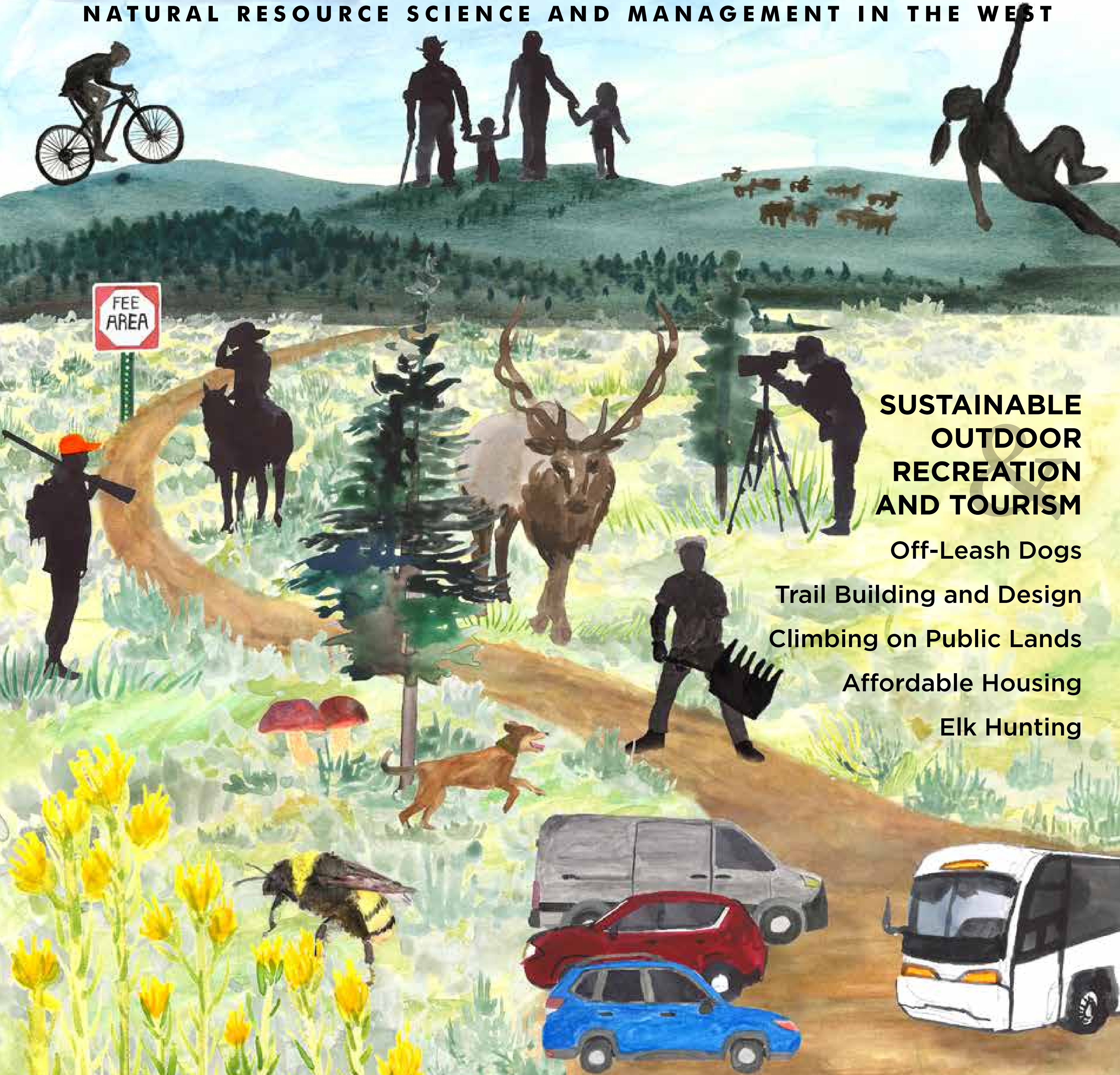
Western Confluence

Issue 13

NATURAL RESOURCE SCIENCE AND MANAGEMENT IN THE WEST



SUSTAINABLE OUTDOOR RECREATION & TOURISM

Off-Leash Dogs

Trail Building and Design

Climbing on Public Lands

Affordable Housing

Elk Hunting

A publication of the William D. Ruckelshaus Institute at the University of Wyoming's Haub School of Environment and Natural Resources

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Western Confluence magazine shares on-the-ground, science-based stories about the interdisciplinary, collaborative solutions to our toughest natural resource challenges.

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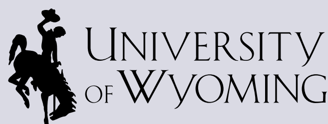

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EDITOR'S NOTE

By Emilene Ostlind

UW Photo

On a search for a place with "a combination of adventure, culture, and affordability," Outside magazine recently named my hometown of Laramie, Wyoming, "the most affordable mountain town in the West." The magazine highlighted Laramie's access to mountain biking, skiing, hiking, and rock climbing along with microbreweries, film festivals, and a farmers market, all while maintaining a cost-of-living below the US average. I read this with a mixture of pride and dread, as no doubt did many other Laramigos. Yes, we know this town is a hidden gem with excellent outdoor amenities that lack the hype—and associated problems—plaguing more famous recreation destinations. And yet, we have already turned away from overflowing trailheads, encountered both human and dog poop at the base of favorite climbing crags, and watched as housing prices leaped skyward. Even before the publicity from *Outside*, it felt like Laramie might be the next of many western towns to be transformed by an outdoor recreation boom.

Communities across the West are racing to embrace outdoor recreation and tourism as an up-and-coming industry. This means figuring out how to reap economic and quality-of-life rewards while avoiding pitfalls such as trash, crowds, and too many seasonal, low-wage service jobs. "What would it look like to envision and work toward an outdoor recreation future where our communities are thriving?" asked the Ruckelshaus Institute (publisher of this magazine) in a statewide forum last year. At the forum, people from across Wyoming worked on how to balance economic, social, and environmental benefits of outdoor recreation against the impacts. Now, *Western Confluence* continues the conversation.

To advance our educational mission, last spring we offered a class in which 10 graduate students each pitched, reported, drafted, and revised an article for this issue. Look for gold medallions with the words "student work" next to their bylines.

In this issue, professional journalists as well as students, staff, and faculty at the University of Wyoming explore outdoor recreation's challenges and opportunities. As communities build new trails (p. 6) and businesses welcome visitors from afar (p. 54), more people are experiencing the outdoors than ever before. But as usage grows, decision makers grapple with how to manage human waste (p. 36), off-leash dogs (p. 38), and housing crises (p. 45). When outdoor recreators descend on a place that's unprepared, managers scramble to accommodate (p. 32), sometimes defending development plans to angry locals determined to protect their place from unwanted change (p. 40). Addressing these challenges requires anticipating and planning for demand before it arrives (p. 2). This might require reconsidering old systems in need of an update (p. 26) or taking creative approaches to steer outdoor recreation toward addressing local challenges (p. 17).

These stories make me consider what Laramie might look like ten or twenty years from now. Will we be the next victim of the amenity trap, clogged with traffic and no longer affordable to anyone except the very wealthy? Or will we get ahead of the challenges and find solutions that welcome residents and visitors alike to our trails and mountains while creating a robust economy and protecting the qualities that make our town special today? As outdoor recreation shapes communities across the West, we hope this issue of *Western Confluence* will help towns and cities, parks and resource managers, understand both the value and perils and consider smart ways to prepare.

On the cover: *Western Confluence editor Birch Malotky layered more than 70 watercolor elements in a collage depicting a few of the many ways that people recreate. She combined figures, animals, and landscape features she painted for the issue with elements that artist June Glasson painted during her 2018 Ruckelshaus Institute Communication Fellowship.*

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LESSONS FROM CURT GOWDY ON OUTDOOR RECREATION DESIGN

Happy Trails

UW Photo

By Katie Klingsporn

Between Laramie and Cheyenne, amid the rocky shrubland and aspen groves of Curt Gowdy State Park, 45 miles of trail unfurl in ribbons of dirt, ramps, jumps, and berms.

These aren't repurposed two-tracks or the kind of grueling paths devised by exercise masochists. The trails were carefully—and in some cases mathematically—designed to utilize the existing granite boulders that sprout up around Curt Gowdy while maximizing angles, curvatures, and roller-coaster features to enhance flow. In other words, these trails were built according to the science of trail pleasure.

"So. Fun!" is how mountain biker Melanie Arnett describes Curt Gowdy's trails. Disclosure: Melanie Arnett is married to Dan McCoy, interim director of the WORTH Initiative, which is the sponsor of this issue of *Western Confluence*. She has lived in Laramie for decades, where she's watched publicly accessible mountain bike trails grow from slim pickings to a plethora. "It's just such a treasure," she said of Curt Gowdy. "I cannot believe this is our backyard."

She does stay away during the summer high season, she said. That's when hikers and mountain bikers flock from Front Range communities and beyond, crowding parking lots and campsites.

Her experience underscores some of the fundamental challenges facing land managers, outdoor recreation advocates, and conservationists working to advance Wyoming's outdoor recreation industry. As they attempt to balance the promise of economic and health benefits with deeply held Wyoming values of empty spaces and the preservation of natural resources, many say the way forward will have to be carefully designed. A test case can be found in Curt Gowdy State Park, which champions say is a model for smart outdoor recreation design, and where a 900 percent surge in visitation post trail-building tested

Brian Harrington/BHP Imaging

A mountain biker threads between boulders at Curt Gowdy State Park.

the landscape's capacity to handle so much human activity.

Established in 1971, Curt Gowdy is a 3,400-acre park at roughly 7,000 feet elevation that encircles three small reservoirs: Granite Springs, Crystal, and North Crow. For much of its existence, the park functioned as a water-activity and camping park, said Todd Thibodeau, a trail builder and mountain bike enthusiast who was a Cheyenne-based senior manager for Wyoming State Parks in the early 2000s. "All of our large state parks were water-based parks," Thibodeau said, adding that the department in large part considered its function to be "providing water-based recreation and camping at reservoirs."

He saw potential for expanding that vision through trail building. Trails are not as affected by storms or lake levels as water sports, he said, and the water at Curt Gowdy could only accommodate a limited volume of people, keeping the park's average visitation to about 50,000 a year. Trail-based activities like hiking and biking could offer more resilient and diversified recreation to state parks visitors.

Specifically, he was drawn to Gowdy, a park right in his backyard and one where "there was not a whole lot of use of those areas away from the reservoirs," he said. The park's windswept landscape—at the intersection of high plains and the Laramie Range foothills—is an unusual clash of granite outcroppings and wide meadows. There's even a tucked-away waterfall. "I used to go hiking a lot in the park, and I kept thinking, 'Wow, you could build an amazing trail system out here,'" Thibodeau said.

> "So. Fun! [Curt Gowdy is] just such a treasure. I cannot believe this is our backyard."
>
> Melanie Arnett

So he helped instigate talks within the agency to build state park trails, he said, laying out arguments why users would benefit from more than just campsites and boat ramps. Swayed by the potential of more users, officials decided to test the waters with a pilot trails project in Gowdy. The agency had to do quite a bit of outreach and explaining, Thibodeau said—including defusing mistaken rumors about the project's scope—but the public eventually came on board.

Over the next dozen years, crews and volunteers created more than 40 miles of purpose-built trail at Curt Gowdy, partnering with trail-building experts from the International Mountain Bike Association to design the network.

Because it started as a blank slate, Thibodeau said, "it allowed us to really innovate and do a lot of unique things there that hadn't really been done in many other places before. And to me, that's maybe one of the reasons that the trail system has been so popular."

A tenet of the design is what Thibodeau refers to as the "ski-area model" of trail development. It involves a focus on loops instead of out-and-back trails, "stacked" loops to offer users lots of options off a main trail stem, and a progression of difficulty—with the easiest options available right from the trailhead. It also involves building "play areas" akin to terrain parks for skills development. Importantly, the trails are fun for a wide range of users, including hikers and runners. That diverse array of options was a uniting principle that guided the entire system.

Another characteristic is that trails were clustered south of the road that cuts through the park, leaving the land north of the pavement mostly undeveloped. That, Thibodeau said, leaves the natural resources and wildlife of the park's north quadrant untouched.

The trails are also designed with the landscape's natural features as opposed to just cutting through them, Thibodeau said. Builders utilized boulders and berms to create playful features; it's these whoop-de-doos, jumps, and bridges that have raised Gowdy's profile as a mountain bike destination. The International Mountain Bicycling Association gave the trails an "epic" designation, and publications like *Bike* and *Outside* magazine have sung its praises. The Crow Creek trail, meanwhile, has become an enormously popular hiking path; it leads to the park's idyllic waterfall.

The success, of course, entailed significant time and money. Construction lasted years as crews, including volunteer labor, meticulously smoothed out grades and moved many tons of rocks. State parks pursued and secured grants and private donations. The state's investment in Gowdy trails falls between $1.75–$2.3 million in 2023 dollars, said Wyoming Office of Outdoor Recreation Manager Patrick Harrington, not including ongoing maintenance.

The pilot project was deemed enough of a success that State Parks also built new trails in Glendo, Hot Springs, Bear River, and Sinks Canyon. In Gowdy, the trails have boosted business for bike and outdoor gear shops in Laramie and Cheyenne, Harrington said, and Thibodeau credits the trails with sparking a youth mountain biking culture in Cheyenne. And, Thibodeau said, it shouldn't be overlooked that it offers locals like himself a sweet place to ride and recreate.

Todd Thibodeau

Trail crews build a bridge at Curt Gowdy State Park during the construction of trails at the park.

Harrington worked as the park's superintendent starting in 2018, at the tail end of trail construction, and has ridden the trails extensively. He calls Gowdy "the little gem in southeast Wyoming" and said it "was one of the initial pieces that started launching sort of a mountain bike revolution, trail user revolution in southeast Wyoming."

Arnett experienced this revolution first hand. When she moved to Laramie in 1998 to pursue a master's degree in botany, she had been mountain biking for a decade. But there weren't a lot of trail options in her new town, so she mostly hiked and ran in the early years. "It actually took me a really long time to figure out where to ride my bike," she said.

Around 2006, a friend convinced Arnett to ride Gowdy's trails, which crews had started building. Cattle grazing in the park necessitated constant on-and-off riding to pass through gates, and she didn't love sharing the park with so many bovines. "I was pretty underwhelmed," she said. However, as more trail miles—as well as cattle stiles—became available, "it started getting really fun…and in recent years, it's just gotten so nice, it's such a great resource for us."

The trails are fun and flowy, Arnett said, and built in a way that helped her progress as a rider by gradually building up her skills. She even got involved in a women's skills camp called Rowdy Gowdy, which she helped coach for years.

Arnett wasn't alone in discovering Gowdy. As word got out, visitation ticked up. By 2019, the park that once attracted around 50,000 visits tallied 221,000. Then in 2020, as the COVID-19 pandemic pushed folks to embark on domestic road trips, that tripled to 622,000.

That season was "crazy," said Harrington, who was Gowdy's superintendent at the time. "We would have parking lots full at 9 in the morning on a random Tuesday," he said. It was a year that put Gowdy's capacity, and design principles, to the test.

Spikes in usage are typically associated with resource impacts like rogue trails, improperly stored human waste, dangerously crowded parking lots, and overwhelmed staff and facilities. In many popular destinations, land managers have struggled to keep up with maintenance, staffing, and infrastructure needs in the face of growing demand. Skeptics of recreation development have also expressed concern about distressing animals, causing irreversible harm to cultural resources like Indigenous sites, and overdeveloping wild places.

In Gowdy, Harrington said, "We definitely saw throughout the pandemic, that capacity of Gowdy, that we reached that capacity."

Though the mountain biking trails and campsites received heavy use, managers said the most drastic explosion was actually in day hiking, with the bulk of people heading out on Crow Creek trail to Hidden Falls. What happened on Crow Creek during the height of COVID, Harrington said, was twofold: up to 300 people a day used it and—because they were social distancing—hikers spread out. That resulted in widening and erosion of the trail and huge parking demand.

In fact, Thibodeau and a crew were shoring up the Crow Creek trail spring 2023 by building stairs, reinforcing grades, and armoring sections. The trail had been "hammered," Thibodeau said. In 2020, State Parks also used federal CARES Act money to add a temporary parking lot and campground to handle the added pandemic demand.

These days, Thibodeau and Arnett both say they generally avoid Gowdy on Saturdays and during the summer high season. The agency keeps an eye on high-use areas like Crow Creek, said acting director of State Parks and Cultural Resources Dave Glenn. "I don't know if we'll ever say, 'Hey, we're full go home,'" he said. "But there's times that we are looking at it going, 'There's too many people on these.'"

Still, this was not a runaway case of "build it and they will come," Glenn said, since "they" are already coming. To him, Gowdy is more of an example of the kind of product they will use—and one the state can manage to minimize negative impacts. "We have the ability to build something and attract folks to it," he said, "or they're just going to go and do it on their own."

These two choices are embodied in a cautionary "tale of two cities" Glenn often tells.

First: Moab, Utah, which he remembers visiting in the 1980s with friends and their outdoor toys, including early mountain bikes. A uranium mill had closed and Moab was economically depressed, he said. But his friends weren't welcomed with open arms. He remembers a

Katie Klingsporn/WyoFile

Todd Thibodeau discusses the complexities of trail design near a popular Curt Gowdy State Park trail, where crews used hundreds of pounds of rocks, among other materials, to connect features for a flowing system.

local telling them to "get out of town, you effing hippies!"

Despite lacking services, they had a good time, and they kept returning. And over the years, Glenn said, he watched as Moab was caught flat-footed as its wealth of red-rock resources attracted increasing crowds. "They buried their head in the sand," Glenn said. "And they got overrun."

The second: Fruita, Colorado. Fruita was a sleepy oil and gas town near the banks of the Colorado River with ample high-desert BLM land, but not much economic vitality. That changed when community members partnered with land managers to build trails and bike paths in a deliberate way, Glenn said, with amenities for the growing number of users like paved paths that connect communities. Today, "It is the mecca of mountain biking in the Intermountain West," Glenn said.

The way Glenn sees it, planning for increased use, rather than fighting it, is the path that will lead to greater prosperity and success. And it's one step toward balancing growth with preservation—"the nut I've been trying to crack the last six or seven years."

After witnessing the surge of visitation at Gowdy, Harrington agrees. "I think that's the lesson learned, is that you can get out in front of it a little bit and start managing for these higher levels of visitation." Though visitation has cooled since 2020, Harrington believes the spike gave State Parks a taste of what's to come.

And while a good design is the foundation of a sustainable product, the planning isn't one and done either. The state also needs to adapt. Back when Gowdy's trails were first being built, managers underestimated how many more people would come. They guessed that Gowdy's visits would roughly double, Thibodeau said. Instead, they increased twelvefold.

To handle increasing growth, Harrington said his office wants to direct crowds to different landscapes and concentrate "them into those places that can sustain those higher uses." It's all guided by State Parks and Office of Outdoor Recreation's philosophy: disperse crowds to alleviate heavy pressure, concentrate them away from sensitive areas, and educate users on responsible stewardship.

And while Wyoming can hold Fruita up as a model of planning, it can also learn from the ways Fruita has continually adapted to growing visitation and use.

One of Fruita's most popular trail networks is 18 Road, in the BLM's North Fruita Desert. 18 Road's popularity exploded around 2010, which prompted the BLM in 2015 to designate it a Special Recreation Management Area. Three years later, a partnership group acquired a grant to develop a trails master plan. The plan, signed in 2022, was both reactive to current conditions and in expectation of growing use, said Amy Carmichael, the assistant field manager for recreation in the BLM's Grand Junction Field Office.

The master plan's goal is to "produce a diversity of quality mountain bicycling opportunities that add to visitors' quality of life while contributing to the local economy and fostering stewardship of natural and cultural resources," which sounds a lot like what Wyoming leaders want to accomplish.

The plan also aims to address negative impacts of popularity, like user-created trails, erosion, dense camping, and packed parking lots. The final document proposes to build an additional 25 miles of new purpose-built trails plus reroutes, event loops, parking, and campsites.

Fruita mountain bike advocate and photographer Anne Keller agrees with Glenn's assessment that Fruita designed amenities to serve visitors, but she thinks the community could offer more hospitality-based businesses, camping, and better trailheads. She's also very concerned about protecting locals from being displaced by tourism-fueled gentrification. "It's a really existential thing that I think about a lot," she said.

Katie Klingsporn/WyoFile

A mountain biker rides 18 Road near Fruita, Colorado.

Wyoming Senator Cale Case (R-Lander) has similar misgivings about what outdoor recreation development can bring to a community. Although he stands to benefit from the industry's growth as a hotel owner, he is also concerned about rising housing costs and jobs that only offer low pay and no benefits, alongside the overdevelopment of places people want to preserve as wild.

These are concerns worth keeping in mind as Wyoming continues to design its outdoor recreation future. Harrington thinks that more of the right kind of development, not less, is one of the ways Wyoming can ensure balance.

In Gowdy, the trail design of stacked loops and directional patterns keeps the biking trails from feeling choked even on busy days, Harrington said. If you want to spend a really lonely day on a trail in southeast Wyoming, "you can find it." If Gowdy is too busy for your liking, nearby areas like Pole Mountain and Happy Jack offer many options, he said. Along with smart design, connections between these and other Wyoming areas can spread the growing number of users out, he said. "The more we build, the less impact we're ultimately gonna have," he said. "Overall, the better the user experience is going to be."

Katie Klingsporn *has been a journalist and editor covering the American West for 20 years. She lives in Lander with her family and reports for* WyoFile.

This story was created in partnership between Western Confluence *and* WyoFile, *an independent nonprofit news organization that covers Wyoming.*

Sheridan Community Land Trust

The Neeson family, along with their four-footed friends Harold and Luu, enjoy the green foothills and valley views during a spring hike at Red Grade Trails.

M·a·k·i·n·g S·p·a·c·e

LAND TRUSTS TAKE ON COMMUNITY ACCESS TO OUTDOOR RECREATION

By Meghan Kent

In 2009, Colin Betzler moved to Sheridan, Wyoming, as the first paid executive director for the local land trust. Like for many people, the Bighorn Mountains drew him to the area. On a clear day, the fortress-like summits of Cloud Peak, Blacktooth, Innominate, and Mt. Woolsey reign over the Sheridan valley. The Bighorns' steep cliffs and high alpine parks play backdrop to everyday life in the small town. Among neon signs and busy storefronts, business names like "Foot of the Bighorns" and "Blacktooth Brewing" bring the mountains into the downtown.

For all of Sheridan's Bighorn Mountain pride, Betzler struggled to find close trail access. A swath of private properties separates the city from mountain trailheads. After fruitless searches down state highways and county roads, Betzler found his choices for trail access limited to driving an hour on the highway or climbing Red Grade Road, a steep, gravel path closed four months of the year. Betzler determined to create a local trail system through his role at the Sheridan Community Land Trust.

Traditionally, land trusts protect land. They hold conservation easements, in which a landowner willingly gives up development rights to a land trust to protect open space, agriculture, or wildlife values of their property. Many land trusts also purchase land outright to protect sensitive habitat, commonly referred to as "preserves." While these agreements and holdings remain important in private land conservation, the scope of work for land trusts has broadened. As they've shifted to engage their communities, local land trusts have found a role in creating access to open space.

"Land trusts increasingly are seeing themselves as part of the solution to who has access to the outdoors," says Brad Paymar, who directs programs in the western US for the Land Trust Alliance, a national organization that develops guidelines, provides resources, and advocates for conservation policy to support land trusts. In recent years, the alliance's focus has shifted to equity and social impacts including access to the outdoors. This isn't necessarily a new idea—for example, the Trust for Public Land was founded in 1972 with a mission to create parks and protect land for people—but growing awareness of disparity in access to greenspaces and resultant health consequences has highlighted the need for local land trusts to create access to open space. The Land Trust Alliance's 2020 census reports 80 percent of land trusts provide public access, up 11 percent from 2015.

Settling into his new role,

Betzler heard abundant interest in the community to expand outdoor access. After consulting with other land trusts, Betzler and the Sheridan Community Land Trust board organized a small group of recreationists to identify locations for a trail system. They narrowed down a long wish list of private and public lands to a few places where trails would be accessible for the community, minimize environmental impact, and have landowner support.

The land trust had been deliberate in building community trust and was careful not to encroach on any property rights. "We weren't standing on the edge of their property with a bulldozer," Betzler says. Working with landowners already supportive of the organization, Betzler started "Ride the Ranch"—a series of evening group bicycle rides along two-track roads on private land. These rides were a proxy for community interest and gave landowners a taste of public access.

One landowner on the west edge of Sheridan made the access permanent. In 2013, the land trust opened Soldier Ridge Trail as a four-mile out-and-back on a ranch road. With volunteer and expert help, the land trust has since built eight more miles of trail leading to the city golf course and a city park. Two of the trailheads connect to the paved city pathway system, making access possible even without a vehicle. As they move across this working ranch, trail users experience the native range habitat protected in many of the land trust's conservation easements.

Paymar refers to places like Soldier Ridge as "ambassador landscapes," where people can experience the open space, wildlife, and natural values that land trusts protect. They're often in or near urban areas, making access easy for recreators as well as school groups. This connection to place brings the community into the land trust's mission.

As Soldier Ridge developed, Betzler and his team pursued another trail project along Red Grade Road. Thirty minutes from Sheridan, Red Grade switchbacks across a mosaic of state, BLM, and Forest Service lands. Unlike Soldier Ridge, which opened access on private properties, Red Grade had always been publicly accessible. Locals had been skiing, snowmobiling, and wandering its dense woods for decades. A trail system would expand its appeal and usability, pulling recreation traffic off the road and into the thickets. The steep foothills and rugged terrain would make destination-worthy downhill trails, but the land trust decided on a different direction.

"We don't need it to be world class—we want it to be great for our community," says Betzler. Instead of bike-specific trails to draw visitors, the land trust designed Red Grade for a range of non-motorized recreation. They hired a trail designer who incorporated local knowledge to create trails for uses from birding to biking and everything in between. The design also accounted for nearby landowner concerns including privacy and fear of trespass.

After years of planning, fundraising, and permitting, the land trust broke ground on Red Grade Trails in 2014. When the BLM and Forest Service requested public comment for expanding the trail system in 2015, they received more than 500 comments, over 80 percent of which specifically supported the trails. What started as four miles meandering from sagebrush foothills into the conifer forest has since grown to 17 miles, three additional trailheads, and plans to construct 16 more miles.

By the time Betzler left his position in 2017, the Sheridan Community Land Trust had built eight miles of trail across two systems; created put-in and take-out sites along Tongue River, Big Goose Creek, and Little Goose Creek for rafters; and placed a conservation easement to double the size of a city-owned natural area. Current executive director Brad Bauer continues Betzler's vision of creating an amenity for the local community.

Community members, he says, are "the ones who have bought into building and enjoying these trails." Seventy percent of the land trust's funding, including for trails, comes from community supporters and local foundations. Their support is necessary to keep the trails maintained, as well. With 31 miles of trail across three systems and over 75,000 users in 2022 alone, the land trust relies on volunteer help to supplement trail maintenance. Bauer continues to look for opportunities to engage more of the community with the trails, including creating accessible trails and providing free community education such as guided hikes, history talks, and workshops.

The Sheridan Community Land Trust trail systems have become a point of pride. In the words of local trail user Jim Sorenson, "Your family is here for Thanksgiving—what do you do? You take them to Red Grade and show them around. … It's something everyone can do."

***Meghan Kent** is the conservation director at the Sheridan Community Land Trust. While attending the University of Wyoming, she wrote for* Western Confluence *as the summer 2020 Science Journalism Intern.*

Sheridan Community Land Trust

Oakley Bevan was excited to collect freshly-blooming balsamroot along Red Grade Trails while her grandmother, retired SCLT Trails Coordinator Tami Sorenson, was out checking the trail.

Restoring Connection to the Land

INDIGENOUS TRAIL CREWS EMPOWER THE NEXT GENERATION OF ENVIRONMENTAL STEWARDS

Ancestral Lands Conservation Corps crew members work in and connect with landscapes important to Indigenous peoples across the Southwest.

Ancestral Lands Conservation Corps

Shonto Greyeyes, a program coordinator for the Ancestral Lands Conservation Corps, says Indigenous trail crew programs can "lead our nations back to ecological and cultural wellbeing."

By Cecilia Curiel

For the last several years, Shonto Greyeyes of the Diné (Navajo) Nation has made his living in some of the Southwest's most sought-after landscapes—from the Red Rock District in Sedona, Arizona, to Utah's Grand Staircase Escalante National Monument. Greyeyes got his start doing river restoration for Coconino Rural Environmental Corps, based out of Flagstaff, Arizona. Following his time at Coconino, he moved north to work in Montana before returning to the Southwest to lead high school conservation crews in Williams, Arizona, intern at the Red Rock Ranger District, and lead adult crews in Grand Staircase for the Arizona Conservation Corps. He now serves as a program coordinator for the Ancestral Lands Conservation Corps.

I spoke to Greyeyes while he tabled at the Nizhoni Days Pow Wow in Albuquerque, New Mexico. With the sound of voices, drums, and laughter in the background, he described the impact that Ancestral Lands and programs like it can have for Indigenous peoples. The Ancestral Lands Conservation Corps aims to engage Indigenous youth and young adults in conservation and land management through hands-on service projects. Like other conservation corps programs, Ancestral Lands crews work with government agencies and private organizations on trail building and maintenance, ecological restoration, historical preservation, fire prevention, and more. However, they do this work with the added goal of restoring Indigenous peoples' historical connection to the land. Or as Greyeyes put it, such programs can "lead our nations back to ecological and cultural wellbeing."

Ancestral Lands is now the model for a much larger initiative. In the summer of 2022, the US Department of the Interior launched the Indian Youth Service Corps (IYSC), meant to provide employment and training for young Indigenous peoples, as well as to "increase Tribal engagement in environmental stewardship activities." Through her role leading the department, Secretary of Interior Deb Haaland of the Laguna Pueblo Nation has ensured that Indigenous stewardship is part of efforts to address topics such as climate change and environmental justice. The Interior Department's role, Haaland said in her acceptance speech to the position, is "not simply about conservation—[it's] woven in with justice, good jobs, and closing the racial wealth gap."

Both Greyeyes and Secretary Haaland see corps programs as not only a means of employment and community service, but also an opportunity to reengage Indigenous people in stewarding the landscapes they inhabited for thousands of years before systematic removal by the US government. The IYSC can contribute to community resilience

Ancestral Lands Conservation Corps

by promoting ecological and social restoration, shared knowledge, and skill development. Achieving these goals—if history has taught us anything—will largely depend on how well programs integrate Indigenous knowledge and values.

Programs like the IYSC and Ancestral Lands have a long historical precedent going back to the Civilian Conservation Corps (CCC) under President Franklin Roosevelt's New Deal. The CCC was intended to provide employment and economic relief for young men in response to the Great Depression. Many viewed the distress experienced by displaced workers who could no longer provide for themselves or their families not only as a financial burden, but a social and psychological one. The CCC was Roosevelt's answer to mending these problems. In fact, historian John Paige notes that the program was steeped in ideas for social and cultural development, with influence from 19th-century philosopher William James who wrote that such programs would make men, "tread the earth more proudly, the women would value them more highly, they would be better fathers and teachers of the following generation." While this sentiment clearly leaves out the active role of women, it shows that conservation corps programs were more than tools for employment, but active in social construction and community building.

While the Civilian Conservation Corps was widely developed for white men in a still-segregated 1930s America, it did recognize the hardships that the Great Depression placed on Indigenous and Black Americans, creating divisions for both. The CCC Indian Division did not suddenly dispel the difficulties that Indigenous people have and continue to endure, but the program was largely lauded as a success within Native communities, especially when compared with other policies of the time.

For example, the 1934 Indian Reorganization Act, implemented just one year after the CCC, intended to restore Indigenous cultural knowledge, strengthen tribal governments, and promote native traditions as a counter to earlier government policies of Native American assimilation. However, it relied on US government authority to enact many of its stated goals, and the program failed to promote tribal autonomy and cultural resilience.

The CCC Indian Division, on the other hand, had the simple goal of providing employment and training to Indigenous peoples while making improvements to both tribal land and government land that other divisions of the CCC worked. The training prepared Native American participants to eventually hold over 750 of the approximately 1,200 managerial positions in the CCC Indian Division. This was a key difference from the Indian Reorganization Act, which was largely run by white governmental officials. The acknowledgement that Indigenous peoples were best suited to make decisions in Indigenous affairs was a critical element of the CCC Indian Division's success.

That self-determination is something that Ancestral Lands and the IYSC strive to replicate. "If we have people from our communities that look like us performing these tasks and showing up authentically through failure and success, the whole process," Greyeyes says, "when we see our people doing it, you know, it becomes a possibility." But truly empowering marginalized communities, Greyeyes emphasizes, also requires creating the opportunities and mechanisms for them to succeed. "If I could train myself out of a job," Greyeyes continues, "that would be ideal."

Training crew members to move up in the organization isn't the only goal of programs like Ancestral Lands and the IYSC. They want crew members to take their training into the community. Shamira Caddo of the White Mountain Apache Nation describes starting her work in conservation. "At the time, there were no jobs on the reservation," she says. So when she got a call from the Arizona Conservation Corps White Mountain Apache office she jumped at the chance, even though she wasn't quite sure what she had signed up for. All she knew was that she needed to be at "Pinetop, with camping gear and clothes for, like, eight days." Her first days at Arizona Conservation Corps were "a crash course" operating chainsaws to clean up after wildfire and clear trails. This was her first job off the reservation, and she eventually became a crew leader. Caddo says one of the most influential parts of her experience was, "being exposed to different departments within the BIA [Bureau of Indian Affairs] or Park Service, or, state, local and federal agencies. It was like, wow, you know, they actually have these jobs. And I can actually do them." She now works at a farm in Minnesota that brings Indigenous practices into the community through garden projects, and she credits her chainsaw training in part. "That's one of the reasons why this organization hired me, "she

> It's about creating opportunities for young Indigenous people to develop their own story and develop their own narratives as a part of their identities when working in parks.
>
> Maasai Leon

Ancestral Lands Conservation Corps

For Shamira Caddo of the White Mountain Apache Nation, her first days at Arizona Conservation Corps were "a crash course" operating chainsaws to clean up after wildfire and clear trails.

told me. "They needed sawyers on the farm."

The corps offer more than just skill-building. Many of the corps members I spoke with explained that conservation programs meant their first chance to leave the reservation and engage with their ancestral lands. Massai Leon, of the Chiricahua Apache Nation, has been working in conservation for several years, including recruiting Indigenous members for the Arizona Conservation Corps. He explained that many of the crew members he worked with had never left their reservation. "And those that had," he says, "have never really seen a lot of the national parks and monuments and areas that we work in." Programs like IYSC and Ancestral Lands reconnect Indigenous peoples to land they were violently displaced from by the creation of our national forests and parks. These programs offer a renewed opportunity to help Indigenous youth understand "the connections that we have to place and how it's been disrupted through the creation of parks and forests," Greyeyes tells me. "In a larger wellness community aspect, [it's about] creating opportunities for young Indigenous people to develop their own story and develop their own narratives as a part of their identities when working in parks."

Working these lands, Leon explains, is important for Indigenous youth to engage their past. For example, one crew worked on a historical preservation project on Fort Bowie, where many Indigenous peoples were held prisoner during the Indian Wars. "It would be wise to put Native people on that trail to know the history," Leon says, explaining that understanding the complexities of historical sites, the legacy of settlement, and the nuance of tribal relations is important for Indigenous peoples.

This gets at another mission of programs like Ancestral Lands and IYSC: to foster community resilience by creating and sustaining cultural lines of heritage through interaction and passing knowledge from one generation to the next. This is why, Leon says, when the crews are together, he tells stories, especially those involving other tribes represented on the crew. "I always encourage people to learn more about their culture," he says. "And if there was any way that we could provide more information for them, or put them in touch with an elder, we would." Opportunities like these are important in keeping alive the knowledge and traditions that Indigenous peoples share through story.

Leon offered another example of a crew member working with Anasazi artifacts, explaining that for his people, the Diné, coming into contact with such ancient cultural pieces meant he needed to perform a cleansing ceremony known as smudging. Leon continued, "When it comes to ceremonies, we're very understanding, you know…if someone needs to go to a ceremony, we will work with the individual to try to get them to wherever they need to go." Caddo shared a similar experience of a young Navajo crew member who refrained from sleep during a lunar eclipse as part of a tradition passed down from his grandmother. Caddo says she had to think on her feet, but because time off for ceremonies is structured into the Ancestral Lands program, it was easier to make adjustments for the crew member. Making space for ceremony within conservation programs represents a different way of being with the land, of recognizing Indigenous peoples' stories and ceremony in conservation.

Caddo, Greyeyes, and Leon's experiences help us understand how Indigenous conservation crews can empower young Indigenous peoples to carry knowledge into the wider community. In calling for a national Indian Youth Service Corps, Secretary Haaland said, "Increasing [Indigenous youth's] access to nature early and often will help lift up the next generation of stewards for this Earth." Connecting Indigenous youth with the land is a significant step in combatting some of the environmental and social injustices that Native peoples have experienced, and one step toward the broader goals of passing Indigenous knowledge to future generations and embedding it into our policies and land management strategies.

Ancestral Lands Conservation Corps

Massai Leon, of the Chiricahua Apache Nation, has been working in conservation for several years, including recruiting Indigenous members for the Arizona Conservation Corps.

__Cecilia Curiel__ is a graduate student at the University of Wyoming studying English and Environment and Natural Resources. She hails from Eugene, Oregon, the traditional homelands of the Kalapuya people and the people of the Grand Ronde Reservation and Siletz Reservation. She loves to be in the outdoors, a passion she first developed working in conservation corps in the North and Southwest.

Sam Sharp

An Outward Bound student and instructor explore a creek.

Reimagining "Leave No Trace"

CAN OUTDOOR RECREATORS MINIMIZE IMPACT IN THE BACKCOUNTRY WHILE CONNECTING DEEPLY WITH PLACE?

By Sam Sharp

It'd been raining all day when we heard them: bullfrogs, croaking from the woods. We stopped, dropped our packs, and marched through the leaf litter to find them.

One student pointed out a big, green frog covered in mud.

"Can I hold him?" he asked.

Sure, I wanted to say. Just be gentle. But I hesitated. The frog had stopped croaking by now, frozen under the stare of ten 8th graders. In fact, all the frogs had stopped. We'd walked as carefully as we could, but our footsteps had still reduced their miniature pond to a silent puddle of mud.

"Let's just look for now," I finally said. "We don't want to bother him."

The student sighed. "Okay," he said.

That night, after we set up our camp, I overheard him talking with a friend. This was the first frog he'd seen "in real life."

That moment stuck with me. As an outdoor educator, I'd led these students into the backcountry—ten days in the Appalachian Mountains—to foster relationships with themselves, each other, and nature. At the same time, we tried to minimize our impact on this place. Most outdoor professionals would agree that holding wild animals, especially walking off trail to do so, violates that effort. It goes against Leave No Trace, or LNT—the ethical guidelines most outdoor recreators follow to reduce our impact on the backcountry.

And yet, something about LNT just didn't feel right. There were times that, as with the frog, trying to minimize our impact resulted in minimizing engagement. But it wasn't just missed opportunities.

Philadelphia Outward Bound School

Students form a huddle and chant in Crater Lake.

Sometimes it felt like we practiced Leave No Trace merely to create an illusion that we hadn't been there. For some kids, this illusion of absence is a reality. Many of our students came from backgrounds that have been and still are excluded from outdoor spaces. It disturbed me to tell them to make our camps look like they were never there—to scatter rocks we used to tie down tarps, for example—when, just a week before, they had never been.

I left that job with a lot of questions. I could see how following Leave No Trace helped us clean up after ourselves and protect the wild quality of these mountains. But I worried that framing their whole relationship with nature around LNT might compromise students' connection to them. At a time when access to wildlands is out-of-reach for many young people, could we adapt LNT to not just minimize our impact on nature, but also maximize meaningful experiences with it?

In the 1970s, Americans began flocking to national parks and forests in unprecedented numbers. Remote places suddenly faced a new source of pressure: aggressive, reckless recreation. Hillsides eroded as hikers walked off trail. People fed bears, then got attacked by them. Campgrounds became clogged with hot-dog wrappers, charcoal, and human poop. And unattended campfires often leapt into the forest.

People's behavior began to shift, slowly, in the 1980s, when the National Park Service, Forest Service, and Bureau of Land Management cooperatively established a program called "Leave No Trace" to inform responsible backcountry travel.

Leave No Trace has since become a non-profit organization, offering day programs, workshops, and multi-day "LNT Master Educator" certification courses. It has become *the* ethical underpinning of the most outdoor education groups and is the most widespread outdoor ethic in the United States. You can find its seven principles displayed at most trailheads, outdoor retailers, and National Park visitor centers. The principles are:

1. Respect wildlife
2. Travel and camp on durable surfaces
3. Dispose of waste properly
4. Plan ahead and prepare
5. Leave what you find
6. Minimize campfire impacts
7. Be considerate of other visitors

Leave No Trace is simple and actionable. Pack out your trash, it tells us. Stay on trail to reduce erosion. Let animals be. And cook on a propane stove, not a campfire, to limit burn scars and wildfires.

"All the principles are science driven," says Derrik Taff, an associate professor of Outdoor Recreation at Penn State. He was on sabbatical at LNT's headquarters in Boulder when we talked over the phone.

"I've seen them work firsthand, as a park ranger and outdoor facilitator," he continued, "but they've been empirically shown as well."

He described a study showing that LNT training led a group of kids to act with more consideration for nature.

I asked him how following LNT as an ethic, however helpful it might be in reducing our impact, might lead to a detached relationship with the outdoors. He saw that as a misteaching of the principles.

"It's really just about being a good human… Like, let's try to protect nature and be respectful of each other. Who could argue with that?"

I couldn't argue with Taff on the point of whether or not LNT works. But I still felt like there was something off about it—something wrong with using it to drive our relationship with the environment. David Moskowitz, author and

professional wildlife tracker, put this feeling into words.

"It [LNT] forwards the idea of wilderness," he told me over the phone one day. "It erases the reality that North America wasn't a wilderness, it was inhabited by people that we stole the land from."

His criticism is not isolated. In a paper titled, "Beyond Leave No Trace," researchers from Stanford University and the University of California, Santa Barbara argue that "as a practical environmental ethic, Leave No Trace disguises much about human relationships with non-human nature." It promotes an optimal relationship to nature based on human absence, another researcher argues, further alienating people from wild places.

"I had students who were so afraid to mess things up outside that it just became a stressful experience," Moskowitz continued. "As if, you know, as if we were in a museum."

He cleared his throat. "When it comes down to it, LNT is really about making it more aesthetically pleasing for affluent people to recreate."

Moskowitz' criticism of LNT resonated with me. It felt arbitrary to tell students not to flip rocks upside down when looking for crawdads, for example, when a flood might easily do the same thing. But again, Taff's support for it made sense too. I'd chased off many racoons who'd come to scrounge on dinner scraps we hadn't properly disposed of.

I wondered if there was a middle way—if I could find someone who has adapted LNT to inform a more holistic, complex outdoor ethic.

I immediately thought of KROKA Expeditions, which I'd heard about when I was working for Outward Bound. Based on an organic farm in New Hampshire, KROKA embraces a unique blend of organic agriculture and backcountry travel in its curriculum. I reached out to Emily Sherwood, a co-director at KROKA, to learn more.

> It's really just about being a good human... Like, let's try to protect nature and be respectful of each other. Who could argue with that?
>
> Derrik Taff

Sherwood made it clear that KROKA rigorously follows LNT. But it doesn't seem to minimize intimate experiences with nature. On some courses, students build canoes from dead trees they fell, using hatchets they maintain. Sherwood also noted that they have a unique way of travelling in winter.

"Our winter travel is very intensive," she started. "We use a large tent that can fit all of our group, and a wood stove that can heat the tent…And we're really conscious about how we harvest those [tree limbs]… and how many we take from a single tree."

KROKA students also cook almost exclusively with wood because it's so abundant in the northeast. Campfires also foster more intimate experiences with a place and other people than gas, from carefully harvesting wood in the area as a group, to seeing the flames crackle while they cook your dinner. Still, it's still a surprising decision, given that propane stoves are widely considered to create less visual impact.

"It feels like Leave No Trace on a much more global scale," she said. "We're not using a petroleum product. And that feels like the right thing."

We agreed that LNT looks different in different places. Here on the high plains of Wyoming, I rarely, if ever, make a fire (though I have in winter, when enough snow falls in the mountains to make a fire pit). But I've only been living in Wyoming for little more than a year. I wondered how I could continue framing LNT in my own budding relationship with this place.

Perhaps Moskowitz, a former KROKA instructor himself, said it best. "Let's accept that negative impacts exist and that we need to clean up after ourselves. But we can reimagine Leave No Trace as something that is helpful in terms of keeping a clean campsite, but also realistic about our relationship with the natural world."

This can still sound cerebral to me. But responsible recreation might not be as complicated as it seems.

Emily Sherwood

KROKA Students prepare to camp in a large tent with a woodstove in the center.

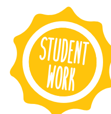
On day five of another expedition, we came upon Crater Lake in Pennsylvania's Delaware Water Gap. It was 90 degrees out, clear and sunny. The students wanted to swim. I wanted to tell them no: this is a fragile, and highly trafficked, glacial lake. But I talked it over with my co-instructor, and we made a plan.

We scouted out a spot without much vegetation on the edge of the lake, and the next thing I knew all ten students were in the water, shoes off, howling like coyotes.

Later that afternoon, we air-dried, put on our hiking boots, and prepared to continue on our way. Our impact on the water seemed negligible—perhaps a bit of sunscreen in an already well traveled lake. But the water's impact on us was momentous.

"I needed that," one student said, closing his eyes. "And I didn't even know that I did."

__Sam Sharp__ is a writer from Ohio. A former Outward Bound instructor, he is currently pursuing an MFA in Creative Nonfiction Writing with a concurrent degree in Environment and Natural Resources at the University of Wyoming.



The Outdoor Recreation Ecosystem

HOW ACCOUNTING FOR HUMAN BEHAVIOR CAN IMPROVE WILDLIFE MANAGEMENT

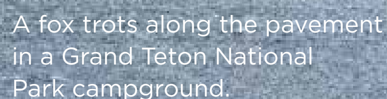
By Molly Caldwell

On a summer evening in a Grand Teton National Park campground, the smell of barbeque drifts along a cooling breeze, signaling dinner time to nearby red foxes. These foxy visitors delight campers, who see no harm in rewarding their presence by tossing a leftover piece of bread. Watching wildlife provides an alluring glimpse of wildness and is a main reason outdoor recreationists flock to the Tetons.

However, such interactions also drive human-wildlife conflict, with some food-conditioned animals becoming aggressive towards humans. So park rangers post signs exclaiming "Lock it up!" on wildlife-safe food containers in campsites, haze foxes out of campgrounds, and, in extreme cases, euthanize aggressive foxes. Anna Miller, recreation ecologist at Utah State University, finds these approaches ignore an important aspect of human-wildlife interactions: that encounters with wildlife can actually bolster support for wildlife conservation. In a recent paper, Miller and co-authors suggest that shifting recreation management from focusing solely on negative human-wildlife interactions to also integrating positive human behaviors and values can improve outcomes for people and wildlife.

Nearly 4 million people visited Grand Teton National Park in 2021 alone, an 11 percent increase from prior record high visits in 2018. Public resource managers in the area are scrambling to minimize negative impacts on natural ecosystems and wildlife from this increased outdoor recreation demand. However, traditional recreation management, which seeks to minimize human contact with wildlife, often does not prevent irreversible damage to wildlife. According to Miller, some management strategies that originated in response to the post-World War II recreation boom have failed to protect wildlife from threats such as habitat destruction or eating trash and are long overdue for an update to match current recreation demand. "Maybe there's some tweaks we can make to make those tools more relevant," says Miller.

One of the tweaks Miller proposes, in her recent co-authored article in the *Journal of Outdoor Recreation and Tourism*, is broadening science and management to encompass a fuller picture of the "recreation ecosystem." This means integrating more of the positive, negative, and neutral interactions that flow both ways between humans and natural ecosystems, rather than focusing just on negative human impacts (such as decreasing wildlife habitat) or negative wildlife impacts (such as attacks on pets and people). One positive human-wildlife interaction that managers may overlook is how, for example, seeing a wild fox may inspire a person to limit


A fox trots along the pavement in a Grand Teton National Park campground.

Sheila Newenham

Sheila Newenham

Grand Teton National Park managers put up signs to discourage campground visitors from feeding foxes.

their impacts on wildlife habitat or support fox conservation.

Miller's proposed "recreation ecosystem framework" outlines an interdisciplinary approach that considers both ecological and social science to inform outdoor recreation and wildlife management. This approach could help researchers and managers identify which pieces of human-wildlife systems are causing conflict and "help us recognize the tradeoffs" between the positive and negative aspects of outdoor recreation, Miller says. Traditional wildlife and recreation management mostly focuses on limiting interactions between humans and wildlife but fails to account for social aspects of these interactions, including how people value wildlife sightings and may contribute to conservation as a result. Another important social aspect of human-wildlife interactions is whether recreationists follow the guidelines of the recreation area, such as staying on trails. Altering how guidelines are communicated to recreationists can help increase adherence to rules that prevent negative human-wildlife interactions.

Linda Merigliano, recreation program manager with the Bridger Teton National Forest adjacent to Grand Teton National Park, is part of a group putting the recreation ecosystem framework into action. Much of her work consists of "understanding desired visitor experiences and offering a spectrum of opportunities that people are seeking," while minimizing damage to land, water, and wildlife. "Human behavior has consistently been one of the most difficult things to manage for," she says.

In 2020, Merigliano and a team of wildlife and social researchers, land and wildlife managers, and several conservation groups launched the Jackson Hole Recreation-Wildlife Co-Existence Project. The project aims to document and improve management of human-wildlife conflict surrounding outdoor recreation in the Tetons. Based on research by Miller, Courtney Larson, Abby Sisernos-Kidd, and others, the project focuses not only on human impacts to wildlife but

Courtesy of Linda Merigliano

Linda Merigliano works as recreation manager for the Bridger Teton National Forest.

Courtesy of Anna Miller

Anna Miller studies recreation ecology at Utah State University

Human behavior has consistently been one of the most difficult things to manage for.

Linda Merigliano

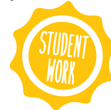
also considers human behaviors and values.

Using social science methods, project members surveyed recreationists in Teton County about their views on wildlife and responsible recreation. The survey results showed most recreationists want to contribute to responsible wildlife management and use of natural areas, and they are more likely to follow management guidelines if they know exactly what is expected and why the action is needed. The co-existence project harnessed these findings along with wildlife and habitat data to create more effective management.

For example, the Bridger Teton National Forest is increasing communication of educational messages before people arrive and by stationing ambassadors at recreation areas. These communications explain the "why" behind guidelines by describing the impacts on wildlife of human actions such as going off-trail. This type of messaging targets the social aspect of the recreation ecosystem, acknowledging the positive findings of the survey that most recreationists want to limit negative impacts of their activities on wildlife and will follow national forest guidelines if they are more thoroughly explained.

In the Tetons, the recreation ecosystem includes how foxes respond to human food as well as how campers both contribute to human-wildlife conflict and support wildlife conservation. Assimilating the ecological and social components of this human-wildlife system could help wildlife managers better shape guidelines (and communications) to limit negative human-fox encounters. "A lot of times it's easy to just say that recreation is a negative disturbance factor," Miller says, "but there's so much more to it than that."

__Molly Caldwell__ is a PhD candidate at the University of Wyoming researching the movement and community ecology of Yellowstone National Park ungulates. More info on her work can be found at mollyrcaldwell.com.



Sheila Newenham

A wild red fox sits in a developed recreation area near the Dornan's Cabins in Grand Teton National Park.

How Human Activity Influences Foxes in Grand Teton National Park

University of Wyoming graduate student Emily Burkholder and her advisor, professor Joe Holbrook, partnered with Grand Teton National Park to examine red fox use of human food resources. The researchers put GPS collars on park foxes to understand how they moved relative to campgrounds, and analyzed hair and whisker samples to determine how much of their diets came from human food.

Burkholder found that foxes eat more human food in the summer when park visitation is at its highest, and determined adult foxes eat more human food than juveniles. They also found "vast individual level variation in how a fox engages with human resources," says Holbrook. Understanding which foxes are more likely to become food-conditioned helps managers identify which individuals are "well-positioned to go through hazing," says Holbrook.

"Our work advances our understanding of the dietary niche of Rocky Mountain red fox, demonstrates how variation in human activity can influence the trophic ecology of foxes, and highlights educational and management opportunities to reduce human-fox conflict," the researchers wrote.

Madlen, Shutterstock

Wings Over Wyoming

CULTIVATING POLLINATOR SUPPORT AT STATE PARKS

By Amy Marie Storey

In 2019, a plain mowed field in Oklahoma's Sequoyah State Park transformed into an acre of wildflowers. The verdant space served both visitors and pollinators. It became home to deer and raccoons, butterflies and bees. Park adventurers wandered the mown paths, enjoying the extra experience before heading home. The author of this metamorphosis was Angelina Stancampiano, a state park ranger who received a grant to revitalize the space as a pollinator garden. Following a recent move to Wyoming, Stancampiano hopes to recreate this success in five more state parks, combining community engagement and conservation to write a little hope into the big picture story of pollinators.

As it happens, the story is currently in a plot twist and it's not a fun one; pollinators are in decline globally and although researchers have catalogued as much as possible about these declines, the causes are not yet defined. Conservation efforts of all sizes—from community courses on pollinator-friendly gardening to participation in community science initiatives—hold extra weight during this critical period. Recreation sites may seem an unlikely player in pollinator conservation, but in summer 2023, Wyoming State Parks took up the challenge. With the agency's focus on visitors and outdoor recreation, the trick was fitting pollinator conservation in with the parks' people-oriented goals.

No comprehensive answers exist to guide long-term conservation of pollinators, including those in the western US. The once common western bumble bee (*Bombus occidentalis*), for example, once ranged down most of the US's west coast, but today has disappeared from almost all its former range. A recent study showed Wyoming as one of the last strongholds for this species. Three other native Wyoming bumble bees are currently petitioned for listing under the Endangered Species Act alongside the western bumble bee. But a listing is just one, lengthy step in conservation efforts. Data must be thoughtfully gathered and research conducted to uncover the causes of decline. Only then can conservation measures be designed to combat losses.

Meanwhile, patches of floral habitat like community and home gardens may be a lifeline to species in peril. According to Scott Schell, entomology specialist for the University of Wyoming Extension, supporting pollinators requires neither great skill nor great investment. "If you plant it, they will find it," he says. He points out that people enjoy plants, too, and a garden can be a boon to human health. "I don't see any downside in trying to help pollinating insects."

Courtesy of Angelina Stancampiano

Angelina Stancampiano, interpretive ranger for Wyoming State Parks, earned a grant to create pollinator gardens in five Wyoming parks.

Emilene Ostlind

A pollinator garden funded by a STIHL grant welcomes butterfly and human visitors at Medicine Lodge State Park in central Wyoming.

> For me, the best possible outcome we could have would be folks who came and visited one of our sites and went home and decided to change part of their manicured lawn into a pollinator patch.
>
> Angelina Stancampiano

Stancampiano is one of two Wyoming State Parks interpretive rangers, whose mission is to ensure that park resources and experiences reach the visitors coming from within and beyond the state. This means helping people build connections with the land through tours and activities. The opportunity to combine her role with pollinator conservation arose when Wyoming State Parks District Manager Kyle Bernis tasked Stancampiano and her counterpart, Linley Mayer, with applying for a Hearts of STIHL grant. Run by outdoor power equipment manufacturer STIHL, this grant funds sustainability- and conservation-related projects in parks.

"The three prongs were education, conservation, and restoration. And it just asked you to pick one," Stancampiano says of the grant's prompt. "But I decided to try and target all three." She proposed Wings Over Wyoming, a long-term program that aimed to provide positive experiences to park visitors and support pollinators at the same time. Stancampiano outlined an ambitious plan to plant pollinator gardens and hold educational workshops that promised to impact parks, visitors, and wildlife statewide.

In fall of 2022, STIHL awarded Wyoming State Parks $20,000 for the proposed project. Over the following winter, the Wings Over Wyoming team crystallized plans, ordered seeds, and hosted the first workshop, which taught participants to build small bee habitats. State Park staff planted seeds during the first two weeks of June and the gardens peaked in July and August.

Wings Over Wyoming is engaging visitors through five themed sites. Bear River State Park highlights bats and rebuilds bat boxes around the park. Edness Kimball Wilkins State Park nods to the active Audubon Chapter in nearby Evansville by focusing on birds. Keyhole State Park restored a plowed area to a pollinator patch optimized for beetles. Medicine Lodge Archaeological Site, a designated monarch butterfly stopover site, is focusing on butterflies. Finally, Curt Gowdy State Park's focal creatures are bees. Each site hosts pollinator gardens and workshops to make "seed-bombs" (biodegradable packets that crumble to release native seeds) and build "bee bungalows," alongside other pollinator-focused activities. The program reached thousands of visitors throughout the summer.

Stancampiano drew from the success of the Sequoyah State Park garden to strategically place pollinator gardens near campsites and other places where visitors linger. For example, "Once [visitors] get off the water for the day and have showered off and they're making dinner, maybe the kids are going and reading all the pollinator signs and walking through that pollinator patch."

Visitors to Wings Over Wyoming sites enjoy pollinator-friendly garden designs that also fit the landscape and its history. Bear River State Park's garden beds are made with galvanized steel to pay homage to the automobiles of the

Blanket flowers bloom in a pollinator garden designed for butterflies.

historic Lincoln Highway nearby. Medicine Lodge State Park features raised beds in the shape of an elk, one of the park's most iconic rock art images. Stancampiano sees Wings Over Wyoming as a way for visitors to connect to the land and its creatures. "We have public lands for us, but also for these plants and animals."

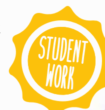
Stancampiano is surrounded by collaborators who have provided practical support to help the program accomplish its lofty goals. The Wings Over Wyoming committee includes volunteers from across the state, colleagues from the Wyoming Outdoor Recreation Office, park superintendents, and Stancampiano's fellow interpretive ranger. This team-level planning may be the perfect counterbalance to Stancampiano's high aspirations. "[I say], let's do the extreme, and then the superintendents [say], 'Woah, woah, woah. How much watering time is that going to need and how much time will it take staff to construct this building?' . . . So by working together as a team, I think we have been able to hopefully hash out any issues before they arise," she says.

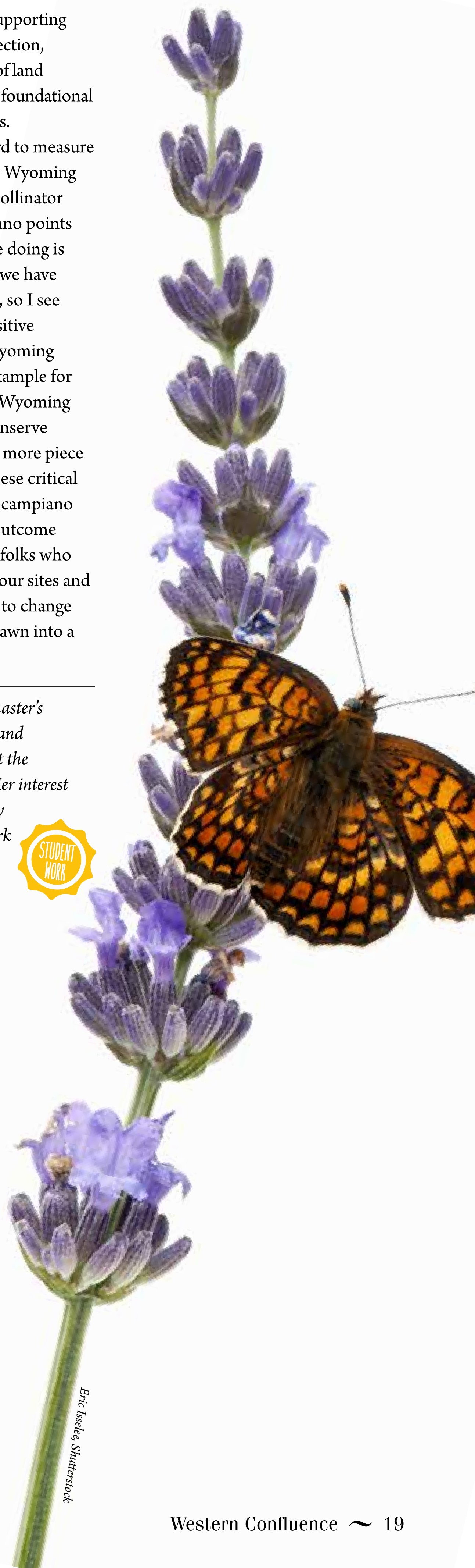
Public education programs like Wings Over Wyoming can create long-term results by inspiring communities to support pollinators and by cultivating the interest that already exists for insects and pollinators. When it comes to gauging interest, entomologist Schell may have the best seat in the house. "Almost everybody has some sort of striking memory of an insect event," he says. As the go-to diagnostician for arthropods, Schell teaches public workshops, supports field trips for young learners, and answers as many questions as he can. "I don't expect everybody to become an insect lover per say," says Schell, "but just recognize their value."

Even small actions like including a flowering plant in landscaping or contributing data to a pollinator study can have far-reaching effects. Will Janousek, a research scientist for the United States Geologic Survey and coauthor of a recent paper modeling occupancy of the western bumble bee, used information from a community science survey to show changes in the range of this bee and to predict continued range reduction in worst- and best-case action scenarios. "A portion of [the 14,500 surveys used in the study] comes from a variety of community science programs," Janousek says. "People have the opportunity to submit data from their backyards." Community-powered studies like this end up supporting petitions for federal protection, informing the decisions of land managers, and providing foundational research for future studies.

While it may be hard to measure exactly how Wings Over Wyoming gardens impact nearby pollinator populations, Stancampiano points out, "Anything that we're doing is above and beyond what we have been doing [previously], so I see any of it, all of it, as a positive effect." If Wings Over Wyoming succeeds, it will set an example for public education, equip Wyoming State Parks visitors to conserve pollinators, and add one more piece in the effort to restore these critical creatures. "For me," Stancampiano says, "the best possible outcome we could have would be folks who came and visited one of our sites and went home and decided to change part of their manicured lawn into a pollinator patch."

Amy Marie Storey *is a master's student with the Zoology and Physiology Department at the University of Wyoming. Her interest in ecology and entomology spills into her master's work studying the parasites of wild bees in the West.*





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Foraging for Data

THE POWER OF MUSHROOM HUNTING AS BOTH OUTDOOR RECREATION AND COMMUNITY SCIENCE

By Shelby Nivitanont

While off-path and crouching at the base of a stoic fir, I took in my surroundings with an exhalation and fresh eyes. Huge, ruby-red mushroom caps pushed up through the earth around me—countless *Boletus rubriceps,* or Rocky Mountain porcini. I hadn't intended to search for mushrooms that day; I had scurried off path while hiking in Wyoming to find a secluded spot to pee. But the forest had other plans for me, and luckily, I already had a permit to forage on public lands. With unbounded excitement but limited pocket space, I took off my shirt and began collecting mushrooms in an improvised sack. I silently thanked nature for her bounty as I selected various boletus, hedgehogs, and chanterelles from the forest floor.

The study of nature is *for* everyone. Even someone with no formal science education can study field guides and learn to identify mushrooms, finding a new way to get outside and connect with nature in the process. Also, the study of nature *needs* everyone. There just aren't enough professional mycologists—scientists who study fungi—to fully survey and understand our wildlands. Local and national science outreach organizations come in to fill the gap. They host community science projects where amateur naturalists can responsibly contribute their observations in ways that scientists and conservationists can analyze. Through community science, amateur mycophiles provide the human-power to collect the mass of data required to improve our broader ecological understanding of fungi.

"People just want to get out into the woods," half-jokes Jon Sommer, president of the Colorado Mycological Society, a group that hosts mushroom hunting forays in the Rocky Mountains. To him, mushroom hunting is a great form of outdoor recreation. In the short and fast summer of the Rockies, Sommer argues, everyone either wants a reason to be outside or they already are outside. Exemplars of science outreach, like local mushroom clubs, the Biodiversity Institute at the University of Wyoming, and iNaturalist, organize events to empower community members to enjoy and discover the West. When mushroom hunters connect with a community science project close to their heart, a fun Saturday afternoon hike also becomes an opportunity to accurately document species in the region.

Cloe Rehbein

Author Shelby Nivitanont assesses her mushroom haul.

During organized group forays, like those hosted by the Colorado Mycological Society, participants can collectively catalog over 500 species of fungi in one morning. A mushroom guide, often a self-taught amateur mycologist like me, helps identify all the interesting fungi and whether they are edible or toxic, native or invasive, and parasitic or mycorrhizal. Sommers emphasizes the importance of amateur and professional mycologists working together for advancements in science.

At the University of Wyoming Biodiversity Institute, scientists work with the public to further the understanding and conservation of biodiversity through a variety of community science projects. "We're trying to connect community members with the research that's going on at the University, primarily," says Dorothy Tuthill, who recently retired as the institute's associate director and education coordinator. One example is the Wyoming BioBlitz, which is curated and taught by local scientists. The 24-hour event feeds a sense of curiosity and discovery by encouraging the community to observe everything around them, from the moose to the millipede, and yes, the mushroom.

But are observations from amateur naturalists reliable enough to support science? One study from the University of Wyoming found that, at least for amphibians, trained community scientists' ability to correctly identify and detect

> What we know... is that the distribution of fungi is directly related to the distribution of mycologists.
>
> Jon Sommer

Alan Rockefeller, CC BY-SA 4.0

Boletus rubriceps, the Rocky Mountain porcini, is a prized edible mushroom common in forests of the region.

species was on par with that of professional biologists. "Agreement in species detected by community scientists and biologists ranged from 77 percent to 99 percent," the researchers wrote about long-term tiger salamander monitoring in Laramie, Wyoming.

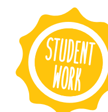
Although it is impossible to predict all potential impacts of community science, one example reveals how in the mushroom world, simply monitoring ecological trends can save lives. Steve Miller, botany professor at the University of Wyoming, explains that prior to three years ago if you had asked a Rocky Mountain mushroom hunter about poisonous mushrooms, they would have assured you that *Amanita phallodies*, commonly known as the death cap, was not a danger. In fact, it wasn't even in the local guidebooks because *A. phallodies* is native to Europe and had never been found in the United States. But then, Miller recalls, two San Francisco Mycological Society members unknowingly ingested the death cap, fell seriously ill, and required emergency liver transplants. Last year, an amateur mycologist and community scientist in Boise, Idaho, documented the non-native death cap mushroom in Idaho. Each season, the death cap's range extends, and no one is sure where it will pop up next. The uncertainty is in part because "the [*Amanita phalloides*] appears to be switching hosts, as it is an ectomycorrhizal fungus symbiotically associated with trees," says Miller. In other words, associating host trees with a certain fungus—a standard method for identifying mushrooms—has not proven trustworthy for spotting the death cap. Tracking fungi's location with community science can prevent deaths and aid in a better understanding of these toxic mushrooms, because there is still much to learn about the death cap.

"What we know, in general, about most groups of mushrooms is that the distribution of fungi is directly related to the distribution of mycologists," Sommer explains. That means that where there are people who study mushrooms, we know a lot about those mushrooms. The bottleneck is people, data, and funding. With voluntary community scientists, all three problems have potential solutions. "That's now changing because we have mushroom clubs all over the world—well over 200 clubs in the US alone."

Solo naturalists can contribute to online community science through apps like iNaturalist, where users and experts visually verify the genus based on pictures and locations. After emptying my shirt full of mushrooms, I logged my day's bounty in iNaturalist to confirm the fungi identifications and to share data. As it traveled the digital airwaves, I hoped that my contribution would assist professional mycologists in understanding the region and tree associations of the Rocky Mountain porcini—a delicious mushroom that paired well that evening with goat cheese, roast chicken, a cabernet franc, and, as with all delicious meals, good friends.

Alexey Borodin, Shutterstock

***Shelby Nivitanont** is a mycophile, an outdoor recreator, and a law librarian at the University of Wyoming College of Law.*



Elk Heyday

BOOMING ELK NUMBERS CREATE A RARE OPPORTUNITY FOR HUNTING AND TOURISM

By Janey Fugate

While scouting for mule deer on a chilly October evening in southeast Wyoming, the last thing I expected to see was several hundred elk. But there they were, at last light, filtering over the crest of a bare ridge and winding down the valley floor towards a river. Awestruck, I watched from a crouch. Cold eventually forced me to my feet and I started moving back along the hillside towards my car. As I walked, blaze orange vests alerted me to the presence of three other hunters lying behind a rock, rifles at the ready. I knew that they were waiting for the elk to step across an invisible line onto public land.

This image of three hunters watching a band of wary elk moving across a darkening landscape has stayed with me. Elk numbers are up across Wyoming, creating more hunt opportunities and possibly more funding for state wildlife agencies. At the same time, this ties to a host of management challenges related to changing property ownership, balancing in-state versus out of state tag allocations, and finding enough access to private and public land for more hunters on the landscape. While these challenges aren't unique to Wyoming, they are particularly acute here as the state moves to adapt to a growing outdoor recreation industry.

Against this backdrop, the state is leveraging its need to control elk numbers with a desire to boost the outdoor recreation economy through increasing nonresident tag allocations, with implications for game managers, landowners, and hunters.

In the age of environmental crises, it's unusual to hear of a wild animal that's thriving. But in Wyoming, elk are at historic highs. In the 1980s, the state had an estimated 65,000 elk. Since then, elk populations have nearly doubled to reach over 120,000. Barring a few herds in the northwest, elk today exceed the desired numbers determined by game managers.

"It's the heyday of elk. It really is," says Lee Knox, a wildlife biologist for the Wyoming Game and Fish Department. Knox attributes elk population growth to a range of factors, including elk's adaptability to different habitats and food sources relative to other hoofed mammals, their long-lived nature, and their ability to learn to avoid hunters by hanging out on private lands.

Another major, though indirect, contributor to elk abundance could be a lessening of hunting pressure driven by changing landownership and changing landowner values. What were once large working ranches that supported hunting are now often divided into smaller ranchettes and developments, where

> We have a world-class wildlife resource, and the world knows it. Elk hunting right now is the best it's ever been in modern history.
>
> Sy Gilliland

elk are viewed less as a nuisance or a hunting resource and more as an attractive feature of the property. On the flip side, some landowners have consolidated large ranches that are less open to hunters than in the past, effectively locking up herds of elk from hunting pressure. This is particularly relevant in eastern Wyoming, where the amount of private property drastically limits hunter access compared to the western part of the state, causing hunters to crowd into patchy public lands.

While having too many elk is certainly a better problem to solve than its opposite, overpopulated elk can take a toll on the landscape. Elk can damage fences and get into haystacks or crops, compete with mule deer for habitat, and can be tough on willow and aspen stands, which are already declining as the climate gets drier.

Yet, elk are one of the most coveted kinds of quarry by both nonresident and resident hunters. As such, elk offer a particularly salient window into how big game hunting, a $250 million industry in Wyoming, fits into the tension around how to grow the state's recreation economy while best managing habitat, access, and hunter satisfaction.

The Wyoming Wildlife Taskforce—a group of stakeholders from around the state that formed to tackle issues related to wildlife management and the sporting industry—may have found a way to bring elk to more sustainable levels. Their proposal could reap the economic benefits of attracting more out-of-state elk hunters, who pay significantly more than Wyoming residents to hunt. They proposed several legislative changes to elk hunt management in the state.

The first change was to remove a longstanding cap of 7,250 on nonresident elk tags. The state legislature approved this change, which will go into effect in 2024. The demand for these tags has steadily exceeded their availability. According to the Wyoming Game and Fish Department, in 2022 there were 30,000 applications from out-of-state hunters for the 7,250 allotted elk tags.

In addition to removing the cap, the task force recommended splitting the nonresident tags into two categories: special (40 percent) and regular licenses (60 percent). The price of nonresident special licenses, which are designated for coveted hunt areas that offer higher rates of success on larger, mature animals, will increase to just under $2,000. For the regular tags, the nonresident price will remain at its current level of $692.

Boosting the number of licenses allotted for nonresident hunters like the task force proposed can be controversial when it's perceived as taking away opportunities for in-state folks. This can be especially sensitive in Wyoming because the state already has higher nonresident

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Photos courtesy of the subjects

Sy Gilliland, president of the Wyoming Outfitters and Guides Association and a member of the Wyoming Wildlife Taskforce, hopes that increasing nonresident elk hunting licenses will benefit both his industry and the state.

"It's the heyday of elk. It really is," says Lee Knox, wildlife biologist for the Wyoming Game and Fish Department.

Jess Johnson, policy coordinator for the Wyoming Wildlife Federation, a sportsmen's advocacy organization, says that in-state hunters are "very protective" of their access to elk hunting.

tag allocations than neighboring states. Compared to Montana, which limits nonresidents to 10 percent of the available tags, Wyoming allocates 16-20 percent of elk, deer, and pronghorn tags to nonresidents. Jess Johnson, policy coordinator for the Wyoming Wildlife Federation, a sportsmen's advocacy organization, says that maintaining a culture that prioritizes in-state hunters is a critical concern for residents.

"A fundamental part of being from these states is the ability to draw these tags," she says. "Hunting, fishing, and trapping is a constitutional right in the state of Wyoming. Folks are very protective over it, understandably."

According to the task force, these changes will not affect resident elk prices or the quantity of tags available to resident hunters, but they will affect Game and Fish's budget—for the better.

Currently, 80 percent of the Wyoming Game and Fish Department's budget is funded from hunting license fees. And 80 percent of that 80 percent comes from out-of-state tags. For example, an elk tag that currently costs nonresidents $692 is only $57 for residents. Doubling the price of a portion of these nonresident tags—like the task force proposed for elk, deer, and pronghorn—has the potential to boost Game and Fish's $90 million budget by 6 percent, adding an estimated $5.7 million in revenue each year.

"To me, that's a win-win when you can approach the market value of a product and help your state agency," says Sy Gilliland, president of the Wyoming Outfitters and Guides Association and a member of the task force.

According to an economic survey conducted by the Wyoming Outfitters and Guides Association, the number of nonresident hunters applying increased by 10 percent from 2015 to 2020, reflecting a broader trend in big game hunting. With shows like *Meateater* popularizing hunting and a growing desire to eat ethically harvested meat, the demand for western hunting isn't showing signs of slowing down. And Wyoming is well positioned to capitalize on it.

"We have a world-class wildlife resource and the world knows it," says Gilliland. "Elk hunting right now is the best it's ever been in modern history. [People] want to come here and experience it, so raising the cost of licenses can slow down or recoup the real value of that license."

Gilliland has been guiding hunters all over Wyoming since 1977. Owning the state's largest outfitting business, he's led black bear hunts, moose hunts, and everything in between. As an outfitter, Gilliland also occupies a unique space in the cross section of hunters' values. Outfitters need nonresident hunters to support their businesses, while still desiring the solitude, abundant wildlife, and public lands access that residents cherish.

He hopes that the change in the nonresident tag quota will indirectly benefit his industry and Wyoming. His logic is that nonresidents willing to pay for the higher price of an elk tag may be more willing to hire a guide.

"The best bang for your buck is to put that license in the hand of a nonresident using outfitters," says Gilliland. "He leaves the most dollars on the landscape."

And repeat customers are the easiest the retain. Jim Moore, a Virginia native, has been coming with his son to hunt elk in the Wyoming backcountry for the last 10 years. Moore says that for him, harvesting a bull elk is just a part of the deeper experience of being immersed in nature. While telling me about his hunts, he described sharing a kill with a red fox that helped itself to Moore's elk carcass, finding wolf tracks in the snow, and nervously keeping watch on a nearby grizzly bear while his guide field dressed their elk. With his outfitters, he's hunted both private and public land.

"It's a real opportunity for people that they can use commonly owned land," says Moore. "It's millions and millions of acres of opportunity for people."

While it's true that the opportunities to hunt public land are vast and worth celebrating, Wyoming's overabundant elk are just as often found on private lands. This is where access comes in, a hunting buzzword. Increasing access to both private and public land is a big piece of the puzzle. Both Knox and Gilliland believe that nonresidents may be

more willing to hunt private lands—and pay the steep fees landowners often charge for access—than residents are. For instance, in eastern Wyoming, Knox says local hunters are more likely to travel elsewhere in the state for hunt opportunities rather than try to get access to private lands.

"Most [residents] will go west if you allow it because there is more public land," says Knox.

Gaining permission to hunt on private land presents a barrier for hunters that don't have existing relationships with the landowner. When I watched the three hunters hiding on the ridge, they had no alternative other than to wait at a distance and pray the elk would cross onto public land. Similarly, in Area 7, a hunt unit near Laramie Peak, there were roughly 1,000 elk tags sold to hunters, but the hunter success rate was only 30 percent. In this area, there's not a shortage of public land, but a lack of access to the private land where the elk hang out.

Private lands can even inadvertently prevent public lands from being accessible, an issue recently brought to the forefront of national news with the now infamous "corner crossing" case. In 2021, a landowner sued four out-of-state hunters for crossing a corner of his ranch to access public land on Elk Mountain they drew elk tags for. This more than $7 million lawsuit, still ongoing, pits the rights of public users against the rights of private landowners, adding to the friction felt around the West.

"The relationship between landowners and hunters is breaking down," Johnson says. "There've been bad actors on both sides, frankly."

This dynamic is painfully real to Ross Cook, a hunting mentor of mine whose family has owned a ranch outside Lander for the last 35 years. A few years ago, he caught two hunters going to retrieve a mule deer buck they shot illegally on his property. This is a more extreme case of the kinds of harmful behavior that deter landowners from opening their properties to hunters, but it illustrates a rising lack of trust.

> How do we get more hunting pressure on reservoirs of private property? The best bet for that is to put more licenses in the hands of nonresidents who have the ability to hunt that land and have the ability to pay landowners.
>
> Sy Gilliland

"I have zero interest in letting people come and hunt that I haven't shot with and worked with," says Cook. "Vetting someone is really hard and most ranchers don't have time for that."

There are many reasons why landowners may not want hunters on their property, despite how much money people will pay for access. These range from not wanting the hassle of managing strangers and concerns over ensuring safety to not agreeing with shooting animals on principle. But for Cook, it comes down to finding hunters that share his ethics.

"I would love for people I know who have elk tags to come up to my land and go to town… but finding individuals you can trust is really hard."

Landowners may have another reason not to allow elk hunters on their land. Cook says that landowners often claim money in elk-related property damages from Game and Fish instead of allowing hunters on their land, which incentivizes a cycle of limited access and over-abundant elk. Programs like Game and Fish's "Access Yes," where landowners can make their property open to hunting, address this dilemma but haven't seen much success.

So bridging a desire to capitalize on nonresident hunters' dollars with the potential to knock back elk populations is complicated on a lot of levels. The next step may be to match a rise in nonresident hunters with properties willing to let them hunt elk.

"How do we get more hunting pressure on reservoirs of private property?" asks Gilliland. "The best bet for that is to put more licenses in the hands of nonresidents who have the ability to hunt that land and have the ability to pay landowners."

Hand in hand with removing the 7,250 cap on nonresident elk tags is a task force proposal to create new nonresident elk hunting units to change how managers can distribute hunters across the landscape. These changes signal how Wyoming is grappling with a growing demand for western hunting and a desire to both protect its wildlife and maintain its identity in a changing West.

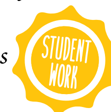
And though distrust between landowners and hunters is a thorny issue, some of these challenges may hopefully open the door to creative solutions that give hunters access to private property where elk congregate. For example, in other parts of the state and the region, online startups are connecting recreationists to private landowners with hunt opportunities, similar to Airbnb for hunting.

The economic benefits of attracting and capitalizing on nonresident hunters and the revenue they might bring to the state are significant, as is the potential to bring elk to more sustainable levels.

But for Gilliland, there is another, less tangible benefit to welcoming more nonresident hunters to Wyoming.

"We change lives, I have seen it so many times. [Hunters] are so grateful to the state of Wyoming for this opportunity," he says. "I've guided congressman, they are hunting their public lands… when they come out here and they see their wilderness for the first time, they are advocates and they go home and help form policy."

***Janey Fugate** is a storyteller and a master's student with the Zoology and Physiology Department at the University of Wyoming under Matthew Kauffman. Her research focuses on how Yellowstone bison, after being reintroduced to the park, established the migration patterns they exhibit today.*



Courtesy of Janey Fugate

The author, Janey Fugate, stops to scan with her binoculars while hunting in southeast Wyoming.

Fair Game

WHO SHOULD PAY FOR WILDLIFE MANAGEMENT?

By Hilary Byerly Flint

"We're pretty darn lucky," says Brian Nesvik, director of the Wyoming Game and Fish Department. "People come to Wyoming [for] bighorn sheep and grizzly bears, elk and moose, sage grouse and waterfowl." Nesvik's agency is responsible for managing the state's wildlife, which includes some of North America's most diverse and abundant populations of large mammals. "We're always going to have that as long as we continue to do the right things and put our resources in good places. We're going to continue to be able to provide that wildlife resource for a lot of different people to enjoy."

Wildlife and the tourism it attracts are particularly exceptional in the Greater Yellowstone Ecosystem—a 22 million-acre area encompassing Yellowstone and Grand Teton National Parks. Craig Benjamin, conservation director at the Greater Yellowstone Coalition, agrees with Nesvik's assessment. "Our wildlife is generally doing pretty well. [Wyoming] Game and Fish does a good job. We have a relatively healthy ecosystem. There are huge pressures and huge threats, but this isn't 1975 where we have 130 bears left."

But some are less optimistic, both about the health of the ecosystem and the promise of the status quo. Kristin Combs, executive director of Wyoming Wildlife Advocates, says "The Greater Yellowstone Ecosystem seems like a wildlife paradise and people think, 'Oh, it's so great. Everything's there'…But when you look beneath the surface, wildlife here is still facing an incredible uphill battle, especially large carnivores and non-game species." In her view, and in the view of a growing coalition of organizations, that uphill battle is the result of state wildlife agencies' focus on game species, which are animals that can be hunted or fished. This focus, they say, is to the detriment of other species, overall ecosystem health, and the interests of all those who value wildlife.

At its root, this controversy is about funding. State wildlife management is funded by a so-called "user-pays" system that was established more than a century ago and hasn't evolved with changing values. Many of today's wildlife users, the people who interact with and benefit from wildlife, don't provide revenue to support broader management, leaving state wildlife agencies with limited and ear-marked resources. In Wyoming, for example, game-related taxes and fees provide 85 percent of Game and Fish's funding, and game species receive 87 percent of the agency's spending. That leaves less than 15 percent for non-game species like raptors, songbirds, certain small mammals and fish, bats, amphibians, reptiles, crustaceans, and mollusks. Combs and others say it's time to rethink this model.

Wildlife agencies' funding and priorities are rooted in their origins. In the late 1800s, profit-seeking hunters and government policies caused steep declines in wildlife populations. "Sportsmen were the core

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> The money to manage all wildlife—those resources just weren't there, and they haven't been there. It's been, how do you stretch the hunter-angler dollars as far as you possibly can to be able to manage all species?
>
> David Willms

of the effort to rebuild those populations," says Nesvik, "and they did it through funding." Recognizing the need for wildlife protections if they were to continue their sport, recreational hunters and anglers successfully advocated for better management. By 1910, every state had established a commission to protect wild game and fisheries and created wildlife agencies to manage hunting and fishing.

These new agencies were funded by asking those who "used" wildlife to pay for its conservation. States generated revenue by selling licenses and hunting tags and more money came from two federal tax laws. The Pittman-Robertson Act of 1937 imposed an 11 percent tax on the sales of firearms and ammunition. Soon after, the Dingle-Johnson Act levied a similar tax on fishing equipment and allocated a portion of the gasoline fuel tax (attributable to small engines and motorboats) towards fisheries conservation. As a result, wildlife management was originally in service of, and funded by, hunting and angling.

This legislation, and subsequent coordination between the federal government and states, formed the basis of the North American Model of Wildlife Conservation. Among other tenets, the model holds that wildlife are a public trust resource that should be be managed for the benefit of all citizens, and management should follow scientific principles. It is a unique and successful model that has largely restored and maintained wildlife populations.

Over time, state wildlife agencies have been asked to do more without major new sources of funding. "Sometime in the 1960s and 70s, you started to see this shift in wildlife management and wildlife management expectations of state agencies, particularly with the passage of the Endangered Species Act," says David Willms, associate vice president of public lands for the National Wildlife Federation. The environmental awakening of the time led to new laws and broader visions of environmental management that went beyond game species. Since then, the US Fish and Wildlife Service intervenes to manage endangered species while state wildlife agencies are left to manage the rest of the animal ecosystem, including those species that might become endangered.

Facing a broadened ecological scope without commensurate funding, state agencies have worked hard to leverage what they have. Willms says, "The money to manage *all* wildlife—those resources just weren't there, and they haven't been there. It's been, how do you stretch the hunter-angler dollars as far as you possibly can to be able to manage all species?"

Wyoming Game and Fish, for its part, has a nongame bird and mammal program. In the last year, the agency conducted bald eagle and trumpeter swan monitoring, black-footed ferret management, studies of American pika, shrews, and prairie dogs, and more. But with just an eighth of the agency's budget and a fraction of its staff, the nongame program can't directly address all 229 species of greatest conservation concern, most of them nongame, identified in the State Wildlife Action Plan.

When Benjamin worked for the National Wildlife Federation, "That was the thing we heard from [state wildlife] agencies across America: 'We want to go work on all these species that are not endangered, yet. They could become endangered, but they're not game species, and we don't really have funding for them because we're not supported by dollars that come in for those species.'"

State wildlife agencies also take advantage of an umbrella effect. "A lot of the work [Wyoming Game and Fish] does to manage for big game benefits all species," says Benjamin. "The habitat restoration or migration corridors for pronghorn or elk, that's then benefiting hundreds of other species." Indeed, a 2016 literature review in *Biological Conservation*

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Hunters and anglers have been funding state wildlife management since the early 1900's when fish and game agencies and commissions were first established.

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Wildlife watching is one of the fastest growing wildlife recreation activities and a top reason for visiting Yellowstone and Grand Teton National Parks. But wildlife viewers are not paying to protect or mitigate their impacts to wildlife in the ways that hunters and anglers do.

found evidence that managing for game could have positive impacts on non-game species by protecting habitat and mimicking natural disturbances. Recent work by Arthur Middleton, an ecologist who studies the Greater Yellowstone Ecosystem, showed that protected big game migration corridors help to sustain carnivores, scavengers, and other animals on the landscape. But these findings aren't conclusive. The 2016 literature review also identified neutral and negative impacts of game management on other species and concluded that, with only 26 studies at the time, the impacts were both variable and poorly understood.

In the end, Nesvik says, "there's an endless list of projects that need to be done. We've taken the resources we have and prioritized the absolute most important places we can go to try to spread that out across the state." He also says "a lot of our work and the messaging and the justifications revolve around species that are hunted and fished. That's really our charge. That's what we do."

> "Restoring the holistic nature of our environment… means we need to have water in the river. It means we need to have buffalo on the ground and able to move. It means we need to have those wolves and bears living their lives."
>
> Jason Baldes

Not only has this user-pays funding model failed to support wildlife agencies' expanded management mandate, it also neglects dramatic changes in wildlife users and payers nation-wide. When the Pittman-Robertson and Dingle-Johnson tax laws passed, hunters and anglers were the primary users of wildlife and the primary buyers of firearms. Today, many people who "use" wildlife do not contribute towards its management, and firearms sales are increasingly disconnected from hunting.

According to a 2016 report from the US Fish and Wildlife Service, only 4 percent of US residents hunt, down from 7 percent in 1991. In contrast, 34 percent reported watching wildlife. Wildlife viewing is one of the fastest growing wildlife recreation activities and a top reason for visiting national parks like Yellowstone and Grand Teton.

Further, while most Americans once thought of wildlife as existing solely for the benefit of humans, a 2021 paper in *Nature Sustainability* showed that, nationally, Americans increasingly think of wildlife as part of their social community and are concerned "about wildlife population decline, habitat protection, restricting humans to benefit wildlife, and maintaining natural conditions."

Because the North American Model of Wildlife Conservation says that wildlife should be managed for the benefit of all citizens, these preferences have management implications. Predators like wolves, for example, are hunted for sport and as a way of bolstering the populations of other huntable species like elk and deer (in addition to protecting

livestock). But a 2016 study found that wolf hunting and trapping along the boundaries of Denali and Yellowstone National Parks reduced wolf sightings within the parks.

Research also shows—and Native people have long known—that a broad range of plant and animal species and interactions are necessary to support ecosystem health, ecosystem services, and successful conservation, which in turn provide benefits to society. Jason Baldes, member of the Eastern Shoshone Tribe and executive director of the Wind River Tribal Buffalo Initiative, says that "restoring the holistic nature of our environment… means we need to have water in the river. It means we need to have buffalo on the ground and able to move. It means we need to have those wolves and bears living their lives."

But large-scale shifts in use, values, and knowledge have not been accompanied by funding. Despite research on the ways that "non-consumptive" recreation can disturb, displace, and even damage wildlife populations, wildlife viewers are not paying to protect or mitigate their impacts to wildlife in the ways that hunters and anglers do. Moreover, rural communities—where traditional values remain prevalent and where hunting and angling are central to many personal identities, communities, and economies—continue to bear most of the costs of conflict with wildlife.

At the same time, there have been shifts in who is funding wildlife management. Today, hunters generate the largest share of revenue for state wildlife agencies only in certain states like Wyoming and Montana, where hunting is still prominent and out-of-state hunters purchase expensive licenses. Nationally, revenue from hunting licenses and fees has stayed flat at about $1 billion annually since 2000, whereas revenue from Pittman-Robertson excise taxes has increased sixfold in that same time period, to $1.2 billion. Now, firearms and ammunition buyers are the largest single source of user-generated funds for state wildlife management.

The thing is, "about 75 percent of Pittman-Robertson funds are not coming from hunters. They're coming from people that buy guns [and ammunition], but not for hunting," says Kevin Bixby, founder of Wildlife for All, a national campaign whose mission is to "reform wildlife management to be more democratic, just, compassionate, and focused on protecting wild species and ecosystems." A 2017 report from Pew Research Center found that protection has surpassed hunting as the number one reason for firearm ownership, with 67 percent of gun owners citing protection as a major reason they own a gun and only 38 percent citing hunting. Sport (or recreational) shooting is not far behind, cited by 30 percent of gun owners. Bixby says that there is a similar decoupling of user and payer with the Dingell-Johnson funds, "because Dingle-Johnson taxes are imposed on fishing equipment but also on the gasoline that goes into lawn mowers and snowblowers."

Willms says, "The growth of the firearms industry, especially from the recreational shooting standpoint, has kind of created a bandaid for the declining hunter participation nationally." In turn, these recreational shooters and lobbies are gaining a voice in how state wildlife management funding is used. For example, the National Shooting Sports Foundation successfully lobbied for Pittman-Robertson funding to pay for shooting ranges on public lands.

As scholars John Casellas Connors and Christopher Rea wrote in their article "Violent Entanglement: The Pittman-Robertson Act, Firearms, and the Financing of Conservation," "The source of funding is thus redefining the user and reshaping the policy, as opposed to maintaining a fixed definition of what is used and enlisting other users of the [public] trust (e.g., hikers) as payers."

That's why for many, funding is the place to start modernizing state wildlife management.

Some ideas adhere to the user-pays model. Both the Wyoming and Montana Legislatures passed resolutions in the last five years asking the National Park Service to collect a "Conservation Fee" from Yellowstone and Grand Teton National Parks visitors. These resolutions are non-binding, but they intend to make a point—the millions of people who visit these parks each year to see wildlife ought to contribute to the state agencies that manage those animals as they roam beyond park boundaries. A similar idea is to levy "backpack taxes," as has been done in Virginia and Texas, which tax certain outdoor equipment to parallel the excise taxes on hunting and fishing equipment.

Another avenue could fundraise

Sagebrush restoration to improve habitat for mule dear and greater sage grouse can help non-game species like the sage thrasher, sagebrush sparrow, Brewer's sparrow, pygmy rabbit, and sagebrush vole.

Taylor Glenn

Park Superintendant Chip Jenkins, EcoTour Adventures Owner Taylor Phillips, and Wyoming Game and Fish Director Brian Nesvik tour Grand Teton National Park as Phillips launches WYldlife for Tommorrow, an initiative that inspires businesses and individuals who rely on wildlife to give back.

from businesses that profit from wildlife. Taylor Phillips, who runs an ecotourism business in Jackson, Wyoming, says "For years I've been in the tourism space, interacting with guests, showing them the diverse array of wildlife. And I've seen this disconnect of who benefits from wildlife and who pays for it. The tourism sector that is largely driven by wildlife doesn't financially contribute." In response, Phillips founded WYldlife for Tomorrow, which solicits businesses to voluntarily contribute a portion of their profits to fund wildlife conservation projects conducted by Wyoming Game and Fish.

Bixby, on the other hand, wants to stop user-pay entirely. "Wildlife is in the public trust, it's a public good," he says. "It's like schools or libraries or fire stations. We wouldn't think access to these public goods should go to the people that pay more in taxes. No, everybody should have access to them, because everyone benefits. Same with wildlife. We all benefit from wildlife whether we use it in some way or just enjoy the fruits of natural ecosystems that wild animals contribute to. I really don't like the idea of 'user pays' at all in terms of wildlife conservation funding. We're all users."

Nationally, the proposed Recovering America's Wildlife Act (RAWA) offers perhaps the greatest hope of funding for more inclusive wildlife management. The legislation would provide around $1.4 billion annually to be split between states and tribes. "It would be a game-changer for states, in the revenue that would be created," says Willms, whose organization is among the leading advocacy groups for the legislation. "I don't know that you'd have to do much more if that were to pass. It would be such a huge shot in the arm."

RAWA would also address the current wildlife funding system's insufficient support for tribal wildlife management. "We have a tribal fish and game department on the [Wind River] reservation that has three game wardens for a reservation the same size as Yellowstone," says Baldes, who is also the tribal buffalo coordinator for the Tribal Partnerships Program of the National Wildlife Federation. "Tribes are ineligible for Pittman-Robertson funding. While most state agencies receive quite a bit of federal dollars for wildlife management, tribes are left out of that. Recovering America's Wildlife Act would ensure that tribal governments can protect their own laws and lands with law enforcement."

None of these funding alternatives are perfect; voluntary efforts will be too small to make a difference, new fees and taxes require changes in legislation, and user-pays schemes can further disenfranchise already marginalized groups. In the case of RAWA, which failed to pass the US Senate in late 2022 and was reintroduced in March 2023, the source of funding is still stuck in political negotiation.

Advocates are also pushing to diversify the voices at the decision-making table. In almost every state, wildlife commissions advise and oversee the wildlife agency and its budget. They are also overwhelmingly populated by sportsmen. Commissioners are not required to have scientific or ecological expertise. "It has to start with reform of wildlife commissions, because they have an enormous amount of power," says Combs. "Then you can start having conversations about how to let more diverse groups contribute to wildlife conservation and management and start putting those into action."

Indigenous leaders could play a greater role in informing management, particularly on public lands and in areas where tribes hold off-reservation hunting rights. "I respect [using science and technical information] but there are a lot of things that aren't explained by science, and that's why you need Indigenous voices in what we're doing," says Wes Martel, member of the Eastern Shoshone Tribe and senior Wind River conservation associate for Greater Yellowstone Coalition.

Indigenous voices can also help elevate concerns around how wildlife management and legislation have marginalized and excluded Native Americans from their traditional lands and resources. "From the scientific and technical side, we try to follow the advice of biologists and scientists when it comes to management," says Martel, "but at the same time, give recognition to our elders and the ceremonial and traditional uses that we have for some of our plants and animals and other things that we utilize. You know, those are not really recognized or upheld under state law."

Even with better funding and a more diverse group of decision makers, it may be necessary to create more flexibility in how existing funds get spent. Dingle-Johnson excise tax revenues can only be used for "species of fish which have material value in connection with sport or recreation in the marine and/or fresh waters of the United States." The authorizing legislation for state wildlife agencies also

limits management. Bixby gives the example of black-tailed prairie dogs in New Mexico, which "have been reduced to about 10 percent of their original range and yet, under state law, our state wildlife agency does not have authority to manage them."

Often, both federal excise tax revenues and agency mandates are restricted to mammals, birds, and fish, thereby excluding management and conservation of other species critical to healthy ecosystems. This prompted a September 2022 ruling by the California Supreme Court that classified bees as fish to allow for their protection under the state's endangered species act.

The absurdity of such an action lays bare the limitations of our current system. So much has changed since the inception of non-Indigenous wildlife management and conservation in the United States: science, values, users, and funders. Updating wildlife management to reflect these changes has been and will be a challenge. Combs, of Wyoming Wildlife Advocates, acknowledges this. "I want to give [Wyoming Game and Fish] credit for doing a difficult job, because it is hard to manage people and wildlife at the same time. They get it from all sides. I don't envy their position."

With this reality, it's unclear whether or how the system might meaningfully change. "Typically things move when there's some sort of crisis or big threat," says Benjamin of Greater Yellowstone Coalition. "And I don't feel like that exists right now."

What exists are passionate people who care about our wildlife—from advocacy groups to legislators, Indigenous leaders to agency directors—all working to gradually refine wildlife funding and management in ways that better accommodate the diversity of wild species and human values in the United States.

Hilary Byerly Flint *is a senior research scientist at the University of Wyoming. She is based in Jackson, Wyoming.*

> "Wildlife is in the public trust, it's a public good. We all benefit from wildlife whether we use it in some way or just enjoy the fruits of natural ecosystems that wild animals contribute to."
>
> Kevin Bixby

Eric Cole, USFWS

A nongame biologist from Wyoming Game and Fish prepares to release a long-billed curlew after equipping it with a satellite transmitter and a band during a 2014 study.

Louis Arévalo

Ascending to the Challenge

ROCK CLIMBERS IN A REMOTE WYOMING CANYON MAY HELP SHAPE NATIONAL PUBLIC LANDS CLIMBING MANAGEMENT

By Nita Tallent

On an early summer day in 2018, a group of sport rock climbers—packs laden with ropes, quickdraws, harnesses, shoes, and chalk—clambered up a makeshift trail in Tensleep Canyon, Wyoming. They were eager to ascend the steep, awe-inspiring limestone walls strewn with pockets, cracks, ledges, jugs, and crimps that promised to deliver challenge and exhilaration.

"We noticed some excessive use of glue in routes at a really well-established area up in Mondo-Beyondo," recalls Mike Ranta, cofounder of the Tensleep Canyon Aerospace Society. Disclosure: Adam Ashurst of the Tensleep Canyon Aerospace Society is the author's stepson. "We had no judgement on that at the time." However, their opinion began to shift when they saw how many new routes included holds manufactured through chipping, drilling, and gluing the rock. Such manufacturing is anathema to standards for climbing route developers to leave the rock in as close to its natural state as possible.

A booming popularity in the area alongside ambiguity over what constitutes ethical route development has made Tensleep Canyon the stage for an outdoor recreation conflict. Now, as the Bighorn National Forest resumes work on a climbing management plan for Tensleep Canyon to both address issues associated with overcrowding and define what amount of rock alteration is allowed when developing climbing routes, climbers and public land managers around the country are watching closely. The Tensleep Canyon Climbing Management Plan has the potential to set precedent for rock climbing management on public lands nationally.

Tensleep Creek cuts through an evergreen shrouded canyon down the southwest face of the Bighorn Mountains in northcentral Wyoming. Climbers have scaled the towering limestone and dolomite cliffs of Tensleep Canyon since the early 1980s when the "godfather" of Tensleep, Stan Price, hand drilled and installed ten bolts to set "Home Alone," one of the first sport routes in the canyon. Hours from any major airport and lacking the glamor of Yellowstone and Grand Teton National Parks, residents and recreators

believed the canyon was immune from being overrun. However, in the 30-plus years since rock climbers with ropes saddled over their shoulders first burrowed into these forests, word of the canyon as a treasure chest of routes waiting to be established has spread.

Since the 1980s, climbers have developed more than 1,200 climbing routes in the Tensleep Canyon area. After local climber Aaron Huey and others compiled *The Mondo Beyondo*: *Tensleep Canyon, Wyoming*, the first published guidebook to the canyon in 2008, climbers and route developers flocked to the area. Today, climbers from around the world have discovered the canyon, making it the central jewel in the crown of any self-respecting sport rock climber. Still many local climbers would have preferred the jewels stay a secret.

The surge in popularity has brought problems. Heavy traffic and illegal parking along the Cloud Peak Skyway (Hwy 16) and Forest Road 18 create safety concerns. A weaving network of unapproved trails to crags is eroding soil. Dispersed camping sites close to waterways and the road are on the rise. Uncontrolled dogs run amuck. Masses of climbers inadvertently spread invasive plant species such as houndstongue and Canada thistle, in addition to leaving behind human and pet waste and litter. At the base of climbing walls, staging areas have compacted soil and damaged shrubs and grasses. Boisterous crowds interfere with nesting raptors.

Recognizing that recreation was on the increase, in 2005 the Bighorn National Forest published a Forest Land and Natural Resource Management Plan announcing that within 10 years a climbing management plan would, "inventory existing rock-climbing routes including approach, associated trail locations, and human impact," in Tensleep Canyon.

In 2011, the Access Fund, a national climbing advocacy organization, created a Tensleep Canyon stewardship group, now known as the Bighorn Climbers' Coalition, to work with the Bighorn National Forest on the climbing management plan. The Access Fund's goal was to collaboratively develop a plan "that both preserves the current climbing experience at Ten Sleep [*sic*], while conserving the resource for future generations."

However, 2015 came and went and the promised plan had yet to be created. By the time Ranta and his buddies witnessed manufactured holds and chipped rock in Tensleep Canyon in 2018, it was not unusual to find climbers from around the world crowding at the base of the crags, anxiously waiting their turn. In that same year the Access Fund included Tensleep Canyon as one of "10 Climbing Areas in Crisis," noting that "world-class climbing" invited crowds too great for the area to sustain.

As the popularity of rock climbing grew in Tensleep Canyon, so did the number of route developers looking to leave their mark on the limestone walls. This was not without controversy. For those not in the climbers' sphere, establishing a new route is the *magnum opus* for many climbers, the pinnacle of their progression and status in the climber community. Setting or developing a sport rock climbing route involves drilling holes into the rock and inserting bolts along an ideal line that is safe and appropriately challenging. Ideally, route setters do this with minimal impact to natural geology, flora, and fauna of the rock face. They may "clean" the route, which generally involves brushing aside loose rock, vegetation, debris, lichens, and moss. They may also "comfortize" hand holds by smoothing and sanding sharp edges typical of the Bighorn Mountains to minimize torn and bloody climbers' hands.

Flickr user James St. John

The dolomite cliffs in Tensleep Canyon, Wyoming, are home to over a thousand sport rock climbing routes.

Generally, cleaning and comfortizing in dolomite and limestone are considered acceptable modifications by modern climbers, but the "manufacturing" Ranta and his buddies encountered in 2018 is not. The Access Fund defines manufacturing (a practice which they oppose) as "any conscious attempt to expand a hold, create a new hold (drilling pockets, expanding a pocket with a tool, creating a hold with glue), reinforcing loose holds with glue, or adding/placing an artificial hold on the wall in an attempt to curate a climbing movement or experience, or to create a route other than what is naturally available." The conundrum is in the fine line between "cleaning and comfortizing," which many climbers accept, and "manufacturing," which many climbers oppose.

In an attempt to self-regulate in Tensleep Canyon, Ranta and other climbers approached world-renowned route developer and owner of a nearby climber campground Louie Anderson, who they suspected of manufacturing. The actual words exchanged during the June 30, 2018, meeting are forever lost, with only contradictory recollections remaining. The gist was to agree upon what was and was not acceptable for comfortizing routes in Tensleep Canyon and put a stop to manufacturing. However, route manufacturing continued.

The Bighorn Climbers' Coalition and the Access Fund denounced the manufacturing. In addition, three original Tensleep Canyon route developers—Charlie Kardaleff, Aaron Huey, and JB Haab—posted an open letter condemning the practice on the Tensleep Canyon Facebook page. Taking the debate to a national audience, *Rock and Ice* magazine published the letter in 2019. In addition, citizens reported the damage caused by the manufacturing to the Forest Service, believing that it was the Forest Service's role to stop the practice.

In July 2019, a few climbers, frustrated by the Forest Service's failure to police the manufacturing, closed manufactured routes by removing bolts, clipping bolts flush with the rock surface, filling holds with glue, and affixing bright red padlocks to the lowest bolts. If the intent was to generate a reaction, that intent was met. The Forest Service, the Access Fund, and Bighorn Climbers' Coalition quickly condemned the bolt cutting and padlocks, which escalated tensions and further divided

forest users.

On July 19, 2019, much to the dismay of many in the local and national climbing community, Powder River District Ranger Traci Weaver issued an official regulation prohibiting any new route development until release of the Forest Service's long-promised climbing management plan (which was slated to be completed by 2015, yet still in 2019 was nowhere to be seen). Soon after Weaver's announcement the Access Fund released a statement which denounced both route manufacturing and "vigilante bolt chopping" forecasting concern that due to these actions the "climbing community could lose the privilege of climbing in Ten Sleep [*sic*] altogether…"

Despite the fact that 30 percent of climbing in the United States occurs in national forests, there is no national policy defining acceptable, standard practices.

Eighteen months later the Powder River District held a virtual meeting to request input from the public about climbing in Tensleep Canyon. The goal was to identify the desired condition of the forest and clarify practices that would ensure respect for the natural and cultural resources owned by all Americans and entrusted to the care of the US Forest Service. During this February 2021 meeting, District Ranger Weaver announced that the Bighorn National Forest had contracted Maura Longden, climbing management consultant with High Peaks, LLC, to lead development of the Tensleep Canyon Climbing Management Plan.

Members of the public submitted over 500 comments during the public meeting and in response to a scoping notice, summarized on the Bighorn National Forest National Environmental Policy Act planning web page. The public expressed a gambit of concerns ranging from the fear that the Forest Service would prohibit all forms of rock climbing; to concerns about negative impacts to natural and cultural resources; to questions about the absence of non-climber, outdoor, recreator, Indigenous, and diverse perspectives in the discussions; to other issues. The overarching concern was whether and how the Forest Service would curtail route manufacturing while allowing route development to resume.

Despite the Forest Service's best intentions, effort on the climbing management plan paused again following Weaver leaving her position in June 2021. In 2022, a new leadership team joined the Powder River District. District Ranger Thad Berrett, Lead Climbing Ranger Ryan Sorenson, and Recreation Program Manager Kelsey Bean began reaching out, learning about the needs of the many forest users, and signaling that efforts on the stalled plan would resume.

Flickr user Gunnar Ries zwo

Tensleep Creek tumbles down Tensleep Canyon on the west side the Bighorn Mountains. This canyon is the site of a planning process that could shape rock climbing management on public lands around the country.

In 2023, the Powder River District staff continued to familiarize themselves with issues and the stakeholders, rights-holders, and national interest groups as they resumed work on the Tensleep Canyon climbing management plan. According to the Forest Service's web page, the plan will respond to "increased development and impacts from rock climbing," and will entail protections for soil, vegetation, geology, water, cultural resources, wildlife, and social resources. The Forest Service confirms it will codify the route development practices and ethics outlined in *Best Practices for Development and Rebolting in the Bighorn Mountains and Bighorn Basin*—a document the Bighorn Climbers' Coalition and Access Fund created with the Forest Service—while prohibiting manufactured holds and routes. It will also guide management for access trails and staging areas, human and pet waste, dog and human interactions with wildlife and livestock, commercial use, gear caches, dispersed camping, and visitor capacity. Climbing management plans are subject to the National Environmental Policy Act, which will allow for public participation. Ranger Berrett acknowledges that momentum on the plan has been slow and says not to expect implementation until 2024.

Meanwhile, Forest Service leadership and climbing advocacy organizations such as the Access Fund are following the Tensleep Canyon Climbing Management Plan because it has the potential to set precedent for rock climbing management on public lands across the country. Despite the fact that 30 percent of climbing in the United States occurs in national forests, there is no national policy defining acceptable, standard practices, meaning each of the more than 150 national forests must establish their own policies. The Access Fund is advocating for nation-wide guidance to bring "consistency and stability" among national forests. Eyes are on how the Bighorn National Forest codifies climbing in Tensleep Canyon because this climbing management plan may pave the way for other

forest plans as well as national policy.

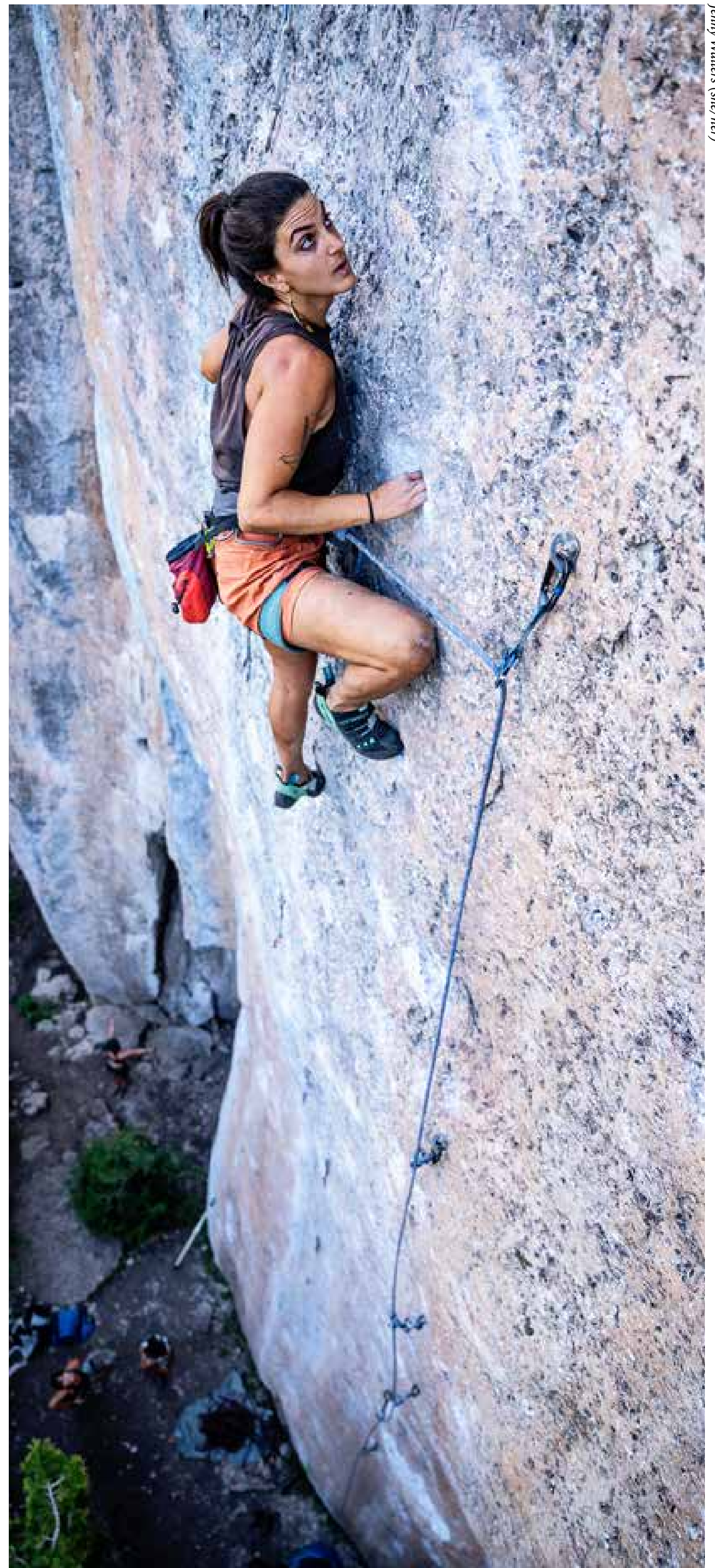
In addition, two bi-partisan bills put forward in Congress have the potential to shape management of fixed climbing anchors across designated Wilderness areas on public lands, according to the Access Fund. The Protecting America's Rock Climbing Act (H.R. 1380) from Representatives Curtis (R-Utah), Neguse (D-Colorado), and Stansbury (D-New Mexico) and the America's Outdoor Recreation Act (S. 873), introduced by Senators Barrasso (R-Wyoming) and Manchin (D-West Virginia) intend, in part, to "bring consistency to federal climbing management policy and protect some of America's most iconic Wilderness climbing areas," as summarized by the Access Fund. Both bills direct public land managers "to outline any requirements or conditions associated with the placement and maintenance of fixed anchors on federal land." They also would require agencies to solicit public comment when drafting the requirements, giving climbers a voice in shaping climbing practices on public land.

As they await the final climbing management plan, an unofficial local climber group is promoting ethical climbing and route development. The Tensleep Canyon Aerospace Society, led by Mike Ranta and Adam "Ace" Ashurst, creates updated editions of Aaron Huey's original climbing guide. In 2023, this informal collective completed the *Tensleep Canyon Climbing Guidebook 11th edition: The Invasion*, which explicitly opposes the "intentional alteration of the rock by chipping, drilling pockets, or gluing for the purpose of enhancing holds (manufacturing)." The society's strategy is to call out manufactured routes so local and visiting climbers can avoid or boycott them out of respect for the landscape, sending the message that manufactured routes are not to be revered or tolerated.

The Bighorn Climbers' Coalition is also doing its part to engage climbers in stewardship of Tensleep Canyon. The coalition's Christa Melde invites everyday climbers of all colors, genders, sexual orientations, and ethnicities to join the conversation around the climbing management plan. She believes the solution to sustainable climbing in Tensleep Canyon "just boils down to education." To that end, Bighorn Climbers' Coalition members reach climbers through one-on-one conversations about stewardship and Leave No Trace practices at crags and trailheads. They also advance engagement and education at the annual Tensleep Climbers' Festival each July.

Everyone who *Western Confluence* spoke to for this article—the Bighorn Climbers' Coalition, the Access Fund, a permitted rock-climbing guide, the Tensleep Canyon Aerospace Society, and independent, unaffiliated climbers—expressed a spirit of renewed enthusiasm and cooperation, unanimously pledging their support to the Forest Service staff in completing the climbing management plan. Now, land managers and climbers around the country are watching to see how the Bighorn National Forest not only tackles the challenges of parking, camping, trail use, and waste disposal in a remote yet world-famous climbing destination, but also how they draw the line between ethical route development and forbidden manufacturing.

Nita Tallent, *PhD, is a plant ecologist, retired federal natural resource professional, and a master's student in the Haub School of the Environment and Natural Resources at the University of Wyoming. Her current research focuses on the motivations of private landowners to allow outdoor recreationists on their lands. Nita is also an avid outdoor recreator who dabbles in sport rock climbing.*



Jenny Walters (she/her)

Climbers clip their rope into fixed bolts as they ascend Ten Sleep's pocketed limestone walls. Photo of Shara Zaia (she/her) taken on Apsaalooké (Crow), Eastern Shoshone, Cheyenne, and Očhéthi Šakówin territories.

NPS/V. Verdin

With millions of people recreating in the desert around Moab every year, proper disposal of human solid waste has been a focus of the city and nearby land managers.

When You Gotta Go—Pack It Out

FINDING SOLUTIONS FOR HUMAN WASTE IN THE BACKCOUNTRY

By Kristen Pope

Among stunning red arches, balancing rocks, canyons, pinyon-juniper, and cacti, a hiker in southern Utah sees something white in the distance. Is it a wildflower? Approaching the "blossom," the hiker instead finds something far less picturesque—used toilet paper and human feces. No one wants to come across such a scene when they're out enjoying public lands, but as visitors flock to the outdoors, this scenario plays out frequently. Human feces in the backcountry are unsightly, gross, and unsanitary—they can contaminate water, stick to pets and outdoor gear, and sicken people and animals. While this may have been a lesser issue in the past, now as millions of outdoor recreators visit the Moab area each year, land managers and user groups are pressed to find solutions.

"A lot of people feel as though they're in the middle of nowhere," says Jennifer Jones, assistant field manager for the Bureau of Land Management's Moab Field Office. "They don't understand that there are 3 million other folks that are going to be enjoying the same scenery and trails that they are, so tucking used toilet paper under a rock may seem like an innocent step, but unfortunately, with so many people doing that [and leaving] these little toilet paper blossoms all over the place, that becomes an issue for sure."

In many parts of the country, burying fecal matter in a "cathole" is preferred, but in southern Utah's arid environment, human waste and toilet paper doesn't rapidly decompose. Grand County, Utah—home to Moab along with Arches and part of Canyonlands National Parks—has made leaving "solid human body waste" behind illegal. Instead, visitors must use a portable toilet, waste disposal bag, or other sanitary method to bring their poop out of the backcountry.

To overcome the "ick" factor and normalize this important sanitary measure, Grand County and partners held a "Poop Awareness Month" in October 2022. A social media campaign featured an inflatable poop emoji that, in short videos, explored the area demonstrating responsible and irresponsible practices. Further, Grand County's "Poop in Moab" website provides a handy guide for visitors, including requirements and best practices, while the statewide Gotta Go Utah campaign shares a similar message. BLM and other partners also produced a series of short films about responsible

A lot of people feel as though they're in the middle of nowhere. They don't understand that there are 3 million other folks that are going to be enjoying the same scenery and trails that they are.

Jennifer Jones

NPS/V. Verdin

Human waste isn't a new issue in the backcountry, but with increasing outdoor recreation, solutions are even more important.

visitation in Moab's fragile ecosystem. And the state's OHV test includes questions about packing out human waste.

Agencies aren't the only ones tackling this issue—the BASE jump and high line communities worked with the BLM to distribute over 2,000 specialized waste disposal bags and raise funds to build new vault toilets in high use areas for their sports.

Another important piece of the puzzle is communicating what people must do with the bags once they return to the trailhead. While some communities accept used human waste disposal bags with regular trash, in Moab, garbage trucks compact trash. "We had several incidents of our staff, because we have compactor trucks, getting sprayed with human waste when it compacted and these bags blew up," says Jessica Thacker, program manager for Canyonlands Solid Waste Authority. These workers then needed a series of shots and medical check-ups, as well as new clothing.

Grand County, SE Utah Health Department, and others collaborated to install five special bins that can safely accept the used poop bags. QR codes on bags and at retail locations share the bin locations. During a pilot run from June through early October 2022, the disposal stations collected an estimated 1,200 pounds of human waste. "That's 1,200 pounds that we didn't risk going onto our staff or going into the local environment. It didn't go into the waterways, so all the better for that," Thacker says.

Problems with human waste are not limited to Utah. In Colorado's Maroon Bells-Snowmass Wilderness, a permitting system is helping manage visitors and the unsanitary messes some leave behind. "By getting a permit, we're engaging [visitors] with a lot more information ahead of time that can then set them up for success being in the backcountry, including how they are going to take care of their human waste," says Katy Nelson, wilderness and trails program manager for the Aspen-Sopris Ranger District in the White River National Forest.

While using a bag is not required, each year the Forest Service and partners distribute around 5,000 free bags at three trailheads. In 2017, rangers recorded 334 incidents of unburied human waste in the wilderness area; in 2021 human waste incidents dropped to 153, and it's likely the new permit system, messaging, and bag distribution played a role.

Human waste isn't a new issue in the backcountry, but with increasing outdoor recreation, solutions are even more important. As communities across the West advance their outdoor recreation economies, they might look to places like Moab and the Maroon Bells for how to address this unpleasant reality.

***Kristen Pope** is a freelance writer who lives in the Tetons. Find more of her work at kepope.com.*

Grand County Trail Mix Facebook page

The Grand County Trail Mix works to enhance non-motorized recreation opportunities in the Moab area, including by distributing wag bags and stickers promoting proper waste disposal.

The author's dog, Slack, enjoys a summer day off-leash in the mountains.

Sabrina White

Untethered

MANAGING OFF-LEASH DOGS ON PUBLIC TRAILS

By Sabrina White

"Boulder, as a town, has always been super supportive of dogs and people recreating together off-leash," says Lisa Gonçalo, recreation management coordinator for the City of Boulder Open Space and Mountain Parks. "We have a long history. We have pictures from the 1970s of people hiking in Chautauqua Meadow with their pups off-leash." Today, dogs enrolled in the Boulder County Voice and Sight Program are still legally allowed off leash on certain trails within the county. As public trails get more crowded with off-leash dogs and people, programs such as this are appearing around the country, exploring innovative solutions that let dogs happily run free while also protecting the surrounding environment and other trail users.

According to the American Veterinary Medical Association, 45 percent of all households in the US own a dog, totaling between 83.7 and 88.8 million domesticated dogs in America alone. That's 10 times the entire population of New York City, and a 30 percent increase over the past 20 years. As these numbers continue to grow, there will undoubtably be more dogs enjoying outdoor spaces with their owners, since dogs require activity every day to stay healthy. Dogs that don't get a chance to run around can gain weight, suffer from joint problems, or develop behavioral issues like excessive barking or unwanted chewing. While requirements vary, most dogs need between 30 minutes to 2 hours of exercise every day.

Many dog owners, like Merav Ben-David, routine skijorer with her two huskies Chilkoot and Elwha, are especially fond of areas that allow dogs to explore off-leash. "There is no replacement for off-leash. Because the dog has to make decisions for themselves," she says. "They are free to explore smells. I mean, they're wolves, even these little ones. And their whole communication system is based on scent. And if you're walking the dog on a leash, they don't have the freedom to explore all the scents around them."

However, off-leash dogs can cause problems if they disturb trail users, attack other dogs, disturb wildlife, or leave poop behind. Melanie Torres, a graduate student at the University of Wyoming, was dog-sitting a huskie named Summit. She had him on a leash in Medicine Bow National Forest, when three little dogs ran up. The owner yelled the classic, "My dogs are friendly," but Summit was not. This story has a happy ending—the owner ran over and grabbed the dogs before anything bad happened—but it's not uncommon for similar narratives to have much worse endings. After experiences like this, Torres believes off-leash dogs must have good recall and owners should leash their dogs when they see another dog on leash. "If your dog is not listening or paying attention," she says, "it ruins the experience for everybody."

Another problem is when off-leash dogs disturb wildlife, but managers and researchers are still trying to understand the full extent to which they impact wild areas. A 2008 study in the *Natural Areas Journal* looking at dog presence on Colorado trails found that prey animals like mule deer and prairie dogs stayed further away from trails with dogs, and bobcat density also decreased in those areas. However, a 2011 study in *Conservation Biology* found that predators avoided trails in northern California based more on the number of humans present than dogs.

A more stinky concern with increased dogs on trails is poop. The Environmental Protection Agency estimates that a typical dog excretes an average of 274 pounds of waste every year. That's 12 million tons of dog waste excreted in the US annually. On average, 40 percent of dog owners do not pick up that waste, leaving it on the trail with major impacts on ecological systems. Dog poop can spread bacteria and parasites like roundworm or hookworm to animals or people, and it introduces excess nutrients into soil and waterways leading to harmful algae blooms. While one dog pile probably won't affect anything, the quantity of dogs using outdoor spaces and trails means it adds up. Dog waste collected in plastic bags

also adds loads of plastic and poop to landfills.

To address these issues, trail managers seek innovative solutions to create a culture of responsibility with dog owners, reward good behavior, and foster a sense of community. The Boulder County Voice and Sight Program is attempting to do just that. Dog owners must watch an hour-long video detailing the natural history of the open spaces and their responsibilities to control their dogs and conserve the area, and their dogs must have a rabies vaccination and dog license. The program requires participants to keep off-leash dogs within sight and under voice control at all times, to clean up after them, and to make sure they don't chase wildlife. Failure to follow any of the rules results in fines or citations. The City of Boulder Open Space and Mountain Parks surveys currently show 84 percent compliance, so while not everyone obeys, negative events are relatively infrequent.

To prepare dogs for such programs, many dog training companies around the country now offer classes for off-leash specific skills such as ignoring wildlife, recalling when there are lots of distractions, and off-leash heel. Mandy Kauffman, co-owner of Rockin' E Dog Training and Consulting in Laramie, Wyoming, says, "Before a dog is ready to go out on trails outside, I think they need to have some, at least basic obedience training so that they and their handler can communicate with each other." She emphasizes the importance of being prepared, ensuring your dog has good recall, and anticipating the types of users or wildlife you might see on the trail. "If a dog is going to be going off-leash on trails, I think that that ramps up a notch," she says.

Harold Malde/Carnegie Library for Local History, Boulder.

People run with an off-leash dog in a meadow outside Boulder, Colorado, in 1967.

Effective off-leash dog programs also strive to prevent wildlife disturbances. During surveys to evaluate the effectiveness of the Boulder County Voice and Sight Program, Gonçalo found few negative encounters. "The incidence that they observed a dog chasing wildlife was barely reportable. So, of the hundreds of observations, it was maybe a handful, like three to five, so … very small." Other areas close trails at specific times of the year, such as during breeding or fawning seasons, when wildlife is particularly sensitive. Such regulations must vary for each trail to address sensitive local wildlife species while still allowing responsible recreation.

Addressing the poop problem especially requires creating a culture of responsibility. The City of Boulder Open Space and Mountain Parks holds events to explain concerns with excess poop and increase visibility of the problem. Recently, they organized a cleanup of their four most frequented trails. Staff and volunteers placed flags everywhere they found a pile of uncollected poop. One of their most popular trails, Dry Creek, had 250 flags within the first quarter mile, providing a striking visual for the amount of waste. "[We were] trying to raise awareness around [dog waste]," Gonçalo said. "The dog owners that came on Saturday were also horrified about what they saw."

City of Boulder Open Space and Mountain Parks

A man walks with an off-leash dog on a public trail near Boulder, Colorado.

While removing dog waste prevents contamination, what happens to it after is also an important environmental consideration. Fifteen years ago Rose Seemann, co-founder of the non-profit Enviro Pet Waste Network, noticed this smelly issue and wanted to do something about it. Inspired by a USDA study that composted waste from Alaskan sled dogs, she created EnviroWagg and began composting waste from dog parks. After years of successfully creating safe and high-quality compost from dog waste, EnviroWagg now collects from more than 20 Boulder Open Space and Mountain Parks trailheads. "I want to try to get across to composters that this is not nuclear waste, your compost pile is not going to blow up, you're not going to poison people. If you compost it with everything else, it will be fine," Seemann explains. "You just have to have all these things in place. You have to teach people not to use plastic." Proceeds from EnviroWagg support the Enviro Pet Waste Network, which teaches people alternative ways to deal with pet waste and keep plastic and poop out of landfills.

Off-leash dogs using public trails don't have to harm other users' experiences or the ecosystem. Programs like Boulder County Voice and Sight are spearheading sustainable practices and creating a culture of responsibility that allows dogs to explore to their hearts' content while minimizing their impact on the environment and people. "In Boulder, I think we kind of consider pets our children and that's how we advocate for them," Gonçalo says. "And so, letting them experience the outdoors and sniffing and doing all the things that dogs love to do is a wonderful opportunity for that."

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CLIFF NOTES

HOW PLACE AND TECHNOLOGY MEANINGS SHAPE CONFLICT AROUND OUTDOOR RECREATION DEVELOPMENT

Climbers enjoy a via ferrata in Spain.

By Wes Eaton and Curt Davidson

In the fall of my first semester as a visiting professor at the University of Wyoming, a stranger knocked on the half-open door to my new office and said, "There's a town in Wyoming where people are saying that an outdoor recreation development proposal is tearing their community apart. Want to look into it with me?"

The stranger was Curt Davidson, a new professor of outdoor recreation and tourism. I had never heard of the thing stirring up the controversy, a *via ferrata,* which Davidson described as a protected climbing route—rungs, ladders, and cables installed on cliffs to assist climbing. It was the community conflict that intrigued me; people around Lander, Wyoming, were increasingly divided on the prospect of building a via ferrata in the nearby Sinks Canyon State Park. I am a social scientist specializing in conflict and collaboration around controversial environmental issues. I wondered if lessons from conflicts around water management and energy transitions, which I'd studied in the past, might apply in the world of recreation development. I told Davidson I was in. Disclosure: This research was funded by the Wyoming Outdoor Recreation, Tourism, and Hospitality (WORTH) Initiative, which is the sponsor of this issue of *Western Confluence*.

As we began meeting and interviewing the people of Lander, we soon found that via ferrata meant much more than iron rungs and ladders, and rarely even that. We wondered if what seemed to be an intractable controversy about specific issues might instead be viewed through the lens of how Sinks Canyon State Park and via ferrata mean different things to different people. We hoped this lens could help foster understanding in the situation at hand, as well as provide a means for decision-makers and developers to sidestep future conflict.

We began our research by reading up on Lander, a former mining town southeast of Yellowstone National Park and the Wind River Indian Reservation, now known as a recreation destination and gateway to the Wind River Mountains. Between the Winds

Frantisek Duris on Unsplash

and Lander, the middle fork of the Popo Agie River runs through Sinks Canyon, where visitors access campgrounds, hiking and biking trails, and sport climbing from a state highway. Sinks Canyon State Park covers 600 acres near the mouth of the canyon, while the rest is managed mostly by the US Forest Service.

Next, we scoured news articles to find out how the situation got to where it was. From what we could tell, officials from Sinks Canyon State Park had released a new master plan in October 2020, following a series of public meetings and a public comment period. The plan included a proposal to install a via ferrata on a north-facing cliff in the canyon, which a group of community members had pitched as a way of attracting visitors and boosting the local economy.

After the plan's release, a retired Wyoming Game and Fish biologist and peregrine falcon expert raised concerns that the proposed via ferrata route crossed a known nesting site, kicking off what quickly emerged as an organized campaign. Lander residents rallied around the mantra "Keep Sinks Canyon Wild" and formed the vocal citizens group Sinks Canyon Wild, which distributed yard signs, knocked on doors, and organized community events. A group of about 40 opponents even surprised Wyoming Governor Mark Gordon on the Lander airport tarmac when he flew in to attend another event.

In the face of growing criticism, someone close to the debate suggested an alternative site on a south-facing cliff called the Sandy Buttress, but that didn't end the controversy. In addition to concerns about the peregrines, critics accused Wyoming State Parks of ignoring public comments, making decisions behind closed doors, and valuing the state's outdoor recreation economy over local concerns. As the campaign against the via ferrata grew, vocal support dwindled to a private matter. By the time we arrived, Wyoming State Parks was the sole public voice for via ferrata in Sinks Canyon.

Our first visit put us at the Middle Fork Restaurant on Lander's Main Street in time for a late breakfast. Our rented university sedan gave us away as outsiders, but when we announced that we were researchers interested in conflict surrounding the via ferrata issue, the community opened to us, with thoughtfulness and engagement from all sides.

We began interviewing people that day. Over the course of three months, we spoke with 29 stakeholders, including recreators, wildlife enthusiasts, business owners, Wyoming State Parks employees, area residents, and local tribes. During our interviews, as well as informally at the Lander Bar, we were often told, "I don't understand the via ferrata." This could mean, *I don't understand why someone wants the via ferrata here,* as well as *I don't understand why people are so upset over building it here.* These weren't statements of ignorance, but claims offered with humility. People in Lander and elsewhere, while clear about their own positions, were genuinely flabbergasted by those on the other side of the matter. Within this gap in understanding, we heard "via ferrata is tearing this community apart."

As researchers, we were not trying to parse out who was right or might be at fault, or claiming to have special insight as to whether the via ferrata should or shouldn't be installed. In fact, less than a year after we completed our interviews, Wyoming State Parks canceled the project, rendering what ought to be done a moot point. Instead, we aimed to better understand the fundamental drivers of different positions on the issue by focusing on the idea of "fit."

A substantial body of social science research says that community support for new development is most likely when the technology involved is seen as "fitting" with a place. A perceived mismatch brews resistance. Because people draw on their personal experiences and community norms when forming ideas about the world around them, the same place and technology can mean very different things to

Curt Davidson

To create a via ferrata (Italian for "iron way"), rungs, cables, ladders, steps and other hardware are fixed to the cliff to provide support and safety for climbers.

Olivia Leviton

Sinks Canyon is named for the "sinks," a limestone cave where the river disappears into the ground, only to bubble back up at the "rise" a short ways down canyon. A paved, fully ADA accessible path known as the Junior Ranger Trail provides interpretive signage between the sinks and rise.

Sinks Canyon Wild

Those who saw Sinks Canyon as a wild and sacred place and thought of via ferrata as commercial development were likely to oppose a via ferrata in Sinks Canyon.

different groups. As such, there is a wide range of ways people feel about or relate to a place (place meanings) that can match or mismatch a range of ways people view a technology (technology meanings). Social scientists disentangle and map these various possible combinations into "symbolic logics," where a position of support or opposition is the logical conclusion of a particular pair of place and technology meanings.

Using these ideas, we proposed that critics in Lander saw the via ferrata as inappropriate for Sinks Canyon, whereas proponents saw via ferrata as a natural fit. This framework is useful for making sense of seemingly irreconcilable differences because it shows how any position is perfectly reasonable, given a certain view of Sinks Canyon and a specific way of thinking about via ferrata.

Take for example the people we interviewed who see Sinks Canyon as a wild and sacred place. They emphasized the diversity of wildlife along the park's canyon walls and the dense riparian habitat along the Popo Agie River, pointing to the opportunities for wildlife enthusiasts. They highlighted that Wyoming Game and Fish has an agreement with State Parks to "preserve and manage important habitats for wildlife." They also frequently referenced Indigenous groups and culture and were concerned that the proposed location "puts this via ferrata now right at the entrance of the canyon, right on a cliff that has petroglyphs and pictographs, right on an area that is culturally very significant."

Now consider those who insist that the rungs and cables of a via ferrata would be an eyesore, saying, "We don't need more junk going on up there, you know?" To them, the physical infrastructure—the rungs and cables—of the proposed technology doesn't fit with the place's wild aesthetic. They stressed this mismatch by labelling the via ferrata things like "playground," "jungle gym," and "plaything"—objects belonging in more developed recreation spaces.

Others opposed the via ferrata because of a different mismatch of place and technology meanings. They agree that Sinks Canyon is a wild and sacred place and objected to what they saw as the via ferrata's commercial nature. The proposal at the time used a concessionaire to manage the route and included what officials hoped would be a nominal fee; opponents declared this out of sync with the public nature of a state park. Focus on the commercial dimension aligned with larger suspicions people held about the role of private interests and political motivations in the project, which ultimately came to symbolize valuing economic progress over wild places that ought to stay special. As one critic said, "We need a whole different lens to look at the planet, and my attention to the via ferrata is about that. It's a little, trivial, kind of ridiculous thing, but it represents [an inability] to grasp the fragility of our planet and Wyoming's unique place in how wild it is

> If we don't limit ourselves and ask ourselves to lighten up our footprint in the outdoors, we're going to trample it to death.

compared to the rest of our planet, and especially our country."

Even proponents of the via ferrata agreed that it did not belong in wild spaces, with one saying, "I would not want the next via ferrata to be in the middle of the Wind River Range, on Gannett peak and the Gannett Peak Wilderness Area." But to that interviewee and others, Sinks Canyon State Park is *not* wild. Instead, they called it a "gateway" and a "transition zone" between the wilderness of the Wind River Range and the development found below. Some called the state park a "planned" place, pointing to existing recreational infrastructure like parking lots, restrooms, campgrounds, and the highway running through it all. The pocketed, limestone cliffs themselves have made Sinks Canyon a hotspot for rock climbing, with more than 500 developed sport routes (although most of these are in the national forest, not the state park).

Another interviewee pushed back on the idea of the canyon as sacred, particularly the proposed via ferrata location at its mouth, saying "You'll not find any sites where [Indigenous groups] did any camping or any ceremonies, no evidence of that activity." Instead, it is a "pass-through," used for travel, migration, foraging, and hunting—but not for sacred purposes.

To many sharing these pro-via ferrata views, Sinks Canyon State Park is seen as an appropriate place for new recreation development that avoids encroaching on what they see as truly sacred or wild places elsewhere. In general, via ferrata proponents focused not only on the technology as a form of recreation and education in keeping with the canyon's current use, but also as a way of enhancing and equalizing that use.

The canyon's cliffs currently offer mostly expert level climbing routes. In contrast, the via ferrata's handles, cables, ladders, rungs, and safety clips could make climbing more accessible to more users. One advocate was excited that "we could open this up to underserved populations and have ways of allowing school groups and college groups and you name it. The opportunities are there for us to use this in an equitable way." More generally, the via ferrata represented increased access to the health benefits of outdoor recreation by providing another means for people to spend time outside.

Another proponent highlighted the via ferrata as an interpretive tool that would complement the state park's educational activity repertoire, saying "I see this more as an education tool to teach the climbing sport or climbing pastime lifestyle, but also teach about the beauty and the history of Sinks Canyon." In this view, climbing the via ferrata would fit in alongside visiting the mysterious sink and rise of the Popo Agie River, experiencing the diverse local wildlife, and exploring hidden waterfalls and caves. It's not a threatening, novel technology so much as "one more hook to catch kid's interests," as one interviewee said, or a way to increase visitors' "stay time," another said.

Other folks who saw Sinks Canyon State Park as a place of extensive use and development still attached a different meaning to it: the canyon is vulnerable to, rather than ideal for, additional development. To them, further alteration represented a line in the sand they didn't want to cross, with one saying, "My greatest worry is basically that Sinks Canyon is death by a thousand cuts. You know, this [via ferrata] gets it a hell of a lot closer to the thousand. I mean [the park] is just a small area."

Many interviewees shared stories of trampled paths, increased trash and pet waste, and overuse of the canyon by recreationists of all types. They worried that what was once the norm for them within the park—solitude, peace, wonderment—was disappearing, and that more users brought in by the via ferrata would only add to the problem. "If we don't limit ourselves and ask ourselves to lighten up our footprint in the outdoors," said one via ferrata opponent, "we're going to trample it to death."

Our research generated a figure illustrating some of these "symbolic logics" of fit that underlie support for, or opposition to, the via ferrata proposal. Admittedly, this framework does simplify things. Making meaning in everyday life is hardly so concise or linear. Nor are the given examples exhaustive of all the possible meanings and combinations of meanings people ascribed to place and technology.

There were, for example, people who saw Sinks Canyon as a recreational space but didn't view the via ferrata as a legitimate form of recreation, saying it wasn't "real" climbing. There were also those

Courtesy of Wes Eaton and Curt Davidson

Wes Eaton (left) and Curt Davidson (right) try out a via ferrata in Estes Park, Colorado to better understand the technology at issue.

We could open this up to underserved populations and have ways of allowing school groups and college groups and you name it. The opportunities are there for us to use this in an equitable way.

who saw via ferrata as worthwhile but blamed the shortcomings of the south-facing Sandy Buttress, warning it would be "a rinky-dink version of what a via ferrata should be."

Despite the simplification, these logics remain a powerful tool for illuminating and charting out the values, motivations, and deep place attachments shaping peoples' contrasting views on what is good for their community. This can get us a long way towards our research goal of building understanding among supporters and opponents, if people are willing to learn about, and take seriously, the meanings others hold that are different from their own. They can still disagree about whether Sinks Canyon is a wild place or a transition zone, but if they set aside their doubt for a minute and try on the other position, they may see the logic in it. We like to sum this up by saying, "If you're feeling furious, get curious."

A close look at our symbolic logics reveals additional insights. First, it can be perilous to ignore or violate locally salient place meanings, no matter how beneficial a technology seems. In the case of via ferrata, even a technology that increases recreation's accessibility (which is generally viewed favorably) was no match for concern about protecting a space that symbolized threatened wilderness. Second, different combinations of place and technology meanings can lead to the same position, which opens creative thinking for sidestepping potential outdoor recreation development disputes.

Communities and decision-makers wanting to manage contention around outdoor recreation development might take advantage of these insights when designing community engagement processes. A project leader might begin by finding out which meanings are tacit and prevalent for a place. This could give a sense of what types of development might fit well. Next, they could join, extend, or begin a new community dialogue to build understanding and potentially forge new, shared meanings along the way.

The best time to tap into and create shared meanings is before a big development announcement. That's because people often hold multiple meanings for the same place—recreating in a place they hold sacred, for instance—but these meanings tend to congeal when someone feels "their" place is threatened. New technologies often constitute a big threat to place; the via ferrata proposal, for example, catalyzed the Sinks Canyon Wild citizens group dedicated to protecting Sinks Canyon. Once a community builds a shared understanding, it can work to identify a reasonable "fit" between place and outdoor recreation development.

In this way, lessons learned from the Sinks Canyon via ferrata conflict, which appears to have ended, might assist other communities and decision-makers wanting to get ahead of conflict around outdoor recreation development. The authors, Wes and Curt, hope to support and continue learning from and with Wyoming leaders willing to build on this approach for current and future projects.

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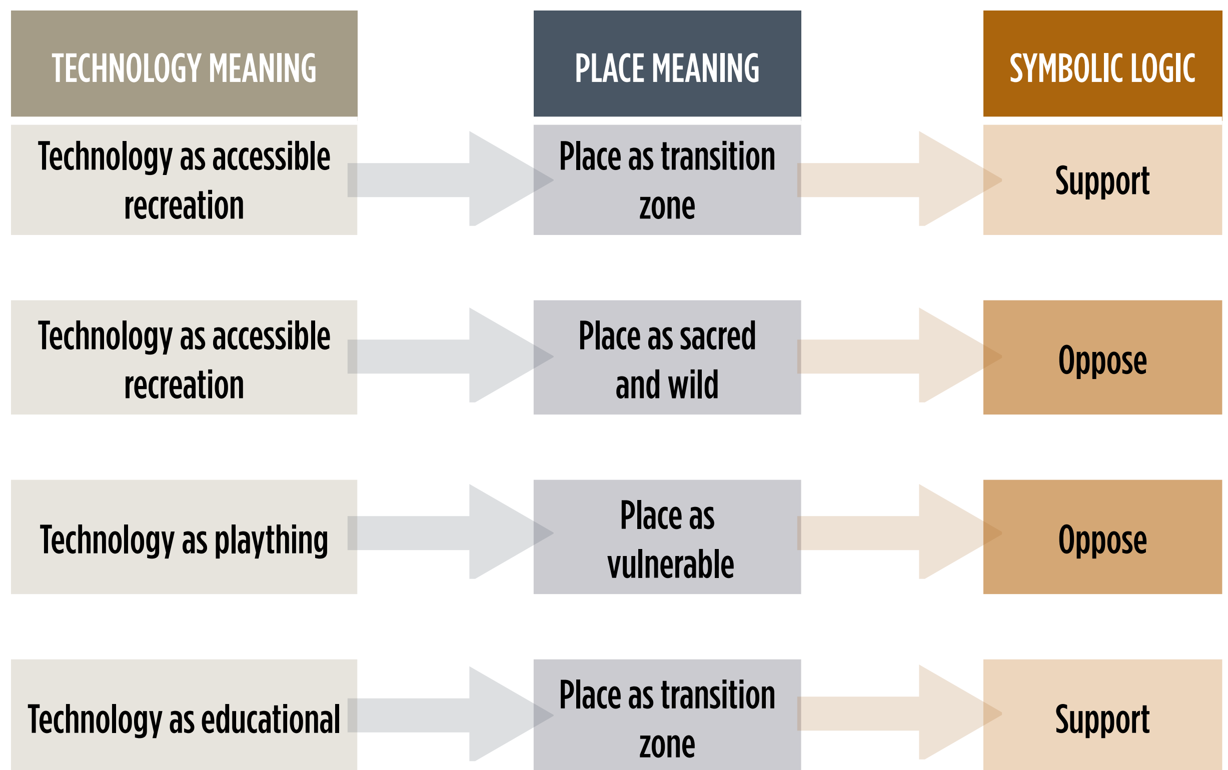

Social scientists disentangle and map various possible combinations of place and technology meanings into "symbolic logics," where a position of support or opposition is the logical conclusion of a particular pair of meanings.

Amenity Trap

SKYROCKETING HOUSING PRICES DRIVE RESIDENTS OUT OF DESIRABLE OUTDOOR RECREATION COMMUNITIES

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By Kristen Pope

Jackson, Wyoming, is famous for its amazing outdoor access, but finding an affordable place to live there is a perpetual struggle. "We know that housing [in Jackson] is very expensive and it's out of reach for most of our seasonal and younger workers who are less established in their careers," says April Norton, director of the Jackson/Teton County Affordable Housing Department. In Jackson, the median sale price of a single-family home in 2022 was $3.5 million, a record high for the community. Due to the high cost and shortage of housing, as many as 40 percent of local workers live outside the county and make lengthy commutes, sometimes on icy, snow-packed roads in nearly white-out conditions. During the busy summer season, some live out of their vehicles on nearby public lands. Other long-term residents have simply moved away.

And Jackson is not alone. For many small mountain towns, the very features that attract people also make them challenging and expensive places to live. Communities throughout the West endowed with natural amenities—nearby forests, mountains, trails, beaches, and wildlife—are seeking ways to capitalize on the economic opportunities that come with outdoor recreation and tourism. At the same time, they strive to avoid sacrificing the characteristics, such as quiet trails and little traffic, that make these places so desirable to live in the first place.

Researchers from Headwaters Economics, an independent, nonprofit research group, explored the challenges communities like Jackson face, along with potential solutions, in a recent report entitled *The Amenity Trap: How high-amenity communities can avoid being loved to death*.

The term "amenity trap" describes "a place with natural attractions that make it a great place to live but also threaten it," as throngs of tourists strain local infrastructure while short-term rentals and wealthy residents, including part-time residents, drive up housing costs for local workers. So, what can communities do to escape the trap? The report authors offer a range of solutions and examples that communities can consider to provide more affordable housing for local workers.

The housing crisis, in both affordability and availability, is a nationwide problem, but a few factors make it especially acute in outdoor-oriented communities throughout the Mountain West. Located in rural areas with great outdoor access, these towns are generally considered nice places to live, where people can admire

> In the next five years, we need to build 2,000 housing units just in Teton County, Wyoming.
>
> April Norton

gorgeous scenery and embrace an active lifestyle that may involve skiing a few laps or going for a trail run on their lunch break. Those qualities also attract people looking for second homes, remote workers, and tourists, all of whom compete with locals for limited housing.

And the competition is stiff. Wealthy individuals may purchase second (or additional) homes in cash, making their offers more attractive and higher than those from people relying on mortgages, which generally cannot extend above a house's appraised value. Limited buildable land and a limited labor force also make housing problems especially pronounced in some outdoor amenity communities.

This housing shortage detracts from quality-of-life for residents and can even imperil their ability to remain housed. The *Amenity Trap* report cited a 2020 study saying median rent increasing by $100 per month is associated with homelessness rising by 9 percent. A 2022 Teton Region Housing Needs Assessment survey found nearly half of renters in the region who chose to complete the survey had been forced to move in the past three years, often more than once, due to factors like their residence being sold or converted to a short-term rental or a significant rent increase. When fewer properties are available for local workers to rent, this drives prices even higher.

Many of Jackson, Wyoming's, vital workers, including teachers, healthcare workers, snowplow drivers, and emergency responders, live outside the county or even across the state line in Idaho. Commuters can be stranded in inclement weather, and driving long distances every day isn't cheap. The Teton Region Housing Needs Assessment found these commutes cost an average of $500-850 per month. And commuting negatively affects communities when those hours behind the wheel each day cut into time engaging with loved ones or participating in civic life.

"In the next five years, we need to build 2,000 housing units just in Teton County, Wyoming," Norton says. And the number is almost double when considering the wider region, including Teton Valley, Idaho, and northern Lincoln County, Wyoming, she says. But finding a place for new structures is a challenge since 97 percent of the county is public land—mostly Grand Teton National Park and the Bridger-Teton National Forest. Of the 3 percent that is private land, several thousand acres are under conservation easement or other restrictions, leaving a very small footprint for building homes.

Steve Estvanik, Shutterstock

Nicole Glass Photography, Shutterstock

Only a small percentage of land in Teton County, Wyoming, is available for building and much of that is already developed leaving little space to build additional housing.

The lack of housing availability is a factor that, coupled with soaring costs, has pushed many long-term residents to move away.

These problems echo around the Mountain West. In Big Sky, Montana, census data shows that 78 percent of Big Sky's workforce now faces commutes of more than 40 miles. Further, many of the communities that Big Sky workers commute from also face housing stresses. The Big Sky Community Housing Trust reported the average cost to purchase a nonluxury condo at nearly $1.2 million. They also reported a 0 percent vacancy rate for long-term rentals at the end of 2022.

David O'Connor, the trust's executive director, says a healthy vacancy rate would be closer to 5 or 6 percent, where market forces can impact rent levels. "So probably the greatest impact of a 0 percent vacancy rate is unfettered growth in rental rates," he says. "There just is no throttle then to try and keep those rates down because from the perspective of the market, demand is then infinite and supply is not, so it's just basic economics and the price goes up."

The Yampa Valley Housing Authority plans to build 2,300 homes on donated land adjacent to Steamboat Springs, Colorado, by 2040.

Communities can be reactive and try to stop growth, do nothing and wait, or be proactive and plan ahead. According to the *Amenity Trap* report authors, trying to restrict growth by methods such as limiting building permits can have unintended consequences like driving up the cost of available housing.

"When communities are faced with change, it's very understandable to want to put the brakes on, but what we've seen is that it doesn't affect the attractiveness of your community, it doesn't affect the desirability, and people still want to come there," says Megan Lawson, economist at Headwaters Economics and co-author of the report.

The Amenity Trap report describes a range of tools communities can consider to address housing for local residents. "With all the different strategies that communities are using around housing, there's no single program or policy that's going to solve the housing challenges these places are facing," Lawson says. "But I think … when communities can try, can have a deep toolbox to draw from, I think they can start to move the needle."

One strategy is to make more rental units available to local workers, including by incentivizing homeowners to rent to local workers. Durango, Colorado, offered "ADU amnesty" to legalize existing unpermitted "accessory dwelling units" such as apartments above garages and in backyards. Now, Durango is incentivizing the construction of new ADUs by offering $8,000 rebates for a set number of ADUs that meet certain requirements, including the owner renting it to a local worker who uses the space as their primary residence, and committing to the program for two years.

Big Sky, Montana, provides financial incentives for homeowners to offer long-term (one- or two-year) rentals to locals, with higher amounts for homes that have more bedrooms to hold entire families. However, without guardrails these types of programs risk benefitting investors and second homeowners more than local residents. In a similar "Lease to Locals" program, Summit County, Colorado, had to cap the amount owners could charge renters after some set rates the local workforce generally couldn't afford.

Limiting short-term vacation rentals is another way to make more homes available to local residents. Bozeman, Montana, uses zoning to restrict short-term rentals in certain neighborhoods. While such measures can increase available housing, they can also be controversial since they impact residents and businesses running short-term rentals as income sources. The Big Sky Community Housing Trust also provides local homeowners with cash incentives to put permanent deed restrictions on their properties that prohibit short-term rentals and specify occupants must work locally. Jackson, Wyoming, is working on a similar deed restriction program to ensure more homes are occupied by members of the permanent local workforce.

"It hits two birds with one stone," Norton says of Jackson's program. "It's providing stable housing for someone who is working locally, but it's also protecting community character, so we don't have to build up bigger all the time. We can protect some of these cool funky houses in town, too, that have been workforce housing and hopefully will remain workforce housing."

In some outdoor amenity communities, a few local businesses such as ski resorts provide employee housing for a limited number of employees. For example, Jackson Hole Mountain Resort offers limited housing for full-time employees including shared 4-bedroom, 2-bathroom apartments with no pets allowed and very limited parking. Another option is a shared motel room with two queen beds, one bathroom, and a mini fridge and microwave, but no kitchen. This motel is a 20–30-minute bus ride from the ski resort, and pets are not allowed. Vail Resorts also offers housing options for employees who don't mind having roommates. In many communities, there are more people seeking employee housing than beds available.

Another approach communities can take is to build more houses, if land is available for construction. Jason Peasley, executive director of the Yampa Valley Housing Authority in Steamboat Springs, Colorado, says the housing issue has existed

Joni Hanebutt, Shutterstock

Big Sky, Montana, offers incentives for homeowners to rent to locals and put deed restrictions on their properties that prohibit short-term rentals.

> “When communities have a deep toolbox to draw from, I think they can start to move the needle.”
>
> Megan Lawson

for more than 40 years and part of the solution is to increase housing supply. After an anonymous donor gave 534 acres of open land adjacent to Steamboat Springs for affordable housing, the Yampa Valley Housing Authority began planning the Brown Ranch project. The county's current housing shortfall is 1,400 units, and the project includes plans to build 2,300 new homes by 2040. Neighborhoods will be built for affordability and sustainability, as well as connectivity and health equity.

“We can expand the size of our community to accommodate our workforce and make sure that those who work in Steamboat and want to live in Steamboat have that option,” Peasley says.

In another effort to create additional housing, the Big Sky Community Housing Trust is building RiverView Apartments, a federally-funded low-income housing apartment project scheduled to be ready in 2024.

The difficulty of creating additional housing spans beyond planning. It also requires people to physically build the structures for people to live in. A short supply of labor (as well as housing for laborers) compounds the housing challenge in many outdoor recreation communities. The *Amenity Trap* report discusses modular housing as a potential solution being used in parts of Colorado. Rather than requiring workers to spend weeks or months on-site building a home from the foundation up, modular homes are built in a centralized location, such as the Fading West factory in Buena Vista, Colorado, and then transported, installed, and finished in less time than building on-site. “Prefabricated and modular homes are typically not distinguishable from traditional stick-built houses and, importantly, must meet the same building code as stick-built homes,” the report states, adding that such homes can cost 10-20 percent less than homes built on-site.

Funding is another challenge that limits housing programs. Different communities turn to approaches like debt financing through bonds, which may rely on funding from local property taxes, and forming partnerships between public and private entities to spread out costs of housing solutions. Others focus on taxing tourism to help pay for housing programs and solutions. Steamboat Springs, Colorado, now charges a 9 percent tax on short-term rentals, which is estimated to bring in $11 million for affordable housing initiatives, including the Brown Ranch Project, over the next 20 years.

As communities already entrenched in challenging housing situations seek innovative solutions, other communities that are starting to develop their own outdoor recreation economies can plan ahead. Escaping the trap and addressing severe shortages of affordable homes requires, the report authors say, proactively creating comprehensive housing solutions ahead of or along with economic development plans, not after the fact. By learning from places like Jackson, Wyoming, and taking the lessons from the *Amenity Trap* report to heart, communities can create housing solutions in tandem with developing ways to boost their economies and enhance quality-of-life for residents and visitors alike. The report's authors emphasize that each community is unique and will need its own set of tools to address its individual situation.

“The challenges around housing that communities are struggling with right now are not new,” says Lawson, but now there is “a much broader group of people who are interested and paying attention to our policies around housing.” She says as community members see more people affected by a lack of affordable housing, they are starting to understand how housing challenges affect their neighbors, local businesses, and other aspects of community. This sets the stage for community leaders to take action.

“I think the challenges are a lot more visible now, and that gives an opportunity for more voices at the table around changing our housing policies.”

***Kristen Pope** is a freelance writer who lives in the Tetons. Find more of her work at kepope.com.*

News from the Ruckelshaus Institute and WORTH Initiative

Western Confluence magazine is a publication of the Ruckelshaus Institute of Environment and Natural Resources at the University of Wyoming. The institute supports stakeholder-driven solutions to environmental challenges by conducting and communicating relevant research and promoting collaborative decision making.

This issue was sponsored by the Wyoming Outdoor Recreation, Tourism, and Hospitality Initiative (WORTH). WORTH's mission is to support, expand, and diversify Wyoming's economy through applied research, educational products, and extension services.

Emerging Issue Forum on Outdoor Recreation

For three days in April 2023, the Ruckelshaus Institute, WORTH Initiative, and Wyoming Office of Outdoor Recreation convened "Outdoor Recreation: Building It The Way We Want It" to explore how Wyoming communities could maximize the benefits, while mitigating the impacts, of growing outdoor recreation. Attendees called it a watershed moment, the first attempt to bring together all the outdoor recreation stakeholders around the state.

The biggest takeaway was that there is broad, measured support for outdoor recreation development in Wyoming. Major themes included the complexity of outdoor recreation, the value of collaboration, and the importance of community. Recordings and a full proceedings from the forum are available at uwyo.edu/ruckelshaus.

Grace Templeton, Wyoming Pathways

Save the Date

WYOMING OUTDOOR RECREATION

Summit

APRIL 18-19TH

+

APRIL 20TH

WYOMING SEARCH AND RESCUE

Best Western in Casper, Wyoming

Next Steps: Annual Outdoor Recreation Summit

The greatest need the forum revealed was an ongoing space for outdoor recreation interests to come together, air issues, celebrate and learn from success and challenges, and work cooperatively to "build it the way we want it."

Inspired and driven by the forum's success, the WORTH Initiative and Wyoming Office of Outdoor Recreation are excited to convene the 2024 Wyoming Outdoor Recreation Summit April 18th-20th in Casper, Wyoming.

Learn more at uwyo.edu/worth

Throughout their road trip, Meredith and Katie blocked out the windows of their camper and let light in through only a small hole. This large camera obscura reproduced the scene outside onto surfaces within the trailer, but upside down and flipped side-to-side. The teardrop-camper-turned-camera-obscura enacts projection, inversion, and reversal. What ideas do we project on the landscapes we visit and what values onto the method of visitation? How does bringing the comforts of home into the great outdoors facilitate and inhibit connection? How do expectations shape and distort our outdoor experiences? The camera obscura indulges the omnipresent desire to document, while exaggerating the imperfect translation of place, moment, and experience to image.

Over Look / Under Foot

TWO ARTISTS ROAD TRIP THROUGH UTAH'S NATIONAL PARKS

By Katie Hargrave and Meredith Lynn
Captions by Birch Malotky

As tent campers and national parks enthusiasts, we spend a lot of time in the company of Airstreams, Winnebagos, and Jaycos, and have come to appreciate that for many, the RV makes a kind of relationship to nature possible. RVs can re-create the comfort and access of home in the middle of spaces the federal government has set aside to be preserved as wild. We have seen our fellow campers set up potted plants, satellite dishes, and full multi-course meals in the middle of what we hope to be wilderness.

This comfort and accessibility is in opposition to romantic visions of national parks and some approaches to conservation. Nature writer Edward Abbey famously wrote in *Desert Solitaire*, "You can't see anything from a car." There is a value judgement implicit in this statement. Abbey and others equate a certain connection to nature with spirituality, purity, and a unique kind of enlightenment, but that sort of experience in the outdoors deliberately excludes most park goers.

Using all five Utah national parks as a springboard, we took a rented van and teardrop trailer on the road to consider the complexities of a relationship to land that is heavily mediated by vehicles, cameras, and our own nostalgia. Through Arches, Canyonlands, Capitol Reef, Bryce Canyon, and Zion National Parks, we enact and document the tourist experience, asking how our portrayals of public land and outdoor recreation differ from the actual experience, and whether an unmitigated relationship to nature is possible, or even desirable.

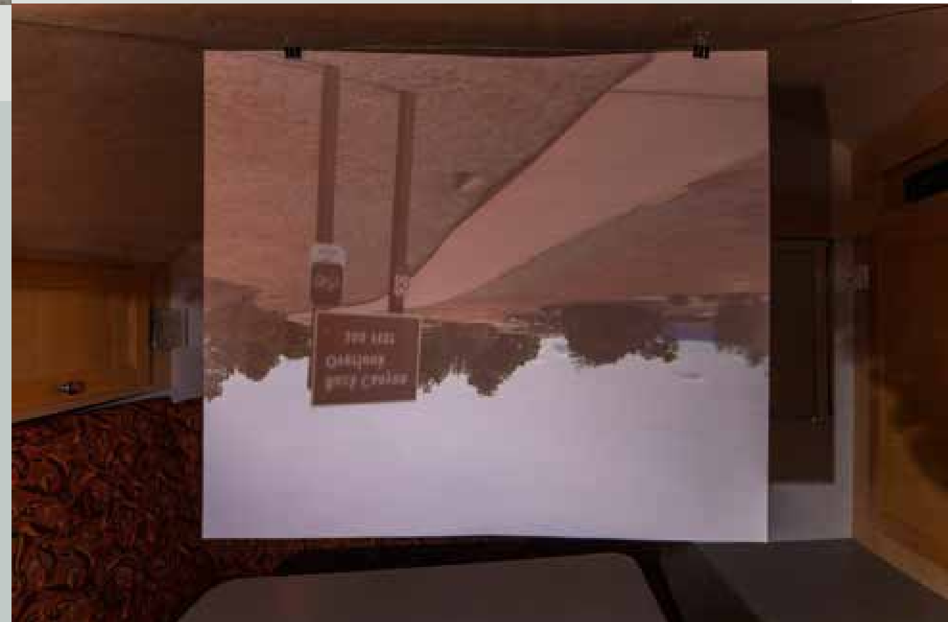
__Katie Hargrave__ and __Meredith Lynn__ are artists and educators who work collaboratively to explore the historic, cultural, and environmental impacts of so-called public land. They met at the University of Iowa, where they both earned MFAs and began to understand art-making as a form of real discourse. Find the rest of Over Look / Under Foot at meredithlauralynn.com and katiehargrave.com.

Katie and Meredith wish to acknowledge the land where this work was made, as the management of these places has happened from time immemorial by the Ute, Southern Paiute, and the Ancestral Pueblo peoples. While these sites are under the control of the National Parks System, it is Indigenous peoples who continue to put necessary pressure on the US government to preserve these spaces.

Tourism makes a mark—through roads, trails, and the "footprints" of buildings, tents, and people. But infrastructure can also expand access while mitigating the impacts of growing crowds. In Arches National Park, visitors had to bring all their own water until a few years ago, when managers installed a bathroom with running water and flush toilets to better accommodate the influx of tourists. Such pedestrian concerns are rarely part of the narrative of blue skies and red rock that's sold to prospective visitors and re-created during visits. To bring these ideas in conversation, Katie and Meredith sewed a tent printed with creative commons photos from tourists at Arches—featuring classic vistas like Delicate Arch and the lines of people waiting to photograph them—and set it up in front of the new bathroom at Devil's Garden, the only developed campground in the park.

After Zion became Utah's first national park in 1919, the park service, the state of Utah, and the Union Pacific Railroad worked to create and promote a "Grand Loop" of southwestern parks as the center of American tourism. To reach Zion, they spent three years and $2 million building 25 miles of switchbacks and a 1.1 mile tunnel through the canyon walls. Now with more than 4.6 million visitors a year, the park is the third most popular in the country and first to implement a mandatory shuttle system, which brings visitors in and out of the narrow Zion canyon most of the year. Before their trip, Katie and Meredith collected vintage postcards of Zion, many of which depicted the famous Zion-Mount Carmel Tunnel. Using the glass beads that are mixed into road paint to make it reflective, they highlighted the roads that historically enabled access and growth in visitation to Zion, and are now strained by the load of millions of park goers.

In a thickly textured landscape of canyons and spires, most of which is accessible only on foot or by raft, the National Park Service has established seven scenic overlooks along a paved road. Most visitors to Canyonlands National Park stop only at these vistas, so the same scenes are reproduced again and again in personal and promotional photography. Meredith and Katie parked their camper at each one and photographed, using the camera obscura, the views that so many motorists and passengers stop to see. The camper cannot walk to the overlook, so instead it turns its eye to the way that signage and infrastructure direct and frame the park experience.



Train Trek

A VISION FOR BRINGING PASSENGER RAIL BACK TO THE RURAL WEST

By Nick Robinson
Artwork by Graham Marema

Steel wheels glide along a track as the conductor announces, "Next stop, Thermopolis!" Outside the window, pronghorn antelope gallop across the sagebrush. The train slows to match their speed and then enters a tunnel. On the other side, striking granite walls of the Wind River Canyon come into view.

This vision of passenger rail travel across Wyoming is purely imaginary, but might it one day become reality? Today, no travelers ride the rails in Wyoming or South Dakota, making them the only two states in the continental United States without passenger offerings. Instead, trains here transport almost anything except humans, while citizens rely on cars to get from one community to the next, and many who can't drive have no options at all. But what if that wasn't the case? What if conductor whistles rang out once again, and accessible passenger rail service connected towns in the rural west?

If Dan Bilka and Charlie Hamilton get their way, that just might happen. The two lead All Aboard Northwest (AANW), a regional passenger rail advocacy group whose vision is to create a transportation network that offers environmental, equity, and economic benefits throughout the northwestern US. The way they see it, folding passenger rail back into the greater transportation fabric could benefit underserved populations and act as a development engine for rural communities across the West.

Passenger rail has a robust history in the region. Starting in the 1860s, trains began carrying travelers across the western United States, further transforming lands that had long been home to Indigenous peoples. I met Mark Amfahr, a transportation consultant from Minneapolis, while he was in Laramie digitizing a Union Pacific Historical Society collection at the American Heritage Center. "A first-class passenger car would look and feel like this room," Amfahr said, motioning to the decadent curtains, detailed woodwork, and grandiose western paintings adorning the walls.

Locomotives required stops to refuel and change crews along routes, Amfahr explained. Key stops grew to depots and became "the reason why people located where they did, and why those communities developed…a base for jobs or employment." Settlements grew. The Overland and Pioneer Routes, operated by Union Pacific and Amtrak respectively, snaked alongside present-day Interstate 80, serving people in Cheyenne, Laramie, Rawlins, Green River, and Evanston and providing the common traveler access to an ever-growing West.

Societal shifts following World War II began to alter the transportation landscape. Veteran pilots returned home, and commercial air travel entered the scene. Flying became popular for long-distance journeys, and the automobile was king for short to medium length trips. Funding supporting rural passenger rail linkages dried up in the late 1990s. Ridership dwindled as routes began to disappear. The last Amtrak passenger train to serve Wyoming departed from Green River on May 10, 1997, and all stations closed the next day.

Now, All Aboard Northwest is working to reverse those closures and bring passenger rail to even more small towns across the West.

"We have found the statistic is around 30 percent of the US population doesn't drive," says AANW Secretary Charlie Hamilton, who himself is unable to drive. "Either they are too old, too young, they're too poor, they are disabled, or they are concerned about the future. And that number is only getting bigger." Offering alternate modes of transportation can attract new visitors for communities hoping to grow in a sustainable manner, Hamilton believes.

"There are the 3 Es. We call them the environmental benefits, the equity benefits, and economic benefits," Hamilton says. The AANW website lists examples such as reducing automobile pollution, expanding access to services for underserved communities, and bringing in tourists to overnight in small towns. "No matter where you are on the political spectrum, most people will say yes, I can get behind at least two of them. There is a lot of interest in making this happen not only in big cities, but in small places too."

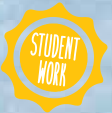
Toward this vision, AANW organizes an annual "Train Trek" outreach series, where members travel by car meeting with groups interested in establishing passenger rail service. In 2021, the trek centered on Wyoming. Stops included not only historically serviced cities, but towns that were never connected to major cross-continental routes. "The smaller communities really got it best," Hamilton said about towns such as Greybull and Thermopolis, where residents were drawn to the value of being able to travel to larger cities for services not offered in the immediate area. One meeting resulted in a series of letters from Wyoming residents to policymakers at the United States Department of Transportation, each echoing the sentiment, "People live here too."

According to AANW President Dan Bilka, this was the first time in recent memory that the Department of Transportation heard from Wyoming residents about their desire for passenger rail. Reinstating service is popular on both sides of the aisle, and the Federal Railroad Administration's Corridor Identification and Development Program aims to identify communities that could be viable candidates for intercity passenger rail. All Aboard Northwest acts as a mediator for communities wishing to submit applications for consideration.

Imagining a future where citizens of the rural West can ride trains from town to town is not that much of a stretch. Many historic depots still anchor small towns. "[The depot] is that critical access point for the community, but they are also regional hubs, as they were in history," Bilka explains. "The depot is the gateway and entryway into the community." Local leaders are realizing this and are already envisioning the transition back to former use.

I can imagine myself standing on the platform as a train rumbles idle at Depot Park in Laramie, Wyoming. Doors of the sleek cars slide open and passengers file out. A seated woman wheels herself down a ramp and is greeted by a friend. Kids run to playground equipment at the park while parents sit at a newly built eatery. I hear letters click on the split-flap display board. Listed under departures is Malta, Montana, the endpoint on a north-south route that transects Wyoming. I step aboard and find my seat. The train departs the station, gaining speed as it glides northward. Full steam ahead.

Nick Robinson *is an adventurer interested in sustainable modes of transportation. He can be seen cycling around Laramie, Wyoming, on a green vintage Schwinn bike.*



Nine Quarter Circle Ranch

Horses, Hats, and Heritage

DUDE RANCHING OFFERS A COMPELLING MODEL FOR SUSTAINABLE TOURISM IN THE WEST

By Graham Marema

Just before sunrise, Nine Quarter Circle Ranch wakes up. The valley is still blue with fog, and wranglers don cowboy hats and vests, shimmying their feet into worn boots. Guests wake and yawn over a communal meal of eggs, sliced fruit, and mugs of steaming coffee. Soon, the Appaloosa horses will come thundering down from their night pastures into the corral, followed by the hooting wranglers, for a day of riding beneath the Taylor Peaks.

I could be describing a scene from 75 years ago, as this dude ranch began another day of horseback riding, fly fishing, and guiding guests over the scrubby hillsides of the Taylor Fork Valley. Or I could be describing a scene from this morning.

That's sort of the point.

"Our motto is 'time stands still,'" says Kameron Kelsey from beneath the rim of an old black cowboy hat. Kameron runs the Nine Quarter Circle Ranch in southern Montana, right outside Yellowstone National Park, along with his wife Sally. They host some 600 guests at their ranch each year. "I mean, we have a guest here this week who came in the early '60s as a young child, and it hasn't changed. That's part of the appeal and charm of the place."

That longevity is something other tourism sectors have, at times, struggled to replicate. For western outdoor tourism, the question of sustainability—which requires balancing the positive and negative impacts on local ecosystems, economies, and cultures—grows more crucial every year. As visitors arrive so do economic opportunities, but often at a cost to local communities. With tourism booms come complications, from increased housing prices to human waste in fragile backcountry ecosystems, and more.

While tourism draws like rock climbing and winter sports have struggled to mediate their impact on local systems, dude ranching, a quietly understated western tourism industry, has remained popular, unobtrusive, and relatively unchanged for nearly 150 years. The

timeless charm of dude ranching might provide a compelling example of a long-term recreational sector rooted in sustaining a cultural and natural way of life.

A dude ranch, also called a guest ranch, is distinct from a working ranch, whose sole purpose and income comes from cattle ranching. The dude ranch, by contrast, receives at least part of its income from hosting guests for cowboy-themed vacations. When the practice began in the late nineteenth century, ranches hosted these guests for free. The very first "dudes," as visitors were called, were mostly folks from East Coast cities enamored with the western lifestyle. They felt drawn to the romantic image of the cowboy, a figure somehow unchanged by the quickening urban sprawl of eastern cities.

It wasn't long before ranches found that guests were eager enough to pay for the chance to play cowboy. From there, an industry was born. Dude ranches popped up from Montana to Arizona, California to Washington. The railroad brought more dudes out West than ever, slick-haired and shiny-shoed, yearning for a vacation far from the city bustle. In the 1920s and 30s, as people were leaving the countryside for urban jobs in offices and factories, the wide plains of the West offered a reprieve—a grounded, traditional experience that urbanites craved. Dude ranches became more popular with each passing year.

The same allure that tempted guests out West in the twentieth century continues to enamor tourists of the twenty-first. Check out Gwyneth Paltrow's Instagram, or Carey Underwood's, and you might catch them sunburnt and beaming in front of a picturesque mountain backdrop at a favored luxury ranch getaway. These dude ranches promise a reconnection with nature and authentic western lifestyle, where values and landscape haven't changed in over a hundred years. Tourists who have never touched a horse before can clamber into a saddle and even wrangle some cattle. Think Billy Crystal in *City Slickers*.

"It's a different type of vacation," says Bryce Albright, director of the Dude Ranchers' Association, which provides membership to more than 90 dude ranches across the West. "They're more of an authentic western experience, which you can't get anywhere else. When people come out West, yes, you'll see the cowboys, and you'll see the rodeos, but until you get immersed in that kind of culture, you won't really have respect for it."

So what has made this model of tourism sustainable for local environments, economies, and cultures? While some forms of outdoor recreation balance negative and positive impacts on local systems by introducing something new—new management plans, new renewable energy technologies, new ideas—dude ranches contend with all three pillars of sustainability by embracing something old, traditional, and relatively unchanged.

In a way, environmental sustainability is inherent to dude ranching. Knowing that their customers expect beautiful, pristine landscapes year after year and decade after decade, ranchers have incentive to be responsible stewards of that land. As Sally Kelsey puts it, "If Kameron's family had chosen not to maintain a dude ranch… this landscape would have looked very different."

That isn't to say dude ranches never embrace new technologies. Take the solar panels soaking up rays outside Goosewing Ranch in Jackson, Wyoming, or the hydroelectric generator at Diamond D Ranch in Stanley, Idaho. In fact, the Dude Ranchers' Association requires some form of environmental footprint reduction as a prerequisite for becoming a member.

But Sally points out another, less measurable way that dude ranching fosters environmental sustainability. "Something that is undervalued when it comes to our impact on conservation," she says, "is our guests get to take rides in the country and learn to value a place that's very different from where they come from. That would benefit the community should we ever have a threat to the area and need people to speak up about why this kind of place is special." This is the same tactic the National Park Service has been using for years to instill a sense of urgency for conservation in park visitors: to care about something enough to fight for its protection, you have to see it for yourself.

When it comes to the second pillar of sustainability—economics—the industry is often "overlooked," according to Bryce. "It doesn't get the recognition," she says of dude ranching's economic impact. "Tourism organizations frequently

Nine Quarter Circle Ranch

Kameron and Sally Kelsey host some 600 guests each year at the Nine Quarter Circle Ranch in southern Montana, right outside of Yellowstone National Park.

overlook dude ranches because they don't think it's very big, but if you look over the past couple of years, they were probably some of the most visited vacation destinations in the US."

It's true that compared to tourism that brings people to stay and spend money in mountain towns, dude ranching's contribution to a shared local economy may be smaller. Guests at the Kelseys' ranch might eat a meal or two in Bozeman or spend a weekend in Yellowstone, and locals may find seasonal work on the ranch as wranglers, cooks, or housekeepers. But the economic contribution outside of the ranch itself is relatively humble.

Still, dude ranching *has* had an important economic impact on the ranching industry. For some ranches, opening their doors to guests has provided an economically viable alternative or supplement to raising cattle. "Agritourism," which invites guests to vacation on farms and ranches, has grown in popularity among both tourists and their hosts, with revenue tripling in the US between 2002 and 2017.

To examine dude ranching's impact on the third pillar—culture—take a look at the Dude Ranchers' Association's six Hs: Hospitality, Heritage, Honesty, Heart, Hats, and of course Horses.

"We're holding onto our forefather's ruggedness and way of life and hoping to share that with as many people as we can," says Kameron, who as the third Kelsey to run Nine Quarter Circle, is evidence of this. Preserving an "authentic" and old-fashioned culture is baked into the dude ranch aesthetic, and that means immediate impact on culture in towns like Bozeman seems somewhat negligible. Dude ranches play on a romantic, mythologized image of the West that has drawn visitors for more than a century, and while skeptics may raise their eyebrows at the perpetuation of that myth, the "authenticity" of dude ranches being run by real ranchers plays a large role in local communities embracing them.

Black Mountain Ranch

Guests enjoy a family reunion horseback at the Black Mountain Ranch in Colorado.

Arizona acknowledged the importance of this cultural preservation when it designated dude ranches as key heritage sites in 2022, creating the Arizona Dude Ranch Heritage Trail. The trail acknowledges dude ranches' historical and cultural significance and puts frameworks in place to preserve these sites for future generations.

What's more, relative to forms of outdoor recreation that entail high-speed sports or loud motors on public lands, dude ranch guests spend most of their time on private land, partaking in low-impact activities like horseback riding or branding their initials into leather belts. They aren't as likely to leave trash on public trails or overburden the infrastructure of small mountain towns to the extent of other industries that rely on those towns to house, feed, and sustain their guests.

> We're holding onto our forefather's ruggedness and way of life and hoping to share that with as many people as we can.

Dude ranches like the Nine Quarter Circle Ranch bring tourists into this region—to gain an appreciation for the land, spend their money, and celebrate local cultural heritage—without a significant cost to local communities. That seems like a pretty balanced version of the sustainability math equation. In the evening, the eggshell sky over the Taylor Fork Valley softens, and the ranch winds down for the night. The Appaloosas return to their grazing pastures. Cowboy hats sleep on hooks by the front doors of the cabins. Guests settle into bed, listening to the shush of the dark river, sore and sunburnt and smiling. Imagine how this scene will look in the next 75 years. My guess and hope? Pretty much exactly the same.

Sari ONeal, Shutterstock

***Graham Marema** is pursuing her MFA in creative writing from the University of Wyoming, with a concurrent degree in environment and natural resources. She is a writer from East Tennessee who often writes about landscape, ghosts, and SPAM.*

Healing in the Outdoors: An opportunity for all

Perspective from Ashlee Lundvall

One August morning in 1999, I swung my legs out of my bunk and pulled on a stiff, new pair of Wrangler jeans. I was at a teen camp in Wyoming, and I had chores to complete before we left that afternoon on a backpacking trip. Little did I know that day would be the last day I stood on my own.

Growing up in Indiana, I was a year-round, four-sport athlete, starting the school year with volleyball and moving through basketball, fast-pitch softball, and slow-pitch softball. After hitting six feet in the 6th grade, basketball had become a special passion of mine. I loved the teamwork, the physicality, the competition, and I found a sense of deep satisfaction every time I stepped on the court. Sports were my identity, and the future I imagined for myself.

In a split second, that was all taken away. Following a freak accident at that camp in Wyoming, I found myself sitting in a wheelchair, listening to doctors tell me I would be seeing the world from a much shorter vantage. My dreams of a career involving sports were demolished as I struggled to accept a new identity in a paralyzed body.

This was a challenging time for me, but it was also a time of growth and discovery. I realized that sometimes it takes more courage to let go of old dreams that you don't even recognize anymore in order to move on to new opportunities. I knew I wanted to help others, and I understood my journey had purpose, but

I didn't know where that would lead me.

During graduate school, I met a young man from Wyoming. We shared a love for the outdoors and we both wanted to start our new life together out West. When we returned to Wyoming, I found that the rugged beauty of the land hadn't changed, but I had. I was presented with a choice; I could hide away in self-pity, or I could venture out in the wild and find a new purpose. As intimidating as those mountains seemed, a spark within me craved the challenge. I was eager to discover a new field, a new competition, a new team. And I found it outdoors.

These days, you can find me hunting, flyfishing, camping, and four-wheeling miles of mountain trails. The vast Wyoming landscape has become my arena, the place I seek out that deep satisfaction from my youth. I have found healing in the outdoors, and along the way I have forged lasting friendships and rediscovered a passion for sharing it forward.

Now my drive is to protect this opportunity for future generations while ensuring that it is accessible to all, regardless of their ability level. Everyone deserves the chance to uncover the adventure and rich fulfillment that I have found outside.

I believe, in the words of the Sisterhood of the Outdoors, that "we have to give it away to keep it." We must conserve these wild places, and that will only happen if we are willing to share our knowledge and experience and passion. If we don't show the next generation the path, we risk losing this way of life. But if we give freely and joyfully, we can see it grow and flourish.

So share your story. Take a kid fishing. Look for philanthropic opportunities in conservation. It doesn't take much to make a difference, but you have to be looking for the hole that only you can fill. And you have to be willing to fill it.

Some may see my disability and believe my life is thin and bleak. I hope they pause long enough to glimpse the richness and pure joy I have unearthed. And I pray they can find that same life-altering experience.

***Ashlee Lundvall** is a wife and mom who lives on a farm in Powell, Wyoming. She is the Head of School at Veritas Academy. Ashlee serves on the Wyoming Game & Fish Commission as well as the Wyoming Hunger Initiative.*

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