valley, where beekeepers are paid for pollinating crops. Much like airplane travelers, the bees can easily pick up and transmit diseases to new colonies.

There's also speculation that under harsh environmental conditions, such as drought, honeybees will outcompete native bees.

"There is so much enthusiasm right now among wildlife conservation professionals," says Sarina Jepsen, endangered species program director at the Xerces Society, a native invertebrate conservation organization. "But honeybees are exotic; they're like livestock. You're not conserving wild colonies, and you may be doing damage."

But beekeepers argue other livestock, like cattle, do just as much damage to ecosystems — and they aren't barred from public lands.

Dov Sax, a researcher at Brown University who studies non-natives, says the line dividing natives from non-natives is fuzzy. Honeybees were imported from Africa and Europe in the 1600s for their utilitarian purpose, and have since spread across the continent, leading many people to believe they were always here.

"There are naturalized honeybees, and it's unclear whether they're invasive," Sax says. "But the ones managed in hives, I wouldn't call those invasive, I would call that domesticated."

Regardless of honeybees' status, with more and more beekeepers driven from pesticide-doused farmland, the demand to put hives on public lands is increasing, says Darren Cox, president of the American Honey Producers Association. Whether they'll be rebuffed by invasive species rules, or welcomed under the new strategy, will depend on individual environmental and infrastructure assessments.

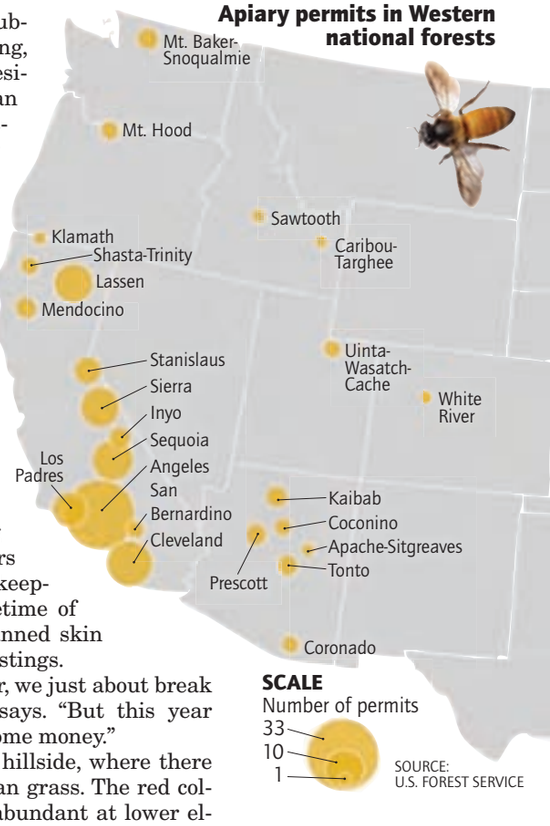
Up at 9,300 feet in the Flat Tops, Limbach is busy adding more hives to his teeming pallet piles. He wears a veil but not a beekeeping suit; after a lifetime of bee handling, his tanned skin is hardened against stings.

"In a normal year, we just about break even up here," he says. "But this year we're gonna make some money."

Bees swarm the hillside, where there are more flowers than grass. The red columbine flowers, so abundant at lower elevations, are largely absent here, however. Honeybees, Limbach noted earlier, can't see red.

"Between me and the livestock, we've probably changed the ecology up here a bit," he says. The cows that crowd the access road eat mostly grass, and the bees pollinate whatever remains. Pretty soon, you're walking through little more than a soft bed of petals.

"Whether that's a good or bad thing, I guess that depends who you are," Limbach adds as an afterthought. "But I don't think there are as many bumblebees as there used to be." □



Gloria Dickie is a *High Country News* intern. @GloriaDickie

WEB EXTRA
See a gallery of Gloria Dickie's photographs of beekeeping in the White River National Forest at **hcn.org**.

The Silicon Valley of marijuana?

Local officials want Pueblo County, Colorado, to be the best place to grow, but not everyone's high on the idea

BY JOEL WARNER

Mark Morley looks out over 30 acres he owns east of Pueblo, Colorado, and imagines the future. On this blustery May afternoon, there's little more than mud and puddles here, bordered by highway and railroad tracks and flanked by farm buildings and rolling hills. But by the end of September, if all goes well, he'll be looking at a pungent green thicket, as 14,400 marijuana plants reach their full 8-foot height. It's one of several major outdoor grows launching this summer in Pueblo County. Eventually, Morley plans to expand onto another 1,500 acres, investing in center-pivot irrigation, greenhouses and processing facilities able to handle 40,000 plants.

Morley, 55 and dressed in jeans, flannel shirt and a Tigers baseball cap, is a major Colorado Springs real estate developer. After a marijuana dispensary opened in one of his buildings, he realized how lucrative the business could be. "Why," he wondered, "am I not doing this myself?" If he planted corn on this land, each acre would require approximately 2.2 acre-feet of water per year and produce $768 in annual sales, according to Rachel Zancanella, a Pueblo-based Colorado Division of Water Resources engineer. That same acre planted with marijuana would require roughly 2.65 acre-feet of water — and gross Morley *$6 million*.

Welcome to the big business of rural weed. Ever since the local steel industry collapsed in the 1980s, Pueblo County has been seeking an economic savior. Nearly a third of its population is on public assistance, and in 2010, the metropolitan area around its eponymous city had the highest unemployment rate in the state. When Colorado voters passed Amendment 64 in 2012, paving the way for legalized marijuana, the county commissioners saw a chance for revival. They hired Brian Vicente, the Denver lawyer who helped write the ballot initiative, to craft rules for growing and selling pot outside city limits.

As a result, about 50 entities — including Morley — are now licensed or conditionally approved to do so in the county. "Historically, the biggest opponent of marijuana reform has been the government," Vicente says. "Here, the tables have turned. No one else in history has taken as comprehensive a look at establishing marijuana business laws." Pueblo County's economy, he adds, "has gone through the roof."

But the area's relationship with pot remains ambivalent. This is, after all, a place where irate voters recalled their state senator over new gun restrictions. Some worry that the county's latest growth industry is bringing social problems along with money, and others doubt whether the bold experiment will reap the promised rewards. "Up to the 1970s, Pueblo was known as 'P.U. Town' because of the steel mill," says Paula McPheeters, co-founder of Pueblo for Positive Impact, which opposes the county's pot-friendly laws. "Now we're getting known for that again, because of marijuana."

The city of Pueblo is sometimes called the "Pittsburgh of the West," and like its steel-town sister city back east, its glory years lie in the past. Call centers — one of the few active industries — dot its downtown area. Pueblo County Director of Economic Development Chris Markuson says that one of his predecessors used to drive potential business owners down the east side's crumbling streets and past crack houses and say enthusiastically, "*Look* at these people. They will work for anything!" — hoping that the promise of a cheap labor force would prove irresistible.

Amendment 64 gave local governments the power to decide whether and how to permit recreational pot within their communities. The Pueblo City Council, for example, banned recreational pot shops and grows within city limits. It reacted similarly when medical marijuana was legalized in 2000, placing a moratorium on dispensaries. The Colorado Marijuana Enforcement Division's 2014 annual report says that 228 local jurisdictions have voted to prohibit medical and retail marijuana operations.

Pueblo County, however, rolled out the welcome mat. "(Marijuana) stores don't require a lot of space, but indoor grow operations can," says Pueblo County Commissioner Terry Hart. "And Pueblo County got hit pretty hard in the recession, so we had a lot of empty commercial buildings throughout the county that realtors were trying desperately to fill." Like some other pot-friendly communities, the county made marijuana businesses a "use by right" in industrial and business districts — meaning they weren't subject to sometimes time-consuming and arduous special reviews or approvals by the local government.

But Pueblo County offered something beyond cheap real estate. Unlike Denver, it had an abundance of available agricultural land. So local officials made marijuana cultivation a use by right there, too — likely the first Colorado county to do so, according to Vicente and Joan Armstrong, Pueblo County's planning director.

The county has also issued pioneering rules that prohibit hemp grows with male plants from being located within five miles of existing marijuana grows. This prevents cross-pollination that could lower the marijuana plants' THC content while increasing THC in the hemp, which can't exceed 0.3 percent under state law.

Even the Pueblo Board of Water Works, the local utility that leases water for business and agricultural use, is trying to accommodate the industry. Last year, when the Bureau of Reclamation explicitly prohibited the use of federal water for pot cultivation, water board employees calculated that they could lease up to 800 acre-feet of raw water to marijuana cultivators without running afoul of the feds. "This was completely new territory for us," says resources manager Alan Ward, who notes 92 acre-feet of the so-called "marijuana" water was already under contract as of this May. "When Amendment 64 was first passed, I didn't put much thought into how it was going to affect my job. But for a few months, it seemed like it was nearly all I was focused on."

The new rules are more than paying for themselves: In 2014, the county netted $1.8 million from licensing fees for pot establishments and marijuana sales taxes, covering the cost of its virtual marijuana "department" and boosting its general fund. Since marijuana remains illegal at the federal level, most banks are still cagey about allowing pot businesses as customers; that means county staff have gotten used to owners plopping tens of thousands of dollars in cash on their desks. Markuson says charter buses filled with Wall Street investors have been touring local farmland, and there's talk of branding "Pueblo-grown pot," along the lines of Pueblo green chile, another celebrated local crop.

Real estate prices are rising, too. Industrial properties have nearly doubled in price to $50 per square foot just since 2014, says local realtor Kendall Curtis, and now that the first outdoor grows and greenhouses are materializing, agricultural land prices have doubled to up to

Charter buses filled with Wall Street investors have been touring local farmland, and there's talk of branding "Pueblo-grown pot," along the lines of Pueblo green chile, another celebrated local crop.

WEB EXTRA See photos from the past five years of pot in Washington state **hcne.ws/pot-pics**

Joel Warner writes from Denver, Colorado. @joelmwarner

$10,000 an acre. All in all, the Southern Colorado Growers Association, the local marijuana trade organization, claims the industry has provided 1,300 new jobs and contributed more than $120 million to the local economy.

The county is also hoping to attract marijuana testing labs and processing plants. "Pueblo could be the Silicon Valley of marijuana," says Markuson, the county's economic development director. He'd prefer that to becoming a Napa Valley clone: The county wants to export its products, not host busloads of marijuana tourists. Former growers association president Tommy Giodone is a Pueblo native, restaurateur and rodeo organizer who hosts an annual country music festival east of the city. He opened a dispensary nearby, but he doesn't smoke pot. "I'm 49 years old," he says. "Once they legalized it, I wasn't going to be like, 'Woo-hoo, I'm going to be a pothead.' "

The fact that Pueblo County wants to keep a fairly low profile hasn't appeased the industry's critics, though. Marijuana hearings are heated, county commissioners have received threatening phone calls, and growers worry that some zealot with a crop duster could devastate the outdoor harvest. "Our commissioners rushed headlong into this without consulting the county (residents)," complains Pueblo for Positive Impact's McPheeters. That allowed a glut of marijuana stores and indoor grows to spring up in Pueblo West, the unincorporated suburb where she lives.

The growth has come at a steep social cost, McPheeters and other critics say. Marijuana-related crimes, including the 2014 armed robbery of a marijuana shop, have increased, according to Undersheriff J.R. Hall. Meanwhile, local affordable housing organizations and shelters have been flooded with families who traveled here hoping to find jobs. In the first four months of 2015 alone, 306 households relocated to Pueblo because of marijuana, says Anne Stattleman, who directs a nonprofit housing assistance organization called Posada. "It is not easy to get a good-paying job in the pot industry," Stattleman says. "Many people can't pass the background checks and other checks needed."

And the problems could have repercussions far beyond Pueblo County. In February, a local couple filed a lawsuit in U.S. District Court, claiming that the pot grow next door devalued their property. It's one of two lawsuits aimed at striking down Colorado's system on the grounds that it conflicts with federal drug laws.

Even if the state laws stand, Pat Oglesby, a tax attorney who studies marijuana at the Center for New Revenue in North Carolina, isn't sure how much Pueblo's head start in the reefer race will ultimately pay off. A 2015 report he co-authored concluded that roughly 20,000 acres of pot would supply the entire U.S. market. "It sounds like they have a plan to really have a huge amount of supply while other jurisdictions aren't licensing any growers, so you could see the county gaining a short-term advantage and having a huge market share," says Oglesby. "Whether that is an advantage that can be kept over time, I don't know."

In the meantime, the tiny town of Boone, population 339, in eastern Pueblo County, seems grateful for the boost. Entrepreneurs Mark Morley and Jeff Ayotte, a food-plant developer originally from the East Coast, stop in Boone one afternoon for lunch after comparing notes on their developing grow operations. Ayotte bought a nearby 500-acre ranch, where he's spent $6.6 million installing the first of 16 cutting-edge, large-scale greenhouses that will require 150 employees. He already has several "Boonies," as he calls them, on his crew, and he's paying some of them to fix up the town's century-old Veterans of Foreign Wars building, where Morley and Ayotte dine on frozen pizzas and Dos Equis beers at the bar.

Yes, there's still a sign on the VFW's wall declaring a zero-tolerance policy for drug use, but bartender Edna Rivera doesn't flinch as the two pot barons brainstorm about recruiting Israeli cannabis researchers. As she wryly observes, between serving up rounds of beers, "If it makes money, I don't care." □

Left, Tammy White, 52, shows her son and his friend the products she bought at The Spot 420 in Pueblo West. They drove from Florida for the week so Tammy, who has chronic back pain from bone spurs, could buy and smoke pot legally. Below, Mark Morley takes a business call while on his land east of Pueblo, where he is starting an outdoor marijuana grow called Los Sueños. In the foreground, pot clones are ready to plant.
BROOKE WARREN

THE LATEST

Backstory

Resolution Copper has long had its eye on a huge copper deposit underneath Oak Flat, near Superior, Arizona, which had been protected by a 1955 executive order from President Dwight D. Eisenhower. In order to mine the deposit, **the company engineered a land swap with the federal government, which stalled in Congress, due in part to opposition from local activists and the nearby San Carlos Apache Tribe**, for whom Oak Flat is holy ground ("Reluctant Boomtown," *HCN*, 2/18/08).

Followup

In December, the land exchange was smuggled through Congress as part of the National Defense Authorization Act. In June, Rep. Raúl Grijalva, D-Ariz, introduced a bill that would repeal the land-exchange legislation. And in July, he joined members of the San Carlos Apache Tribe in a 2,000-mile protest journey to Capitol Hill in Washington, D.C. Grijalva's bill has little chance of passing, so **members of the tribe are now circulating a petition to get Oak Flat designated — and protected — as a national monument**.

PAIGE BLANKENBUEHLER

Apache Stronghold Rally in Washington, D.C., July 2015. ROBERT MEYERS/GREENPEACE

Birds hover as a sea lion eats a salmon near Bonneville Dam. THOMAS BOYD/THE OREGONIAN

Sea lions feast on Columbia salmon

Fishermen, tribes and environmentalists flummoxed as predator numbers swell below Bonneville Dam

BY BEN GOLDFARB

Rolling whitecaps thumped against the hull of the *CRITFC3* as Bobby Begay piloted the boat up the Columbia River on a breezy spring morning. Herons and cormorants skated against the blue sky. On the vessel's dashboard sat yellow binoculars, a bag of snickerdoodle cookies, and a carton of orange, finger-length explosives: seal bombs.

Begay, a boulder-sized fisheries technician at the Columbia River Inter-Tribal Fish Commission (CRITFC), swung the boat hard to port, where the black head of a sea lion bobbed near the river's Washington bank. Russell Jackson, a ponytailed technician wearing a Seahawks cap, hoisted a Remington .780 Marine Magnum 12-gauge shotgun and fired a few cacophonous rounds. Another crewman flipped a seal bomb over the starboard gunwale; moments later, the detonation resounded through the hull. The head vanished.

Begay idled the boat and stared downriver, waiting to see if the sea lion would resurface. "We're seeing a lot of new animals this year," he said. "It's like everyone brought a friend."

Though the animal surely disliked the rude treatment, it wasn't harmed. Jackson's shotgun was loaded not with bullets but with cracker shells — explosive projectiles that, like seal bombs, are designed merely to scare away critters. For years, CRITFC, the fish and wildlife agency that represents four Columbia River tribes, has been hazing sea lions away from Bonneville Dam, the hydroelectric dam closest to the ocean. The reason: to prevent the pinnipeds from devouring sturgeon, lamprey and threatened and endangered salmon surging upriver to spawn.

This year, that task was harder than ever, as unprecedented numbers of sea lions flooded into the Columbia. The influx reignited a smoldering debate: What happens when a protected marine mammal clashes with an endangered fish? Some regard sea lions as ravenous pests; others as scapegoats for the more serious problems afflicting salmon. But almost everyone agrees that they're symptoms of a degraded river, in which natural conditions have been distorted by human meddling.

For proof that conservation laws can work, look no further than *Zalophus californianus,* the California sea lion, which ranges from Mexico to Alaska. Though sea lions were hunted nearly to extinction for their hides and oil-rich blubber, in 1972 Congress passed the Marine Mammal Protection Act, sparking a dramatic recovery. These days, more than 300,000 roam U.S. waters — likely more than at any time in the last 10,000 years.

As sea lions rebounded, they began colonizing the lower Columbia River. In 2001, six sea lions appeared in the tailwaters of Bonneville Dam, 145 river miles inland, where homeward-bound salmon and steelhead congregate before

HCN correspondent Ben Goldfarb writes from Seattle. @ben_a_goldfarb

California sea lions lounge on the boat docks in Astoria's East Mooring Basin, Oregon. Thousands of sea lions congregate there in the spring. LYN TOPINKA/COLUMBIARIVERIMAGES.COM

ascending fish ladders. By 2004, around 100 were showing up each year. This year, food shortages off the California coast drove record numbers into the Columbia. In March, biologists counted 2,400 sea lions along the waterfront in Astoria, Oregon, near the river's mouth — 1,000 more than last year.

It's hard to say how many fish they consume. Biologists estimate sea lions eat about one in 25 returning spring chinook salmon at the dam, but predation throughout the entire river may be far higher. In 2010, NOAA biologist Michelle Wargo Rub began inserting trackable microchips into chinook at the Columbia's mouth to see how many passed the dam. In 2011 and '12, more than 80 percent reached the dam; but in 2014, only 55 percent did. Nearly half the run, in other words, disappeared. And while the evidence implicating *Z. californianus* is circumstantial, it's compelling: Fish that Wargo Rub tagged in March, when sea lions are abundant, vanished most frequently. After the mammals decamped for their California breeding grounds in May, salmon survival shot up.

To be sure, sea lions are far from the greatest threat to salmon: Dams, fishermen, habitat loss and invasive fish take a huge toll. Nonetheless, the pinnipeds pose a problem. "The estimate (of only 55 percent survival) might not be spot-on, but we're focusing on the trend," says Wargo Rub. "We're seeing lower survival at the same time that we're seeing more predators."

These days, the barking hordes are back in California, and Astoria's waterfront stands silent. But in a few short months, they'll be back — and we humans will face some tough decisions.

It's a rancorous debate. The federal government spends over $500 million on salmon recovery each year, and some fisheries managers fear that sea lion predation is impeding those efforts. Commercial and recreational fishermen, meanwhile, complain that sea lions steal their catch. The pinniped proliferation, worries Oregon Outdoor Council president Dominic Aiello, is "altering the balance of our natural resources."

Starting in 2008, NOAA permitted Oregon and Washington to trap and kill sea lions that continued eating fish at the dam. These days, the states are authorized to "remove" up to 92 repeat offenders — identified by brands seared into their skin — annually. Since 2008, the states have euthanized 85 California sea lions and sent another 15 off to captivity. According to Robin Brown, marine mammal program leader at the Oregon Department of Fish and Wildlife, the regimen has worked. "Every year after we started removal, the average number of California sea lions feeding at the dam went down," he says. "We were making headway" —until this year.

But the killing infuriates groups like the Sea Lion Defense Brigade, which watchdogs the government's pinniped activities on Facebook. To the mammal's defenders, lethal removal distracts from everything else that imperils fish.

"It's not that we don't care about salmon — it's *because* we care about salmon that we don't want this program to continue," says Sharon Young, marine issues field director for the Humane Society of the United States, which has repeatedly sued to stop the lethal campaign. "It's like the squirrel and the birdfeeder: You may kill the squirrel that's on the birdfeeder today, but you're crazy if you think some other squirrel's not going to replace it. You're just setting up a treadmill of death."

After my ride with Begay, I joined Doug Hatch, the biologist who heads CRITFC's sea lion program, at an overlook above Bonneville Dam. Two dozen glinting heads floated in the white churn. Every minute or two, a sea lion surfaced with a salmon clenched in its jaws, shaking its head violently to break the fish into manageable chunks.

I asked Hatch how well hazing works. He laughed. "Short answer: It doesn't," he said above the roar of the dam. "We're moving them downstream, but once we quit hazing they're coming right back. It's not the long-term solution."

Ultimately, the tribes, whose fishing rights give them a vested interest in salmon recovery, want more authority to remove sea lions. In January, congressmen from Washington and Oregon introduced a bill, now stalled, that would grant them that power. "We certainly don't advocate killing all the sea lions, but we need more management options," Hatch said.

Hatch and his colleagues can safely eliminate one prospective solution. In June, Astoria officials deployed a motorized artificial orca, dubbed "Fauxby Dick," to frighten the sea lions off the docks. The whale went belly-up. The sea lions didn't move.

The conflict, like many animal issues, seems mired in divergent views about what wildlife *is*. To many biologists, it's a resource — like, say, timber — and the goal is sustainable management on a grand scale. To the Defense Brigade, however, sea lions are charismatic fauna, possessed of liquid eyes, capable of breathtaking elegance, and deserving of individual rights, including the right to eat fish.

Yet both sides can agree on the problem's root: Bonneville Dam. By concentrating and disorienting salmon, the dam has created a canned hunt; the sea lions are simply behaving like human fishermen at a stocked pond. Of course, any species that flourishes in our novel ecosystems risks our wrath: Ravens that nest on transmission towers and eat sage grouse eggs get poisoned; coyotes that prey on livestock are shot. Several Columbia River sea lions have been assassinated by anonymous killers. The mammals are victims of their own success.

Back on the *CRITFC3*, Begay approached one final sea lion as it mauled a salmon, an oily sheen spreading in its wake. Jackson reached for his shotgun, but Begay told him to hold his fire. Visiting Sea World trainers had advised him not to haze sea lions while they ate.

"Let 'em eat this fish, and maybe they won't be hungry for the next one," Begay explained. He spun the boat upriver and the sea lion ducked beneath the Columbia, its belly full, for now. □

GARY O. GRIMM CC VIA FLICKR

The newly protected wilderness in central Idaho.

THE LATEST

Backstory

In 2004, Idaho Rep. Mike Simpson, R, introduced **a bill to protect nearly 300,000 acres of alpine terrain in Idaho's Boulder Mountains and White Cloud Peaks**. Simpson's wilderness proposal drew criticism from both sides; some thought it protected too little and others too much. Eventually, though, it gained the support of many conservationists, and at one point, Idaho's entire congressional delegation. Still, it languished, and when a particularly conservative Republican cohort took the U.S. House in 2010, its prospects dimmed again: The gridlocked 112th Congress was the first since 1966 to not designate any new wilderness ("Wilderness bills languish in legislative limbo," *HCN*, 3/5/12).

Followup

In early August, **Congress finally protected 275,000 acres** in the Boulder-White Clouds, nudged by the possibility that the Obama administration would create an even larger national monument if Congress didn't act. The wilderness bill had the support of Idaho lawmakers, environmentalists and even motorized groups, who will maintain access to certain areas excluded from the bill.

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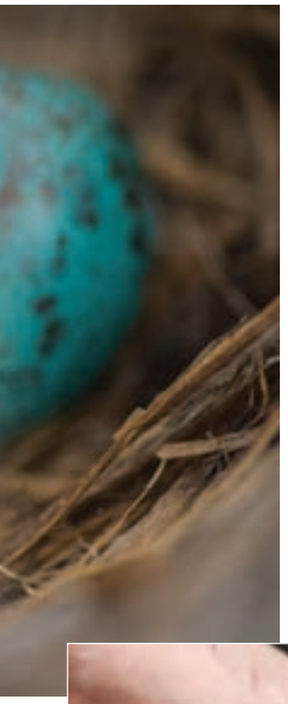

SAGE SPIRIT: THE AMERICAN WEST AT A CROSSROADS
By Dave Showalter. 173 pages, paperback: $24.95.
Mountaineers Books, 2015.

Photographer and writer Dave Showalter has spent a quarter century wandering the sagebrush of Montana, Wyoming, Colorado and New Mexico. In *Sage Spirit: The American West at a Crossroads*, he takes the reader on a journey across the "Sagebrush Sea," one of America's most imperiled landscapes. The book's impassioned essays and evocative photographs focus on the competing conservation policies for the ecosystem and its diverse wildlife, particularly the sage grouse, known for its puffed-out chest and flamboyant courtship dance. Showalter employs the bird as a guide to the complicated tangos between public and private lands, and between threatened wildlife and human history. Photographs capture the bird's intricate dance, while immersive essays by biologists, ornithologists and others trace the complex, not always successful, maneuvers of land managers. Together they create a somewhat mismatched and yet melodious duet that yearns for more collaborative conservation in the West.
PAIGE BLANKENBUEHLER

Sage thrasher eggs on a nest in dense sagebrush in Sublette County, Wyoming, left. A biologist holds a sage thrasher chick while studying sagebrush songbirds, below. DAVE SHOWALTER

Accolades and visitors

We're delighted that the American Geophysical Union has named **Doug Fox** its 2015 Walter Sullivan Award Winner for his story "Dust Detectives," which appeared in our Dec. 22 issue. The award committee praised Fox's "excellent storytelling, compelling characters, and his choice of an important, newsworthy topic." Way to go, Doug, and by the way, where is your next story? (Hint, hint!)

Meanwhile, former *HCN* Editor-in-Chief **Greg Hanscom** is now editing-in-chief for Crosscut, an online independent news service covering the Pacific Northwest. Yay, Greg!

And *High Country News* isn't just running for Congress; we've already gotten there! Thanks to generous readers who donated $5,000 — matched by a longtime supporter — each member of Congress will begin receiving a subscription in time for the fall session. Our heartfelt thanks to all who contributed.

VISITORS

Summer has brought an unusual amount of rain to the North Fork Valley, nicely greening up the mesas and bringing peaches, cherries and a bunch of visitors to our Paonia headquarters.

Dixie and **Bob Jahnke** drove their green 1960s Austin Healey into Paonia this June after a car rally in Glenwood Springs. They'd passed Paonia more than once and heard about *HCN*, but didn't subscribe until now. Welcome to the club!

Steve, **Donna** and **Alex Morrall** of nearby Grand Junction brought their Midwestern visitors, **Lynne Cruse** and **Marilyn Aardema**, by when they drove over Grand Mesa to show off their gorgeous backyard. Steve has subscribed since the early 1980s.

The Wolff pack — **Kevin Wolff**, **Maureen Grady** and their children, **Abigail** and **David** — dropped in while exploring the area. The Chicago-based family spent a week in town while Kevin trained at Paonia's Solar Energy International. Though from the Midwest, they have multiple Paonia connections — visible from the parents' Chaco-clad feet (the sandal company was founded here), to their love of *HCN*.

Internationally recognized speaker, business expert and *HCN* reader **Jon Schallert** stopped by after presenting a workshop for locals on how to transform Paonia, a former coal-mining town with great organic fruit and produce, wine and a creative arts sector, into a successful "destination." It turns out that Jon and his wife, **Peg**, have another connection to Paonia: Their son helped build our new public library.

Celebrating their 50th wedding anniversary, **John** and **Carol Bisbee** visited with their daughter, **Kari O'Connell**, who is from Corvallis, Oregon. John, a retired college biology professor, and Kari, who works for the forestry extension at Oregon State University, are longtime subscribers. The group then planned to camp out at nearby Lost Lake.

Faithful readers **Paul Jakus** and his wife, **Flora Shrode**, stopped by for a quick respite from the heat and their bike ride. Paul is a professor at Utah State University and associate director of the Center for Society, Economy and the Environment. During their off-time, the couple travel the country to see the band Phish. This was their first expedition to Paonia.

—Jonathan Thompson for the staff

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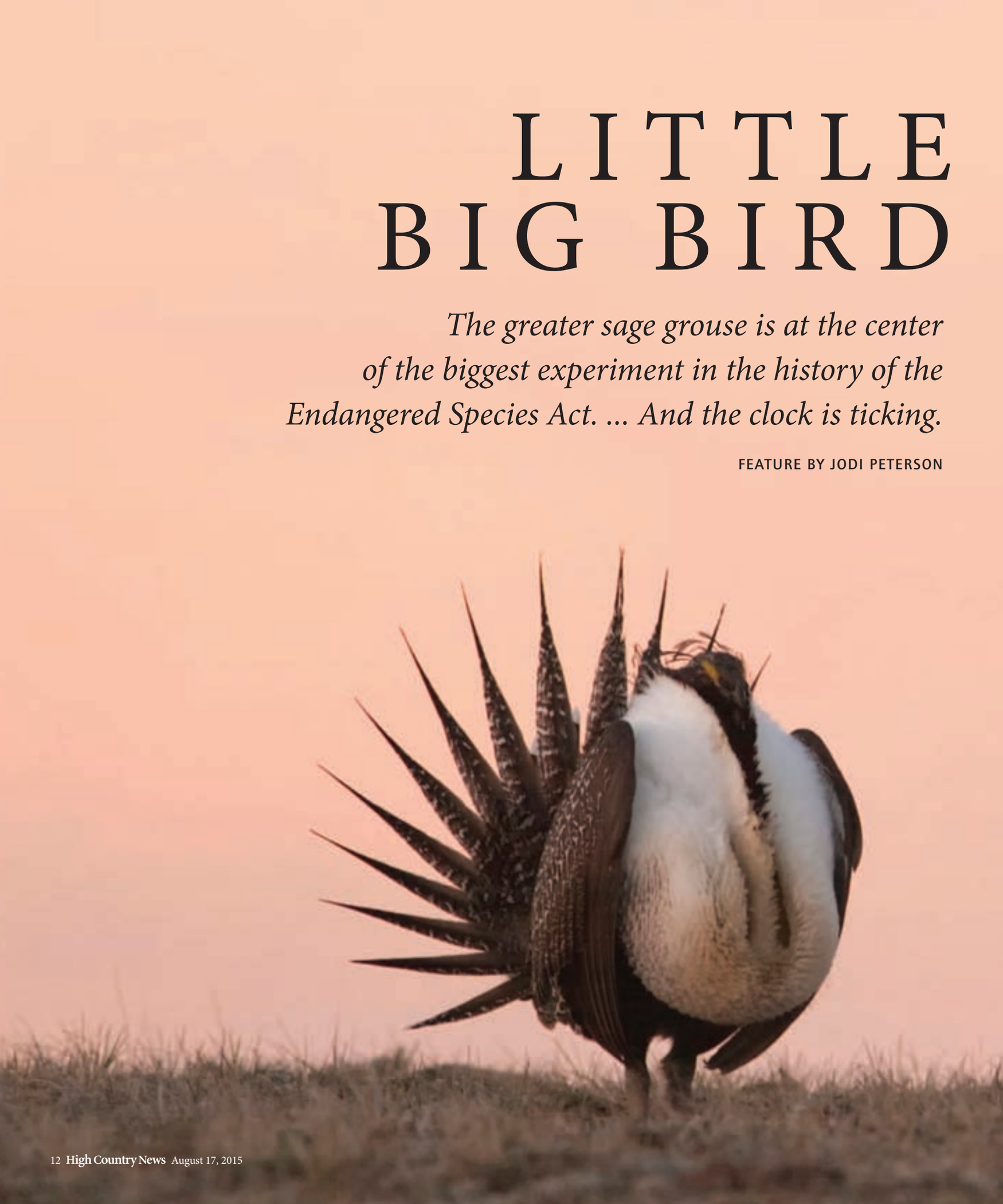
LITTLE BIG BIRD

The greater sage grouse is at the center of the biggest experiment in the history of the Endangered Species Act. ... And the clock is ticking.

FEATURE BY JODI PETERSON



IN LATE APRIL, THE HILLS OF CROSS MOUNTAIN RANCH, near Craig, Colorado, are already dry; the only snow in sight caps the higher peaks on the horizon. A pond sparkles in the sun, and to the west, where the land rises in ridges, dark patches of juniper finger down the draws. On the crest of the hill where I stand, something catches my eye in a pile of rocks. It's a greater sage grouse egg, buff-green with brown speckles.

Peering into its sand-crusted interior, I imagine a tiny striped chick emerging, toddling hopefully after its mother in search of food. But biologist Chris Yarbrough sets me straight: A raven probably devoured this one, he says, turning the shell over on his palm. A hatchling would have pushed out the egg's large end; here, the middle is crumpled inward. I look again, my cheerful fantasy replaced by a scene from *Jurassic Park* — the one where the *T. Rex* shoves its head into a Land Rover to try to extract screaming children.

Aside from this particular chick, though, Cross Mountain's grouse seem to have it pretty good. Last winter, a federal program called the Sage Grouse Initiative helped permanently protect 16,000 acres of prime habitat here through a conservation easement. The property's abundant sagebrush provides food and cover for grouse, and its thick grass helps camouflage nesting hens. Ranch manager Rex Tuttle, a slight, soft-spoken 45-year-old, points out the pipes he installed from the pond to watering holes down valley; they feed wet meadows, where grouse chicks can fatten on insects. In the far distance, sheep graze; Tuttle says he'll shift them to higher pastures in June to let the grass here go to seed, so it can shelter grouse this year and grow lush again next year.

He'll do the same on the neighboring ranch, where he grew up and where another 15,000 acres have been under easement since 2012. Add in a third easement and neighboring federal lands, and a quarter-million acres here are now protected to support grouse and other wildlife.

It's a conservation outcome that few could have imagined in the 1990s, when biologists first realized that sage grouse were in trouble across their range. Before European settlement, sagebrush covered more than 500,000 square miles; today, oil and gas development, renewable energy projects, subdivisions, wildfire, invasive species and poorly managed grazing have whittled it down to about 250,000 square miles scattered across 11 states. Perhaps 400,000 grouse survive, down from as many as 16 million.

But in 2010, the U.S. Fish and Wildlife Service made a decision that set in motion what many are calling a landmark transformation in how the nation recovers imperiled wildlife. Ordinarily, the sage grouse's situation might land it on the federal endangered species list, ushering in much-feared land-use restrictions. But the agency declined to list the bird, not because it didn't need protection — listing was warranted, it declared — but because other creatures needed it more. Instead, the agency promised to make a final call on sage grouse by Sept. 30 of this year.

That court-ordered deadline has been a galvanizing force for grouse conservation like no other. The federal government and the states have partnered with industry, landowners and environmental nonprofits to protect places like Cross Mountain, spending hundreds of millions of dollars on everything from setting aside vast swaths of sagebrush to cutting down junipers and poisoning ravens. The Bureau of Land Management and Forest Service are cooperating with each other and with the states to protect habitat across tens of millions of acres. If they succeed in doing a good enough job, they may prove that the Endangered Species Act works best when it never goes into effect at all.

"I see a lot of people working hard together. Relationships have formed among people who never used to talk," says John Freemuth, professor of public policy at Boise State University. Still, it remains to be seen whether those relationships will survive once crisis mode has passed, or whether the feel-good collaboration will be enough to save the long-suffering grouse. "This is a pivotal Western moment," Freemuth says. "In 30 years, how will we be writing about this? How did the trajectory change?"

MANY SPECIES, WHEN SHOULDERED OFF THEIR PREFERRED HABITATS, can make a living elsewhere — robins, coyotes, mule deer. But sage grouse are exceedingly sensitive — disturbed by human activity near breeding areas; alarmed by trees and tall structures where raptors can perch. They're loyal to the places they know, even if those places are no longer suitable. Matt Holloran, chief scientist at Wildlife Management Research Support, describes how one female grouse in western Wyoming laid eggs in the same general spot each year as a major natural gas field rose up around her. When a well pad replaced her nest site, she finally moved — but just 30 feet away.

This sensitivity makes greater sage grouse a strong indicator of ecosystem health: If they're not thriving across the vast Interior West, then things look bad for the region's 350 other species, from sagebrush obligates like the sage thrasher and pygmy rabbit, to seasonal migrants like sandhill cranes and elk. Says Jennifer Hayward, Pinedale district conservationist for the Natural Resources Conservation Service — the umbrella agency for the Sage Grouse Initiative — "I don't know why they don't just list sagebrush itself."

Listing the plant, though, might run up against the same limitations as listing the grouse. Under the Endangered Species Act, the U.S. Fish and Wildlife Service is supposed to evaluate imperiled species' circumstances and determine what level of protection they need based on science, exclusive of politics and economics. The law works best when used to protect a species from a single, controllable threat; peregrine falcons, for example, bounced back after DDT was banned.

But the sage grouse's huge range and lack of adaptability complicate things, and the myriad threats it faces — many related to industries that define Western rural economies and identity — make wielding the law a much trickier prospect. Conservative politicians have for years sought to gut the act, and many conservationists worry a sage grouse listing would provoke fiercer attack — a prospect underscored by recent congressional attempts to boot several creatures off the list altogether and block funding for others.

That political grandstanding fuels fear and misinformation about what would actually happen if the bird were listed, says Pat Deibert, the Fish and Wildlife Service's national sage grouse coordinator. "It's like this big black hole," she says. "People think the world would end, that they'd lose the ranch. But most would be relatively unaffected."

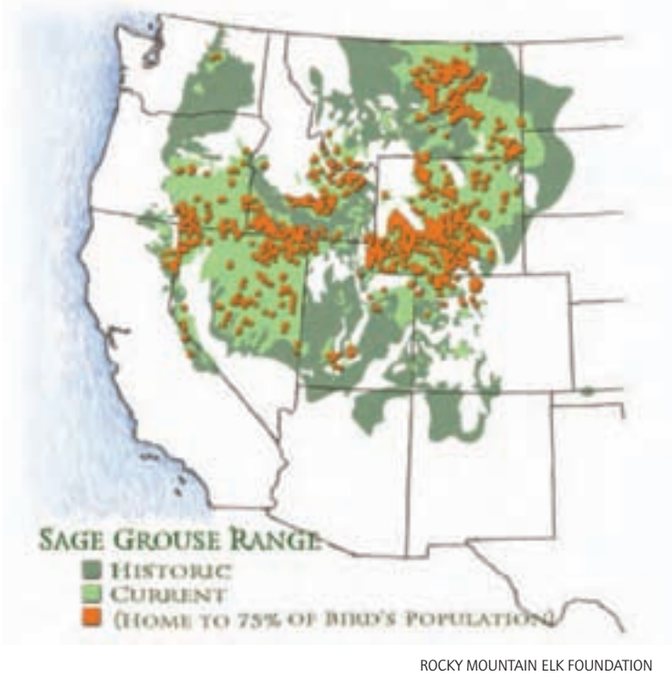
More than one-third of sage grouse range is on private land, where the Endangered Species Act holds little sway. The law prohibits harming protected species, for example, but it can't force landowners to undertake conservation projects that might help those species recover. Meanwhile, the Fish and Wildlife Service is plagued with tight budgets and has a long line of species waiting for recovery. There are more than 1,200 on the list, and 250 candidates await final determinations, some for more than a decade.

In 2010, the U.S. Fish and Wildlife Service declined to list the greater sage grouse, not because it didn't need protection, but because other creatures needed it more.

A male sage grouse displays in the sage country south of Pinedale, Wyoming, at the base of the Wind River Range. MARK GOCKE

Battling male sage grouse, below. At right, journalists walk the largest lek in northwestern Colorado, looking for feathers lost by greater sage grouse males.
RICK MCEWEN/SAGE GROUSE INITIATIVE, BELOW; THEO STEIN/USFWS, RIGHT

States, on the other hand, can move faster, and have greater on-the-ground expertise than the federal agency. Former Idaho and Colorado wildlife department biologists Jack Connelly and Clait Braun were among the first to raise the alarm about grouse declines. In the mid '90s, as mounting threats became clear, they put together "all the data we could get our hands on," says Connelly, and brought it to the attention of wildlife managers. In 1995, the Western Association of Fish and Wildlife Agencies convened the states with grouse populations and nudged them into action. They began creating conservation strategies; some took a bottom-up approach, first developing local working groups, then rolling those results up into statewide plans. Idaho's came in 1997, Nevada's in 2001.



ROCKY MOUNTAIN ELK FOUNDATION

Wyoming — home to roughly 40 percent of the nation's remaining grouse — mounted the most comprehensive effort. While other state plans relied almost entirely on voluntary efforts, a state statute gave Wyoming regulatory authority over oil and gas development, the primary threat facing grouse in the state, across federal, state and private jurisdictions. The state created a policy in 2008 to protect what it determined to be the most important chunks of habitat. Ranchers, miners, oil and gas companies, environmental groups, state and federal agencies all had a place at the table. They capped the amount of surface disturbance allowed inside these "core areas" and instituted seasonal work stoppages. Wind development was discouraged in those areas, and oil, gas and transmission lines were restricted.

But as environmentalists' court battles to list the bird intensified over the same timeframe, it was becoming clear that, range-wide, grouse conservation efforts still weren't cutting it. Oil and gas were booming again, and wind turbines popped up like mushrooms. In the Great Basin, severe wildfires devoured sagebrush and invasive cheatgrass moved in, fueling more big burns. Livestock grazing continued to degrade land in some areas, while in others, drought dried up water supplies and withered plants. The Bureau of Land Management and Forest Service weren't doing enough to stop habitat loss, while many states weren't effectively implementing their plans. Nobody had made enough sacrifices to ensure the bird's long-term survival.

In some ways, little seemed to have changed since *High Country News* ran a cover story assessing the situation in February 2002. "Several years into a West-wide effort to conserve the grouse and the sagebrush ecosystem," author Hal Clifford wrote, "there are only modest results."

JUST AFTER DAWN, Yarbrough indicates that I should peer through a spotting scope aimed at a gravelly area at the base of a draw. I kneel on a red plastic placemat in front of the scope to keep from getting muddy, and about 50 male sage grouse pop into focus, their wings held vertically and their spiky tails fanned wide.

If sagebrush makes up the grouse's universe, then this is the center of its solar system. It's a lek, where male grouse return each year to dance for females and scuffle with rivals. Most stories about sage grouse open with a scene of clichéd majesty — the ancient ritual of the dancing birds. But when the males puff their white chests and inflate their yellow air sacs, the result looks disconcertingly like a halved hard-boiled egg. *Whup whup* sounds drift through the chilly air. Several males strut boldly in the lek's center, but most lurk in the shrubs, as if half-hoping no one sees them. "They're like the less-popular boys at the high school dance," comments Chris West, then executive director of the Colorado Cattlemen's Agricultural Land Trust, as he takes a turn with the scope. "Kinda standing against the wall with their hands in their pockets." The hens seem unimpressed.

This particular lek is on a ranch several miles east of Cross Mountain. Most other leks are on or near private land, too: A Sage Grouse Initiative study suggests they're almost always within six miles of the wet summer habitats where grouse raise chicks. These meadowy areas are overwhelmingly in private hands, because they also attracted human settlement.

That's where the Sage Grouse Initiative comes in. Tim Griffiths, the program's national coordinator from 2010 until July 2015, knows from experience how endangered species struggles can breed mistrust. He was a Fish and Wildlife biologist in Klamath Falls, Oregon, in

2001 and 2002, when farmers' irrigation water was turned off to protect salmon — prompting a near-insurrection — and then turned on while salmon fry died by the thousands. "Wildlife was pitted against agriculture," he recalls, "and in the end, nobody won."

He remained convinced that the two could be reconciled, and in Montana in 2004, he got the chance to prove it with a fish called the fluvial Arctic grayling, which was headed for an emergency listing. Griffiths and State Conservationist Dave White, now both working for the Natural Resources Conservation Service, helped channel Farm Bill dollars into efforts to keep more water in a stretch of the Big Hole River and improve its quality by helping ranchers move feedlots and restore riparian areas. It was the first time that the NRCS had set aside a dedicated pool of money from its own wildlife habitat incentive programs to help with a broader species conservation initiative.

Those voluntary efforts worked so well that the agency decided to apply the approach to a species with a much bigger range: The greater sage grouse. Taking a card from Wyoming's deck, Montana's Fish, Wildlife and Parks Department mapped out the areas containing 75 percent of the state's birds. Then, in one of those core areas near Roundup, the NRCS developed conservation plans with 10 ranchers to test the approach. Because the agency works with agricultural producers as a partner rather than as an enforcer, it lacks the political baggage of the federal Fish and Wildlife Service. "Folks saw we weren't coming out with black helicopters, and heard through coffee-shop talk about the benefits," says Griffiths. "Healthy rangelands support sage grouse and also support vibrant agriculture." Eventually, 90 percent of the 200,000-acre core area was covered with conservation plans.

A male greater sage grouse struts on a road in the Wasatch Mountains of Utah.
BRYANT OLSEN
CC VIA FLICKR

Sage grouse saga

One step forward, two steps back: A timeline BY MARSHALL SWEARINGEN

1995	The Western Association of Fish and Wildlife Agencies — an organization of state wildlife management agencies — reports **range-wide declines in populations since the 1950s**. Members agree to work cooperatively to conserve sage grouse.
1999	The U.S. Fish and Wildlife Service receives the first of five petitions to **list greater sage grouse as threatened or endangered in parts of its range**.
2000	The Western Association of Fish and Wildlife Agencies, the BLM, Forest Service, and Fish and Wildlife Service task **a team of federal and state biologists with developing a range-wide conservation strategy**.
2002	Fish and Wildlife receives the first of three petitions to **list greater sage grouse across its entire 11-state range**.
2004	The Western Association of Fish and Wildlife Agencies completes the first detailed, **range-wide assessment** of sage grouse populations and habitat, confirming a continued decline.
2005	Fish and Wildlife finds that **grouse don't warrant federal protection** range-wide, because existing conservation efforts are enough to prevent extinction.
April 2006	The Interior Department receives an anonymous complaint alleging **unethical and illegal behavior by Julie MacDonald**, deputy assistant secretary for Fish, Wildlife and Parks, a political appointee who oversees endangered species reviews.
December 2006	The Western Association of Fish and Wildlife Agencies releases the first range-wide strategy for **conserving greater sage grouse through collaboration** among local, state and federal efforts.
March 2007	Interior's inspector general finds that MacDonald repeatedly intimidated Fish and Wildlife field staff and tinkered with scientists' findings, including a key 2004 sage grouse analysis. Two months later, **she resigns**.
December 2007	A **federal district court in Idaho remands Fish and Wildlife's 2005 "not warranted" decision** to the agency, excoriating it as tainted by MacDonald's actions. Under a settlement agreement, the agency agrees to issue a new finding by May 2009, later postponing it until 2010.
2008	Democratic Gov. Dave Freudenthal of Wyoming, which has the greatest share of sage grouse, issues an executive order creating a **"core area" strategy**, which identifies key areas of remaining habitat — across the state's private and public lands — and establishes new conservation measures. It becomes a model for other state and federal plans.

Please see **Sage grouse timeline**, *page 17*

"Folks saw we weren't coming out with black helicopters, and heard through coffee-shop talk about the benefits: Healthy rangelands support sage grouse and also support vibrant agriculture."

—Tim Griffiths, former national coordinator for the Sage Grouse Initiative

Cattle and sage grouse coexist on the Big Creek Ranch in Idaho, which works with the Sage Grouse Initiative to maintain grazing practices that improve habitat for sage grouse and other wildlife. Below, vinyl fence markers are installed in Montana to help prevent collisions that injure or kill sage grouse and other birds.

ROSANA RIETH/USDA/NRCS, RIGHT; JEREMY R. ROBERTS/CONSERVATION MEDIA, BELOW

So the conservation service extended the program to the rest of Montana's core areas, and then began scaling up to the other 10 sage grouse states, which each mapped key grouse habitat. By the time the U.S. Fish and Wildlife Service reached its "warranted but precluded" decision in March 2010, the Sage Grouse Initiative was ready to go, with White as NRCS chief. "We launched the very next day," Griffiths recalls.

Now funded with Farm Bill money through 2018, the Sage Grouse Initiative works with more than 75 partners, including state wildlife departments, energy companies and nonprofit groups. Most came on board through a migratory bird project called the Intermountain West Joint Venture, which contributed $15 million to help put "boots on the ground" in rural areas to work with landowners. Today, about 30 biologists are stationed in small towns like Randolph, Utah, and Burley, Idaho. All are jointly employed with partner organizations, including Yarbrough with the Rocky Mountain Elk Foundation. "They're 10 percent of (the initiative's) work force," says Griffiths, "but they account for 50 percent of our accomplishments."

So far, the initiative and its partners have invested about $425 million in projects involving 1,200 landowners, with greater reach than an endangered species listing could achieve. Participants receive a compliance check once every three to five years, says Jason Weller, head of NRCS, and most follow their conservation plan.

The stats seem impressive: 400,000 acres of important grouse range have been cleared of encroaching conifers, which provide perches for predators and crowd out sagebrush. Ranchers now maintain taller grass on 2.6 million acres — which the initiative says bumps up nesting success by 10 percent. At least 500 miles of fencing have been moved or marked, reducing often-fatal collisions with wires by more than 80 percent. And more than 450,000 acres have been placed in conservation easements, permanently protecting most of them from subdivisions and wind farms, and substantially reducing the threat of oil and gas development.

Back on Cross Mountain, Chris West says that the conservation easement the Colorado Cattlemen's Agricultural Land Trust placed on the ranch wouldn't have been possible without the Sage Grouse Initiative. It contributed half of the $5.6 million paid to the ranch's owners; a private donor and Colorado Parks and Wildlife covered the rest. Initiative dollars have made more than a dozen other Trust easements possible.

Under Endangered Species Act "candidate conservation agreements with assurances," landowners who implement certain conservation measures are protected from further restrictions if that species is listed. In a similar way, initiative signatories get 30 years of certainty that if the bird is listed and they continue approved conservation practices, they won't be asked to change those practices, nor will they be prosecuted if they accidentally harm or kill a grouse.

They also get a lot of federal dollars to make improvements on their land that benefit their bottom line as well as the bird. But 80 percent of the ranchers involved rely on BLM and Forest Service grazing allotments, so the Sage Grouse Initiative hopes to figure out how to extend approved conservation plans to cover those acres, as well. "(The whole program) is truly the biggest experiment in the history of the Endangered Species Act," says Griffiths. "Nothing this big, this orchestrated, has ever been attempted."

ON A WINDY MAY AFTERNOON, I stroll along a wall of red shipping containers lined end to end. A tall metal structure rises behind them, and the groan of diesel engines and clank of pipes fills the air. This could be an industrial shipping yard on Seattle's Puget Sound. But it's a terminal on a very different sea: Sagebrush rolls in green waves eastward all the way to Wyoming's Wind River Range. Here on the Pinedale Anticline, managed by the BLM, the infrastructure of natural gas extraction lies thick — well pads, pipelines, roads, compressor stations, built by Shell, Ultra and other companies.

The shipping containers, which are set atop earthen berms, are one company's response to BLM limits on drilling noise, which can cut lek attendance and breeding success. It's part of a much more sweeping effort to change how business is done on the federal land that is home to two-thirds of the remaining grouse habitat, in order to avert an endangered species listing.

But the most important part of that has less to do with how energy companies develop resources than with regulations governing where they're allowed to do it. That was a significant shortcoming of previous federal efforts to safeguard grouse. The lack of regulatory certainty that habitat would be protected was one of the primary reasons the Fish and Wild-

life Service decided in 2010 that federal protection was warranted.

In response, the Interior Department and Agriculture Department have thrown a huge amount of muscle and money into a comprehensive strategy to manage BLM and Forest Service lands, developed in close cooperation with the states. "These (federal) plans are unprecedented — they're collaborative, landscape-level and science-based," says Jim Lyons, deputy assistant secretary with the Department of Interior. "This is really the first attempt to implement the Endangered Species Act as it was intended — by conserving habitat so listing is not needed."

The centerpiece of the federal effort came out this summer, when the agencies unveiled 14 near-final plans that will usher in much more stringent protections than previously existed on 66 million acres of federal grouse habitat. They'll also set in motion large restoration and mitigation efforts to compensate for unavoidable development, and, perhaps most importantly, institute range-wide monitoring frameworks to determine how conservation strategies are working. Those frameworks include specific trigger points: If the number of male birds attending leks declines by a certain percentage, for example, then protections will be ratcheted up.

All the plans take a tiered approach to habitat protection, similar to the strategies favored by Wyoming and the Natural Resources Conservation Service. The tightest restrictions apply to "focal areas" critical for grouse survival; next is "priority" habitat. Existing energy leases and rights of way are grandfathered in, but both designations limit additional surface disturbance. "General" habitat offers the least restrictions. Though grazing, properly managed, is not generally considered a major threat, the plans prioritize reviewing allotments within high-priority habitat; some may also allow for the permanent retirement of certain allotments.

Many conservation groups, especially the large mainstream ones, regard the federal plans as a huge improvement. "It's achieved a lot of what we hoped it would achieve," says Nada Culver, director of The Wilderness Society's BLM Action Center. "Compared to other planning efforts we've seen, these plans provide more certainty, more landscape-scale cooperation and more actual protection."

The federal plans differ from each other in significant ways to better mesh with state strategies, which have also generally gotten more rigorous as the deadline nears. In 2011, then-Secretary of Interior Ken Salazar convened the State-Federal Sage Grouse Task Force and encouraged states to step up their efforts. Some governors issued executive orders requiring state agencies to consult with wildlife departments before doing anything that might harm grouse, while others revised and strengthened earlier plans, often with input from the Fish and Wildlife Service.

Sage grouse timeline, *continued from page 15*

Subdivision in prime sage grouse habitat outside Pinedale, Wyoming. JEREMY R. ROBERTS/ CONSERVATION MEDIA

March 2010	Fish and Wildlife announces that the **greater sage grouse now warrants federal protection** across its range, though other, higher-priority candidates preclude further action. "Sagebrush habitats are becoming increasingly degraded and fragmented," it declares, citing the "inadequacy of existing regulatory mechanisms."
March 2010	The Agriculture Department's Natural Resources Conservation Service launches the **Sage Grouse Initiative**, channeling Farm Bill funding into a major effort to work with private landowners to protect and restore sage grouse habitat.
May 2011	With Fish and Wildlife facing a backlog of hundreds of candidate species for listing, **the agency enters into a settlement agreement with WildEarth Guardians that creates a timeline** for rulings, including a Sept. 30, 2015, deadline for greater sage grouse.
August 2011	The **BLM begins amending 78 resource management plans** for areas containing sage grouse habitat across 10 Western states; the Forest Service later does the same for plans on 13 national forests.
December 2011	Secretary of Interior Ken Salazar and Wyoming Gov. Matt Mead convene representatives from 10 states and several federal agencies and create a grouse task force to coordinate "regulatory mechanisms" and conservation goals to stave off ESA listing.
January 2013	**Fish and Wildlife proposes to list Gunnison sage grouse**, a related species found in Colorado and Utah, as endangered.
March 2013	Fish and Wildlife releases its Conservation Objectives Team report, enumerating specific conservation goals for sage grouse that could prevent listing. The report, which stresses the importance of habitat protection, **becomes the blueprint for revising BLM and Forest Service management plans**.
2014	After re-evaluating development trends in the Gunnison Basin and the conservation efforts of states, tribes, private landowners and others, Fish and Wildlife decides to **list Gunnison sage grouse as threatened rather than endangered**.
March 2015	Eleven scientists write to Secretary Jewell, **criticizing the draft BLM and Forest Service plans** and calling the Conservation Objectives Team report "elastic, subjective."
March 2015	A scientific study commissioned by the Pew Charitable Trusts documents a **56 percent decline in greater sage grouse between 2007 and 2013**, and states, "the conclusion seems pretty straightforward that current policies and programs are accomplishing little."
April 2015	Jewell announces that the **bi-state greater sage grouse** — an isolated population on the Nevada-California border — no longer warrants federal protection because of a concerted conservation effort, bolstering hopes that a range-wide listing can be similarly avoided.
May 2015	Forest Service and BLM propose **new management plans that seek to limit disturbance within priority sage grouse habitat** across 10 states.
Sept. 30, 2015	Under the 2011 court settlement, **Fish and Wildlife must issue its new finding for greater sage grouse**, even though a budget rider prohibits it from proposing a listing rule, its normal procedure.

"This is really the first attempt to implement the Endangered Species Act as it was intended — by conserving habitat so listing is not needed."

—Jim Lyons, deputy assistant secretary with the Department of Interior

A greater sage grouse lies dead on the side of a road that services gas wells in the Jonah Field area of Wyoming.
JEREMY R. ROBERTS/CONSERVATION MEDIA

"It's a slick PR effort, but I fail to see the results. There's no data to show that grouse numbers have increased or that their distribution has increased."

—Clait Braun, biologist who helped raise early alarms about grouse

In Idaho, for example, Republican Gov. Butch Otter assembled legislators, industry representatives, ranchers, sportsmen, county commissioners, and members of conservation groups. "At first, it didn't look like the all-star team," says grouse biologist Connelly, who advised the team along with other experts. "But they incorporated the best available science, even when they didn't like it." The plan prohibits wind development, transmission lines and other energy development in the most important sage-grouse habitat. If that habitat is lost to wildfire or otherwise destroyed, or if large numbers of birds die off, additional protections kick in. The BLM incorporated Idaho's plan as a preferred alternative for its Idaho and Southwest Montana regional plan.

In Wyoming, federal plans hew closely to the state's core-area strategy, which has garnered both praise and criticism. Endangered species advocates believe the state plan, despite multiple updates, remains too friendly to industry, and indeed, significant new development has been allowed inside some core areas. And the BLM's plans adopt Wyoming's lek buffers, which forbid surface occupancy for drilling only within a .6-mile radius — much less than the distance that scientists recommend. Even so, the Fish and Wildlife Service supports the state plan, citing its breadth and regulatory force. Federal plans covering Colorado and Nevada, meanwhile, extend the no-surface-occupancy restriction across priority habitat and enforce a three-mile buffer around leks.

Over the past five years, says San Stiver, sage grouse coordinator for the Western Association of Fish and Wildlife Agencies, a lot of horsepower has been added to state efforts, as every Western governor has endorsed plans and every state legislature has dealt with the issue. Now, he says, "their credibility is on the line. There's an earnest attempt to make sure things get implemented."

YET DESPITE ALL THE PLANS, projects and collaborations, it's hard to tell if the conservation actions undertaken by states, the Sage Grouse Initiative or any other group will bump up grouse numbers over the long haul. The birds are fairly long-lived and reproduce slowly, and their populations tend to cycle, hitting natural highs and lows over many years.

A recent study for the Pew Charitable Trusts, for example, found that bird numbers dropped a whopping 56 percent between 2007 and 2013. In August, though, the Western Association of Fish and Wildlife Agencies reported that they've climbed by two-thirds since that time. It may take decades to average out such spikes and dips; many biologists think the overall trend is either stable or downward. "Sage grouse declines are not as dramatic as they were 70 years ago," says Holloran, who's studied grouse since the '90s. "But overall there still seems to be a decline."

"In Wyoming, you're not going to stem losses," adds Griffiths. "But with policy and easements, you're going to greatly curb those losses. And in other places like Oregon and Idaho — there, you're actually building birds up and building range up. We're hoping this will even out over the range."

However, critics argue that the focus on preserving just the best remaining habitat means that the bird will get considerably less protection across its range than it needs. If it were listed, most of the land it occupies would, theoretically at least, be designated as "critical habitat" and legally safeguarded. In late July, WildEarth Guardians released a report showing that, compared to draft versions, the near-final BLM and Forest Service plans have dropped protections for about one-quarter of the priority habitat that the Fish and Wildlife Service had specified as vital to recovery. "How is that agency now going to say with a straight face that these plans are adequate to protect the species and prevent a listing?" asks Erik Molvar, who directs the group's Sagebrush Sea Campaign. (As of press time, the Interior Department hadn't responded to the report.)

Clait Braun, the biologist who helped raise early alarms about grouse, is similarly skeptical. "I have no confidence that anything anyone is doing is working," he says. Wildlife species need connectivity to maintain healthy genetics, and scattered areas of high-priority habitat are not enough to provide that. Nor do any plans set aside large permanent reserves, protected from all development. Voluntary conservation efforts fall short, since many, especially those undertaken by industry, aren't measured to see what they're actually accomplishing. Braun sees the Sage Grouse Initiative as less an effective way to conserve grouse than a taxpayer-funded subsidy program for ranchers. "It's a slick PR effort, but I fail to see the results. There's no data to show that grouse numbers have increased or that their distribution has increased." Within 30 years, he predicts, the birds will persist only in tiny, widely dispersed populations.

And despite strong monitoring and adaptive management, in which the federal plans change course whenever trigger points are hit, others fear that the land agencies' own pinched budgets and political inertia will sabotage the effort. "Monitoring is expensive, and it has to be implemented in the long term," says former BLM biologist Steve Belinda. "And what happens if you don't turn things around for grouse? BLM's history on adaptive management is poor to fair at best."

At least 200 protests have been filed against the plans, from every direction. The Western Energy Alliance says oil and gas development is unduly restricted, while Colorado and Montana complain that the plans don't give them enough authority over protections for the bird. Earlier this summer, Wyoming Gov. Matt Mead praised the federal plans in appearances with Interior Secretary Sally Jewell. But now he's backed away, citing numerous issues that he claims have gone unaddressed. Idaho Gov. Butch Otter has expressed similar reservations.

Western Watersheds Project, WildEarth Guardians and other environmental groups have protested as well, claiming that the plans' provisions are far weaker than what's needed to avert a listing. And at this point, listing is an outcome that few want to see — even on the environmentalist side. "We wouldn't be as engaged (in sage grouse conservation) if it

was a listed species," says The Wilderness Society's Culver. A listing would make conservation actions more piecemeal, as individual projects are proposed and the feds evaluate how each one might affect the grouse. "That's a lot more challenging," she says. "We have a big scope, but we don't have endless resources."

Tom Christiansen, Wyoming's lead sage grouse scientist, puts it more bluntly: "What message would it send to our society," he asks, "if the largest conservation effort ever undertaken failed?"

SO WHAT WOULD A SAGE GROUSE LISTING actually look like? Ask an endangered species activist or lawyer, and you're likely to get generalities, accompanied by reminders that nobody has a crystal ball. A "threatened" designation allows for more flexible management than an "endangered" listing. The activist would tell you that either adds public accountability — opening the door for lawsuits if the government isn't doing enough — and both experts would mention additional restrictions on economic activity and prohibitions on injuring or killing a sage grouse. Furthermore, the Fish and Wildlife Service would have to be consulted about any federally funded or permitted activity — drilling or grazing, say — that might harm the bird or its habitat, which can cause significant and costly delays.

But even if the grouse is listed, it doesn't mean that "the largest conservation effort ever undertaken" has failed, because the effort itself is likely to define the terms of the listing — possibly even making it stronger than what the agency would have developed on its own. The Fish and Wildlife Service would lean heavily on the existing work when it puts together its own recovery plans. And the private land agreements designed to help grouse would remain in place. The sage grouse, in other words, has already flown.

This scenario has played out with the sage grouse's cousin, the lesser prairie chicken, which lives mostly on private land in Kansas, Colorado, Oklahoma, New Mexico and Texas. When the bird landed on the "warranted but precluded" roster in 1995, collaborative efforts sprang up; the Western Association of Fish and Wildlife Agencies developed a range-wide plan, and a Lesser Prairie Chicken Initiative followed later. Fish and Wildlife still listed the bird as threatened in March 2014, after worsening drought knocked its numbers to perhaps 18,000. But the agency noted that the collaborative efforts were similar to the kind of formal recovery plan it would normally create several years after a species' listing, and developed a special 4(d) rule meant to soften the blow for businesses and landowners by honoring existing efforts.

As a result, the listing has been far from catastrophic. "We heard a dull thud. Nothing happened," says Terry Riley, director of conservation for the North American Grouse Partnership. "Energy

The birds and the bugs

ON A HOT JUNE MORNING, I follow Hayes Goosey across a wide, lonely stretch of fragrant rangeland 12 miles north of Ryegate, Montana. Scanning the ground for snakes while sidestepping clusters of blooming cactus, we arrive, finally, at a strange scene: Soapy water-filled plastic bowls scattered among sagebrush and grama grass, next to a line of plastic Solo cups buried to their rims in the ground. It resembles the remnants of a rained-out, hastily abandoned prairie cookout, but it's actually one of Goosey's study sites. And the Montana State University entomologist seems pleased: The picnic-ware traps are literally crawling with bugs. I count nine coffee-colored dung beetles in one cup alone. In others, inch-long, Halloween-hued carrion beetles serve as life rafts for smaller, less buoyant insects. Meanwhile, the surface pan-traps are a witch's brew of butterfly wings and bee bodies. Most people, Goosey says, "have no idea that all of this stuff is out here or how important it is."

The range, it turns out, is not so lonely after all: It supports a mini-metropolis of arthropods that pollinate forbs and break down dung and carrion. But Goosey is primarily interested in their role as food for other rangeland creatures — particularly sage grouse. During their first three weeks of life, sage grouse chicks feed almost exclusively on arthropods, which are rich in proteins, fat and nutrients essential for early development.

Thanks to habitat loss and fragmentation, the bird is a candidate for endangered species protection, inspiring a raft of conservation and research projects to help with recovery. In Montana, where sage grouse share nearly 100 percent of their core habitat with domestic livestock, grouse conservation efforts often focus on resting pastures for a year or more, or rotating livestock more quickly through them, in order to avoid overgrazing and ensure the vigorous return of grouse-concealing, forage-providing grasses and shrubs. Despite this, Goosey says, few people have looked into how grazing practices influence an equally vital component of sage grouse habitat: food arthropods. So, in 2012, he tackled the problem.

This site — which he's currently using for a related project involving rangeland pollinators — lies just across the road from some of the 26 sites Goosey used during the resulting three-year study. The sites were spread across five different ranches between Roundup and Ryegate. Each was implementing a grazing plan under the Sage Grouse Initiative, a federal program that uses Farm Bill money to promote conservation practices on private lands. Using the same Solo cup-fashioned pitfall traps as the current study, as well as sweep net passes of the rangeland vegetation, Goosey collected beetles, grasshoppers, butterflies and other arthropods from grazed and rested pasture sites. He timed his collecting to coincide with the sage grouse's nesting and early brooding periods during the spring and early summer, when the chicks — and their recovering moms — depend most on rangeland bugs.

Goosey's preliminary analysis (he plans to submit final reports for publication this fall), suggests

MARIAN LYMAN KIRST

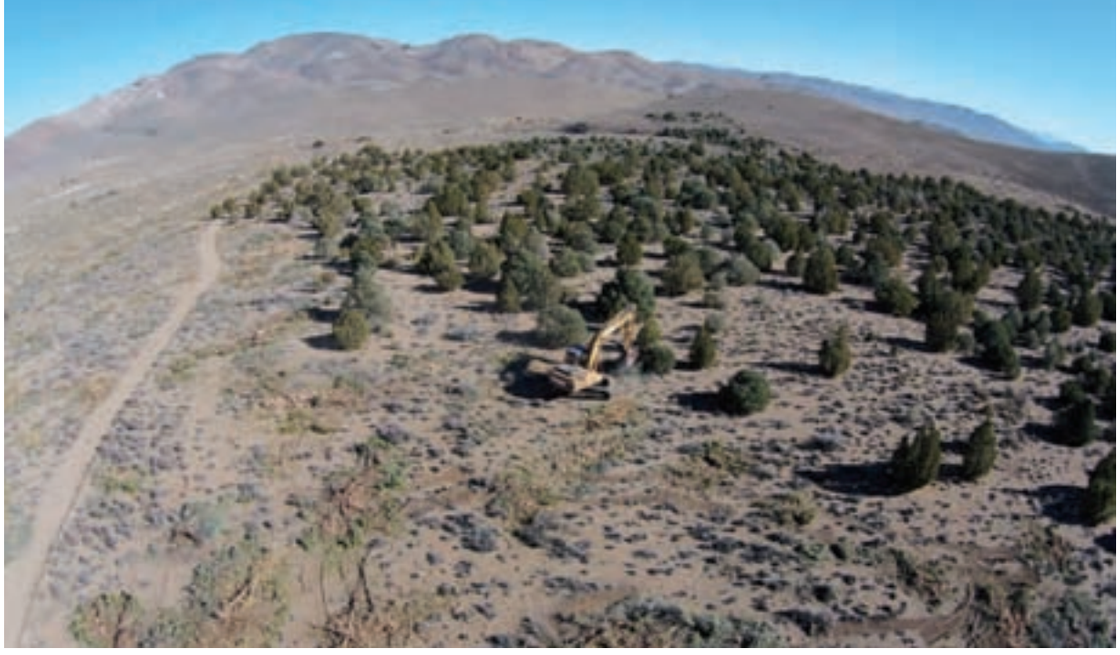
Hayes Goosey on rangeland near Ryegate, Montana, where he uses traps to assess grazing's impact on food arthropods, like these dung beetles, and pollinators.

that rested pastures harbor significantly more food arthropods than grazed pastures, as well as taller vegetation, which shelters and feeds both the birds and their arthropod prey. That suggests that deferring grazing during the early brooding period may increase the number of chicks that survive to adulthood, he says.

And while some recommend removing cows altogether, healthy ranches are a bulwark against sod-busting for farms — a much bigger threat to grouse survival. "Sage grouse can coexist with grazing," says Lorelle Berkeley, a research biologist with Montana's Department of Fish, Wildlife and Parks. But row crops wipe out the woody shrub that defines the bird's habitat, and "it takes decades to grow back."

Indeed, given the often knotty and contentious nature of sage grouse conservation, Goosey feels his findings represent a refreshingly win-win situation. "Because (conservation) grazing is supposed to help decrease the percentage of bare ground," he says, "and because bare ground means less forage for livestock and is also a detriment to food arthropods … what is good for grouse is good for cattle is good for bugs." MARIAN LYMAN KIRST

Marian Lyman Kirst writes from Billings, Montana.



Mitigation efforts like this one, which removed piñon and juniper from grouse habitat in the Smith Valley near Minden, Nevada, helped stave off the listing of the bi-state sage grouse. USDA/NRCS

companies haven't gone out of business, ranchers haven't lost their operations. That was a surprise to a lot of people."

With sage grouse, too, the threat of a listing has mobilized conservation work much more quickly than an actual listing probably would have done. What's more, says Ya-Wei Li, senior director of endangered species conservation with Defenders of Wildlife, "the restrictions imposed under these (federal) frameworks are far more significant than what we've seen for many other species that have been listed for decades."

Still, the risk of alienating stakeholders is very real, and state buy-in, like landowner buy-in, is vital. "Several governors have told me that if it's a federal bird, then it's a federal problem, and the feds can fund it and the feds can deal with it," says Audubon Society Vice President Brian Rutledge, who has long been involved with Wyoming's efforts. "We would much rather have the sage grouse managed at the local level," adds Fish and Wildlife's Deibert, "(so people) can make decisions relevant to their landscape. That's very difficult for us to do looking across 11 states."

THAT KIND OF LOCAL MANAGEMENT is now the rule for at least one small group of sage grouse — much to the relief of ranchers, Washoe Tribe members, and the many other stakeholders who had been working since 1999 to save the bi-state population of greater sage grouse.

On April 21, Interior Secretary Jewell, along with Nevada Gov. Brian Sandoval and other officials, stood on a stage outside the Nevada Department of Wildlife's headquarters to announce that the 2,500 to 9,000 birds on the California-Nevada border no longer warranted federal protection, thanks to voluntary conservation efforts. It was a hot, sunny day, and most of the chairs arranged on the grassy lawn were empty. But a big round of applause went up from under the surrounding trees, where dozens of attendees had sought shade. The bi-state birds had been added to the candidate list in 2010, and three years later the agency proposed to list them as "threatened"; now, provided populations remain strong, they won't be listed at all. "It's a great feeling of accomplishment, and of enthusiasm to keep moving forward," says Shawn Espinosa, a state biologist who's been part of the collaborative efforts. "Now we won't have that specter (of potential listing) lurking behind every working group meeting."

If the same thing happens with greater sage grouse, it could add momentum to, rather than undermine, the ecosystem-wide efforts the bird's predicament has inspired. "This is the start of something bigger," says Holloran. "It has the potential to evolve into the process under which all wildlife is managed," at least for landscape-scale species that range on private land.

Indeed, that's already happening at the Natural Resources Conservation Service. "There's a big shift in the wind here that's really good," says agency chief Weller. Within the past year, the Oregon chub was delisted and the Louisiana black bear was proposed for delisting — both of them saved by voluntary landowner conservation that the NRCS helped foster. As with sage grouse, protecting these species protects other creatures that share the same habitat — an approach that the agency has continued to concentrate on.

In 2012, the conservation service created the Working Lands for Wildlife Program, expanding Sage Grouse Initiative-style efforts to six other umbrella species across the U.S., including the southwestern willow flycatcher; Griffiths was just named Western regional coordinator for the program. Working Lands for Wildlife and the Fish and Wildlife Service recently released an ecosystem-wide biological opinion for the flycatcher that covered 83 other species that are either listed as threatened or are candidates for listing — the first time the agencies had issued a collective opinion for multiple species. Landowners who sign conservation plans for the flycatcher will work to remove invasive species and restore the riparian habitat that all those creatures — including the yellow-billed cuckoo, Chiricahua leopard frog and New Mexico jumping mouse — rely on. If any are later added to the list or upgraded to endangered, the ranchers will have the same 30-year certainty that the Sage Grouse Initiative offers. "Now we have predictability for the whole riparian ecosystem," says Weller.

Still, it's unclear just how well that approach will work. Dealing with dozens of species at once does add "layers of complexity," says Griffiths. "We'll have to test drive this for a year or two and see what needs tuning."

The Fish and Wildlife Service itself realizes that this kind of effort, with engagement from landowners, industry, and every level of government, can result in the kind of landscape-scale conservation needed to preserve not just a single species, but entire ecosystems. "The success is in the partnerships," Deibert says. "I'm hopeful that eventually, even if folks don't agree a particular species is of value, they'll realize it's a good business decision for them to do conservation."

BOUNCING DOWN A DIRT ROAD on Cross Mountain Ranch in his white pickup, Rex Tuttle gestures toward a large black-and-white border collie sitting in the back of the crew cab. "Don't try to pet Junior," he warns me; the dog doesn't like to be bothered by strangers, a sentiment that might apply to Tuttle as well. The ranch manager looks anxious, reflecting the apprehension pervading the sagebrush steppe about Fish and Wildlife's upcoming decision on Sept. 30.

But things are unlikely to change on Cross Mountain or anywhere else, anytime soon. Thanks to a budget rider Congress passed last December, the agency will be able to announce only whether the sage grouse is or is not still a candidate for listing. If the bird warrants protection, the agency is blocked from developing a rule to protect it as threatened or endangered for at least another year.

Still, Tuttle is clearly worried about the future of his own neighboring ranch, which he hopes to pass down to his sons, now 15 and 17. The conservation easement reduces the ranch's value and hence the eventual inheritance tax, in addition to benefiting wildlife. "We've done all we can to help grouse," Tuttle says, "but we can't force other ranchers to do the right thing." If the grouse is eventually listed, Tuttle wonders if his operation can remain viable — especially since it relies on hundreds of thousands of acres of public-land allotments where grazing might be curtailed. Ranching is already dicey enough, he says, citing difficulties with hiring sheepherders and fending off predators like black bears. "I told my boys they both need to plan to go to college and get degrees," he says, sounding resigned. "That way they can do something else if the ranch doesn't work out." □

Jodi Peterson is a senior editor at *High Country News*, and writes from Paonia, Colorado. @Peterson_Jodi

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When eating the scenery makes you sick

OPINION BY TOM RIBE

WEB EXTRA
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Sometimes you get your heart's desire, and it's too much. On May 23, the Utah Highway Patrol had to close the entrance to Arches National Park after traffic got backed up for five miles on the highway into nearby Moab.

Southwest of Arches, Zion National Park and its gateway town of Springdale also suffer from too many visitors and too little money to manage the impacts of the crowds. Zion has seen an annual 28 percent increase in visitation to around 3.2 million visitors a year. Arches National Park was up 19 percent in 2014, and will likely match that increase this year.

The spiking visitor numbers may be partly attributed to a $12 million advertising campaign, launched by the Utah Office of Tourism and specifically focused on Utah's national parks. The multimedia ad blitz, known as "The Mighty 5" campaign, is designed to bring out-of-state visitors to southern Utah. The tourism office claims that for every dollar spent on its ad campaign, $5.90 in income will flow to state businesses, and $960 million will return through local and state taxes.

Swamping Utah's national parks with visitors may boost local business traffic, but it also stresses the region's gateway communities. Local citizens complain that the state has yet to dip in to those tourist-generated taxes to fund their strained medical clinics, sewer and water systems, law enforcement and transportation. Springdale's medical clinic, for example, is funded by residents and run by part-time staff. Meanwhile, all the new hotels are overwhelming the antiquated sewer and water systems in this vulnerable canyon.

"Many local citizens and park employees would like to request that you stop your ad blitzes, which must cost millions," said Springdale resident Betina Lindsey in an open letter to the state published in the St. George *Independent*. "You might say you are bringing jobs. No, you are bringing tourism and unsustainable consumerism to a fragile ecosystem."

Even as the state turns a blind eye to the real cost of tourism in southern Utah, the National Park Service has been struggling to keep its head above water ever since a 5 percent budget cut in 2012. Lack of money has forced parks to reduce staff in law enforcement, maintenance and public education. Overall, the national parks face an $11.5 billion maintenance backlog because of inadequate congressional appropriations over many years. Zion's backlog alone accounts for $62 million.

For parks like Zion and Arches, fewer staff means fewer rangers to do safety patrols or greet and educate visitors, and fewer workers to fix deteriorating roads, restrooms and trails. And when visitors don't see rangers out in the field, they are more likely to damage national heritage resources with graffiti, vandalism, off-road driving and trash.

"We are seeing a very high level of visitation — a significant increase," says Kate Cannon, superintendent of Arches National Park. "It's difficult for us to keep up with the demands of visitors on facilities and on search and rescue. We have gridlock at the parking lots. People's experience at Arches should not be about trouble finding a place to park."

The National Park Service's budget problems, however, will receive little help from the Utah congressional delegation. The agency's budget is only one-fifteenth

Crowds gather for sunset photographs at Delicate Arch in Arches National Park last July.
RODD HALSTEAD

of 1 percent of the federal budget, but despite the fact that the national parks are a big economic draw for Utah, the state's elected officials consistently vote against their financial needs.

The nonprofit National Parks Conservation Association, which tracks park-related legislation in Washington, D.C., gives Utah Republican Sen. Orrin Hatch a 33 percent rating for his votes related to national parks. His colleague, Republican Sen. Mike Lee, earned a zero percent rating for not supporting the national parks. Meanwhile, Utah's House members get an average 15 percent rating.

Tellingly, the national campaign to divest the American people of their Bureau of Land Management and Forest Service lands and transfer them to the states excludes National Park Service lands, perhaps because of strong public support for the national park system or the draw of the national parks brand. The American Lands Council, a clearinghouse for the land-transfer movement, is based in northern Utah.

It is certainly hypocritical for Utah to hype its national parks with taxpayer-funded ad campaigns while refusing to support those parks or their gateway communities, which are also suffering from overuse. Utah is eating the scenery on public land in the form of economic development; it is past time for the state to pitch in and help pay for the meal. □

Tom Ribe writes about environmental policy in Santa Fe, New Mexico.

Writers on the Range is a syndicated service of *High Country News*, providing three opinion columns each week to more than 70 newspapers around the West. For more information, contact Betsy Marston, betsym@hcn.org, 970-527-4898.

Tombstone's true grit

Epitaph: A Novel of The O.K. Corral
Mary Doria Russell
592 pages, hardcover: $27.99.
Ecco, 2015.

Every day in Tombstone, Arizona, actors recreate the famous gunfight of October 1881, when the Earp brothers — Virgil, Morgan and the legendary Wyatt — along with their friend, Doc Holliday, confronted a gang of local troublemakers known as the "Cow Boys," in a shootout that wounded several and left three dead. The battle lasted a mere 30 seconds, though in modern cinematic slow-motion it goes on forever. In *Epitaph*, Mary Doria Russell goes beyond the bloody melodrama, turning painstaking historical research into an absorbing 600-page novel that seeks to understand these men and the context in which they lived and fought. Russell writes of the participants, "Whether you live another five minutes or another fifty years, those awful thirty seconds will become a private eclipse of the sun, darkening every moment left to you."

Russell ended her terrific 2011 novel, *Doc*, before Holliday's brief stint in Tombstone, largely because she felt the O.K. Corral overshadowed the rest of a remarkable life. But now Russell carries forward Doc's story, as he is increasingly incapacitated by tuberculosis and seldom able to practice his chosen profession, dentistry. As Russell tells it, in fact, Doc first comes to Tombstone in 1880 as a special favor in order to tend Wyatt Earp's toothache. Russell vividly depicts Holliday's suffering, both physical and mental: A man whose reputation as an outlaw gunslinger becomes increasingly ridiculous as his strength wanes.

Holliday was the main focus of Doc, but dozens of distinctive characters populate *Epitaph*, a story that Russell tells with omniscient aplomb. One standout character is Josephine Marcus, the daughter of a San Francisco Jewish baker who ran away as a teenager to become an actress. She winds up living with Johnny Behan, eventual sheriff of Cochise County, Arizona, a man determined to further his political career by any means necessary, including exploiting the violence plaguing Tombstone. Behan discreetly allies himself with the Cow Boys, thereby rousing Wyatt Earp's ire and eventually estranging Marcus, who becomes Earp's lover.

Epitaph shows how a single bloody skirmish in the streets — a rare occurrence historically — becomes the mythic model of daily life in Western frontier towns. Russell ably evokes this epic myth, which continues to fuel our imagination, but what she really excels at is immersing readers in the reality of life in the early 1880s — the clashing tempers and political factions of people striving for power, fortune or at least a toehold in life amid the day-to-day grit of a rugged desert outpost.

BY JENNY SHANK

The man behind the monumental aqueduct

Water to the Angels
Les Standiford
336 pages, hardcover: $28.99.
Ecco, 2015.

Few issues in the West are more controversial than water, and Les Standiford dives headfirst into the topic in his new nonfiction book, *Water to the Angels*, a dramatic account of the life of William Mulholland. Standiford traces Mulholland's rise from an Irish immigrant ditch-digger to the mastermind behind the Los Angeles Aqueduct, one of the greatest civil engineering projects of the 20th century. In the process, Standiford, an accomplished novelist, displays his talent for finding and sharing compelling anecdotes that highlight the drama and adventure of Mulholland's story.

Unlike other books written about Western water issues, such as Marc Reisner's magisterial *Cadillac Desert* (1986), Standiford's *Water to the Angels* passes over the complexity of the region's water politics in order to focus on the larger-than-life person of Mulholland himself. Of course, politics and controversy flow with water wherever it goes, and Mulholland's personal story remains inextricably linked to its context. "But controversies," says Standiford, "have only one small part of my fascination with such tales wherein one of the most powerful men of an era undertakes a project that most consider impossible and overcomes all obstacles."

Mulholland is clearly the hero of this story, but Standiford's portrayal is nuanced and never overblown: The man was, after all, a mere mortal, who confronted numerous challenges in his life and made his share of enemies along the way. And the mistakes he made were, on occasion, both public and catastrophic. Standiford recounts the most tragic failure of Mulholland's career, the 1928 collapse of the St. Francis Dam, which killed hundreds in one of the worst civil engineering disasters in U.S. history. "Devastated by the event that refashioned him from civic hero to villain in an eye-blink, Mulholland would at one point confide to a reporter, 'I envy those who were killed.' "

Water to the Angels ultimately portrays Mulholland as a man who was responsible, intelligent, honest and tireless in his dedication to the public good. Although Mulholland doesn't float unscathed through controversy — and in fact, controversy still swirls around him today — Standiford's story of the ditch-digger who built the monumental aqueduct will inspire anyone who has dared to dream the impossible, and then set out to make it happen.

BY TRACI J. MACNAMARA

William Mulholland and Commissioner Del Valle in an 80-inch pipe at Power Plant 1 construction in 1916. LOS ANGELES DEPARTMENT OF WATER AND POWER

Dreaming where I walk

When I took my oath of American citizenship, the United States Citizenship and Immigration Services realized I was an author and a filmmaker, so I was invited to be the guest speaker for the ceremony. A few hundred people packed the South Broadway Cultural Center in Albuquerque that September morning last year, as 80 people from 12 countries — including Bolivia, Germany, India, Mexico and Russia — took the oath. This is an excerpt from my talk.

When I was a child in India, I was told that Prime Minister Jawaharlal Nehru kept on his desk this verse from the American poet Robert Frost:

The woods are lovely, dark, and deep.
But I have promises to keep,
And miles to go before I sleep,
And miles to go before I sleep.

My family moved from India to Canada when I was a teenager, and I came to America as a graduate student. The film school at the University of Southern California was supposedly the best of its kind, and soon I was up to my neck in coursework. Still, the images that stick with me from those years are of a tree-lined campus where I could walk and think about life, and of long drives to Northern California that sometimes ended in hiking and camping in Yosemite. I can't say exactly when it happened, but I began to fall in love with this country. At 21, of course, it's easy to fall in love.

But many years later, despite the challenges I've faced as an artist, I still feel the same way. My position has nothing to do with politics.

Recently, I got to visit Robert Frost's cabin in Ripton, Vermont. As I gazed at his bookshelves, his Modern Library editions, I pinched myself; it felt like a dream. The solitary cabin and a glorious field that stretched out past it echoed the aspect of Frost's work that appeals to me most — his fusion of the isolation and exhilaration of the road "less travelled."

For me, America is a country where I can dream. This is a place where I can fail and try again. It's a place where I've been able to grow.

I've grown partly because of my experience of American wilderness — its mountains, rivers, national parks, even its visitor centers. In Yosemite, on the knife's edge of Clouds Rest, I realized that one wrong move could mean death. Still, over the years, I kept returning. On a trail in Kings Canyon National Park, I encountered a mother bear with three cubs; I turned around, only to startle another bear off the trail. At that point, I began to run. In such moments, I've felt like I was pushing my physical limits, but looking back, I think I was stretching my sense of who I am and who I can be.

In nature, it's still possible to have that rare thing: an original experience. The experience of deep wilderness is rarer still: In Europe, it's almost nonexistent; in India, though there are still some wild places, a lone woman hiking — even a woman with a companion — faces scrutiny, if not harassment.

I visit the American Museum of Natural History and its scrumptious bookstore whenever I can. During one of my first visits, I picked up biographies of John James Audubon and Theodore Roosevelt. I drank up Roosevelt's story: how he became a birder; how he was Mr. Vitality. I read about his creation of the U.S. Forest Service, and his vision for the national parks. Because of people like Roosevelt, I can now drive 10 minutes from where I live in Santa Fe and be in a national forest with my husband and our toddler.

I was delighted to discover that Roosevelt combined reading, writing and the outdoors, something I like to do as well. He didn't believe in wasting time: In 1886, while chasing boat thieves down a river thick with ice in the North Dakota Badlands, he read Tolstoy's *Anna Karenina*. Much later, on his Brazilian voyage down the Rio da Dúvida, the swarms of mosquitoes and unbelievable hardships did not stop him from being a scientific explorer and an almost pathological diarist.

Though I am still rooted in my origins — I am fascinated by the Indian storytelling tradition, which is ancient and rich and deep — these days I'm dreaming more about where I live now. Many of the stories I'm writing are set here in America, and the characters in them are people like you and me — the new citizens in this auditorium.

I still have many miles to go, but now I feel that where I'm coming from is right here. I think this moment will change the way I tell stories. I hope that, as I try to interpret America's wild spaces, I will make the ghosts of Teddy Roosevelt and Robert Frost smile. □

The author resting at the Summit of Cloud's Rest in Yosemite National Park, left, and in Big Basin Redwoods State Park, below.
COURTESY PRIYANKA KUMAR

Priyanka Kumar is the author of the novel Take Wing and Fly Here*, and she is the writer/director/producer of the feature documentary* The Song of the Little Road*, starring Martin Scorsese and Peter* .

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HEARD AROUND THE WEST | BY BETSY MARSTON

IDAHO

"I guess when you gotta go, you gotta go," BLM spokeswoman Carrie Bilbao told KTVB. She was talking about the mountain biker who started a 73-acre wildfire in the Boise foothills by burning his toilet paper in a dry ravine. The biker, who was not identified, came forward to tell the Bureau of Land Management what happened; apparently, he tried to burn and bury his waste to avoid littering, "but an ember spread to nearby dry grass," reports *The Associated Press*. Occasionally, environmentally minded recreationists try to dispose of their waste in this fashion, said Bilbao, but burning *anything* in a fire-prone area is never a smart idea — and *that's* the latest poop.

ALASKA **Gulled-eagle sandwich.**
DAVID CANALES/U.S. DEPARTMENT OF THE INTERIOR

MONTANA

Then there's starting fires by deliberately pouring gasoline down gopher holes and tossing matches in afterward. That's what a landowner did south of Billings, Montana, but his scorched-burrows War on Gophers quickly became a grass fire that burned 21 acres. "No one was injured," reports kpax.com — except, of course, for the gophers, who lost their homes in the blaze.

WYOMING

Is the Interior Department much too forbearing when it comes to policing oil and gas companies? A recent *Associated Press* story would appear to answer "yes." For several years, High Plains Gas never bothered to report how much gas it was extracting from the Powder River Basin, until finally, the Interior Department fined it $4.2 million. More recently, Interior fined the company an additional $6.9 million for not even keeping track of its gas production, a civil penalty that's said to rank among the most severe ever assessed by the department's Office of Natural Resources Revenue. But it's doubtful that the company will ever pay up: High Plains Gas has been out of existence for more than a year. It has no working phone, and this April, its CEO, Ed Presley, told the *Casper Star-Tribune* that "the company didn't even have the money to file for bankruptcy." Left holding the bag, the state has taken possession of 2,300 of the company's coalbed methane wells, and the Wyoming Oil and Gas Conservation Commission plans to "plug the derelict gas wells."

YELLOWSTONE

Yellowstone National Park bison, those formidable animals that can weigh 2,000 pounds, appear to value their privacy. In particular, they seem to detest having tourists take selfies and post them on Facebook without their permission. Wielding their massive shaggy heads like battering rams, bison recently tossed three too-intrusive visitors into the air. Each encounter occurred as a tourist tried to pose for a picture with a nearby bison. Two other people were attacked for moving too close, including a teenager from Taiwan who was gored near Old Faithful. The Park Service has posted signs that warn tourists about charging bison, but somehow, people remain convinced that the huge animals are tranquil and slow-moving. Park officials warn that annoyed bison can suddenly erupt, sprinting "three times faster than humans can run and are unpredictable and dangerous." The best idea is to stay at least 25 yards away from a bison, and until 75-foot-long selfie sticks are invented, just keep yourself out of the picture.

COLORADO

Crested Butte in western Colorado is being loved to death. According to an impassioned editorial in the *Crested Butte News*, a flood of visitors to the beautiful backcountry around the mountain town is causing "chaos" and "disaster." As the head of the Rocky Mountain Biological Laboratory put it, "We're losing meadows to illegal roads, illegal parking and illegal camping. It's not good for anybody — visitors, scientists or ranchers." The agency in charge of the increasingly trashed public land near town is the Forest Service, and sadly, it hasn't done much because it is "overwhelmed." Editorial writer Mark Reaman compared the high-elevation overcrowding to a spreading rash, and worried that Crested Butte might find itself in "an abusive relationship" with its visitors. The values that make the wild so wonderful are disappearing, he warned, especially respect for the backcountry. He wants the Forest Service to post signs telling tourists how to behave and to consider adding buses to cut down the number of cars on dirt roads.

CALIFORNIA AND NEVADA

It's always been assumed that Lake Tahoe's intense cobalt-blue color was linked to the lake's clarity — the bluer the lake, the cleaner the water — but now, scientists from the University of California, Davis, have found that the lake's blue color is caused by the presence of algae. *Environment & Energy Daily* reports that researchers also found a surprising benefit from the ongoing drought: Reduced snowmelt and precipitation meant that fewer sediments flowed into the lake, increasing its clarity to a depth of 77.8 feet last year, 7.6 feet more than 2013's levels. The iconic lake is the country's second deepest, at 1,645 feet.

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.

"What the Nevada desert — which was seen for so many years as a place to be **mined, bombed and nuked** — needs is understanding, not transformation."

Matt Jenkins, in his essay "The desert doesn't need this 'City' " from Writers on the Range, hcn.org/wotr

Wyoming Wildlife Federation, a (501)c3, seeks qualified individual interested in wildlife issues with special emphasis on fundraising and development to serve as Executive Director (ED). Position will be under supervision of President of Board of Directors. ED oversees all organization operations and provides leadership for members and staff in adherence with existing policies, bylaws and resolutions. The ED coordinates with the Board regarding administration, advocacy, fundraising, development and membership. ED is expected to provide leadership, goal setting, and short- and long-term planning with implementation for WWF. Headquarters located in Lander, Wyo., but some flexibility for position location within Wyoming. Full details on www.wyomingwildlife.org Submit by Sept. 19, 2015.

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When eating the scenery makes you sick

OPINION BY TOM RIBE

WEB EXTRA
To see all the current Writers on the Range columns, and archives, visit *HCN*'s Web site, **hcn.org**

Sometimes you get your heart's desire, and it's too much. On May 23, the Utah Highway Patrol had to close the entrance to Arches National Park after traffic got backed up for five miles on the highway into nearby Moab.

Southwest of Arches, Zion National Park and its gateway town of Springdale also suffer from too many visitors and too little money to manage the impacts of the crowds. Zion has seen an annual 28 percent increase in visitation to around 3.2 million visitors a year. Arches National Park was up 19 percent in 2014, and will likely match that increase this year.

The spiking visitor numbers may be partly attributed to a $12 million advertising campaign, launched by the Utah Office of Tourism and specifically focused on Utah's national parks. The multimedia ad blitz, known as "The Mighty 5" campaign, is designed to bring out-of-state visitors to southern Utah. The tourism office claims that for every dollar spent on its ad campaign, $5.90 in income will flow to state businesses, and $960 million will return through local and state taxes.

Swamping Utah's national parks with visitors may boost local business traffic, but it also stresses the region's gateway communities. Local citizens complain that the state has yet to dip in to those tourist-generated taxes to fund their strained medical clinics, sewer and water systems, law enforcement and transportation. Springdale's medical clinic, for example, is funded by residents and run by part-time staff. Meanwhile, all the new hotels are overwhelming the antiquated sewer and water systems in this vulnerable canyon.

"Many local citizens and park employees would like to request that you stop your ad blitzes, which must cost millions," said Springdale resident Betina Lindsey in an open letter to the state published in the St. George *Independent*. "You might say you are bringing jobs. No, you are bringing tourism and unsustainable consumerism to a fragile ecosystem."

Even as the state turns a blind eye to the real cost of tourism in southern Utah, the National Park Service has been struggling to keep its head above water ever since a 5 percent budget cut in 2012. Lack of money has forced parks to reduce staff in law enforcement, maintenance and public education. Overall, the national parks face an $11.5 billion maintenance backlog because of inadequate congressional appropriations over many years. Zion's backlog alone accounts for $62 million.

For parks like Zion and Arches, fewer staff means fewer rangers to do safety patrols or greet and educate visitors, and fewer workers to fix deteriorating roads, restrooms and trails. And when visitors don't see rangers out in the field, they are more likely to damage national heritage resources with graffiti, vandalism, off-road driving and trash.

"We are seeing a very high level of visitation — a significant increase," says Kate Cannon, superintendent of Arches National Park. "It's difficult for us to keep up with the demands of visitors on facilities and on search and rescue. We have gridlock at the parking lots. People's experience at Arches should not be about trouble finding a place to park."

The National Park Service's budget problems, however, will receive little help from the Utah congressional delegation. The agency's budget is only one-fifteenth

Crowds gather for sunset photographs at Delicate Arch in Arches National Park last July.
RODD HALSTEAD

of 1 percent of the federal budget, but despite the fact that the national parks are a big economic draw for Utah, the state's elected officials consistently vote against their financial needs.

The nonprofit National Parks Conservation Association, which tracks park-related legislation in Washington, D.C., gives Utah Republican Sen. Orrin Hatch a 33 percent rating for his votes related to national parks. His colleague, Republican Sen. Mike Lee, earned a zero percent rating for not supporting the national parks. Meanwhile, Utah's House members get an average 15 percent rating.

Tellingly, the national campaign to divest the American people of their Bureau of Land Management and Forest Service lands and transfer them to the states excludes National Park Service lands, perhaps because of strong public support for the national park system or the draw of the national parks brand. The American Lands Council, a clearinghouse for the land-transfer movement, is based in northern Utah.

It is certainly hypocritical for Utah to hype its national parks with taxpayer-funded ad campaigns while refusing to support those parks or their gateway communities, which are also suffering from overuse. Utah is eating the scenery on public land in the form of economic development; it is past time for the state to pitch in and help pay for the meal. □

Tom Ribe writes about environmental policy in Santa Fe, New Mexico.

Writers on the Range is a syndicated service of *High Country News*, providing three opinion columns each week to more than 70 newspapers around the West. For more information, contact Betsy Marston, betsym@hcn.org, 970-527-4898.

Tombstone's true grit

Epitaph: A Novel of The O.K. Corral
Mary Doria Russell
592 pages, hardcover: $27.99.
Ecco, 2015.

Every day in Tombstone, Arizona, actors recreate the famous gunfight of October 1881, when the Earp brothers — Virgil, Morgan and the legendary Wyatt — along with their friend, Doc Holliday, confronted a gang of local troublemakers known as the "Cow Boys," in a shootout that wounded several and left three dead. The battle lasted a mere 30 seconds, though in modern cinematic slow-motion it goes on forever. In *Epitaph*, Mary Doria Russell goes beyond the bloody melodrama, turning painstaking historical research into an absorbing 600-page novel that seeks to understand these men and the context in which they lived and fought. Russell writes of the participants, "Whether you live another five minutes or another fifty years, those awful thirty seconds will become a private eclipse of the sun, darkening every moment left to you."

Russell ended her terrific 2011 novel, *Doc*, before Holliday's brief stint in Tombstone, largely because she felt the O.K. Corral overshadowed the rest of a remarkable life. But now Russell carries forward Doc's story, as he is increasingly incapacitated by tuberculosis and seldom able to practice his chosen profession, dentistry. As Russell tells it, in fact, Doc first comes to Tombstone in 1880 as a special favor in order to tend Wyatt Earp's toothache. Russell vividly depicts Holliday's suffering, both physical and mental: A man whose reputation as an outlaw gunslinger becomes increasingly ridiculous as his strength wanes.

Holliday was the main focus of Doc, but dozens of distinctive characters populate *Epitaph*, a story that Russell tells with omniscient aplomb. One standout character is Josephine Marcus, the daughter of a San Francisco Jewish baker who ran away as a teenager to become an actress. She winds up living with Johnny Behan, eventual sheriff of Cochise County, Arizona, a man determined to further his political career by any means necessary, including exploiting the violence plaguing Tombstone. Behan discreetly allies himself with the Cow Boys, thereby rousing Wyatt Earp's ire and eventually estranging Marcus, who becomes Earp's lover.

Epitaph shows how a single bloody skirmish in the streets — a rare occurrence historically — becomes the mythic model of daily life in Western frontier towns. Russell ably evokes this epic myth, which continues to fuel our imagination, but what she really excels at is immersing readers in the reality of life in the early 1880s — the clashing tempers and political factions of people striving for power, fortune or at least a toehold in life amid the day-to-day grit of a rugged desert outpost.

BY JENNY SHANK

The man behind the monumental aqueduct

Water to the Angels
Les Standiford
336 pages, hardcover: $28.99.
Ecco, 2015.

Few issues in the West are more controversial than water, and Les Standiford dives headfirst into the topic in his new nonfiction book, *Water to the Angels*, a dramatic account of the life of William Mulholland. Standiford traces Mulholland's rise from an Irish immigrant ditch-digger to the mastermind behind the Los Angeles Aqueduct, one of the greatest civil engineering projects of the 20th century. In the process, Standiford, an accomplished novelist, displays his talent for finding and sharing compelling anecdotes that highlight the drama and adventure of Mulholland's story.

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Mulholland is clearly the hero of this story, but Standiford's portrayal is nuanced and never overblown: The man was, after all, a mere mortal, who confronted numerous challenges in his life and made his share of enemies along the way. And the mistakes he made were, on occasion, both public and catastrophic. Standiford recounts the most tragic failure of Mulholland's career, the 1928 collapse of the St. Francis Dam, which killed hundreds in one of the worst civil engineering disasters in U.S. history. "Devastated by the event that refashioned him from civic hero to villain in an eye-blink, Mulholland would at one point confide to a reporter, 'I envy those who were killed.' "

Water to the Angels ultimately portrays Mulholland as a man who was responsible, intelligent, honest and tireless in his dedication to the public good. Although Mulholland doesn't float unscathed through controversy — and in fact, controversy still swirls around him today — Standiford's story of the ditch-digger who built the monumental aqueduct will inspire anyone who has dared to dream the impossible, and then set out to make it happen.

BY TRACI J. MACNAMARA

William Mulholland and Commissioner Del Valle in an 80-inch pipe at Power Plant 1 construction in 1916. LOS ANGELES DEPARTMENT OF WATER AND POWER

Dreaming where I walk

When I took my oath of American citizenship, the United States Citizenship and Immigration Services realized I was an author and a filmmaker, so I was invited to be the guest speaker for the ceremony. A few hundred people packed the South Broadway Cultural Center in Albuquerque that September morning last year, as 80 people from 12 countries — including Bolivia, Germany, India, Mexico and Russia — took the oath. This is an excerpt from my talk.

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I've grown partly because of my experience of American wilderness — its mountains, rivers, national parks, even its visitor centers. In Yosemite, on the knife's edge of Clouds Rest, I realized that one wrong move could mean death. Still, over the years, I kept returning. On a trail in Kings Canyon National Park, I encountered a mother bear with three cubs; I turned around, only to startle another bear off the trail. At that point, I began to run. In such moments, I've felt like I was pushing my physical limits, but looking back, I think I was stretching my sense of who I am and who I can be.

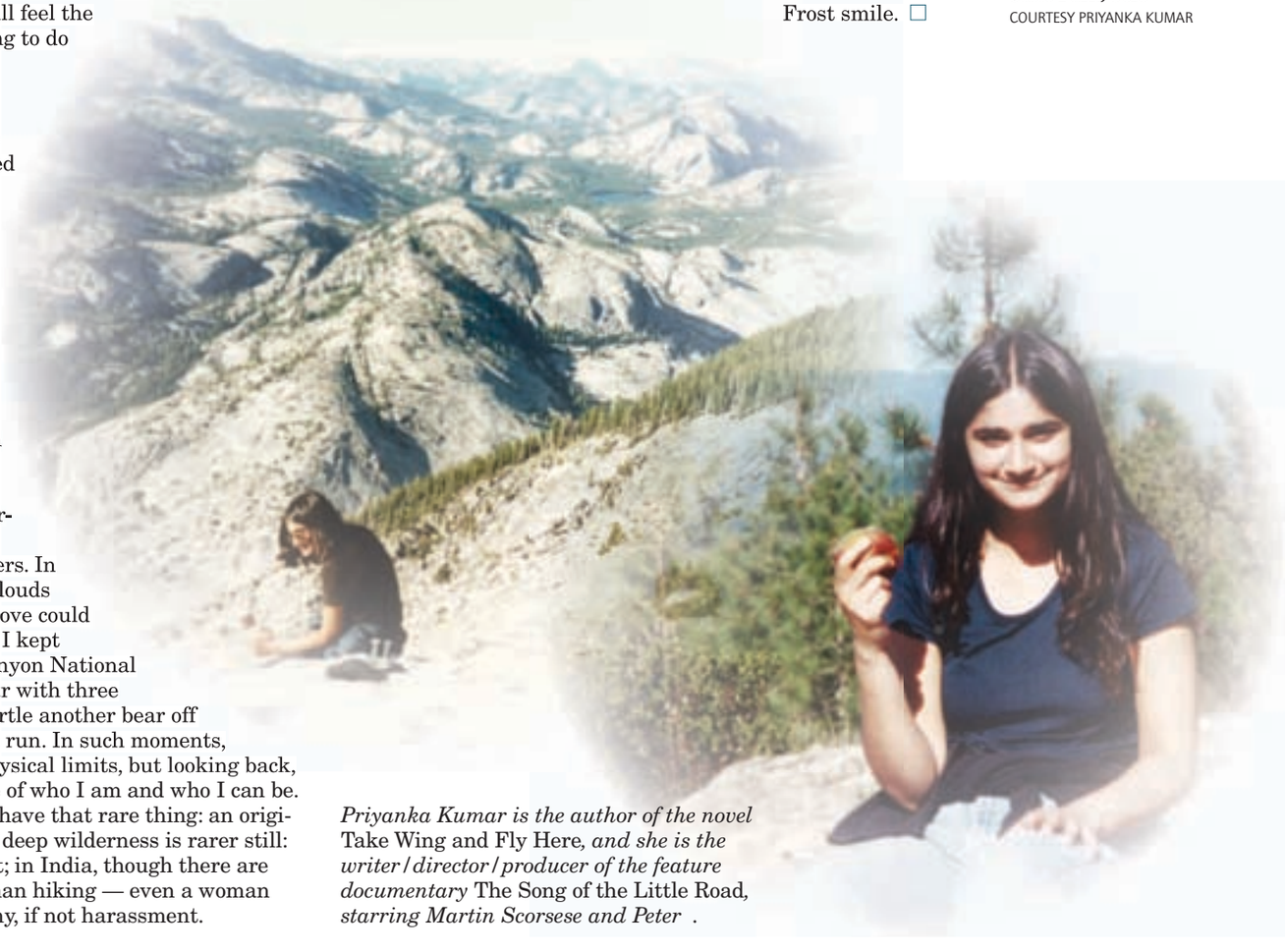
In nature, it's still possible to have that rare thing: an original experience. The experience of deep wilderness is rarer still: In Europe, it's almost nonexistent; in India, though there are still some wild places, a lone woman hiking — even a woman with a companion — faces scrutiny, if not harassment.

I visit the American Museum of Natural History and its scrumptious bookstore whenever I can. During one of my first visits, I picked up biographies of John James Audubon and Theodore Roosevelt. I drank up Roosevelt's story: how he became a birder; how he was Mr. Vitality. I read about his creation of the U.S. Forest Service, and his vision for the national parks. Because of people like Roosevelt, I can now drive 10 minutes from where I live in Santa Fe and be in a national forest with my husband and our toddler.

I was delighted to discover that Roosevelt combined reading, writing and the outdoors, something I like to do as well. He didn't believe in wasting time: In 1886, while chasing boat thieves down a river thick with ice in the North Dakota Badlands, he read Tolstoy's *Anna Karenina*. Much later, on his Brazilian voyage down the Rio da Dúvida, the swarms of mosquitoes and unbelievable hardships did not stop him from being a scientific explorer and an almost pathological diarist.

Though I am still rooted in my origins — I am fascinated by the Indian storytelling tradition, which is ancient and rich and deep — these days I'm dreaming more about where I live now. Many of the stories I'm writing are set here in America, and the characters in them are people like you and me — the new citizens in this auditorium.

I still have many miles to go, but now I feel that where I'm coming from is right here. I think this moment will change the way I tell stories. I hope that, as I try to interpret America's wild spaces, I will make the ghosts of Teddy Roosevelt and Robert Frost smile. □



The author resting at the Summit of Cloud's Rest in Yosemite National Park, left, and in Big Basin Redwoods State Park, below.
COURTESY PRIYANKA KUMAR

Priyanka Kumar is the author of the novel Take Wing and Fly Here*, and she is the writer/director/producer of the feature documentary* The Song of the Little Road*, starring Martin Scorsese and Peter* .

U.S. $5 | Canada $6

HEARD AROUND THE WEST | BY BETSY MARSTON

IDAHO

"I guess when you gotta go, you gotta go," BLM spokeswoman Carrie Bilbao told KTVB. She was talking about the mountain biker who started a 73-acre wildfire in the Boise foothills by burning his toilet paper in a dry ravine. The biker, who was not identified, came forward to tell the Bureau of Land Management what happened; apparently, he tried to burn and bury his waste to avoid littering, "but an ember spread to nearby dry grass," reports *The Associated Press*. Occasionally, environmentally minded recreationists try to dispose of their waste in this fashion, said Bilbao, but burning *anything* in a fire-prone area is never a smart idea — and *that's* the latest poop.

ALASKA **Gulled-eagle sandwich.**
DAVID CANALES/U.S. DEPARTMENT OF THE INTERIOR

MONTANA

Then there's starting fires by deliberately pouring gasoline down gopher holes and tossing matches in afterward. That's what a landowner did south of Billings, Montana, but his scorched-burrows War on Gophers quickly became a grass fire that burned 21 acres. "No one was injured," reports kpax.com — except, of course, for the gophers, who lost their homes in the blaze.

WYOMING

Is the Interior Department much too forbearing when it comes to policing oil and gas companies? A recent *Associated Press* story would appear to answer "yes." For several years, High Plains Gas never bothered to report how much gas it was extracting from the Powder River Basin, until finally, the Interior Department fined it $4.2 million. More recently, Interior fined the company an additional $6.9 million for not even keeping track of its gas production, a civil penalty that's said to rank among the most severe ever assessed by the department's Office of Natural Resources Revenue. But it's doubtful that the company will ever pay up: High Plains Gas has been out of existence for more than a year. It has no working phone, and this April, its CEO, Ed Presley, told the *Casper Star-Tribune* that "the company didn't even have the money to file for bankruptcy." Left holding the bag, the state has taken possession of 2,300 of the company's coalbed methane wells, and the Wyoming Oil and Gas Conservation Commission plans to "plug the derelict gas wells."

YELLOWSTONE

Yellowstone National Park bison, those formidable animals that can weigh 2,000 pounds, appear to value their privacy. In particular, they seem to detest having tourists take selfies and post them on Facebook without their permission. Wielding their massive shaggy heads like battering rams, bison recently tossed three too-intrusive visitors into the air. Each encounter occurred as a tourist tried to pose for a picture with a nearby bison. Two other people were attacked for moving too close, including a teenager from Taiwan who was gored near Old Faithful. The Park Service has posted signs that warn tourists about charging bison, but somehow, people remain convinced that the huge animals are tranquil and slow-moving. Park officials warn that annoyed bison can suddenly erupt, sprinting "three times faster than humans can run and are unpredictable and dangerous." The best idea is to stay at least 25 yards away from a bison, and until 75-foot-long selfie sticks are invented, just keep yourself out of the picture.

COLORADO

Crested Butte in western Colorado is being loved to death. According to an impassioned editorial in the *Crested Butte News*, a flood of visitors to the beautiful backcountry around the mountain town is causing "chaos" and "disaster." As the head of the Rocky Mountain Biological Laboratory put it, "We're losing meadows to illegal roads, illegal parking and illegal camping. It's not good for anybody — visitors, scientists or ranchers." The agency in charge of the increasingly trashed public land near town is the Forest Service, and sadly, it hasn't done much because it is "overwhelmed." Editorial writer Mark Reaman compared the high-elevation overcrowding to a spreading rash, and worried that Crested Butte might find itself in "an abusive relationship" with its visitors. The values that make the wild so wonderful are disappearing, he warned, especially respect for the backcountry. He wants the Forest Service to post signs telling tourists how to behave and to consider adding buses to cut down the number of cars on dirt roads.

CALIFORNIA AND NEVADA

It's always been assumed that Lake Tahoe's intense cobalt-blue color was linked to the lake's clarity — the bluer the lake, the cleaner the water — but now, scientists from the University of California, Davis, have found that the lake's blue color is caused by the presence of algae. *Environment & Energy Daily* reports that researchers also found a surprising benefit from the ongoing drought: Reduced snowmelt and precipitation meant that fewer sediments flowed into the lake, increasing its clarity to a depth of 77.8 feet last year, 7.6 feet more than 2013's levels. The iconic lake is the country's second deepest, at 1,645 feet.

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.

"What the Nevada desert — which was seen for so many years as a place to be **mined, bombed and nuked** — needs is understanding, not transformation."

Matt Jenkins, in his essay "The desert doesn't need this 'City' " from Writers on the Range, hcn.org/wotr