Winter 2026, Issue 15

Western Confluence

NATURAL RESOURCE SCIENCE AND MANAGEMENT IN THE WEST

THE CHECKERBOARD

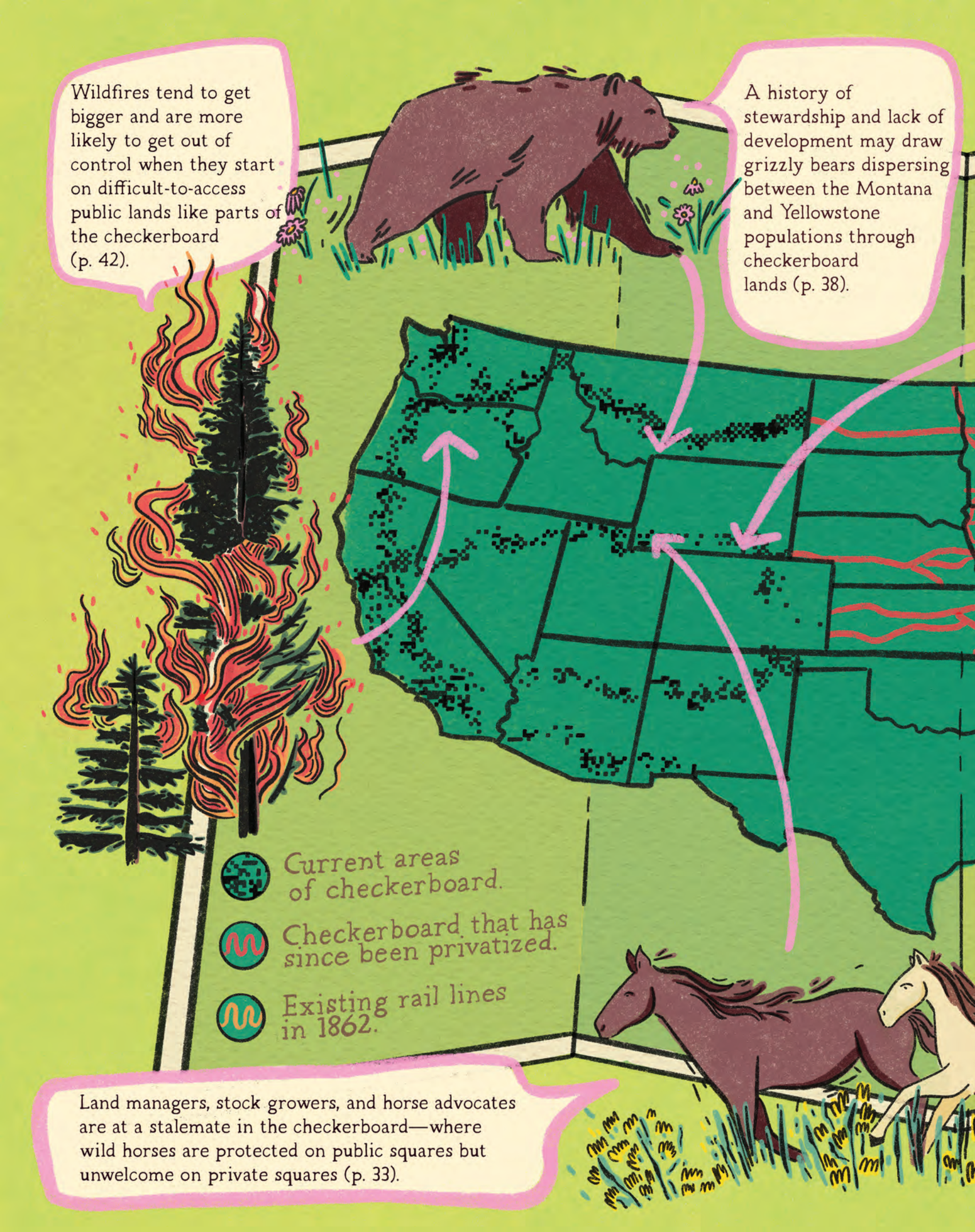
Corner Crossing

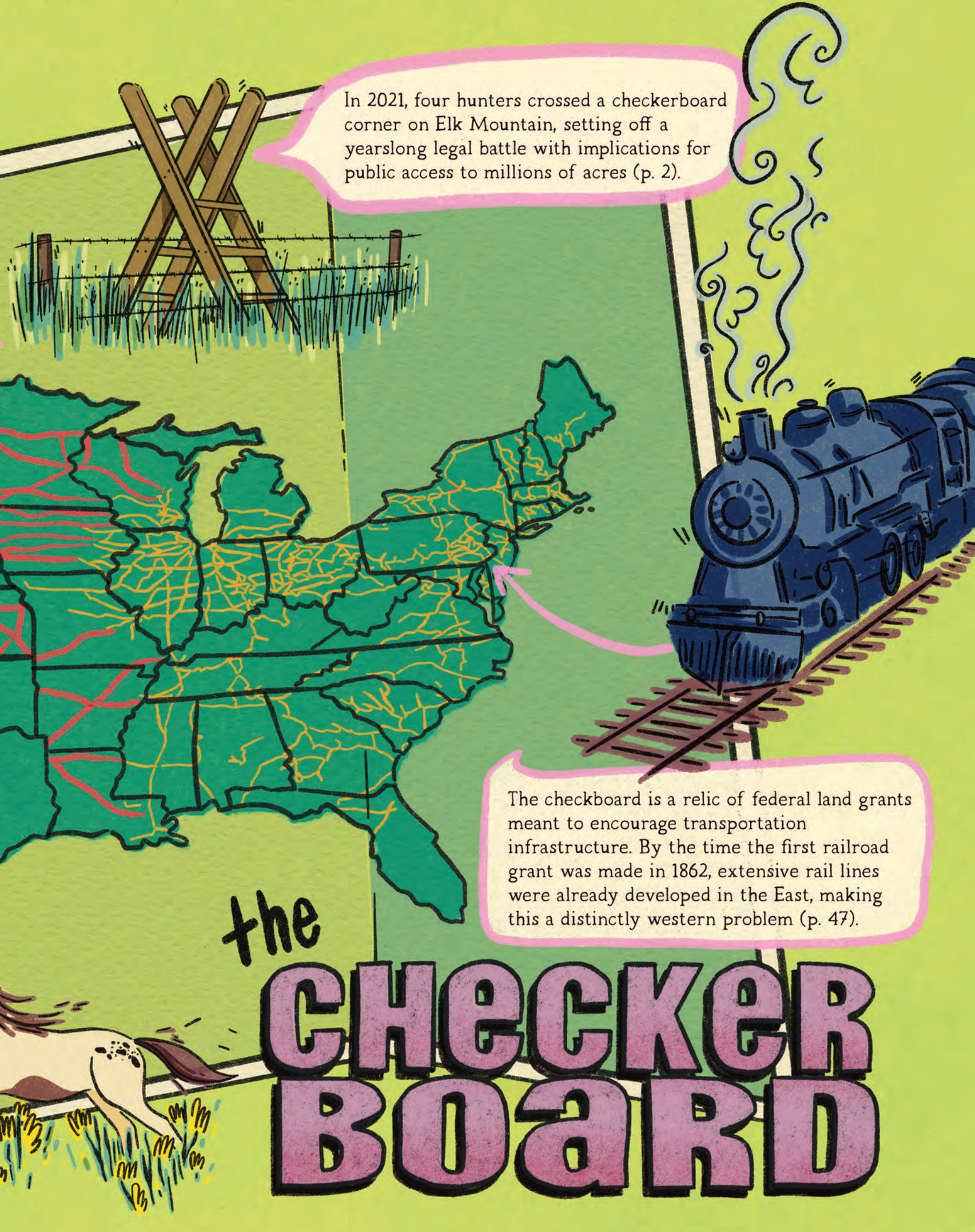
Land Swaps

Wild Horses

Energy Development

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


Wildfires tend to get bigger and are more likely to get out of control when they start on difficult-to-access public lands like parts of the checkerboard (p. 42).
A history of stewardship and lack of development may draw grizzly bears dispersing between the Montana and Yellowstone populations through checkerboard lands (p. 38).
Current areas of checkerboard.
Checkerboard that has since been privatized.
Existing rail lines in 1862.
Land managers, stock growers, and horse advocates are at a stalemate in the checkerboard—where wild horses are protected on public squares but unwelcome on private squares (p. 33).


In 2021, four hunters crossed a checkerboard corner on Elk Mountain, setting off a yearslong legal battle with implications for public access to millions of acres (p. 2).
The checkboard is a relic of federal land grants meant to encourage transportation infrastructure. By the time the first railroad grant was made in 1862, extensive rail lines were already developed in the East, making this a distinctly western problem (p. 47).
the
CHECKER
BOARD

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Western Confluence is a publication of the Ruckelshaus Institute at the University of Wyoming's Haub School of Environment and Natural Resources. It shares on-the-ground, science-based stories about interdisciplinary, collaborative solutions to our toughest natural resource challenges, while supporting new and emerging environmental writers.

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EDITOR'S NOTE

By Birch Dietz Malotky

A. H. Jackson

Like many folks, I first learned about the checkerboard fairly recently. Paddling down a stretch of the Platte River through an old burn zone bursting with fireweed, a friend described the strange pattern of every-other-square ownership and how difficult it can make getting to public land. I didn't think much about it, until a few years later when the corner-crossing story of the "Missouri Four" began to unfold in the news and the courts, sparking off what Kelly Dunning calls one of the past decade's most significant developments regarding conservation (p. 46).

Those hunters—who passed through the airspace above private land on their way from one public parcel to another—may have drawn the national spotlight to both Wyoming and the checkerboard, but this unique pattern of landownership is nothing new. Recreationists, landowners, and the US Forest Service have been sparring over access in Montana's Crazy Mountains for years (p. 9) and horse advocates, ranchers, and the Bureau of Land Management have been gridlocked in the Red Desert for even longer (p. 33). The checkerboard itself goes back nearly two centuries, to a grant made to Indiana for canal construction that was part of a much larger campaign of nation building (p. 47).

Set on an expansionist path driven by belief in Manifest Destiny, the federal government claimed, gridded, and handed out land for all kinds of purposes—to incentivize railroads and settlement (p. 2), to support public education (p. 16), and to further displace and attempt to assimilate Native Americans (p. 28). This practice created the foundation for an unseen superstructure of policies, legislation, and case law that governs much of life in the West—but doesn't neatly overlay the living landscape. That mismatch has implications for everything from energy development (p.13), to wildfire management (p. 42), to the recovery of grizzly bear populations (p. 38).

In answer to the challenges of checkerboard management, the stories in this issue make a strong case for the power of coming together across the invisible lines that separate us. Across the West, collaboration is driving many of the solutions and workarounds we have, including localized access pathways (p. 6), collective action and management among stock growers (p. 25), and landscape-scale, multi-decadal coordination between federal and state agencies, local governments, private landowners, and other organizations (p. 21). As the West continues to grapple with the challenges of transboundary management in complex landscapes, we hope this issue of *Western Confluence* helps illuminate a part of how we got here and some ways we might move forward.

Above: *In a push to connect the East and West coasts, the federal government granted nearly 100 million acres of land for transcontinental railroad construction.*

Inside Cover: *Illustration by Ashley Quick and captions by Birch Malotky, with assistance from Bryan Leonard.*

On the cover: *Analysis of satellite images can reveal on-the-ground differences in management, as seen in the checkerboard around Eugene, Oregon, that resulted from grants made to the Oregon and Pacific Railroad in the mid-1800s. The public parcels are mostly forested, while the private parcels have been largely harvested for timber. (Joshua Stevens/NASA Earth Observatory using data courtesy of N. Lang)*

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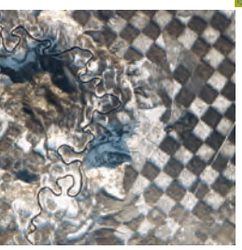


From a Simmer to a Boil

CORNER-CROSSING CASE IGNITES FIRESTORM WITH MESSY HISTORY

By Christine Peterson

Long before a group of hunters from Missouri hoisted a ladder over a fence in southwest Wyoming—setting off a series of headline-grabbing court cases and breathless predictions—the US government had a plan. It wanted a railroad built. And it wanted it built fast.

But, like anything built with speed in mind, there were unintended consequences. Those consequences spent 180 years slowly heating up before a gray area of western law boiled over into a legal battle that has captivated the nation and is reshaping the debate about how to access millions of acres of public land across the West. At the heart of it lies a philosophical argument about private ownership, public land, and what it means to live and recreate in the West.

Look at a color-coded land-ownership map of the western United States and, in the chaos, a few patterns appear. Large blocks of green denote national forests like the Beaverhead-Deerlodge in Montana, Bridger-Teton in Wyoming, and Salmon-Challis in Idaho. Swaths of orange Bureau of Land Management land spread across large portions of Nevada and Utah. State land pops up in a haphazard way, often surrounding reservoirs or in pockets enclosed by private land.

And then there's the checkerboard. Instead of yawning stretches of one color, there are bands of tidy, one-mile squares alternating between orange and white. This wavy chessboard, composed of millions of acres of not-quite-public, not-quite-private land, spans a section of the Union Pacific Railroad across the bottom of Wyoming. The trend continues across other portions of the West like northern Nevada, southern Idaho, and scattered portions of Montana. It's a leftover from the federal government's drive to connect the east and west coasts and facilitate the transportation of people, goods, and timber.

At the time, that meant transcontinental rail lines. Building a railroad costs money, though, and railroad companies wanted help. So the growing federal government looked at a map of the new country, full of 640-acre squares of land brokered through treaties or stolen from Native American tribes, and offered the railroads a deal. The government would give companies every other square of land for 10 or more miles on either side of the proposed railroad tracks.

Companies could do what they wanted with those private squares: sell them, develop them, or keep

Elk Mountain, situated along the Union Pacific Railroad corridor in southern Wyoming, has become a testing ground for public access in the checkerboard.

kmoney56

them. The government would use the squares it kept to entice settlement through the Homestead Act of 1862, which gave 160 acres to any adult citizen willing to live on and "improve" the land. As settlers moved in waves with the tracks, creating farms, ranches, towns, and eventually cities, the nascent US would have what it wanted: railroads crisscrossing the continent and a settled West.

For decades, that's exactly what happened. Between 1850 and 1871, Congress gave railroad companies more than 100 million acres of every-other-square on either side of proposed railway lines. These squares were sold, perhaps to homesteaders who had settled nearby public parcels. Cities cropped up. Land consolidated.

States with fertile land, plenty of rainfall, and more mild winters developed quickly and the checkerboard disappeared, erased from modern maps and gone from memory, says John Leshy, former solicitor of the US Department of Interior and author of *Our Common Ground: A History of America's Public Lands*. But not everyone wanted to live everywhere the railroad stretched. Some areas, like portions of parched Nevada or sagebrush-covered southwest Wyoming, were either never settled or were abandoned. So that checkerboard remained. Early on, it caused surprisingly few problems.

Take the Rock Springs Grazing Association. Created more than a century ago, it loosely oversees two million acres of checkerboard in Wyoming where ranchers graze cows and sheep in the winter. "In the summer, Rock Springs Grazing doesn't have livestock out there, so recreation use in the summer wasn't affecting them," says Jim Magagna, executive vice president of the Wyoming Stock Growers Association. The public was welcome to traverse and use the landscape, both public and private parcels, just as the association's producers held shares allowing them to graze their livestock across the checkerboard. The decision was a practical one, Magagna says. "Because it's such a large acreage and being checkerboard every other section, the reality of managing or monitoring public use would be quite a challenge."

But that kind of utopian ownership, where ranchers could graze and the public could hunt and recreate over public and private land, didn't translate everywhere. Some landowners began to treat corner-locked public parcels as de facto private land. Still, they largely gave access to hunters and anglers, Magagna says, loosely abiding by the Unlawful Inclosures Act of 1885, which said that landowners can't block the public from accessing public land.

A few cases broke that early, relative ease. The first occurred in 1917 when a man trailed his sheep through his neighbor's property to reach public grazing land. Another, called *Leo Sheep Co. v. United States*, followed 60 years later when the government wanted to build a road through the checkerboard. The courts ruled in favor of the man who wanted to run his sheep through his neighbor's land, citing "custom of the open range." But in *Leo Sheep*, it ruled in favor of the landowner, saying that the government doesn't have a right to build a road over private land to access public land.

Outside of those two niche cases, not much was challenged. Time went on, hunters and anglers knocked on landowners' doors, shook hands, and were mostly given access. Easements were bought and sold, and state access programs purchased walk-in rights.

But in more recent years, as ranches changed hands, that door-knocking, permission-giving ethos waned. Wealthy, out-of-state landowners became more interested in private hunting grounds and less in running cows and letting an occasional hunter wander through. "These big owners, rich guys, they

J Doll

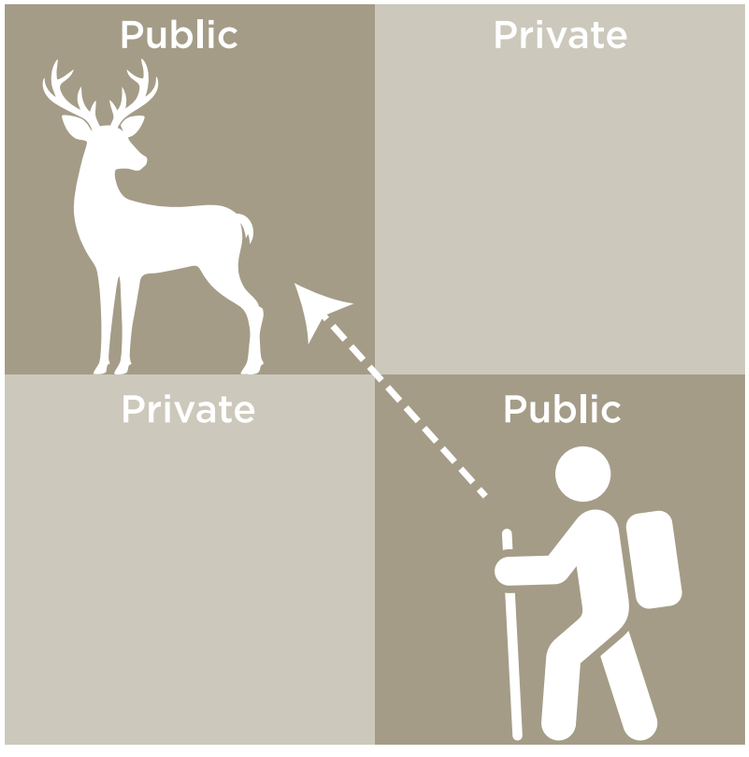
In 2021, four hunters used a ladder to corner cross in the Wyoming checkerboard without setting foot on private land, setting off a yearslong legal battle.

> You have a wealthy landowner who doesn't live here and purchased the lands as his playground, and some hunters who were motivated and supported by national groups to test the law. It was a perfect place for a fight to come up.
>
> Jim Magagna

come in and buy a piece of property with eyes wide open. They know there's checkerboard and access to what they want to control," says Buzz Hettick, co-chair of the Wyoming chapter of Backcountry Hunters and Anglers and a longtime hunter and public lands advocate. "And rather than live with what they have, they immediately try and get what they want."

As more private landowners refused access to the public checkerboard land, more hunters, anglers, and other recreationists grumbled. And when those handshakes didn't work, deciding if someone trespassed fell to the local sheriffs and county attorneys.

The grumble grew louder as reports from GPS company onX showed that 9.52 million acres of land in the West is landlocked, with 2.4 million acres of corner-locked land in Wyoming alone. Public land advocates said private landowners shouldn't be able to block the public from public land, while landowners countered that the public has no right to cross private land.



10th Circuit Court, Document 122-1

"Corner crossing" is the act of stepping from one piece of public land to another without setting foot on the adjacent private lands.

For years the debate simmered. And then four men from Missouri heaved a ladder over a fence.

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At this point, almost anyone interested in public land in the West has heard the 2021 story: Four men wanted to hunt on thousands of acres of public land on the west side of Elk Mountain in southeast Wyoming, but they had to cross a corner to get there. They knew no formal rules existed outlawing corner crossing, and they also knew "the alternating sections were reserved by the federal government for public use," says Ryan Semerad, an attorney representing the four Missouri hunters.

So they figured they would step from one public parcel to another, with the ladder straddling the middle. If their feet didn't touch private land, then surely, they thought, they weren't trespassing. Once on public land, they shot deer and elk, field dressed the animals and carried them back out over the same, makeshift ladder they used to enter the land. Except the ranch manager for the wealthy, out-of-state landowner found them, told them they were trespassing, and called the sheriff. The sheriff issued citations, and the Missouri hunters ended up in court.

Then the hunting community exploded. A GoFundMe account set up to pay for the hunters' legal fees raised almost $118,000 from more than 2,000 donations. Comments from donors filled the page, many saying some version of what one person, who gave $15, stated simply: "Private landowners should not control access to publicly owned land."

For hunters, anglers, and others wishing to access corner-locked land, the case was about more than defending four hunters, it was about settling an issue that had been gnawing at recreationists for years as they stared at maps of land they wanted to get to but felt they shouldn't. This was just the case to finally bring a gray area of western access law to a head.

"You have a wealthy landowner who doesn't live here and purchased the lands as his playground, and some hunters who were motivated and supported by national groups to test the law," says Magagna. "It was a perfect place for a fight to come up."

The hunters won their case in the local courtroom, with a jury finding they did not commit criminal trespass by passing through only the airspace of the Elk Mountain Ranch. Hunters said it was settled, at least in Wyoming. But even before the verdict arrived, the ranch's owner, a North Carolina pharmaceutical executive, also sued the hunters in civil court, alleging that trespassing through his airspace stole value from his land. It was a taking, he claimed, which the courts had ruled illegal in the *Leo Sheep* case. He then later said the hunters caused millions of dollars in damages.

Months later, a federal judge said that argument didn't quite hold

Andrew J. Russell

The 1869 ceremony honoring the completion of the first transcontinental railroad. The US government incentivized railroad construction by giving railroad companies 100 million acres of free land over the course of two decades.

up. The hunters didn't step on private property or cause property damage. As the hunting community claimed another victory, the landowner filed an appeal to the 10th Circuit Court.

David Willms, associate vice president for the National Wildlife Federation's public lands program and University of Wyoming adjunct professor, believes most of the controversy stems from a change in attitude about what these lands mean. When the US government wanted to settle the West, they focused on giving land to individuals to be used for cutting timber, mining gold and silver, growing crops, or raising cows and sheep. The government wasn't originally in the business of owning land. Until it was. And decades later, the public began to see public land not as something to be disposed of but something to be retained for the public good.

The checkerboard, or corner-locked land, is the collateral damage of that shift in attitude. As the tourism and outdoor recreation economies increase, public land has become one of the West's greatest assets. In Wyoming alone, tourism generates $4.8 billion each year and provides 33,000 jobs, according to the University of Wyoming's Jay Kemmerer WORTH Institute. It's the second largest economic driver after energy. But few values in the West are as sacrosanct as private land ownership, which means the issue of who can access those millions of acres of corner-locked private land quickly pits two core Wyoming values against each other.

For Semerad, the case is like David and Goliath, a battle between wealthy and regular Americans. "The range was free to travel and free to stargaze and pick flowers. In America, it was 'go roam, go see, go venture' and that was the ethos of the American West. Only, in the last 75 years you had monied landowners that started to act like it really wasn't that way," he says.

Before the 10th Circuit Court made its ruling, Semerad said a decision in the hunters' favor would provide an important correction. Not only would it tell sheriffs and county attorneys throughout the West that people can access public land over corners, but it would also affirm that "America was never predicated on someone being able to buy up the landmass and block everyone out."

But Magagna said it wasn't so simple. None of the prior cases, such as *Leo Sheep*, cleanly addressed whether or not the public could cross corners to access to public land. And if landowners are suddenly forced to allow people to corner cross, he said, they may be less willing to allow full access to their private properties to hunt and fish via those old-time handshakes and newer easements and access programs.

In March of 2025, the 10th Circuit Court ruled unanimously in favor of the hunters. In October, the US Supreme Court declined to hear the landowner's appeal, effectively settling the issue of corner crossing in Wyoming, Colorado, Kansas, New Mexico, Oklahoma, and Utah. Many hunters rejoiced that they would now have access to millions of acres of land, but outside the 10th Circuit, the gray area enveloping what it means to live and recreate in the West still remains.

Christine Peterson *is a freelance journalist covering the environment, wildlife, and outdoor recreation for local, regional, and national publications from her home in Laramie, Wyoming.*

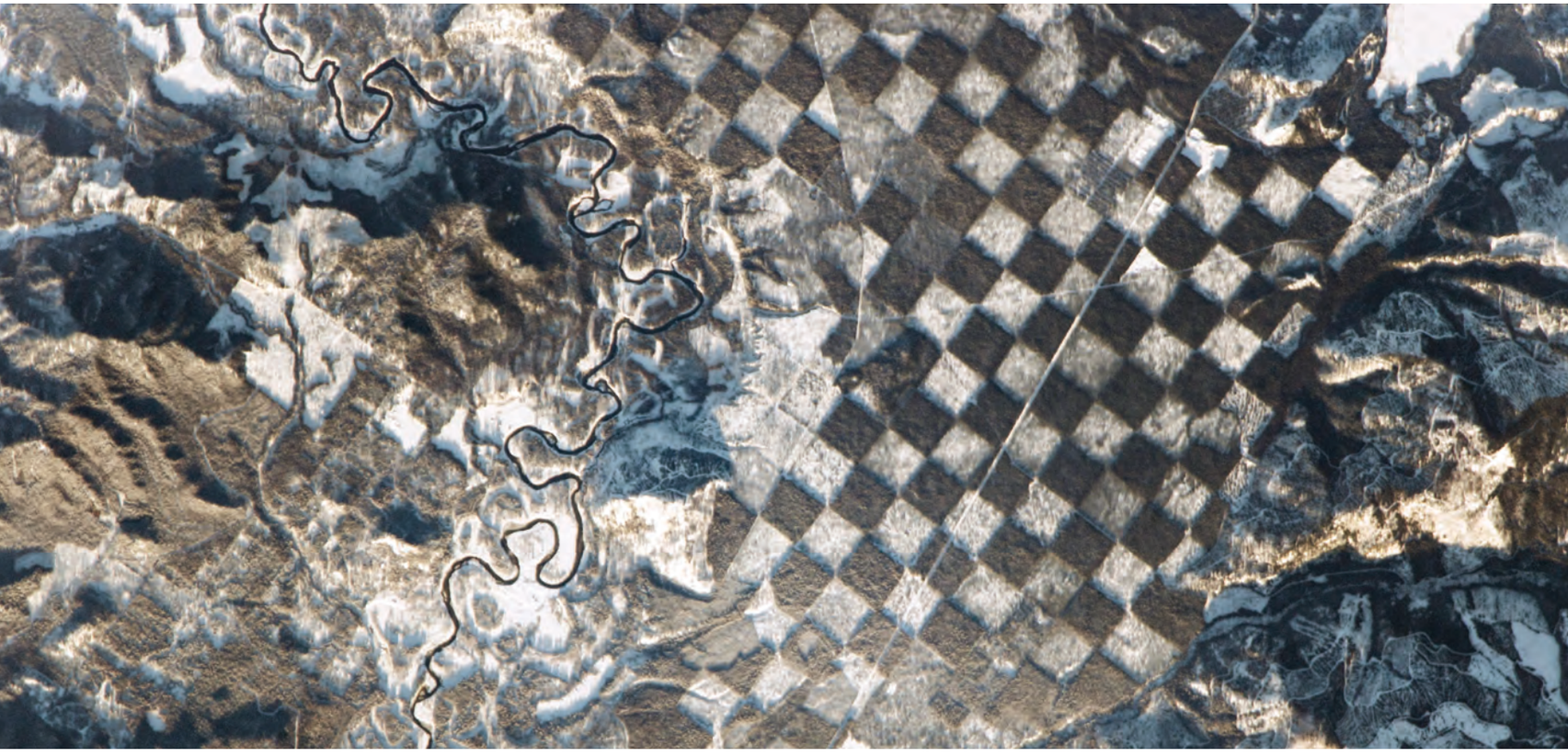
Iron Bar via 10th Circuit Court, Document 122-1

As more landowners sought to restrict access to corner-locked lands, momentum grew around public access advocacy.

Unlocking the Corners

FINDING FUTURE SOLUTIONS FOR RECREATIONAL ACCESS TO CORNER-LOCKED LAND

NASA



By Heather Hansman

The hunters, technically, never touched the ground. In 2021, four men were looking to hunt on a section of Bureau of Land Management land that was surrounded by a ranch in southeast Wyoming. So they used an A-frame ladder to climb from one parcel of public land over a fence to another parcel of public land without stepping on private land. But the landowner called it trespassing and sued them for $7 million in damages for traveling through his airspace. The case, which eventually made its way to federal appeals court, sparked up a long-simmering battle about public land access.

Across the western US, 8.3 million acres of public land are corner-locked. This means they are bordered on all sides by private land and the public can only access them by corner crossing, like the hunters did. Historically, most corner crossers have been hunters, anglers, and other recreators looking for uncrowded wild places. With an almost 50 percent increase in recreational use of many public lands over the last 15 years, more people are looking for those quiet places than ever.

Corner crossing is not technically illegal. There's no specific law on the books that prohibits it or makes it legal, although states have tried to codify it the past. So, it's murky, because it can be viewed as trespassing and because it's not always clear where the corners are, or how to access them. The hope for clarity, after so many years, is what made the Wyoming case so significant.

In March, the 10th Circuit Court of Appeals ruled that the hunters were in the right to cross, as long as they didn't touch private land. The ruling applies only within the Court's jurisdiction of Colorado, Kansas, New Mexico, Oklahoma, Utah, and Wyoming.

Despite what many characterize as a strong ruling in support of public access, questions remain about the use of corner-locked federal land, including how the ruling will be enforced, where it applies, and how recreationists can ensure that they're avoiding private land. As the dust settles, it's worth looking to existing models for safe, legal access to understand what the future might look like, and how both members of the public and landowners can navigate the ongoing uncertainty.

Currently, one of the most effective ways to access corner-locked land is through easements, which are deeded rights-of-way that allow the public to cross specific pieces of private land in pursuit of recreation. Easements can look like a lot of different things, from historic rights-

of-way, to conservation easements that allow for walk-in public access, to roads that traverse checkerboard private sections, making the public land easy to access.

While effective, they are not without barriers. Lisa Nichols, senior advocacy manager for onX, the mapping company that has spearheaded research about corner-locked lands, says that one hurdle is knowing where historic easements lie. "There are a lot of easements out there that are only on paper or in file cabinets," she says.

That's starting to change, thanks in part to the 2022 Modernizing Access to Our Public Land Act, which mandated that the US Department of the Interior, Forest Service, and Army Corps of Engineers digitize and standardize all their maps so they can be available to the public by 2026. As those records are revealed, public access is improving. When onX worked with the BLM to digitize easement records in Montana and the Dakotas, they uncovered access to 29,600 acres of public land that had previously been considered locked.

For purchasing new easements, the biggest hurdle is valuation. Government entities can only pay at the federal appraisal rate, which Nichols says is often well below what landowners are willing to accept in exchange for granting perpetual access. "You have to find the right landowner who is interested in opening that up for not much return," she says. It's also possible that the recent spotlight on corner-locked lands will prompt investment from the private sector, which isn't limited by the appraisal rate.

Another future hurdle—which is a barrier to almost any kind of public access across private land—is the enforcement of boundaries and figuring out who is responsible for upholding it. Public agencies or nonprofits rarely have the capacity to monitor the boundaries of an easement, but landowners don't want the burden to fall entirely on them. Nichols says that in their research on locked corners, landowners complained about bad actors crisscrossing their property, blocking their roads, or otherwise disrespecting their rules when they had some level of access. "We heard stories of horses getting shot because [someone] thought it was an elk," she says. "The majority of hunters are good, it just takes one bad apple." Landowners are already expressing similar concerns about corner crossers potentially disrupting their operations.

Courtesy of Lisa Nichols

Lisa Nichols, senior advocacy manager for onX.

To avoid the messy boundaries and technicalities around easements, government entities or nonprofit groups like land trusts can also acquire private land for public use, through land swaps or direct purchases. "Those have historically been the best way to convey land into conservation," says Joel Webster, Interim Chief Conservation Officer for the Theodore Roosevelt Conservation Partnership. He says they will continue to be an important tool, even if corner crossing becomes more widespread. "It allows for public access," sure, but it also "makes properties more contiguous. It's always beneficial for wildlife, because it can get rid of fencing. It's good for conservation."

These land acquisitions can be successful all around, like in 2019 when the Bureau of Land Management bought 11,148 acres of checkerboard private ranch land near the John Day River in Oregon that opened access to previously locked or hard-to-access land and rivers. But finding appropriate land to swap or buy, and making sure the value makes sense for everyone, can be tricky. In a 2017 Aspen-area land swap between the BLM and Leslie Wexner, the billionaire CEO of brands like Victoria Secret, nearby residents objected, saying that the exchanges benefited the private landowners more than the public.

Like easements, finances are a key piece of effective land swaps, and pricing land becomes complicated when some of that land is in the public domain, or a public agency is purchasing the land. When appropriate landscapes and valuation are established, there is funding through the federal Land and Water Conservation Fund to make it happen. Webster says that 3 percent of the fund is set aside for increasing public access, and it has been a powerful tool for finding and buying appropriate pieces of land.

> "We're not going to buy our way out of the checkerboard challenge. It's not economically or politically physically feasible."
>
> Joel Webster

But the funding isn't infinite, and not all locked lands are good candidates, so land swaps aren't a silver bullet. "We're not going to buy our way out of the checkerboard challenge. It's not economically or politically physically feasible," Webster says. That's why public access advocates are celebrating the potentially much broader impacts of the corner crossing ruling.

Land and money don't always have to change hands to build up access to corner-locked lands. There are also management programs that incentivize landowners, in various ways, to grant recreationists access. Often called walk-in programs, 27 states administer these kinds of voluntary public access programs.

In Montana, the Department of Fish, Wildlife, and Parks established the Unlocking Public Lands program in 2013 to explicitly target corner-locked parcels of public land. The program gives landowners a tax credit for allowing public access. "The landowner has to be open to the

Courtesy of Jason Kool

Jason Kool works with landowners on Montana's voluntary public access program. 27 states administer similar programs.

public for [at least] six months and one day, and they have to allow all recreation," says Access Program Manager Jason Kool. It is slightly restrictive, he says, "but it's helping keep access options and producers on the landscape. We find that they want to allow public access and to be compensated for it."

According to Kool, the programs work best when the landowner wants to provide access, when the rules are clear, and when the agency carries the burden of regulation, so that enforcement doesn't fall to the landowner. It's time and labor intensive, but it's effective. "We have seasonal technicians we bring on to help manage properties, so the hunter management burden is taken out of the landowners hands," he says.

Unfortunately, they have struggled to enroll landowners. Kool says their biggest challenge is finding a balance between flexibility for landowners and consistency for the public, who want clear information about where they can recreate. To address those issues, they are increasingly relying on digital tools that are more accurate and make it easier for the public to find information. In the future, they hope to geofence public access areas on publicly available digital maps, so users can clearly know when they're in the right place.

Users knowing the exact location of themselves and boundaries is critical to the success of not only easements and walk-in programs, but also corner crossing itself. It's another challenge that user groups are working to overcome.

Some corners are marked physically with stakes, rocks, or blazed trees, but not all are, and survey markers can be hard to find. Some survey markers are also better than others; onX advises people not to cross unless they find a "survey-grade" marker, usually called a pin or a monument. The physical survey marker is key because GPS technology isn't quite accurate enough to get you precisely to the corner. Nichols says the variance is usually plus-or-minus 16 feet.

Beyond that, many areas aren't surveyed, digitally or physically, says Devin O'Dea, western policy and conservation manager for Backcountry Hunters & Anglers, a nonprofit that promotes recreational access. In response, there's a rise in grassroots opportunities for nonprofits and volunteers, like the citizen science group The National Map Corps, to mark correct survey points. "There's an opportunity for the recreation community to help agencies with identifying the corners and assist with mitigating potential conflicts," he says.

Along with higher resolution data, that kind of accuracy could open up opportunities for landowners to allow access, and the new ruling gives both recreationists and landowners more clarity, too. "I don't think it's beyond the realm of reality that landowners who are open to having people cross at a corner could provide a physical gateway at the corner with signage up saying, 'you're welcome to cross, make sure you do it here,'" Nichols says.

All these pieces, from perpetual easements to walk-in programs, will be tools for access to corner-locked lands in the future. And both recreationists and public land advocates need all the tools they can get.

Heather Hansman *is a freelance journalist based in southwestern Colorado. She's the author of* Downriver *and* Powder Days. *You can find out more at heatherhansman.com.*

Bureau of Land Management

Land swaps and acquisitions, like those that opened up access to recreation in and along the John Day River in Oregon, are one way to solve access issues in the checkerboard.

Ecoflight

Lines on the Land

CONFLICT AND COOPERATION IN THE CHECKERBOARD OF MONTANA'S CRAZY MOUNTAINS

By Shawn Regan

The Crazy Mountains rise sharply from the plains of south-central Montana, forming an island of rock and forest in a sea of prairie. Long a place of cultural and spiritual meaning for the Crow Tribe, the mountain range has also drawn hunters, hikers, and settlers for generations. But today, the Crazies are better known for something else: the legal and logistical knots created by their checkerboard landownership patterns.

The checkerboard in the Crazies is an accident of history—a legacy of 19th-century railroad land grants that awarded alternating square-mile sections of land to companies like the Northern Pacific in exchange for building rail infrastructure. Unlike other ranges, where homesteaders or the government later consolidated these parcels, the Crazies' rugged terrain made their sections less attractive for settlement or buybacks. The result is a tight grid of private and public land parcels that largely remains today, forming one of the most heavily fragmented landscapes in the northern Rockies.

That legacy has turned the Crazies into a case study in the challenges of checkerboard ownership. Publicly owned parcels are often landlocked and inaccessible by recreationists or even Forest Service crews. Privately owned sections can be just as hard to reach, requiring landowners to cross public or neighboring private property for routine tasks like grazing livestock, harvesting timber, or maintaining fences. And Crow Tribal members have been blocked from reaching sacred cultural sites that would otherwise be accessible but for the fractured pattern of ownership.

Those challenges have, at times, erupted into conflict. Property owners have clashed with hikers and hunters. Lawsuits have been filed over disputed trails. And Forest Service officials have been caught in the middle, trying to navigate a legal and geographic maze that leaves no easy answers.

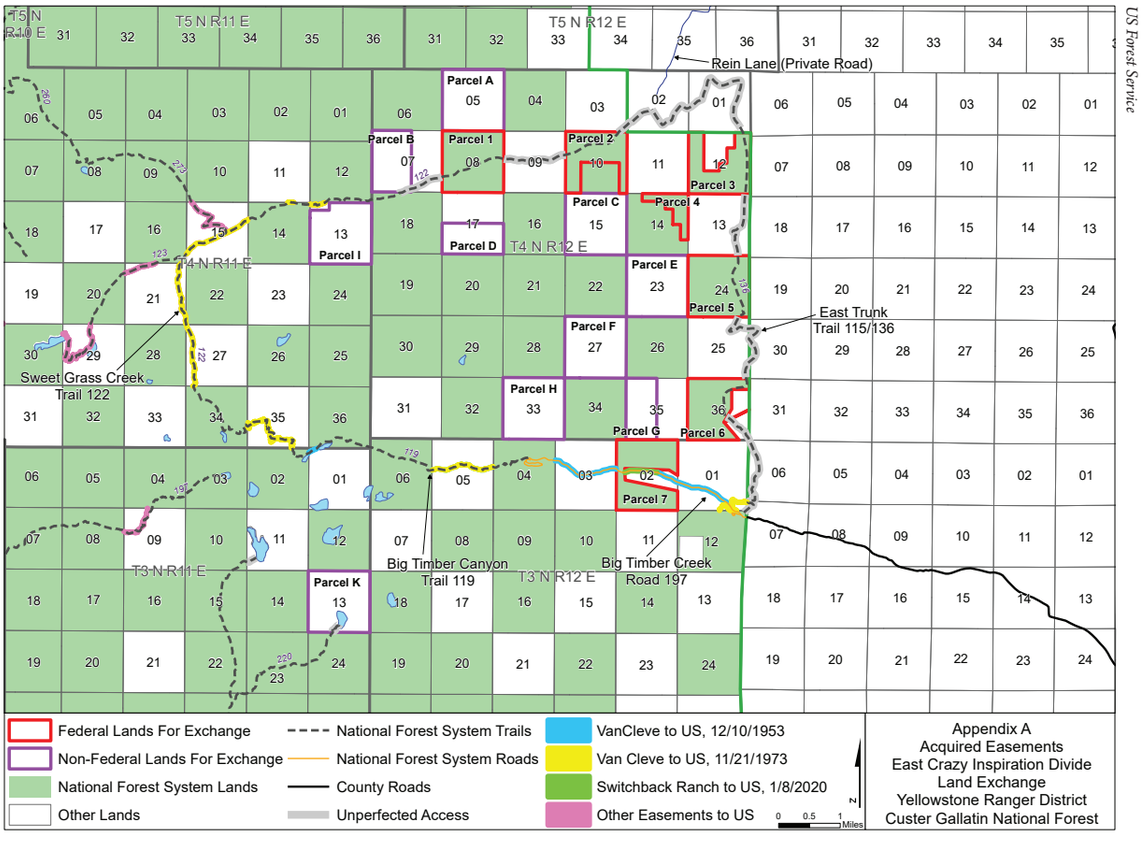
Amid the contention, one approach—collaboratively negotiated land swaps—has started to cut through the gridlock. By consolidating fragmented ownership and untangling jurisdictional confusion, these exchanges are beginning to create more coherent, better-managed landscapes. The work is slow and rarely glamorous, but it's effective. And as the lessons from the Crazy Mountains are carried into similar debates elsewhere in the West, they're becoming part of a broader conversation about land management, access, and cooperation.

Checkerboarding in the Crazies makes nearly everything more complicated. A simple hiking trip can become an exercise in forensic cartography. Hikers might consult

three sources—Forest Service plats, a GPS app, and county deed filings—only to find conflicting answers about access permission. Hunters often must study detailed legal documents and public easement records to avoid trespassing.

One flashpoint has been the ongoing debate over corner crossing—the act of stepping from the corner of one public parcel in the checkerboard to another. While the legality of corner crossing is settled in the states within the 10th Circuit Court's jurisdiction, it is generally presumed to be illegal in Montana. That means large amounts of public land in the Crazies remain inaccessible, even if they lie across from another publicly owned corner of the checkerboard.

This complexity has fueled tensions across the range. For years, trails that cross a mix of public and private parcels—like the Porcupine-Lowline and North Fork Elk Creek on the west side of the range and East Trunk and Sweet Grass on the east side—have been at the center of bitter access disputes involving easement claims. Although these routes appear on some historic Forest Service maps, the agency never formally established easement rights where these trails cross private land.



The East Crazy Inspiration Divide Land Exchange swapped federal and private parcels in the checkerboard to create a contiguous block of public land and includes plans to build a new 22-mile loop trail.

Some landowners posted signs on their property declaring that the public cannot access these trails without permission. Hikers and hunters were occasionally cited for trespass in areas they said they thought they had access to, and locked gates and missing trail signs in disputed areas added to the confusion and distrust. Then, in 2019, access advocates sued the Forest Service, demanding that the agency assert access rights to some of these areas.

In 2022, a federal court sided with the agency, finding that no such easements existed. But the decision left relationships between recreationists and landowners strained. By the time the case was decided, years of fighting had deepened mistrust and hardened local divisions—all without producing a single new acre of public access.

In some places, the push to open more access even backfired, spurring landowners to tighten control over their properties. Concerned about

Mike Cline

prescriptive easement claims—legal rights-of-way that can be established if the public uses a route openly, continuously, and without permission for a set number of years—landowners have responded by posting "No Trespassing" signs, locking gates, or otherwise making clear that access is by permission only. While legally prudent, these steps closed off routes that may have once operated under informal agreements, reducing access, eroding goodwill, and adding another layer of tension to an already divided landscape.

Beyond recreational access, wildfire suppression, habitat restoration, and routine forest management all become more complicated when agencies and landowners must navigate a patchwork of ownership. Without road easements to allow legal access through checkerboard corners, land managers must find costly workarounds to get themselves and their equipment to parcels needing attention. Even with access, coordinated work can require the consent of multiple entities, each with their own priorities.

Consider one example from the northeastern edge of the range where a ranching family sparred with the Forest Service for years over road access to private inholdings within the checkerboard. They wanted to conduct timber and fire management, at one point threatening to build a road with or without approval and even bringing the matter to Montana's congressional delegation. Before the issue could be resolved, disaster struck. In 2021, a wildfire broke out, burning more than 20,000 acres of public and private lands in the same area where the family had been pressing to reduce fire risks by clearing dead and downed timber. The episode underscored how the checkerboard doesn't just complicate recreation opportunities, it can also hamper proactive land management.

Despite the long history of disputes, the Crazies have also become a proving ground for collaborative solutions. In recent years, some of the most significant progress hasn't come from lawsuits or agency decrees, but from landowners, conservationists, Tribal representatives, and public officials sitting down to negotiate win-win proposals that can improve both access and land management. These efforts take time, require compromise, and rarely satisfy everyone. But they have shown that, even in one of the West's most divided landscapes, it's possible to move beyond the checkerboard stalemate.

One example is the South Crazy Mountains Land Exchange, finalized in 2022. The deal consolidated land ownership in the southern part of the range by trading approximately 2,000 acres of inaccessible public parcels for a similar amount of scattered private inholdings. The exchange also secured two additional easements to improve public access to the southern end of the range. The result was a clearer boundary, improved management, and more public access, all without reducing the overall acreage of public land. The agreement took more than a decade to complete and drew little fanfare, but it ultimately created a landscape that is easier for both landowners and recreationists to navigate.

Wildfire suppression, habitat restoration, and routine forest management all become more complicated when agencies and landowners must navigate a patchwork of ownership.

Years later, a more ambitious proposal on the east side of the range built on this same model. After years of stalemate over disputed trails and hypothetical prescriptive easements, a coalition of hunters, conservationists, Tribal representatives, landowners, and access advocates—working together as the Crazy Mountain Access Project—sat down to work out a deal. The proposal called for the Forest Service to trade seven inaccessible public parcels to private landowners in exchange for 10 private parcels that would become public and could be reached without crossing private property. Combined with existing holdings, the acquired tracts would create a 30-square-mile block of contiguous public land and secure formal access for the Crow Tribe to Crazy Peak, one of the most culturally significant sites in the range.

The deal also included the construction of a new 22-mile loop trail, designed to give the public reliable access to this area without trespass disputes. In a creative twist,

the deal funded this by incorporating a smaller exchange of several parcels in the nearby Madison Range, where a ski resort sought to expand its terrain. As part of the package, the resort agreed to cover the cost of building the new trail in the Crazies more than 70 miles away—tying together two entirely different mountain ranges through a single negotiated exchange. The Forest Service ultimately adopted the group's proposal as the East Crazy Inspiration Divide Land Exchange, and after several years of public review and environmental analysis, it formally authorized the swap in 2025.

Not every solution requires trading land. In some cases, cooperation has focused on adjusting how the public reaches the land that is already theirs. In the Porcupine Ibex area on the west side of the range, the Forest Service worked with private landowners to reroute a popular trail that had previously crossed a checkerboard of public and private parcels. The old route had been the source of repeated trespass disputes, as sections passed through private property without deeded easements. Rather than fight over historic use, the parties agreed to construct a new trail that stays almost entirely on public land, while the landowner donated an easement for the trail to cross a portion of private land. The result is a trail that connects visitors to the high country but eliminates legal uncertainty.

And when it comes to crossing private land, the Forest Service has increasingly focused on negotiated solutions rather than contentious efforts to assert access rights in court. That approach is beginning to pay off. In one recent case, negotiations with a ranching family produced a permanent, legally recorded trail easement that opened public access to the northeastern edge of the range. The agreement grants a two-mile corridor across private property to reach thousands of acres of previously inaccessible national

Park County Environmental Council

To resolve trespass disputes without undertaking a complicated and time-consuming land exchange, the Forest Service worked with private landowners to reroute the Porcupine Ibex trail.

forest land, demonstrating how cooperation can succeed where confrontation has failed.

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For all their potential, land exchanges and other cooperative arrangements are not a silver bullet. They are complicated, time consuming, and often politically sensitive. The South Crazy Mountains and East Crazy Inspiration Divide swaps were the product of years of negotiation, legal reviews, appraisals, and public meetings. To finalize an exchange, the Forest Service must clear a series of procedural hurdles under federal law, including environmental analyses under the National Environmental Policy Act and appraisals to ensure the exchanged parcels are of equal value. Each step can take months or years to complete, and these drawn-out timelines can be enough to discourage otherwise beneficial land swaps.

But bureaucratic hurdles aren't the only challenge. In many cases, the parcels the public gives up are lower-elevation lands that offer better wildlife habitat for hunting than the higher-elevation, rock-and-ice parcels the public receives in return. Yet those lower-elevation parcels are also the ones most valuable for ranching or development, making them prime candidates for consolidation into larger, contiguous private holdings. Balancing those competing priorities can be one of the most contentious aspects of any proposed swap.

Another sticking point comes from conditions the Forest Service often attaches to the private parcels it conveys. In many swaps, the agency seeks to require that landowners place conservation easements on their newly acquired parcels to protect habitat or prevent subdivision. While such restrictions may align with public goals, they have made exchanges less appealing to some landowners, who may be reluctant to limit how their land can be used in the future. Negotiating these conditions—which are not required by federal law—adds another layer of complexity that can derail or slow down land swaps.

For these reasons, successful land swaps remain the exception, not the rule. Ultimately, such exchanges are as much a relationship-building exercise as a real estate transaction. It takes years to get there, and in the Crazies, that patience is slowly, but steadily, paying off.

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Much of the Crazy Mountains remains checkerboarded, and that won't change overnight. But the recent examples of rerouted trails, negotiated easements, and land exchanges offer a glimpse of what progress can look like. It all starts with collaborative approaches that allow for genuine public-private partnerships.

It also requires better information. Groups like the Theodore Roosevelt Conservation Partnership and onX are helping map landlocked parcels and provide information about public access gaps. Transparency helps identify priorities and build support for finding creative ways to close those gaps. These tools not only promote access but also increase awareness about how checkerboarding impacts both recreation and conservation.

And it takes forums for discussion. The Crazy Mountain Access Project brought together diverse groups to look for common ground. These efforts don't eliminate disagreement—they create space for productive conversation. And they help establish norms of engagement that can replace the threat of litigation with the possibility of cooperation.

The Crazies show that even in one of the West's most divided landscapes, cooperation can prevail to resolve conflicts in the checkerboard—one trail, exchange, or agreement at a time. The lessons learned here can inform efforts to untangle checkerboards across the West.

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SHORT-CIRCUITED

US Department of Energy

DEVELOPING ENERGY RESOURCES IN CHECKERBOARD LAND

By Bryan Leonard

Imagine that you are a private landowner interested in tapping oil or gas reserves beneath your property. You own one square mile of land, which is surrounded by alternating squares of federal and private land. You may even own many square miles of land, but they only meet at the corners, because you live in a part of the country called the checkerboard, which arose from federal land grants made to railroad companies in the 1800s.

Many of the landscapes beset with this fragmented ownership pattern also happen to hold vast energy resources, ranging from oil and gas to wind and solar. These resources—and the infrastructure needed to develop them—are often larger than the one-by-one-mile squares within the checkerboard, and the consequences for energy development can be significant due to regulatory spillover from adjacent public land.

Odds are, the Bureau of Land Management (BLM) is in charge of the federal squares around you, both the surface estate, meaning the right to use what is aboveground, and the mineral estate, meaning the rights to belowground resources. The BLM administers oil and gas development across 700 million acres of public land, but in the checkerboard, its decisions about which areas to lease and under what conditions—along with parallel decisions made by federal agencies regarding surface use—have a substantial

impact on private land as well.

Analysis of energy development on public versus private land in Wyoming indicates that those impacts are likely economically negative but environmentally positive. That is, the complex web of regulations that governs federal land makes energy development significantly slower and more costly than on private lands, but is also correlated with lower rates of, for example, oil and water spills. These regulations include the 1920 Mineral Leasing Act, the 1970 National Environmental Policy Act, and the 1976 Federal Land Policy and Management Act. The extent of these impacts varies based on the type of energy development, the amount of pre-existing infrastructure, and the nature of potential environmental impacts.

For example, conventional oil and gas drilling on private land is often not directly affected by federal restrictions within the checkerboard in Wyoming because the state's regulations for drilling are built around the operation of "spacing units," which are usually only a square mile in size. Hence, the typical scale of development happens to exactly match the size of the squares in the checkerboard, and operators and regulators can make decisions one square at a time without directly affecting the operations on adjacent squares. This is likely neither accidental nor intentional, but rather a natural result of the Public Land Survey System dividing the whole western US into a grid of square-mile sections. The federal government used this grid to delineate the size and boundaries of the railroad grants, and the system is close enough to the approximate scale for conventional drilling that it made the most sense administratively to define units this way.

US Department of Energy

Energy development tends to be cheaper and faster on private lands than on federal lands. In the checkerboard, regulatory spillover from the public parcels can impact the adjacent private squares.

The advent of horizontal drilling and hydraulic fracturing, however, has upended this reality. A typical lease for a horizontal fracking project is one mile wide and anywhere from two to three miles long, which would require a row of several adjacent squares on a checkerboard. Hence, an operator would need to lease both private and federal minerals to assemble the acreage for a single well pad. If regulation makes leasing federal mineral acreage in the checkerboard difficult or impossible, the adjacent private mineral rights may not be economical to extract on their own, significantly reducing their value.

Research published in *The Economic Journal* confirms this, comparing oil production under different ownership patterns during the 2010–2015 fracking boom in the Bakken shale formation that underlies the Fort Berthold Indian Reservation in North Dakota. Similar to the checkerboard, historical federal policies have created a mosaic of parcels of varying sizes and owners—fee simple lands with one private owner, allotted trust land co-owned by multiple owners (with an average of 17 owners per parcel), and land held by the Tribal government.

> Although the spillover effects of federal regulation onto private energy development can be large, they are often given short shrift in federal planning processes.

Of note, most of the single and co-owned parcels are less than the two square miles needed to make shale oil extraction profitable, because of how allotment played out under the Dawes Act of 1887. The act initiated privatization across many reservations, taking land that was communally owned by Tribes and giving it to individual Tribal members (leading to fee simple lands with single owners). At first, however, parcels were held in trust until allottees were deemed "competent." When the Indian Reorganization Act ended allotment in 1934, many parcels became stuck in trust, and a practice of passing those parcels to all of an allottee's heirs has led to allotted trust parcels with more than 100 owners today.

Comparing oil production per acre across 8,000 parcels on the reservation—based on their size, ownership type, and the fragmentation of surrounding land—indicates that joint ownership and small, interspersed parcels of federal and private land had the most significant negative impacts on productivity. In

particular, the presence of a small government holding near a private parcel cut expected production nearly in half.

Interestingly, this analysis also indicated that there is a threshold at which the higher costs of developing on government land are surpassed by the transactional cost of doing business with many individual private landowners. So, in the checkerboard, where federal and private lands are equally fragmented, private land tends to be more productive, but on Fort Berthold, larger, contiguous blocks of government land were more productive than many small parcels with many different owners. In fact, if all the allotted trust lands on the reservation had been consolidated into Tribal ownership, estimates show that the same land might have produced $90 million more in initial royalty earnings during the boom.

Beyond the ownership of minerals themselves, and the need to have enough space to make production viable and economic, there is also the matter of access and transport. In this, the issuance of rights-of-way on federal land can have a substantial impact on all forms of energy development on adjacent private land. Even when conventional oil and gas projects are feasible within square-mile tracts of private minerals, rights-of-way must be obtained across adjacent federal lands to install the necessary roads and pipelines to move drilling equipment in and bring the oil and gas out. Land use plans, like the BLM's Resource Management Plans, will typically designate areas as "open," "avoidance," and "closed" for rights-of-way, depending on other resource goals like protecting sensitive habitat, historic trail corridors, or viewsheds. Avoidance areas can make it very difficult to obtain a right-of-way permit, and even open areas can still be subject to additional stipulations.

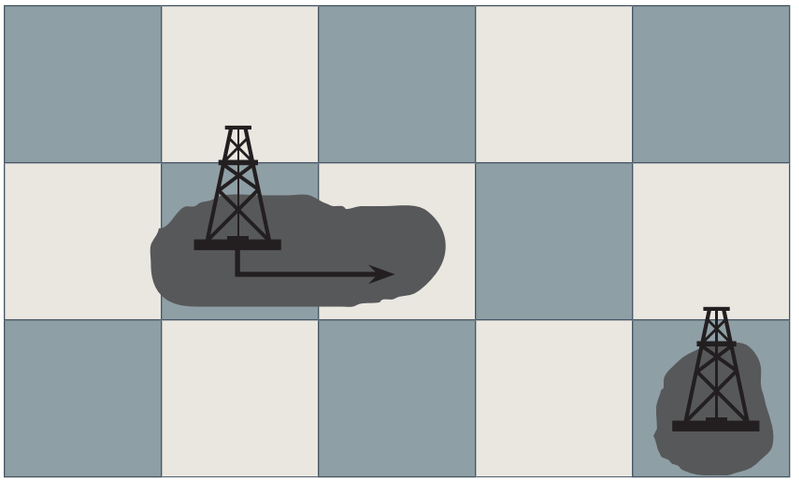
This same problem creates roadblocks to renewable energy development, for two reasons. First, installing high-voltage transmission lines across federal lands has long required surface rights-of-way. Hence, even for relatively small, utility-scale solar installations that can be less than one square mile, the inability to connect projects to the grid can render checkerboard development infeasible. The second reason is that, in the absence of specific federal legislation to create a framework for renewable development on federal land, the BLM and US Forest Service have opted to issue permits for wind and solar development as rights-of-way grants. This means that any renewable energy project with a footprint larger than a square mile would require federal rights-of-way for development within the checkerboard.

Although the spillover effects of federal regulation onto private energy development can be large—especially in places like Wyoming where significant fossil fuel and renewable energy resources overlap the checkerboard—these impacts are often given short shrift or overlooked altogether in federal planning processes. For instance, the draft version of the recent Rock Springs Resource Management Plan in southwest Wyoming entailed significant changes to federal land management within the checkerboard, but the 1,500-page environmental impact statement contained no analysis of potential impacts to private lands. My calculations indicate that the BLM's preferred alternative would have potentially blocked access to an additional 502,000 acres of private surface and 231,000 acres of private minerals. However, the final version of the plan dramatically reduced rights-of-way exclusions of federal land, leading to much more modest impacts in the checkerboard.

Rights-of-way are needed for all renewable energy development on federal land, as well as for access to private parcels across public land.

Energy resources—like many other valuable natural assets—are highly site-specific. A geologic formation either contains valuable fossil fuels and other minerals, or it doesn't. Similarly, the renewable energy potential of a particular location is largely fixed, given current technology. The scale of these resources often does not conform to administrative boundaries and landownership patterns, especially in the checkerboard. When this happens, resources are often developed less productively, at higher cost, or not at all. As the US energy generation mix increasingly moves toward renewable sources with larger footprints, the importance of accounting for private-land impacts of federal regulations in the checkerboard will only grow.

Bryan Leonard



Conventional oil and gas development is relatively nimble in the checkerboard because it operates using "spacing units" that are usually a square mile in size (bottom right). However, fracking and horizontal drilling operations (center) usually require at least two square miles, meaning they have to deal with both private and federal land in the checkerboard.

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For the Beneficiaries

COLORADO PLAYS THE LONG GAME ON NEARLY THREE MILLION ACRES OF STATE TRUST LAND

By Birch Dietz Malotky

Senator Dylan Roberts might be one of the few people in the Colorado state legislature who has been interested in state trust land for years. This widespread but generally misunderstood type of land is often lumped in with public lands, but it has a specific and unique purpose that sets it apart from national parks, forests, wildlife refuges, and so on. Trust lands—which the federal government granted to states when they became states—are managed to support K-12 schools and other public institutions, usually by making money to fund them.

Most state trust lands have been leased for agriculture, mining, and logging, but not all parcels—which are scattered all over Colorado—have good soil, or minerals, or forests. Roberts says there are "small tracts of land within cities and towns or along highways that aren't going to be used for traditional leasing ever, and are not wildlife corridors or anything like that, so they're not generating any economic value." The senator, who represents a district with "some very high-cost communities that deal with significant housing challenges," thinks that building affordable housing on these random bits of trust land could make good money for the schools while helping keep working families where they are needed.

He points to a quarter-acre plot "right in the heart of Denver that was state trust land and, for whatever reason, hadn't been developed or sold." The Colorado State Land Board, which manages state trust lands, built affordable housing on the parcel back in 2022, and "that became the model," Roberts says. When he started looking at state trust land in his district, which spans much of northwestern Colorado and includes places like Vail, Aspen, and Breckinridge, he discovered several promising parcels "along already existing transportation corridors and near other residential and commercial development." Through these efforts, one project is already moving forward in Dowd Junction, between Avon and Vail.

As the 150th anniversary of Colorado, and its state trust lands, approached, Roberts connected with a number of other legislators and organizations interested in exploring and expanding these kinds of creative uses of trust land. Together, they drafted and passed HB 1332 last spring, which instructs a working group to conduct an analysis of state trust lands and write a report with recommendations on opportunities to advance affordable housing, conservation, climate resilience, biodiversity, recreation, and renewable energy.

The act, presented as a kind of sesquicentennial performance review, is the latest juncture in a long history of Colorado figuring how to make the best out of a group of lands that were designated for a certain purpose, but weren't optimally designed to fulfill that purpose. Throughout that time, the scattered, widespread nature of the parcels has proven both challenge and opportunity, and has required creative thinking and a reckoning with the legal and moral responsibility of managing not only for this generation or the next, but for generations far into the future.

Colorado State Land Board

The Lowry Ranch, a 26,000-acre property managed by the State Land Board, is leased for grazing, recreation, solar energy, water development, and oil and gas extraction. With 80 percent of the ranch in the Stewardship Trust established by Amendment 16, lessees need to comply with strict stewardship stipulations that protect the property's natural values. 10 years of regenerative grazing practices on the property have fostered thriving, native grasslands and healthy riparian corridors.

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Most people have never heard of state trust lands. Matt Samelson, an attorney with Western Environmental Law Partners who helped advocate for HB 1332 and has been appointed to the working group, admits that it's "a pretty weird little corner of the land world." The Colorado State Land Board Director, Nicole Rosmarino, says that most Coloradans are not aware of the specifics of her agency's mission. But that agency is the second largest landowner in the state—responsible for 2.8 million surface acres and 4 million sub-surface acres—and its mission goes back to the founding fathers, Manifest Destiny, and a desire to measure and divide the world into a uniform grid.

Before the Constitution was even adopted, a newly independent America turned to securing its claims to the western frontier, wanting to ensure that new territories did not try to split off from the young

and fragile republic, and also that they would hold to the democratic ideals of the revolutionaries. Many saw public education as essential to preparing the nation's citizens for their civic duties, but funding was a problem. The settled, eastern states had an established tax base, but yet-to-be-formed western states did not, and the federal government was in massive debt from the war.

Cash poor but land rich, the Continental Congress passed the Land Ordinance of 1785 and the Northwest Ordinance of 1787, which divided the West into square townships, among other things. Each township was made up of 36 sections of one square mile (640 acres) each. The 16th section, located at the heart of each township, was reserved "for the maintenance of public schools within said township."

This one provision laid the foundation for more than a century of land grants, from Ohio's statehood in 1803 to Arizona's in 1912. Totaling more than 80 million acres, the school land grants made during this period were nearly as large as those made to the railroads.

So, this is where the question of a system designated for a purpose, but not designed for it, begins. Why were the grants made in this pattern? How, exactly, were these lands meant to support public schools? And why the 16th section?

It's tempting to imagine that a central section was reserved for the purpose of actually hosting a schoolhouse, such that each township was organized around its civic core and distributed across the countryside with mathematical precision. It does seem to fit with the intellectual zeitgeist of the revolutionaries, who were enamored of rationalism and the idea of an agrarian democracy. But if that was the intent, realities on the ground rendered it more symbolic than practicable, creating a mismatch between how the lands were distributed and how they came to be managed that has created challenges for administrators ever since.

At the least, it seems the Continental Congress did intend for there to be a school in every 36-square-mile township in the West, which explains why the grant pattern was one parcel in each township instead of a single block of school trust lands. The evidence is in the way that the initial grants to new states were directed to township-level governments for the exclusive benefit of that township's schools. The vision was not a statewide, state-administered school system, where land or a school in one township could support a broader area, but rather one characterized by self-sufficiency and local control.

This likely reflects, in part, post-revolutionary uneasiness with centralized government, but it was a fundamental flaw in both purpose and design. The reality of settlement and western landscapes meant that population centers formed around travel corridors, arable land, military outposts, and other strategic features, rather than the artificial boundaries of the rectangular survey system. This left plenty of townships lacking people, governments, and the need for a school.

In response, Congress changed to whom the grants were made, and for whose benefit. By the mid-1800s, it was granting land to state governments rather than local ones, for the support of schools statewide rather than exclusively for schools in the township where the land was located. But which lands were granted did not change, so the basic pattern of reserving a little bit of land all across the state persisted. This created a kind of checkerboard land ownership that people today sometimes call "the blue rash" because of the way that state trust parcels—light blue on many maps—pock the surface of many western states.

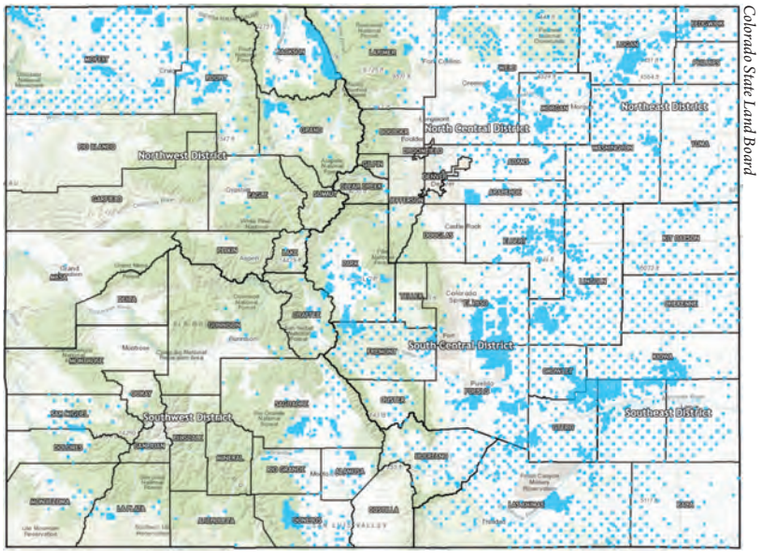
The scattered nature of these lands is the first challenge that trust land managers have had to contend with over the years. Smaller, discontinuous parcels don't offer the management efficiencies that larger parcels do, and they are more vulnerable to impacts from the lands around them. "The checkerboard makes it hard to have consistent management," Samelson says, "because the surrounding uses and surrounding ownership may just have a very different perspective than the state does." For example, he asks, "How do you manage a little 640-acre parcel inside of a Wilderness Study Area? Are you actually going to generate money from that?"

In Colorado—which received sections 16 and 36 in each township "for the support of common schools"—the checkerboard mostly overlays the eastern plains, with far less state trust land appearing west of the Continental Divide. That's partially because Colorado didn't receive sections that were already spoken for, including a lot of the Ute reservation, which at that time covered roughly the western third of Colorado.

In today's Southern Ute and Ute Mountain Ute reservations, there are still no state trust lands—a sharp contrast to many states. A *Grist* report found that Utah, for example, claimed more than half a million acres, or 5.7 percent, of the Uintah and Ouray Reservation, while the Leech Lake Reservation in Minnesota is nearly 20 percent state trust land.

In answer to the difficulties of the checkerboard, Colorado has, over the years, successfully traded away many of its trust parcels that were surrounded by Bureau of Land Management and Forest Service lands, and pursued consolidation. It now holds title to several properties of 25,000 acres or more, including State Forest State Park and a number of ranches. But land exchanges can be complex and slow, and require a landowner who is willing to trade, so plenty of those 640-acre sections remain.

As to the question of how the reserved sections were meant to support schools, the 1967 *Lassen v. Arizona Highway Department* Supreme Court case implies that at least some of the granted lands were intended to be used as building sites for schools. Indeed, the Maxwell Schoolhouse in Buena Vista still stands today as a historic site on Colorado trust land. But the court also goes on to say that because "the lands were obviously too extensive and too often inappropriate" for "actual use by the beneficiaries…



Colorado State Land Board

The federal government granted Colorado sections 16 and 36 in each township as state trust lands, creating a checkerboard of land ownership that people sometimes call the "blue rash." Over time, the State Land Board has pursued land exchanges and consolidation of these scattered parcels.

US Fish and Wildlife Service

Colorado hosts a species conservation bank for the federally threatened Preble's meadow jumping mouse. These 222 acres of protected and restored habitat generate credits that a nearby water utility has purchased to offset the impacts of a new reservoir it was building, making around $750,000 for Colorado's schoolchildren.

the grant was plainly expected to produce a fund, accumulated by sale and use of the trust lands, with which the State could support the public institutions designated by the [Enabling] Act."

This practice of funding schools through leasing and sale was well-established in the colonies when the Land Ordinance passed in 1785 and is, for the most part, exactly what happened. The states created before 1851, like California, sold all or most of their state trust lands, with at least one case of granted lands being given to teachers in lieu of salary. The younger states tended increasingly towards retention and leasing. Colorado, which was formed in 1876, still holds 62 percent of its original granted lands, with older states retaining as little as 3 percent and younger states as much as 91 percent. For the states that retained their granted land, leasing reflected the primary industries of the 19th and early 20th centuries—farming, grazing, logging, and mining.

Most states also developed a permanent fund to house trust land revenue (from sales and leasing), the earnings from which could be distributed to schools. Colorado was the first state required to do so. Over time, administration of these land grants evolved into, and has been interpreted by courts as constituting, formal trust arrangements, in which the state (the trustee) has the legal responsibility to manage the land and the permanent fund (the trust corpus) with undivided loyalty, good faith, skill, and diligence, for the benefit of public schools and other named institutions (the beneficiaries).

In Colorado, 95 percent of trust lands benefit K-12 education, with smaller grants supporting public buildings, the penitentiary, and state universities. Another pair of trusts, called the internal improvements and saline trusts, benefit the state park system. This pair of trusts includes land within 13 of Colorado's state parks, for which the parks themselves are the beneficiaries but have to contract with the State Land Board to use. Samelson calls this situation "perhaps unduly complicated," and it's part of why he and others first got involved with HB 1332.

Across all Colorado state trust lands, leasing generated $230 million last year, with the permanent fund producing another $50 million in interest. About half that went back into growing the permanent fund and half went to the Department of Education's Building Excellent Schools Today (BEST) program. The program supports school construction and renovation, fixing things like boilers and roofs, particularly in rural Colorado where there is less of a tax base.

While many states, Colorado included, have at times taken their trust responsibility to mean maximizing revenue generation, this management strategy can be in tension with the duty to sustainably manage trust assets, such that they can continue to benefit future generations of schoolchildren in perpetuity. This tension came to a head in Colorado in 1996, when voters approved a constitutional amendment that asserts "that economic productivity of all lands held in public trust is dependent on sound stewardship, including protecting and enhancing the beauty, natural values, open space, and wildlife habitat thereof," and instructs the board to manage state trust lands to "produce reasonable and consistent income over time." Amendment 16 also created a 300,000-acre Stewardship Trust "to preserve the long-term benefits and returns to the state" by managing the lands specifically for their natural values.

The ballot measure was a sharp rebuke to the maximization-focused management of the time, which had led to a series of high-profile controversies around proposed uses of trust lands—including what would have been the nation's largest commercial hog farm, sited along the South Platte River near billionaire Phil Anschutz's hunting lodge.

Amendment 16 was accused of violating the trust mandate, but the courts ultimately found that encouraging "sound stewardship" and "reasonable and consistent income" was not corrupting the purpose of the State Land Board, but rather providing guidance on a management approach for achieving that purpose—one that upholds the long-term health of the trust.

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As to the final question of why the founding fathers reserved the 16th section specifically, the

Courtesy of Mindy Gottsegen

Mindy Gottsegen oversees the Colorado State Land Board's stewardship and ecosystem services programs, which engage in regulatory and voluntary environmental markets for things like habitat and nature-based carbon sequestration projects to generate revenue for the beneficiaries while protecting and enhancing the natural values of state trust lands.

Supreme Court justices write in *Cooper v. Roberts* that it was meant "to plant in the heart of every community . . . grateful reverence for the wisdom, forecast, and magnanimous statesmanship of those who framed the institutions for these new States." It would also promote "good governance and the happiness of mankind by the spread of religion, morality, and knowledge."

Apart from this largely symbolic gesture, it was likely just as good a method as any other to systematically grant largely unexplored land to unknown future states. It still can't be called optimal—while states ended up with some land that was excellent for generating revenue to fund schools, they also had plenty that was steep and dry, lacking trees or minerals, or too far away from roads, rivers, and towns to be useful. Congress did give more land to the more arid states (two sections per township and then four), but the disparate value of granted lands, in addition to their small, scattered nature, has remained a challenge through centuries of trust land managers trying to meet their constitutional obligation. For most western states today, a small percentage of the granted sections generate the majority of revenue, while the rest produce more marginal incomes, or in some instances, no money at all.

But Rosmarino, the Colorado State Land Board director, says we have to be careful about using too broad a brush on the issue. The distribution of trust lands is an advantage, she says, for the opportunity it affords to build relationships all across the state, with local governments and lessees that live and work close to the land. Isolated sections can be integral parts of larger projects, from multi-generational ranches and farms to new, utility-scale renewable energy projects. They can also, with creative thinking, support "projects with a pretty small footprint that have provided big results financially for the State Land Board," as well as the community and the environment, she says.

For example, a sale of 400 acres of state trust land surrounded by development in Erie yielded $40 million for the state's permanent fund. In southeast Colorado, the City of Lamar plans to purchase electricity from a solar garden being built on 30 acres of trust land. And there is that quarter-acre lot in the middle of Denver with the affordable housing development that inspired Senator Roberts.

Colorado also hosts some of the West's only ecosystem service leases on state trust land. In one case, when a water utility needed to offset the impact a new reservoir would have on the federally threatened Preble's meadow jumping mouse, the State Land Board restored and enhanced 222 acres of habitat on state trust land. This created the state's first species conservation bank, which has generated around $750,000. In another case, a 200-acre floodplain on the South Platte River became a wetland mitigation bank that offsets gravel mining elsewhere in the watershed. That lease has generated more than $2 million for Colorado's schools, on a property that was appraised for less than $200,000. For both the jumping mouse and wetland mitigation projects, grazing was able to continue on most of the property.

These kinds of projects can turn the challenge of the checkerboard into an asset, says Mindy Gottsegen, the conservation services manager who developed and runs the State Land Board's ecosystem services line of business. That's because a diverse land base can mean access to diverse markets, and the State Land Board is continuously expanding its leasing program to take advantage of that dynamic.

Of course, legacy industries remain integral to Colorado's school trust—96 percent of land is leased for farming and grazing, and 82 percent of revenue comes from mineral extraction, particularly oil and gas development. But, Gottsegen says, "We have areas of the state where we think there's no oil and gas, and it's very arid. Now all of a sudden, we know that there are big helium reserves there, and we have access to that because of the checkerboard pattern." All it takes is for a new market to develop, and a property that didn't seem like it had much to offer 30 years prior is suddenly worth a lot more.

Jeffrey Beall

In Colorado, many single-room schoolhouses were built on lands that were granted to the state "for the support of common schools." Today, these state trust lands support public education by making money to fund school construction and renovation.

Amendment 16's intergenerational outlook helps preserve these kinds of opportunities. By dialing down the pressure for immediate, maximized return, the amendment allows managers to forego near-term development and keep their options open on any given parcel of land. And the emphasis on sound stewardship has provided fertile ground to explore leasing for things that preserve or enhance the value of land while still making money for the beneficiaries, like regenerative grazing and wildfire restoration for carbon credits, which Gottsegen is currently working on.

The founder of a land trust and a former advisor to the governor, Rosmarino sees her position, and these kinds of projects, as "a great convergence of my background in conservation and agriculture, and also my interest in being really entrepreneurial in generating revenue for a good cause." That's why she welcomes working with the State Trust Lands Conservation and Recreation Work Group, which was formed by the passage of HB 1332 last spring. "We really see it as an opportunity to showcase how innovative we are trying to be," she says, adding that "creative solutions can come from anyone and anywhere."

Senator Katie Wallace, who co-sponsored HB-1332 with Senator Roberts and Representative Karen McCormick, says that "the goal of the working group is to see how state trust lands can support conservation, climate resilience, biodiversity, and recreation, while still honoring and uplifting the duty to generate reliable revenue for our public schools." The bill's proponents hope it can provide support for the State Land Board's existing efforts and inspire new projects, particularly by "pulling in a lot more voices from a lot of different perspectives," says McCormick.

The State Land Board is "a pretty lean organization, and because of its small size and the sheer amount of land they have, a lot of times they end

Land Life Company

HB 1332, passed in May 2025 by the Colorado legislature, instructs a working group to look for opportunities to advance climate resilience and conservation on state trust lands, as well as recreation, renewable energy, and affordable housing. One potential example is a State Land Board project to reforest trust land that hasn't recovered in the 13 years since the High Park wildfire, which would promote carbon sequestration and generate credits for the carbon market.

up having to be reactive to proposals coming from outside entities," says Samelson. They have still managed to do some really exciting and creative work, says John Rader, who was part of the coalition that advocated for the bill, but "there hasn't been a comprehensive, holistic approach that gathers stakeholder input," he says.

So, the bill establishes what Wallace and McCormick both call a kind of mind trust, featuring 24 members representing the trust beneficiaries, agriculture, oil and gas, conservation, recreation, affordable housing, and the Southern Ute and Ute Mountain Ute tribes, as well as experts in economics, law, and real estate. "We kept adding seats to the working group," says McCormick, "which tells you that folks saw the importance of having their voices in the mix."

The group, which only just convened for the first time in October, is instructed to inventory state trust lands for their potential to support these various goals—for example by identifying parcels that contain habitat for Colorado's species of great conservation concern—and to analyze the various tools and mechanisms available to achieve them—like conservation leases and land swaps. They will present their recommendations in an interim report by March 16 and a final report by September 1, 2026.

The idea, Samelson says, is to create space to have a proactive conversation "outside of the pressure cooker of the capitol dome," where a wide variety of folks can mull over all the different options and available avenues "and come back with a package that, hopefully, has been thoroughly poked at from different angles."

All the bill's sponsors and proponents emphasize that the intent of the group is not to displace or discount legacy users of state trust lands, but rather to look in the margins of what's already happening for new opportunities to make the whole corpus of trust lands work for the beneficiaries. "How do we look at those parts of the corpus that aren't oil and gas, or agriculture?" asks Wallace.

Samelson, for example, is interested in what he calls inholdings and edgeholdings—those tricky 640-acre parcels that can be hard to manage on their own. Rader, who is the public lands program manager for the San Juan Citizens Alliance, is also interested in inholdings, particularly in nearby Lone Mesa State Park. "That's our small window into state trust lands," he says, "and from there the conversation just started ballooning outward."

The twist with those Lone Mesa inholdings, and state trust land in 12 other Colorado state parks, is that they're part of the land grant that was made to benefit the state park system. So, you end up with a weird situation "where Colorado Parks and Wildlife [which manages state parks] is both the lessee and the beneficiary," says Rader. Since it doesn't make sense for Parks and Wildlife to pay rent that would be given back to the agency, they enter into beneficial use agreements, often short term, where no money is exchanged. On the state parks side, "that doesn't give us a lot of certainty about long-term management for conservation and recreation," says Rader, "and it doesn't generate a lot of revenue for the State Land Board, so it's kind of this double inefficiency."

Thinking about creative management solutions for the lands that benefit state parks is one of the working group's first tasks. Also intended for the interim report is a look at the Stewardship Trust that arose from Amendment 16. The amendment "says that the lands are supposed to be managed to preserve and enhance their natural values," says Rader, "but it doesn't really define natural values. It doesn't tell the state land board how to manage for them. It doesn't say what uses are compatible or incompatible with those natural values." He's hoping the working group can define some terms and establish clearer procedures. Beyond those specific trusts, Rader just wants to know what's out there in terms of creative uses of state trust land, particularly when it comes to making money while conserving the land.

It's a timely conversation, in part because "we are in a really tough budget situation and we have been for a really long time," according to Wallace, "and that makes any revenue stream absolutely irreplaceable." But more than immediate need, everyone seemed to feel that this moment—150 years after Colorado first received its trust lands, and 30 years after Amendment 16 established the twin pillars of sound stewardship and reasonable and consistent income—was simply ripe for reflection.

"There hasn't been a comprehensive look at how we are using our state trust lands in quite a long time," says Roberts, "and the practical reality of our state is changing. We're struggling with issues like housing and wanting to promote more outdoor recreation and protect the environment, and this is a chance to get some of the best and brightest minds together to look at the opportunities to maximize the value of every state trust land—not just the big parcels, but the small parcels too."

Birch Malotky *is the editor of* Western Confluence *magazine and writes from Laramie, Wyoming.*

Partner-led, Science-driven

HOW THE WYOMING LANDSCAPE CONSERVATION INITIATIVE HAS FOSTERED TWO DECADES OF CONSERVATION IN THE CHECKERBOARD

By Emma Dietrich and Patrick Anderson

"The checkerboard is always in the back of our minds," says Jim Wasseen, Wyoming Landscape Conservation Initiative coordinator for the Wyoming Game and Fish Department. The alternating pattern of private and public land ownership that crosses Wyoming was created in the 1800s when the federal government deeded every other square mile of land to railroad companies as they expanded tracks across the West, and has long posed a problem to land managers in the region.

Today, a few companies own and lease most of the private lands in Wyoming's checkerboard and use that land primarily for mining, energy development, and grazing sheep and cattle. The Bureau of Land Management (BLM) manages most of the public portions of the checkerboard for multiple uses, including conservation, recreation, ranching, and mineral extraction. Other landowners and managers include private individuals, the State of Wyoming, and other federal agencies.

Each landowner has their own goals and needs for the land, and ignoring what happens on neighboring lands is not always an option. Everything from rivers and mineral deposits to the wildlife that Wasseen is responsible for managing can cross land management boundaries, so what happens on one plot influences neighboring lands. In southwest Wyoming—a region the size of South Carolina with the world's largest trona reserve, significant coal and uranium production, considerable oil and natural gas reserves, vital freshwater tributaries of the Colorado River, valuable game species, essential wildlife habitat, and acres of prime land for ranching, recreation, and renewable energy development—the challenge of balancing different landowners' needs is never-ending.

The Wyoming Landscape Conservation Initiative (WLCI), a coalition of federal, state, and local government agencies and nongovernmental organizations, has answered this challenge with a program driven by partnerships and supported by science. This combination has proved valuable and nimble enough to endure for nearly 20 years of facilitating landscape-scale conservation and responsible development in southwest Wyoming, while producing research, technology, and management models that are transferable to other landscapes facing similar problems.

WLCI arose in the 2000s, not long after rediscovery of two of the nation's largest natural gas fields in southwest Wyoming spurred a rapid rise in demand for energy development and related industries. This growing demand, combined with urban development, worsening drought, and the spread of invasive species in the region, conflicted with other land uses, like ranching and outdoor recreation, and jeopardized overall landscape integrity.

To balance conflicting land management priorities—that is, to allow for development while conserving lands for other uses—interested federal, state, and local governments established WLCI through a cooperative agreement and began drafting plans for its operations. Key to these plans was the development of distinct committees and teams, each assigned a clear function within the coalition. The WLCI Executive Committee,

Justin Caudill/Wyoming Department of Agriculture

The WLCI Executive Committee and staff tour a tree removal project where old, decaying aspen and other vegetation were removed, piled, and later burned with the goal of regeneration of new aspen growth.

composed of local, state, and federal government executives and elected officials, is responsible for setting the strategic direction and policies of the initiative. To facilitate that strategic vision, the WLCI Coordination Team manages the daily operations of WLCI, including regular interactions with the public and partners at the field level. The US Geological Survey's dedicated WLCI Science Team conducts research to better understand and address the ecological and environmental challenges facing managers within the WLCI landscape.

With these three teams working together, the founders hoped to improve the efficacy of on-the-ground conservation projects—like fencing improvements, wetland creation, river restoration, prescribed burns, weed treatments, and habitat protection—by giving them a collaborative, landscape focus and basing management decisions in science. Renee Dana, retired WLCI coordinator for BLM Wyoming and founding member of WLCI, describes how the WLCI executives provided momentum in those early days: "Their commitment, along with great support from local governments and partners, brought WLCI to life."

Early congressional funding for WLCI provided the means for federal agencies to begin work in public portions of the region, but to implement meaningful, landscape-scale change required local buy-in. For example, the BLM could begin treating invasive species or restoring fish habitat on their portions of land, but invasive species treatments would not be successful long term if every other square mile of land still contained the invaders. And removing barriers to fish passage in a stream on public land would only improve fish movement if there were not similar barriers in the next mile along the same stream.

> What has worked for WLCI is fitting together the big puzzle—including the checkerboard, private landowners, finding matching monies, and who wants to get things done together.
>
> Rox Hicks

"Landscape health knows no boundaries," says Mary Jo Rugwell, retired BLM Wyoming state director and former WLCI executive. "People must find common ground and work toward the goal of improving the lands together." To reach their landscape-scale goals, WLCI executives and coordinators needed to consider all possible owners, resources, and jurisdictions, meaning many people with potentially conflicting needs would have to jointly decide which actions to implement on public and private lands.

To meet this need, WLCI coordinators organized Local Project Development Teams representing the five largest counties overlapping the WLCI area— Sublette, Sweetwater, Carbon, Lincoln, and Uinta. Resource specialists from federal, state, and county agencies and nongovernmental organizations joined the local team meetings. WLCI executives from conservation districts and county commissioner offices leveraged their networks to increase local government and private landowner participation. "Alone, we manage landscapes, but only for one component," says Chris Aimone, Uinta County Weed and Pest supervisor and Uinta local team member. "WLCI brought so many players to the table, different organizations coming together to look at the whole landscape."

The local teams were tasked with developing common goals and priorities that addressed conservation challenges across southwest Wyoming, including in the checkerboard. To accomplish this, the WLCI Coordination Team ran local forums facilitated by the University of Wyoming's Ruckelshaus Institute that encouraged public participation and explored how individual goals and priorities could align with WLCI's broader vision. Throughout the processes, WLCI coordinators tried to make it clear they weren't trying to tell local practitioners what to do.

Building relationships and trust took time, but it was a necessary first step to starting WLCI off on the right foot and has paid off time and again. "It always amazed me when people working for differing agencies or employers had the realization that, by sharing their plans and needs for their area of concern, it could often lead to less duplication of effort," says Justin Caudill, agriculture program coordinator for the Wyoming Department of Agriculture and WLCI coordinator. These partnerships, he says, allow "the local team to cultivate and develop a project into a truly landscape effort affecting many wildlife species and agriculture with vastly positive outcomes."

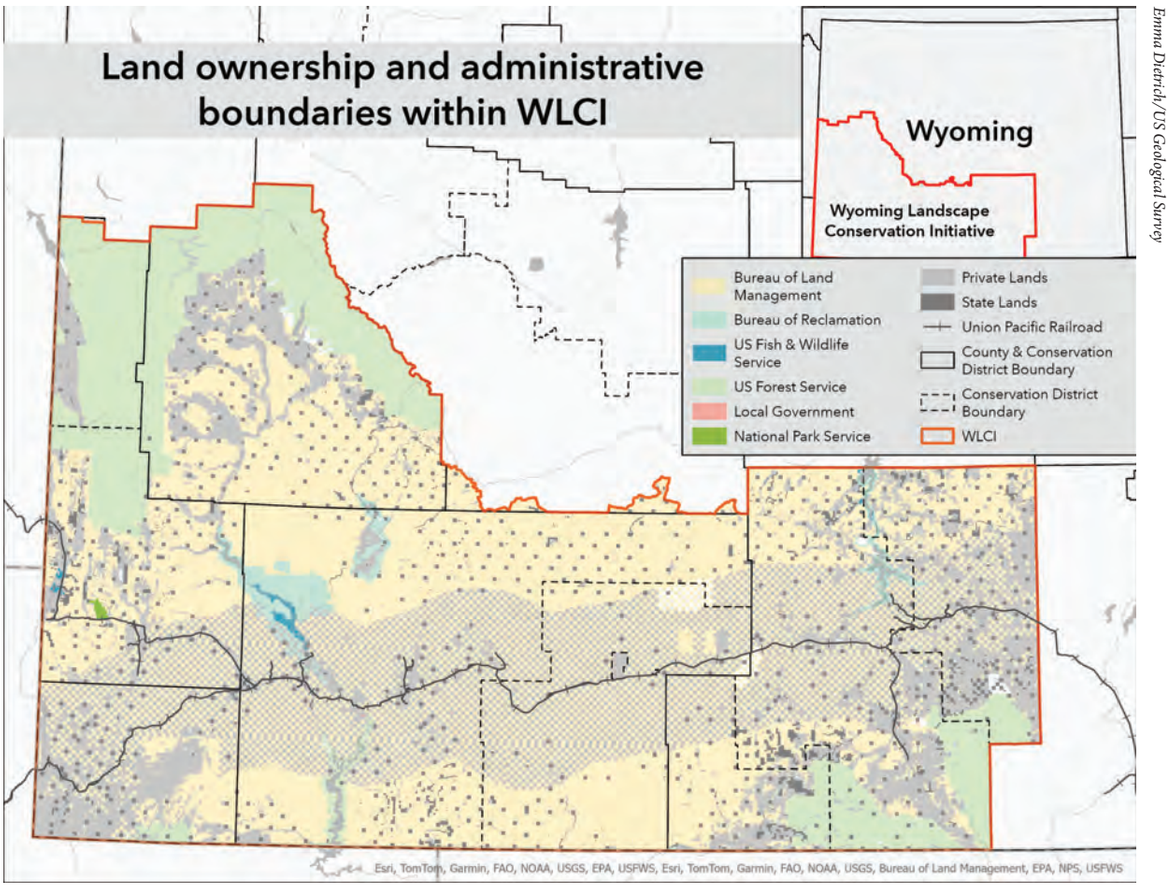
To ensure that a grassroots approach to conservation is sustained over time, the local teams develop and vote on priority habitats and project proposals within and across their counties each year. Then, the WLCI coordinators rank projects according to how well each fits with prior work across the WLCI region, as well as the conservation goals formulated by the local teams during WLCI's establishment. The Coordination Team sends their recommendation to the Executive Committee, which gives final approval and determines how much funding to grant each of the top-ranked projects. After that, it returns to the local teams for implementation.

"It's better if agencies fund projects, then let the communities drive the projects, as the communities know the locals and who to hire," says Rox Hicks, retired US Fish and Wildlife Service biologist and WLCI coordinator. The local teams bring in external grants and matching funds from members' own agencies or organizations, which gives them more flexibility to work across jurisdictional and ownership boundaries of all interested parties. Hicks says that "what has worked for WLCI is fitting together the big puzzle—including the checkerboard, private landowners, finding matching monies, and who wants to get things done together."

In addition to external funding, the local team members leverage external relationships to get conservation work done. One particularly important relationship is with the Rock Springs Grazing Association (RSGA). A large organization of cattle and sheep ranchers recognized for its landscape stewardship, the RSGA leases lands from the major energy companies in the checkerboard and is permitted to use many of the connecting public sections for winter grazing. This means they essentially manage a large swath of the checkerboard as one unit and can facilitate projects across that entire unit. Though

Bureau of Land Management

A Montana Conservation Corps crew converts old barbed- and mesh-wire fence to wood post, rail-top, and wire fence on Ferris Mountain.



Emma Dietrich/US Geological Survey

Land ownership and administrative boundaries within the Wyoming Landscape Conservation Initiative (WLCI). Along the Union Pacific Railroad, land ownership alternates mile-to-mile in a checkboard pattern, primarily between private landowners and the Bureau of Land Management.

Jim Wasseen/Wyoming Game and Fish Department

Sublette County Conservation District installed a solar-powered well pump and tire tanks to provide water for cattle. The location of these tanks improves range conditions by better distributing cattle across a grazing allotment.

RSGA is not an official partner of WLCI, many local team members independently collaborate with the grazing association, and a lot of WLCI's success relies on groups like the RSGA serving as a network hub to implement restoration and habitat improvement projects.

Also integral to project development and execution is the US Geological Survey (USGS) Science Team. After all, "without sound science to help managers decide best options, how do they implement projects with lasting benefits?" asks Wyoming Game and Fish's Wasseen. Over the years, the USGS has produced over 200 different scientific products for WLCI partners and local teams on topics of management interest like mineral distribution and abundance, wildlife migration, vegetation status and trends, ecosystem restoration, water quality, land management economics, and invasive species biology. Scientists present new products and get feedback on ongoing work during WLCI-hosted workshops and virtual meetings, field tours with WLCI partners, and at local team meetings. Subsequently, local team members use applicable science to inform projects and prioritize management actions. Coordinators and executives also use USGS science to measure the impact of local team management actions on broader conservation goals.

Southwest Wyoming's mix of world-class wildlife, priority habitats, and development in and outside of the checkerboard has created a unique place for scientists to develop products that are applicable across jurisdictional boundaries and address large landscape decisions. Indeed, many science projects piloted within WLCI, like the mapping of ungulate movement and migration corridors, have now expanded across much of the western United States. This mapping has helped managers determine where to construct wildlife-friendly fencing and habitat improvements in southwest Wyoming and beyond.

Despite the success of WLCI's collaborative management and learning model, maintaining WLCI core teams across two decades has not been easy. Employee turnover within organizations, major private land sales in the region, and shifting organizational priorities have all challenged WLCI's success. Aimone, with Uinta County Weed and Pest, says that "in areas with new owners, it can be difficult to figure out who to contact and how to get their buy-in." Historically, many partners in WLCI were local to the region, either living or headquartered within southwest Wyoming. Most participants already shared a common interest in maintaining healthy landscapes across the region. Recently, some of the private lands in the checkerboard were sold to large corporations without a local presence beyond ownership, and engaging them in the initiative has been challenging.

Wasseen, and others, emphasized that maintaining relationships, interest, and enthusiasm requires "getting our message out, and continuing to get our message out" through existing and new partnerships. "WLCI has been a constant, evolving effort. We are always needing to find ways to stay relevant within our own agencies and to others in southwest Wyoming," he says. To do this, WLCI coordinators have organized many workshops, field tours, and meetings for different partners to share their work with each other and with potential new partners. In all, WLCI relies heavily on all its members to leverage their personal networks within the region, and especially those of the local teams.

Indeed, to remain successful in the checkerboard and beyond, WLCI executives, coordinators, and local teams find motivation in the initiative's foundational elements—landscape-scale conservation goals, strong partnerships, locally driven projects, and science-based decision-making—while remaining flexible to shifting landscapes and individual needs. "There is no one way to get landscape-scale conservation done and some of the challenges to landscape-scale conservation are not a single fix," says Dana, the retired WLCI coordinator for BLM Wyoming. "Continuously overcoming challenges and remaining flexible are an integral part of WLCI's structure and organization."

Emma Dietrich *is a biologist with the USGS Fort Collins Science Center. She develops communications for USGS science teams and completes research in support of bridging the research-management gap.*

Patrick Anderson *leads the USGS Science Team in support of WLCI and serves on the WLCI Coordination Team. His science focuses on evaluating the effectiveness of habitat treatments and restoration of sagebrush and aspen communities. He is also interested in advancing collaborative conservation partnerships, improving stakeholder engagement, and developing approaches to advance the co-design and co-production of science to make it more accessible and usable.*

A Century of Managing the Checkerboard

AN INTERVIEW WITH JOHN HAY AND DON SCHRAMM OF THE ROCK SPRINGS GRAZING ASSOCIATION

By Temple Stoellinger

The Rock Springs Grazing Association (RSGA) represents one of the oldest and most complex grazing operations in the American West, born from a conservation crisis more than 100 years ago. The association operates across two million acres of southwest Wyoming's distinctive checkerboard landscape—a pattern of alternating public and private land sections created by 19th-century railroad grants—which has provided both challenges and opportunities for innovative range management.

In the early days of westward expansion, grazing of public lands was unregulated, and first come, first serve. By the turn of the 20th century, nearly 900,000 head of migrant sheep swept through southwest Wyoming annually, leaving the country "like the top of a desk—nothing left," as Schramm and Hay describe it. As local ranchers watched their rangeland deteriorate, they recognized that survival required organization and collective action. The fragmented ownership pattern, however, made coordinated management nearly impossible.

Out of these conditions, local ranchers in southwest Wyoming formed RSGA. Rather than competing for access to scattered parcels, local ranchers organized to lease entire blocks of private railroad sections while working to secure federal grazing permits on the interspersed public lands. This strategy gave RSGA control and management authority across large, contiguous areas that no purely private or public operation could achieve.

Within this area, RSGA established its own conservation-based management principles, setting livestock numbers based on carrying capacity rather than market demands and implementing rotational grazing practices to protect the resource. This local, cooperative approach to range management later influenced federal policy. When the Taylor Grazing Act was passed three decades later, the newly formed Grazing Service adopted similar ideas—such as locally administered permit systems and regulated stocking levels—to guide use and stewardship on public lands.

Today, RSGA continues to demonstrate how collaborative management across fragmented ownership patterns can balance conservation, agriculture, and industrial development in the modern West.

John W. Hay III is a fourth-generation Wyomingite and chairman of RSGA. His family has been integral to the development of Rock Springs for over a century—his great-grandfather, John W. Hay Sr., arrived in the late 1880s as a Union Pacific Railroad supervisor, married into the founding Blair family, and purchased controlling interest in Rock Springs National Bank in 1907. Before joining RSGA, Hay graduated from the University of Wyoming and served as president of Rock Springs National Bank.

Don Schramm retired from the Bureau of Land Management (BLM) after 37 years as an engineering and operations manager, mostly in Wyoming's checkerboard regions. He holds a bachelor's degree in forest engineering from the University of Montana and is a licensed professional surveyor. Currently serving as land operations manager for RSGA, Don reviews, negotiates, and coordinates surface use agreements across nearly one million acres of deeded and leased lands in southwest Wyoming, managing everything from livestock operations to energy development and cell towers.

This interview has been edited for clarity and length.

Western Confluence: How does RSGA manage grazing across such a complex landscape where ownership alternates every other square mile between private and public lands?

RSGA: The checkerboard in the Rock Springs area of southwest Wyoming is roughly 40 miles wide by 80 miles long—about two million acres total. BLM comprises around 48 percent of that, so think of it as roughly a million acres of BLM and a million acres of private and other ownership. Within that private and other million acres, RSGA holds about 520,000 acres, while the other four major owners hold about 480,000 acres. It's all known as the BLM Rock Springs Allotment—a common allotment encompassing deeded and leased land where we're the sole holder of the BLM winter permit.

The private land ownership in this area of the checkerboard has become increasingly complex over the years. What was originally federal railroad grant land given to Union Pacific transferred to Anadarko, then Occidental, then Orion. Orion retained two entities: "Aggie Grazing"

for everything except trona and "Sweetwater Surface" for the trona portion. Coal properties were sold to Wildcat Coal, while much of the oil and gas remained with Occidental/ Anadarko Land Corp. Today, we maintain leases with Anadarko Land Corp, Aggie Grazing, Sweetwater Surface, and Wildcat Coal. There are also other landowners with independent BLM summer grazing permits in the checkerboard that we don't lease from—the historical arrangement was winter use by us, summer access by them.

Despite this complexity, the key advantage is that we maintain control across the entire two million acres through ownership, lease, or permit arrangements. Managing these large, diverse areas allows us to take a flexible approach that many smaller operations cannot. Unlike some grazing associations that allocate specific use areas to shareholders, we don't follow that model. We have range on both the north and south sides of the railroad and interstate, and winter conditions vary dramatically between these areas. If your allotment were fixed on the north side and deep snow came in, you'd be stuck. There's no equitable way to assign fixed areas while ensuring equal opportunity for all shareholders.

WC: How does RSGA coordinate day-to-day winter grazing across the checkerboard?

RSGA: Members coordinate with our range rider, John Pierre Erramouspe. Folks call him to ask where the feed is and what areas make sense. Sheep, being herd animals, can go most anywhere that's open; cattle aren't herd animals and need to be in familiar areas where they know feed and shelter. So cattle tend to use parts of the lease they're accustomed to, while sheep use whatever is open and accessible. Before coming on, most people tour the lease, then coordinate with John about who's where and what's sensible.

The lease opens December 1. There's always a bit of a "race for grass"—people pass good feed to get to favorite spots. We have a five-mile rule that says once you set up in an area, others should give you about five miles of space. It works in concept, not always in practice, especially with cattle mixing. Everyone tries to respect each other, but neither sheep nor cattle read maps. It's a work in progress every year, and Mother Nature ultimately dictates use. We think this is the best way to manage it so everyone has a fair shot.

WC: How complicated are the legal arrangements that hold this all together?

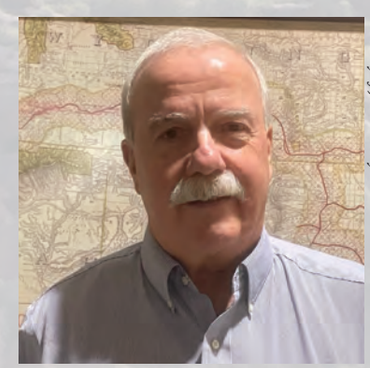
RSGA: Actually, less complicated than you'd think. We have straightforward lease arrangements with the private companies—basically updated versions of the old Union Pacific forms with some modifications over time. The BLM permit is standard, and we pay based on actual use, not acreage. For state lands, we pay based on their estimate of animal unit months in the leased sections. It could be much more complicated than it is, and it hasn't changed much over the years.

It's worth noting that when RSGA was created, there was no federal land control. That didn't start until the Taylor Grazing Act in 1934, which created the Grazing Service, a predecessor to the BLM. There's a legend that John Hay's dad knew Ferry Carpenter, the first director of Division of Grazing, and influenced some of the early rules to follow RSGA practices. That's just legend, but it's interesting to think about.

We think the real difference between then and now is in how decisions get made. Back then, local grazing advisory boards assisted the Grazing Service with grazing decisions based on actual on-the-ground conditions and needs. Today, decisions come from Washington DC, and local BLM offices appears to have very little authority. In our opinion, if you want to improve public lands management, you'd put decision-making back in local hands where people understand the specific conditions and challenges.

WC: What challenges or opportunities does the checkerboard present for your members?

RSGA: The alternating ownership gives us far more usable ground than if we only had private land. In most BLM permits, the BLM portion is the bulk of the ranch's usable country. For example, in the Pacific Creek Allotment there are about 200,000



Courtesy of John W. Hay III

John W. Hay III

BLM acres and maybe 5,000 private, so we have very little leverage there. In the Rock Springs checkerboard, with something close to fifty-fifty ownership, we actually have a seat at the table. That said, our "seat" applies to grazing decisions, not to BLM planning processes, major oil and gas development, or other land-use decisions.

WC: This region has long been shaped by energy development—from coal and oil to trona and renewables. How has energy development intersected with grazing in the checkerboard, and how does RSGA navigate those overlapping land uses?

RSGA: This isn't split estate like you see around Gillette, where you have private surface over federal minerals. Here, we call it "parallel estate"—federal surface with federal minerals on one square mile, private surface with private minerals on the next. When RSGA purchased the surface estate from Union Pacific, the railroad retained the mineral estate. Because of this pattern, you have to

Courtesy of Don Schramm

Don Schramm

work together. No oil and gas unit can proceed without coordinating with other land managers.

Our philosophy is pro-development and multiple use, and it has worked well. Mineral-related income lets us avoid annual shareholder assessments. While we still charge for grazing, only about half of our shareholders actively run livestock; the others hold their shares for the dividends generated by mineral and surface-use revenues. Oil and gas activity has been extensive over the years, and while livestock numbers have declined, it hasn't hindered grazing.

Renewables present different challenges, though. Solar requires fencing and becomes single purpose, which conflicts with our multi-use approach, so we say "no thanks" to solar. Wind has a much smaller footprint per megawatt and doesn't interfere with grazing, so we're open to discussions. But only with strict conditions that oil and gas development remains the priority, grazing continues uninterrupted, we retain access to all areas, and all existing uses continue. We're currently negotiating with one company and may talk with another, but it's challenging to draft agreements that protect our interests while meeting their development needs.

WC: How does RSGA balance livestock grazing with wildlife conservation and increasing recreational use?

RSGA: When the association formed, they thought the country could handle 350,000 sheep. Today, with drought and other resource conflicts, we're far below that capacity. Deer numbers rose over time but are down now, while elk have jumped dramatically and are approaching wild horse numbers, making it important to manage them at levels the land can support without conflicts. Antelope had a hard winter in 2023 but should rebound; deer may not recover due to elk competition and chronic wasting disease. We meet regularly with Game and Fish on population numbers and targets, and they coordinate with BLM on infrared counts for wild horses and elk.

Conserving the range is the only way any of this works. We keep things in balance, and our livestock numbers aren't the limiting factor. Remember, RSGA is a winter operation. Plants grow in summer, and we graze dormant vegetation in winter, so winter sheep grazing has negligible impact compared to the greater year-round impacts from wildlife and horses. If summer grazing by anyone overuses the range, that removes winter feed for everyone. We monitor wild horses and elk closely to ensure winter feed remains available for all species, including the pronghorn and deer that migrate through but aren't here year-round.

On public access, many locals assume it's all BLM land. To avoid liability, we don't grant permission, but we don't deny access either. People hunt and fish. Our private lessors don't want hunters, though that's hard to enforce. RSGA and Game and Fish have established management units on about 15 miles of the Green River that are open for hunting and fishing.

Recreation pressure has definitely increased with ATVs, side-by-sides, dirt bikes, cyclists, and backpackers. The numbers aren't overwhelming, but they're up. Tools like onX create confusion by showing "BLM roads" that aren't actually guaranteed public access in our checkerboard, since BLM doesn't hold easements and counties often don't either. That's been a problem, particularly with organized events. Anything commercial on RSGA land requires a permit and insurance, and we tell people to stick to main county roads, not every two-track.

WC: Looking ahead, what are you watching for? What are the biggest challenges facing RSGA?

RSGA: In grazing, ranchers running sheep face major challenges with labor availability and cost. Department of Labor wage requirements now make it hard for operations to pencil out, so I expect sheep numbers will decline from current levels. Statewide, we've gone from around six million sheep in 1910 to maybe a quarter million today. This is excellent sheep country but less ideal for cattle in the winter, since cattle aren't herd animals.

With fewer grazers and more shareholders holding for dividends, we have to work closely with industry—oil and gas, coal, trona, and renewables—so there's a reason to hold the stock while protecting the resource. Think of RSGA as a large land trust and Wyoming asset where development must be done right. There's talk of rare-earth mining now. Wind farms can be "here today, gone tomorrow," so we need solid long-term agreements.

Our current BLM permit is winter only, but if cattle numbers grow and sheep decline, longer seasons in fall and spring might make sense, though that could conflict with summer inholders. We don't have a perfect scheme worked out yet. We want grazing to continue, though the model may need to change. Some people joke, "maybe we should graze buffalo," but they're hard to control and people insist on petting them.

Temple Stoellinger *is an associate professor of environment and natural resources and law at the University of Wyoming.*

Fragmented Jurisdiction

THE COMPLICATED LEGACY OF ALLOTMENT LEGISLATION

By Autumn L. Bernhardt

Consider a pronghorn doe embarking on her yearly migration route or simply traveling an intermediate distance in search of better grass. Over the course of her journey, she may cross streams, roads, and fences. She may also cross different types of public land managed by state and federal agencies, as well as private property located in various counties. Then imagine that this same doe ventures onto a reservation that has been subject to allotment legislation. While on the reservation, she not only passes through tribal lands, but also private property owned by tribal citizens and private property owned by non-tribal citizens.

As she crosses these varied physical and legal landscapes, the entity with jurisdiction over this doe also changes. In some cases, it may be unclear who is responsible for her, creating challenges for environmental code enforcement and wildlife management. These challenges in environmental management are just a taste of the complexity in other areas of tribal administration and regulation.

For the most part, governments have authority to pass and enforce laws within their territorial limits. But tribes are often frustrated in this by the legacy of federal policy known as allotment, which broke up reservation lands into private property parcels and authorized the sale of lands deemed "surplus." Allotment dramatically reduced the size of reservations and created a political geography that invites jurisdictional confusion and conflict between the federal government, states, tribes, and private landowners. In the almost century and a half since allotment began, the law has been slow to deal with its fallout, and even today, clarity and regulatory coordination remain elusive.

Tom Koerner/US Fish and Wildlife Service

Wildlife regularly cross jurisdictions on their daily and annual migrations, which can complicate environmental code enforcement on reservations that have been allotted.

To understand how allotment impacted reservations, some basic understanding of land tenure and trust law is helpful. Reservations are held in trust by the federal government. Tribes, with their own distinct governments, have beneficial ownership of these lands. This means that the federal government holds legal title, but tribes are still recognized as owners with certain rights and expectations of use and possession of land. As a trustee, the federal government has a high fiduciary duty to tribes as trust beneficiaries, which implies good faith and even-handed dealings. In the foundational *Cherokee Nation v. Georgia* case, the Supreme Court likened this special trust relationship to that of "a ward to his guardian," while also noting that the Cherokee tribe was "a distinct political society separated from others, capable of managing its own affairs and governing itself." Despite the duty a guardian should have to act in a ward's best interests, this ward-guardian analogy has been used, at times, in a more paternalistic way to justify absolute discretion by the federal government in its relationships with Native nations.

Most reservations were tribal trust land before the General Allotment Act of 1887, which took tribal land out of trust, converting large holdings within reservations into private land that could be bought, sold, and taxed. The act—sometimes called the Dawes Act because Congressman Henry Dawes from Massachusetts guided it through the legislative process—

Flathead Allotment: 1887 Dawes Act by Aspen Decker/Shining Canvas Studios

The General Allotment Act of 1887, or Dawes Act, divided communal tribal land into private holdings that could be bought, sold, and taxed. Lands deemed "surplus" by the federal government were sold to settlers.

somewhat resembled the Homestead Act in operational terms. It awarded roughly 160 acres to each family head who was on a tribal roll (or Dawes roll), although the acreage varied between grazing, agricultural, and timber land, and, after subsequent amendments, depended on who the intended allottee was. The act also contained a mandate for the disposal of reservation lands that the federal government deemed "surplus," which were sold to settlers. Although the General Allotment Act played a predominant role in allotment policy, several surplus land acts and allotment acts that only applied to a single tribe also contributed to the fracturing of land ownership.

At first, allotted land would be held in a different kind of trust, where the allottee, rather than the tribe, was the beneficiary. During this period, which the act set at 25 years, the allottee didn't have full private property rights, and the state couldn't tax the land. After the trust period ended, the land would be private, "fee patent" land that could be taxed by the state and sold by the allottee, who could also be granted US citizenship. Sometimes the federal government extended the trust period. A competency commission, typically made up of non-tribal citizens involved in federal-tribal affairs, could shorten it by finding the allottee to be "competent."

While some tribal allottees still have land holdings within reservations, many allotted parcels that were originally awarded to tribal members eventually transferred into the hands of non-tribal members. Tribal allottees may have been willing sellers in some instances, but in other instances they may have been pressured to sell or lost lands due to tax default or mortgage foreclosure. Economic conditions on reservations were dire, forced assimilation to new food economies without regard to ecological realities was ill-fated, and Indian Service agents and their successors in the Bureau of Indian Affairs (BIA) could be heavy handed in their control of the daily lives of tribal members, including how tribal members ran their own farms and ranches. Furthermore, tax notices came in the mail to sometimes remote destinations in a language that tribal members did not always speak fluently. For these reasons, early "competency" findings were often criticized because they subjected the allottee to taxation and pressure from land speculators sooner rather than later.

Allotted lands did not slip through the hands of tribal allotees because tribal societies lacked any concept of private ownership. Although nomadic tribes had communal territories that sometimes shifted with the seasons and migration patterns, a number of more location-bound tribes had designated fishing, hunting, and agricultural lands reserved to families or clans. Tribes in the Southwest did pool their resources to operate communal irrigation systems, and some Great Plains tribes hunted buffalo collectively, but in both cases harvested crops or game often went home to individuals and family units. The story of allotment is more complicated than can be explained in a line or two. Tribes had their own laws and customs and were submerged into a completely different set of customs and laws.

The allotment era came to an official end in 1934, with Section 1 of the Indian Reorganization Act declaring that reservation land shall no longer be allotted. Covering more than just allotment, the Indian Reorganization Act came about after a study known as the Meriam Report documented many of the failures of allotment and federal administration of tribal affairs. But a lot of land had already been allotted, leaving reservations reduced in size and with land tenure alternating between tribal and fee patent lands that were owned by either tribal members or non-tribal members.

The checkerboard metaphor has been in common usage for a long

E. W. Wiggins/Library of Congress

National Anthropological Archives/Smithsonian Institution

A historical map (left) announces that the "Kiowa, Comanche, Apache, and Wichita Reservations" would soon be opened to settlement and advertises rich mineral lands. Tribal members fought against allotment for more than decade, with Kiowa leader Lone Wolf (right) bringing a lawsuit that made it to the Supreme Court, but the federal government ultimately ignored these repudiations.

time, but comparing maps of allotted reservations to checkerboards can be a bit misleading. Checkerboards are uniformly spaced and suggest some sort of deliberate planning and organization. The map of the Cheyenne River Sioux reservation, by contrast, looks a bit like digital camo. The map of the Nez Perce reservation looks like small islands of tribal land floating intermittently in an ocean of non-tribal allotted land. Reservations can be lightly to heavily allotted, but roughly three-quarters of all reservations were allotted to some degree.

Like so much of American law, allotment was born out of a particular time and a particular set of cultural narratives. Having begun during the thrust of Manifest Destiny, allotment was ostensibly assimilationist in nature. Along with government-funded boarding schools, missionary conversion efforts, and the creation of reservations themselves, assimilation policy was regarded by its advocates as the gentler arm of Federal Indian policy, especially in comparison to extermination strategies like the Indian Wars. Assimilationists, such as John Wesley Powell, aimed at making Indigenous peoples in the US more palatable to, and theoretically more integrated in, dominant society by making them more like dominant society in dress, speech, religion, gender norms, and thought. Although assimilation was deemed less forceful, it was still coercive. R. H. Pratt, who acted as superintendent of the notorious Carlisle Indian Boarding School, summarized assimilationist theory when he said: "A great general had said that the only good Indian is a dead one. . .I agree with the sentiment, but only in this: that all the Indian there is in the race should be dead. Kill the Indian in him and save the man."

In the case of allotment, assimilation meant compelling Native Americans to become "pastoral and civilized" by doing agriculture the way Euro-Americans thought agriculture should be done. That translated to breaking apart communal tribal land, assigning individual land parcels to tribal members to farm and graze, and making tribes perform irrigated agriculture on arid private real estate more suitable for buffalo migration, with little to no capital or equipment. Its advocates claimed that allotment was good and necessary for the development of Native Americans and the only viable means to ensure their physical survival given the aggressive behavior and attitude of the country. Henry Dawes, the sometimes-namesake of the act who was opposed to both slavery and Indian-ness, said he wanted to "rid the Indian of tribalism through the virtues of private property."

Despite this sentiment, the motives underlying allotment were mixed. Teddy Roosevelt famously described the General Allotment Act as "a mighty pulverizing engine to break up the tribal mass." Allotment presented an opportunity to open reservations for settlement and relieve the government of its trust responsibility and obligations toward tribes—a new tactic, but not a new goal. At the time allotment came into being, only a few dissenters voiced concerns that it was a thinly veiled pretext for speculator land grabs or

condemned the expressed concern for the welfare of Native people as barely masked greed for tribal land. Colorado Senator Henry Teller was nearly alone in prophesying that "if the people who are clamoring for it understood Indian character, and Indian laws, and Indian morals, and Indian religion, they would not be clamoring for this at all."

Consistent with the assimilationist attitudes of the time, tribal consultation and consent were not robust concepts or deemed necessary for the allotment process. Although special allotting agents were sent to reservations to obtain agreement from the tribes, allotment was a foregone conclusion in the minds of its advocates. Some tribal members may have initially thought of allotment as a way to get the federal government and its agents off the backs of tribes or to bring prosperity to the tribe, but there are historical accounts that show a deep suspicion of allotment as well. This is likely because before allotment came into being, the federal government "re-negotiated" many treaties to significantly reduce the reservation land base—once tribes were relatively confined to reservations and their military might had diminished.

In one case, tribes pushed back against the lack of consent in an attempt to stop allotment of their reservation. Article XII of the 1867 Treaty of Medicine Lodge Creek with the Kiowa and Comanche tribes stated that further cession of tribal land would require the signatures of "at least three-fourths of all the adult male Indians." But in 1892, when David Jerome went to Fort Sill on behalf of the federal government to get support for allotment of reservation lands, he only obtained 456 signatures, a significantly smaller percentage than the treaty requirement. Tribal members also made complaints of a mangled translation of agreement terms and some signers requested to have their signatures removed. They wrote letters to Congress, sent a delegation to Washington, and testified in opposition to allotment, but despite these clear repudiations, Congress ratified Fort Sill allotment by means of a rider to a bill concerning a separate reservation in Idaho in 1900. When the reservation of the Kiowas, Comanches, and Apaches was opened up to settlement, a Kiowa leader named Lone Wolf brought a lawsuit against the US government that made it all the way up to the Supreme Court.

In *Lone Wolf v. Hitchcock*, the Supreme Court ruled in 1903 that Congress can abrogate a treaty, or render it void, without the agreement or approval of the tribe—in this case, by allotting a reservation without sufficient signatures. The Supreme Court linked this power of treaty abrogation to that special trust relationship between the federal government and the tribes, writing that "Congress possessed a paramount power over the property of the Indian, by reason of its exercise of guardianship over their interests." The court also held that despite the criticisms of fraud and coercion, "we must presume that Congress acted in perfect good faith." The case carried the weight of precedent for many years and stagnated the waters of tribal self-determination, leaving lasting marks on Indian Country.

Subsequent cases have, however, softened the precedent laid down by *Lone Wolf*. In particular, the 1980 *United States v. Sioux Nation of Indians* case was similar to *Lone Wolf*, in that the US government took land—in this case the Black Hills, by military force and threat of starvation—without the signatures of the three-fourths majority of Sioux men as required by the Fort Laramie Treaty. In this decision, the US Supreme Court somewhat side-stepped the question of treaty abrogation but declared that the Sioux Nation was entitled to just compensation for the land that had been taken a hundred years prior. Importantly, this case suggests that judicial review can act as a check on congressional power in Indian affairs.

Consent for allotment, and the question of treaty abrogation, is not the only decades-long legal battle to come out of the allotment era. Another major legal question arose around how the allotted parcels themselves were owned and managed. Over time, ownership interests in the parcels that tribal members were able to hold onto became fractionated due to tribal allottees dying without wills. Lawyers call this dying intestate. In the absence of a will that specifies how property, such as a land parcel, is to be distributed, property is split according to statutory probate laws. Generally, that meant that allotted parcels were divided among family members and heirs. Over generations, this led to some parcels becoming fractionated down to the thousandths.

Milton Snow/National Archives

Allotment meant breaking apart communal land to make tribes do agriculture the way Euro-Americans thought it should be done—without regard to ecological realities of soil, water, temperature, and growing season. Here, the Bureau of Indian Affairs distributes plows for row crop farming on the Navajo Nation.

Allotment was in many ways too much, too soon, and in the wrong way. Allotment land parcels, like homestead parcels, were by and large too small to support farming and ranching by small family units in arid country, and fractionation of ownership only exacerbated this ecological reality. Between this challenge, the complexity of managing land among a multitude of potential decision-makers, and likely some attendant government pressure, tribal allotment parcels often ended up being leased.

The BIA was supposed to lease allotted lands, place funds in Individual Indian Money accounts, and distribute the proceeds to owners, including owners who had highly fractionated interests. For decades, tribal members contended that allotment parcels were leased with little regard for fair market value and operated as a subsidy to non-tribal interests. They also voiced concern that the land was run into the ground due to poorly managed leases where over-grazing and over-tillage were rampant. Complaints that the BIA could not account for hundreds of millions of dollars and that account beneficiaries did not receive what they were owed eventually found their way to court through the *Cobell* class action lawsuit.

Cobell began in 1996 and has a storied history, with a DC federal district judge saying that "it would be difficult to find a more historically mismanaged federal program than the Individual Indian Money (IIM) trust." At one point, this judge also ordered the BIA to disconnect their systems from the internet to avoid potential transfer and embezzlement of land lease funds. After the original judge was replaced at the request of the government, which claimed he had an anti-government bias, the case made its way to appeal. Finally, in 2009, the individual Indian trust account beneficiaries and the federal government reached a settlement. Among other agreements, $1.4 billion was to be distributed to Individual Indian Money accounts and $2 billion was earmarked for a Trust Land Consolidation Fund to purchase fractionated allotment land interests and transfer title back to tribes.

The idea of consolidating fractionated allotment parcels and returning them to tribes was not a new concept, but the means to accomplish the return of land has caused some conflict. In 1983, Congress passed the Indian Land Consolidation Act, which originally required fractionated interests that were less than 2 percent of an allotment parcel to escheat, or pass back to, the tribe rather being split among heirs, which would increase fractionalization. The act has been amended several times now to respond to successful lawsuits claiming that it was unconstitutional under the 5th Amendment to "take" these interests without just compensation. Now, to avoid unconstitutional taking claims, fractional allotment interests must be purchased with consent of the seller at fair market value. Additional provisions also authorize tribes to adopt land consolidation plans and probate codes that apply to allotment land interests.

All these decades of laws and lawsuits—only some of which are mentioned in this article—and the digital camo of land ownership they produced underlie the jurisdictional complexity on reservations today. Reconsider the pronghorn doe in search of greener grasses. The person or government that can make decisions about her may depend on whether the land is communal tribal trust land, allotted land owned by tribal citizens, or allotted land owned by non-citizens. It also might depend on whether Congress has passed a relevant statute dictating jurisdiction in a particular matter, and how higher courts have interpreted that statute according to the specific facts of the case.

In *Montana v. US*, another highly analyzed case, the Supreme Court held that tribal regulation of duck hunting and trout fishing did not apply to non-citizens on their own private allotment land within the Crow Reservation. Although the court also provided that tribal civil regulation might apply on non-citizen private land when "necessary to protect tribal self-government or to control internal relations," jurisdictional determinations appear to be circumstance specific. As both people and wildlife transition between different jurisdictions, landscape-scale regulatory coordination may be desirable but remains elusive, given the legal dynamics tied to allotment.

In truth, reservations and tribes would not exist if allotment had worked the way some of its proponents wanted it to. The consequences of allotment implicate Federal Indian law, property law, Constitutional law, probate law, wildlife management principles, legislative interpretation, and so much more.

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US Department of the Interior

Ostensibly assimilationist in nature, allotment also presented an opportunity for the US government to open reservations for settlement and relieve itself of its responsibility and obligations towards tribes.

Autumn Bernhardt *has over twenty years of experience in environmental matters and has worked as an entrepreneur, professor, and attorney. Bernhardt litigated water disputes between states as a Colorado Assistant Attorney, served as an Assistant Tribal Attorney for the White Mountain Apache Tribe, and now provides environmental consulting services.*

Allegra Keenoo and Jacqueline Alderman/Bureau of Land Management

Gridlocked

IN WYOMING'S RED DESERT, THE CHECKERBOARD HAS FUELED A WILD HORSE STALEMATE

By Mike Koshmrl

A dozen or so wild horse advocates and photographers were gathered on a ridgeline near White Mountain in August 2024 when news started spreading that federal land managers got the OK from the courts to eliminate two entire herds, and a part of another, from 2.1 million acres of the area known as the Red Desert. Cheyenne resident and amateur photographer Robyn Smith was immediately bummed. "Argh, oh crap," she said. "That's a lot of horses." More than 3,000 horses, U.S. District Court of Wyoming Judge Kelly Rankin had ruled, could go.

The group of activists were gathered to oversee an unrelated horse roundup in the so-called checkerboard region of southwest Wyoming, a 40-mile-wide swath of land where one-square-mile blocks of private and Bureau of Land Management (BLM) property meet at the corners. Fences are few in the region, so thousands of horses pass on and off the private land daily. These walkabouts, and the underlying land ownership pattern, have proven a land management quagmire that has been the source of a half century of conflict, despite sporadic coordination.

Rankin's ruling in favor of horse removal was just the latest development in the debate over whether and how many mustangs should be allowed to roam the checkerboard. The back and forth involves wool growers and cattle ranchers who don't want the free-roaming horses on their private land, the BLM, an agency that's required by the Wild Free-Roaming Horses and Burros Act to maintain them on federal property, and wild horse advocates, who want to protect the animals and health of the herds.

Some 14 months later, however, the herds slated for elimination were still there. They'd even grown larger. The reason is litigation, which has dominated the 54 years since horses in the Red Desert became federally

Mike Kosht mrl/WyoFile

Successful lawsuits by wild horse advocates have halted plans to address the concerns of private landowners in the checkerboard by eliminating the Great Divide Basin and Salt Wells Creek herds, and part of the Adobe Town herd.

> "The Bureau of Land Management has only zeroed out a herd two times in history."
>
> Bill Eubanks

protected. As herd sizes continuously exceed goals, frustrations have grown. But middle-ground solutions have failed to gain traction as the camps in the checkerboard horse dispute have become gridlocked, leaving today's land managers and horses at an impasse.

Before 1971, when the Wild Free-Roaming Horses and Burros Act passed, ranchers in the checkerboard who run cattle and sheep as a collective under the Rock Springs Grazing Association took wild horse management into their own hands. "They removed excess numbers, and at that time they went to slaughter, for the most part," says Christi Chapman, who's a longtime wild horse advocate: She co-founded the all-volunteer Wyoming Wild Horse Improvement Partnership. "They did a good job, because they cared about the land and they wanted to have enough room for their livestock. But they liked the horses—they didn't want to see them go completely away."

After the Wild Horse Act passed, management shifted to federal officials. The law protects free-roaming horses from "capture, branding, harassment, or death," prohibits commercial sale for slaughter, and declares them "living symbols of the historic and pioneer spirit of the West." It passed both chambers of Congress unanimously and was shepherded by the matriarch of wild horse advocacy, Velma Johnston, who was known as Wild Horse Annie.

At that time, wild horses and burros roamed free on roughly 54 million acres of federal land, mostly managed by the BLM. The new federal law didn't demand blanket protections for equines everywhere. Land managers inventoried the West, looking at factors like vegetation and water, and ultimately defined 179 "herd management areas" covering nearly 32 million acres in 10 states where the landscape was considered able to sustainably support horses. In another 20-million-plus inhabited acres, free-roaming horses weren't thought of as practical long-term residents because of habitat constraints or resource scarcity—these were labeled "herd areas" and are not managed for horses. In southwest Wyoming's Red Desert and Green River Basin, nine herd management areas were established, some of which included hundreds of square miles of the checkerboard.

A key provision of the Wild Horses and Burros Act instructs agencies to "remove stray wild horses from private lands as soon as practicable" when asked by landowners, who are prohibited from removing or destroying horses on their own. That made the broad swath of interchanging public and private land that forms the checkerboard tricky, and negotiations essential. Shortly after it passed, members of the Rock Springs Grazing Association met with Johnston and the BLM to discuss management for horse herds in the region. In the new era, the association had plenty of incentive to work with the BLM to keep horse numbers in check. Their livestock depended on the same rangeland and would have to compete for forage with the free-roaming horses, which can reach 1,000 pounds and face little predation. "They had a great conversation," Chapman says. They even came to terms on population targets.

But the horses thrived and the herds grew in the absence of rancher management—unchecked, herds can swell by 20 percent annually. The association's ranchers tried to get the BLM to step in with large roundups to no avail, and by the late 1970s they sued. A negotiated legal settlement came out of it, and that deal was for four herds totalling no more than 1,600 animals in the Red Desert region. "BLM Wyoming complied without delay, but it took from 1980 to 1985 to reduce the number of horses from almost 7,000 to 1,600," Rock Springs Grazing Association Manager Don Schramm testified to Wyoming lawmakers in 2023. The herds had sprawled across the landscape and gathering them was difficult and costly—as was finding a home for them, because the free-roaming animals could no longer be killed.

Horse populations fluctuated in the two decades that followed. Roundups would drive numbers down to near the 1,600-animal target, but then years would go by. "They would double by the time of the next roundup," Schramm said

in his testimony. "We did our best. We had the support of the state, BLM, wild horse interest groups, the Washington office employees, administrative officers, and RSGA. It was a team effort." But it wasn't enough, and the wild horses spent far more time above the agreed-upon population limits than near or below the threshold.

"I will say this: I feel like it's not the BLM's fault," Chapman says. She pinpointed two reasons, naming constant litigation and a lack of resources for federal land managers to carry out their horse-removal duties. Wild horse management has proven to be an extraordinary drain on BLM coffers. Roundups, which rely on helicopters and big teams of wranglers, are pricey, but most of the expense goes toward paying for the horses to live out their days. Some rounded-up mustangs are adopted and domesticated, but most end up in long-term corrals and in off-range pastures where board, feed, and veterinary bills cost more than $100 million annually.

Finally, in 2010, frustrated ranchers revoked their consent to tolerate horses on private land in the checkerboard, asking that the herds be removed entirely. The BLM went along, citing the Wild Horse Act, and even sought to remove herds from the public land squares interspersed throughout the checkerboard. This would have been an almost unprecedented move. While roundups eliminating horses from the "herd areas" are somewhat routine, the designated herds have remarkable staying power.

"BLM has only zeroed out a herd two times in history," says Bill Eubanks, an attorney who has represented horse advocacy plaintiffs in the Red Desert dispute for over a decade. The Colorado and Nevada herds that were eliminated faced dire straits from a landscape that lacked enough resources for their survival. Animals were "emaciated," Eubanks says, and federal law explicitly permits removing herds "in order to preserve and maintain a thriving natural ecological balance" in areas. "The agency ultimately documented that they could not keep a genetically viable, self-sustaining wild horse herd," Eubanks says, "because it was just impossible."

The rationale for getting rid of the Red Desert herds was starkly different. It hinged on the RSGA asserting its rights to have stray wild horses removed from private lands as soon as possible, and the assumption that herd elimination was the only reasonable way to do that in the checkerboard.

Mike Koshmrl/WyoFile

Wild horse advocate Robyn Smith, of Cheyenne, was one of many who were dismayed to learn of the plans to eliminate herds from the checkerboard.

Mike Koshmrl/WyoFile

Jim Magagna, pictured here at his ranch in 2023, is the longtime executive vice president of the Wyoming Stock Growers Association.

The association sued the BLM again three years later, and out of it came another settlement agreement. This one called for eliminating two herds and shrinking two others. Wild horse advocacy groups, represented by Eubanks, got involved with their own lawsuit, arguing violations of the Wild Horse Act, National Environmental Policy Act, and other federal laws. After a federal district court defeat, the horse advocates prevailed when the 10th Circuit Court of Appeals ruled in 2016 that the federal agency broke the law by treating the entire checkerboard as if it were private property.

Appellate Judge Monroe McKay and the court acknowledged the "practical realities of the checkerboard" and the need for BLM to find a "workable solution," but still faulted the agency for ignoring a key provision of the act. "It seems to me that the only way the BLM can ultimately lawfully achieve its [ecological balance] duty to maintain wild herds and prevent destruction of viability caused by overgrazing on public lands is to go back to step one and make appropriate judgments by redetermining the [herd management areas] without the non-permissive use of private lands," McKay wrote.

While the BLM went back to the drawing board, the herds kept steadily growing. In the winter of 2022–2023, the federal agency commissioned an infrared aerial survey that found roughly 4,700 horses in the Red Desert herds. Roundups followed and a similar assessment at the end of 2024 found just shy of 3,700 animals.

Around the West, the pace of roundups has long been inadequate to keep up with population growth, in some areas resulting in ecological harm rather than ecological balance. As of spring 2025, the number of free-roaming horses and burros nationwide was approaching 75,000—nearly triple the BLM's targeted numbers. Nevada, which hosts nearly half of them, has been the poster child of feral horse overpopulation run amok, and its state biologists have reported that the equines eat more forage than all the native ungulate species, like elk and mule deer, combined.

Impacts to wildlife have also been documented in Wyoming. A University of Wyoming-led research team examined how free-roaming horses influence sage grouse and found evidence that overpopulated Red Desert herds are hurting the imperiled birds' survival rates by breaking up sagebrush, increasing bare ground and denuding watering holes. Wildlife managers on the Wind River Indian Reservation—

Allegra Keenoo and Jacqueline Alderman/Bureau of Land Management

In southwest Wyoming's largely unfenced checkerboard region, thousands of horses pass on and off private land daily. Combined with the difficulty of finding and rounding up horses in this vast landscape, the result has been decades of conflict and litigation.

which isn't subject to the Wild Free-Roaming Horses and Burros Act—reported dramatic, almost overnight changes after rounding up nearly 8,000 horses in 2022 and 2023. "It was at an ecological crisis point," US Fish and Wildlife Service supervisory biologist Pat Hnilicka said at the time. "If something wasn't done, there was no turning back."

In the Red Desert, near where her family ranches, Chapman has seen feral horses eat themselves out of a home during periods of drought and succumb to severe winters. It was especially hard to watch, she says, during the winter of 2022–2023. "We found families of horses dead within feet of each other," Chapman says. "It was just really sad."

Wild horse enthusiasts, however, contend that equines are being unfairly scapegoated when it comes to impacts on the land. Casper College instructor Chad Hanson, who's an avid horse photographer and writer, says that their impacts on grasslands are "red herrings"—arguments intended to distract from more significant concerns. "The BLM's rangeland assessments make it clear: Livestock represent the most significant threat to the health and vitality of our public lands," says Hanson, who joined the checkerboard horse lawsuit as a plaintiff.

But there is a distinction between how horse and livestock impacts to rangeland are handled, according to Jim Magagna, a longtime lobbyist for the Wyoming Stock Growers Association. "It's the only major species of animals out there that isn't managed," he says of Red Desert horses. "We manage our livestock—we harvest our calves and lambs every fall. We manage our wildlife through hunting seasons." Because wild horses, legally, are neither livestock nor wildlife, the BLM's toolkit for managing them is much more constrained.

Attempting to remedy the court's concerns after the 2016 loss, federal authorities prepared an environmental impact statement and updated its resource management plans for the Rock Springs and Rawlins areas. "We've been trying to come up with a solution," says Brad Purdy, a senior advisor for the BLM's Wyoming office. The federal agency's analysis assessed different scenarios, in part demonstrating "adequate forage, water, cover, and space" to support horses if the trimmed-down herds were confined to solid-block public land outside the checkerboard. Still, there were concerns the herds would easily drift back onto private land.

Ideas for solutions included fencing the checkerboard and keeping horses on public ground, but that would require extensive fencing that would bisect big game migration routes and could even harm sage grouse prone to striking them. It was called "not technically feasible" and the gargantuan task was dismissed.

The assessment also considered and dismissed a land swap to consolidate private and public property. "For a land exchange, you've got to have a willing partner—and I don't think we had a willing partner," says Purdy. "I'm not saying that in a negative way. It's completely up to private landowners whether they want to engage in a land exchange with the Bureau of Land Management."

The option the agency ultimately landed on was to get rid of the Great Divide Basin and Salt Wells Creek herds, which dwell in areas that are respectively 48 percent and 72 percent checkerboard. The northwestern portion of the Adobe Town Herd, an area that's 42 percent checkerboard, would also be lopped off and managed for zero horses. In

> It's the only major species of animals out there that isn't managed. We manage our livestock—we harvest our calves and lambs every fall. We manage our wildlife through hunting seasons.
>
> Jim Magagna

total, the contested plans called for ridding roughly 2.1 million acres—an area about the size of Yellowstone National Park—of more than 3,000 free-roaming horses. "When you weighed it all out, this was the most informed and the best decision, I think, the BLM could have made," Purdy says.

Initially, the courts were on board, upholding the agency's plans. Rankin's August 2024 opinion—the ruling that bummed out Smith and the other roundup observers—recognized the BLM's bind of having to remove the private land horses and having no practical means of keeping others on checkerboard public land. Repped by Eubanks, horse advocacy groups and individuals again appealed to the 10th Circuit Court of Appeals.

By spring 2025, the BLM was already setting in motion its renewed plans, but history repeated itself, and again the 10th Circuit put a stop to the roundups. Like nearly a decade prior, the court faulted the BLM for not demonstrating how removing all horses from public land in the checkerboard is necessary to achieve a "thriving natural ecological balance"—language from the Wild Free-Roaming Horses and Burros Act. "They said it's the guiding principle of the act, as Congress wrote it, and you can't just ignore that," Eubanks says.

Federal officials turned heads by announcing they were proceeding with the elimination roundups despite the appeals court ruling, sparking another lawsuit, then another—and eventually an assurance that nothing would happen before summer 2026.

So several thousand Red Desert horses remain on the landscape, and land managers, stock growers, and horse advocates are at a stalemate. "This whole controversy, it's been a standoff for 15 years," Chapman says. "I've been here since day one, right in the middle of it." The 10th Circuit's summer 2025 opinion instructed the BLM to go back to federal district court to resolve concerns about "ecological balance," but the agency's earlier plans stated there was no ecological justification for removing the Red Desert herds. There was no scarcity of forage, water, cover, and space, according to its own analysis.

Pro-horse plaintiffs say the stakes are high. Herds around the West could be at risk if the BLM prevails in removing whole herds because of the checkerboard's private land, Eubanks says. Every herd management area in the country contains private inholdings or non-federal land. "Where do you draw the line?" the attorney says. "There's not really any coherent reason why it could not apply elsewhere. Does BLM see this [argument] as specific to these herds, or is this really something that they're testing out? We don't know."

Meanwhile, ranchers' patience has been exhausted after decades of legal disputes and the BLM failing to achieve targeted numbers. Magagna, at the Wyoming Stock Growers Association, sees few prospects for coexisting with free-roaming horses in the long term. "At this point, the only way that the landowners could be satisfied outside of a total removal would be if they were reduced down to [agreed-upon] numbers, with a firm guarantee that the horses would be held at those numbers," he says.

Others say the potential solution was prematurely dismissed by the BLM. "I think the right solution is for the federal government to have land swaps with the checkerboard landowners and consolidate the private lands and the public lands," says Erik Molvar, a biologist who directs the Western Watershed Project, an environmental group that focuses on negative impacts of livestock grazing. "Once you consolidate the private lands, then under the Wild Horse and Burro Act, the wild horses that stray can be removed back onto the public lands—and the private landowners can have wild-horse-free private lands."

As long as a decade ago, Eubanks was encouraging BLM to consider a land swap as a mutually palatable solution so that the Rock Springs Grazing Association would be unencumbered by horses, which would then dwell only on solid-block public lands. "Not one time has BLM even explored the idea—they just refuse to even consider whether it's a viable option," Eubanks says. "What's especially peculiar is BLM does land exchanges of substantial size. They're the agency that specializes in these federal/non-federal land swaps for precisely this type of purpose."

For now, the steady stream of litigation is keeping the Red Desert horse dispute in flux. As this story was going to press, the federal agency and Rock Springs Grazing Association had not shown their hand, declining interviews about legal next steps to satisfy the court's concerns about "ecological balance."

"They could interpret the 10th Circuit opinion differently than I do," says Eubanks. "We have very little intel on how they're going to approach these issues. It may be that the outcome of their evaluation sparks more litigation. I'm sure that would be a surprise to no one."

This story was created in partnership with WyoFile*, an independent nonprofit news organization that covers Wyoming.*

***Mike Koshmrl** is a Lander-based journalist who reports on wildlife and natural resource issues for* WyoFile.

Mike Koshmrl/WyoFile

While some rounded-up horses are adopted, most live out their days in long-term corrals and off-range pastures that cost the BLM more than $100 million annually. Pictured, wild horses from the White Mountain Herd north of Green River are trailered away to a temporary holding facility.

Chess Not Checkers

FOR GRIZZLY BEARS, SOME OF THE MOST DESIRABLE DISPERSAL HABITAT CROSSES HEAVILY CHECKERBOARDED LANDS

By Katie Hill

It took all night to drive hundreds of miles from the Northern Continental Divide Ecosystem (NCDE) in northwestern Montana to the shores of Yellowstone Lake, a trip that Dr. Cecily Costello spent in the passenger seat of a pickup truck. Hitched to the truck was a large, tubular trap containing a young, male grizzly bear, previously tranquilized but now wide awake and sporting a fresh GPS collar.

With a team of researchers, Costello, a bear biologist for Montana Fish, Wildlife, and Parks (MFWP), helped haul the culvert trap onto a boat. Then, the seaworthy crew and the federally threatened apex predator steered to a southern arm of the lake. When they struck land, they had to figure out how to release the bear into the wilderness near the shore.

"We rigged it up so that we could pull a long rope to open the trap from the boat out on the water," Costello says, noting that her team has been pleased with the success of the 2024 relocation. "The male stayed remarkably close to where we left him. He made one little interesting movement in the fall just before denning, but he's pretty much staying put inside the park." The hope is that the NCDE transplant will introduce some genetic diversity into the Greater Yellowstone Ecosystem's (GYE) grizzly population, which is currently one of the criteria for delisting the species under the Endangered Species Act.

In some ideal version of the future, it wouldn't take traps, tranquilizers, trucks, boats, and ropes to get grizzly bears from the NCDE to intermingle with those in the genetically isolated GYE and produce healthier, more resilient bears. Instead, bears dispersing from their home territories would traverse the slim margin of range between the two recovery zones on their own. The two populations, which have exceeded their recovery goals, are already bleeding out into more lowland riparian areas and valleys between the towering mountain ranges, but they haven't yet spanned the gap. According to recent research by Costello and Dr. Sarah Sells, the assistant leader of the Montana Cooperative Wildlife Research Unit and a US Geological Survey ecologist, some of the most likely, but perhaps surprising, dispersal routes for grizzly bear connectivity lead straight through checkerboard lands.

Montana Fish, Wildlife, and Parks

Montana Fish, Wildlife, and Parks researchers release a male grizzly bear on the shore of Yellowstone Lake in the hopes of introducing genetic diversity into the local population.

The checkerboard usually refers to an alternating pattern of square-mile parcels under federal and private ownership, which is left over from a time when the federal government awarded railroad companies every other parcel along the tracks to incentivize transcontinental railroad construction. In Montana's Boulder Mountains, for example, which is one of the rugged ranges separating the

Sarah Sells

northern grizzly populations from Yellowstone, the US Forest Service manages the public parcels, while a series of livestock companies and other individuals own the private parcels.

A different kind of checkerboard connects the Scapegoat Wilderness and surrounding Helena National Forest to the Sheep Creek and Sleeping Giant Wilderness Study Areas at the north end of the Big Belts. This region features alternating private lands and state trust lands, which were awarded to Montana when it became a state and are constitutionally required to generate revenue for Montana's public schools and other community resources.

From a 10,000-foot view, checkerboard lands seem like they should be heavily manipulated, chopped-up landscapes. Only European settlers would think to carve lands up and hand them out to various owners in such a manner. The roster of landowners and managers ranges from the state of Montana and three different federal agencies to absentee landowners and fifth-generation working ranchers. Logic dictates that such a level of human involvement in a landscape would drive grizzlies and other wildlife away. After all, grizzly bears in the Lower 48 survived near-extinction in the late 1800s by retreating into deep, dense habitat, as far away from human influence as possible.

"But our simulated bears don't know anything about land ownership," says Sells of her and Costello's work modeling potential dispersal pathways between the NCDE and GYE grizzly populations. Instead, they used GPS collar data from real grizzlies to model how bears moving through a landscape respond to its overall greenness, terrain ruggedness, density of riparian areas, density of buildings, distance to secure habitat, and distance to and density of forest edge. "Secure habitat," per the US Fish and Wildlife Service, means habitat on state, federal, and Tribal lands that is 500 meters away from nearby roads.

Then, "these bears take a walk in our simulations," choosing a path "based on how the model from their data showed them choosing between these [variables]," Sells says. With a long list of known grizzly bear deterrents between the NCDE and the GYE—Interstate 90, growing population centers, new real estate development, sprawling road networks, heavily pressured public lands, and natural resource extraction projects— "most bears tended to select for areas with greater greenness value, closer to secure habitat, higher densities of riparian areas, and generally close to forest."

Between many bears taking many simulated walks, the model "strings together this pathway that tends to [have] lower building density, higher riparian density, be closer to forest edge, and be farther away from roads. So that's where you see these rivers of blue that indicate where bears are most likely to travel," Sells says.

It turns out that this combination of factors foreshadows bears moving through checkerboard, a sign that these areas possess a higher proportion of intact, desirable habitat than the surrounding lands.

That's largely due to the work of private landowners, according to Heart of the Rockies Initiative partnerships manager Jim Williams. "Working families produce food and, at the same time, protect the spaces between blocks of protected public land," Williams says. "[Most] of the connectivity habitat within checkerboarded matrices of public lands is on private agricultural lands in the transboundary Northern Rockies, here and in British Columbia and Alberta."

Take the Hibbards, one of countless landowning families who live, work, and play in a checkerboard matrix between the NCDE and GYE. Cooper Hibbard grew up on the ranch owned by Sieben Live Stock Company, not to be confused the nearly Sieben Ranch, owned and operated by his cousins. Although he is now the fifth generation to work it, he is the first generation to experiment with novel, selective grazing techniques to improve the soil's water and carbon retention and

has been widely recognized in the sustainable ranching community.

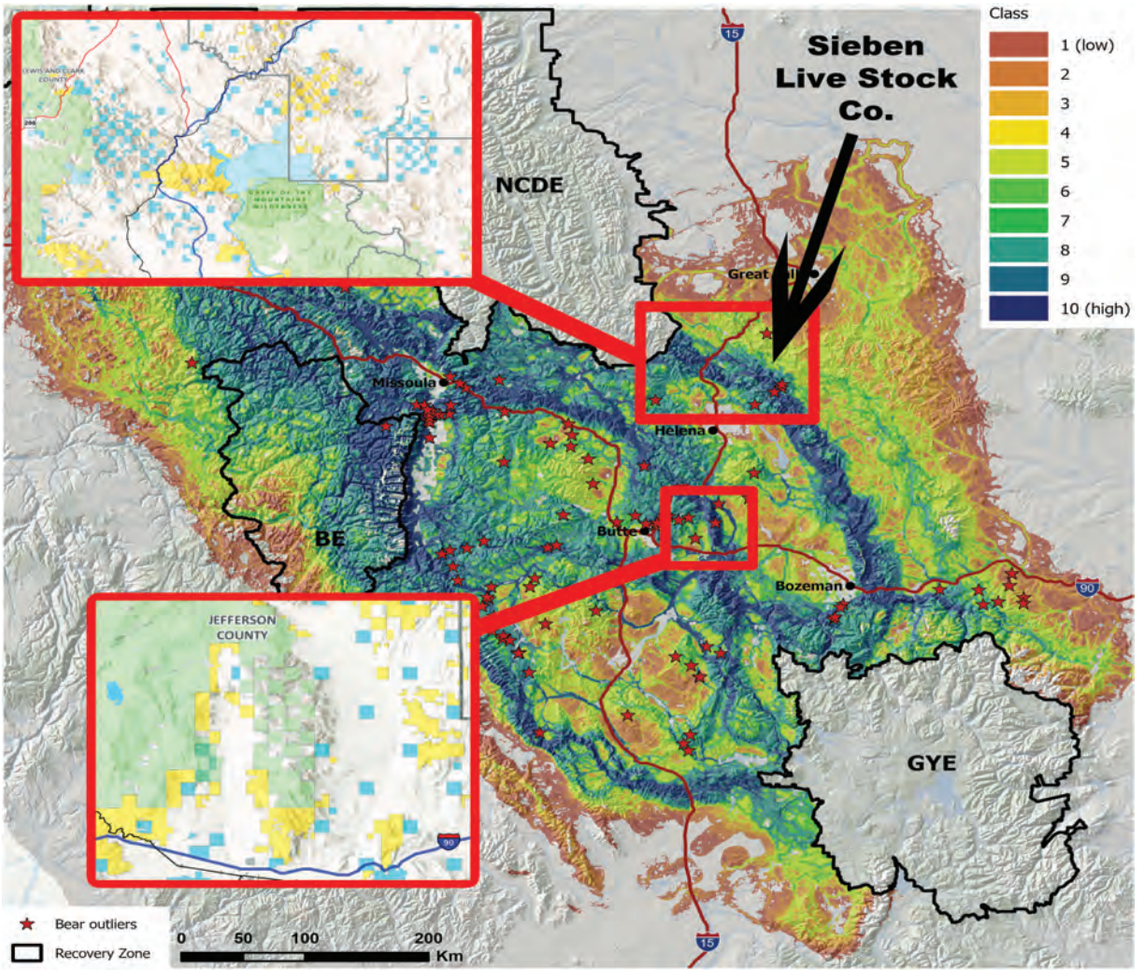
While the Hibbards hold a more contiguous tract of land than most, they neighbor parcels held by the Bureau of Land Management, the Forest Service, the State of Montana, and other private landowners. Apart from I-15 snaking northeast from Helena to Great Falls, this area is remote. The closest town is Cascade, population 600, about 20 miles northwest as the crow flies.

Compared to large, intact tracts with more proximity to major population centers, these rural parcels in their 640-acre increments have far less to offer real estate developers. So, they've largely escaped development. Those who do build on heavily timbered, checkerboard parcels often opt for cabin-style dwellings, which tend to be less disruptive for wildlife habitat than suburban style homes with lawns. Meanwhile, the public lands within the checkerboard have often lacked reliable public access, meaning they aren't as pressured by outdoor recreationists seeking backcountry adventure, hunting, or otherwise spending time on the landscape.

Instead, both public and private parcels in the remote checkerboard between the NCDE and the GYE are more heavily used for livestock grazing—which can help maintain healthy landscapes—and potential resource extraction. While something like timber cutting does disturb the natural condition of an area, its impacts are still less permanent than those of a subdivision. Some studies even show that bears might like regenerating clear-cuts and other restored extraction areas for their renewed food sources and cover.

In other words, the West's growing recreation pressure on intact public lands and growing development pressure on intact private lands has made the checkerboard into something of a de facto last best place for wildlife.

But it's not without its own issues. Conflict between bears and the people stewarding the land is part of the reason why grizzly bear connectivity is such a touchy subject in the rural West, particularly in areas where landowners and government entities border each other.



Created by Katie Hill using maps from Biological Conservation *and Montana Cadastral*

According to Costello and Sell's predictive maps, some of the mostly likely corridors (shown in blue on the base map) for connecting grizzly bear recovery areas pass through checkerboard lands. In the land ownership insets, yellow indicates Bureau of Land Management, green is US Forest Service, light blue is Montana Fish, Wildlife, and Parks, teal is the State of Montana, and white is private.

Hibbard first encountered the aftermath of hungry grizzly bears on his family's ranch in 2017. Eleven dead calves littered the rangeland sandwiched between the Big Belts and the Adel Mountains, almost perfectly equidistant between Glacier and Yellowstone National Parks. When Hibbard woke up the morning after the grizzly attack and stepped outside, something in the air he'd been breathing since infancy was different.

"It immediately changed the feel of this place," Hibbard says. "Not for better or worse, but it changed the feeling. You aren't just going to walk out the door with kids without being prepared. That was when the shift truly happened, when we knew this place was going to continue to be different."

Hibbard is probably the first in his family to have to coexist with grizzly bears, except maybe his great, great grandfather, Henry Sieben, who arrived from Illinois in 1864 when the species was already in immense decline. "This grizzly question is a big deal. But I also see them as a small ingredient in the big stew," Hibbard says, mentioning that range riders and other adaptive techniques for grizzly coexistence might be part of the near future of Sieben Live Stock Company.

Supporting landowners by providing funding for these kinds of adaptations is part of the Heart of the Rockies Initiative's work, says Williams, who worked with MFWP for 31 years as a wildlife biologist and program manager and helped develop grizzly bear conflict monitoring programs in the NCDE. Range riders and electric fences can cost tens of thousands of dollars—money that ranchers rarely have just lying around—so as long as grizzlies remain a federally protected species, coexistence will cost some serious cash.

Now, Williams works on a program called Keep It Connected, which funnels private philanthropic dollars to working-lands families seeking perpetual conservation easements through nearby land

Courtesy of Cecily Costello

Courtesy of Sarah Sells

Research by Costello (top left) and Sells (top right) models the most likely routes that grizzly bears might take when dispersing between the Northern Continental Divide Ecosystem and the Greater Yellowstone Ecosystem.

Working families like the Hibbards (bottom right) protect habitat in the space between blocks of public land, says Williams (bottom left), who works at the Heart of the Rockies Institute to build habitat connectivity while supporting private landowners.

Courtesy of Jim Williams

Courtesy of Cooper Hibbard

trusts. "When a land trust comes to us with a project that lists wildlife connectivity as a primary component, on top of keeping a working agricultural family on the land rather than growing homes, we review it," he says. "If it's a match, we bring it to our board for approval. Then, philanthropic donors can search through our list on our website and close the funding gaps on projects depending on what species and locations they're interested in. It's almost like online shopping."

The program is needed, Williams says, because the pace and scale of development continues to climb and to reach further into what was once considered less desirable land. More than half of new houses built in Montana from 2000 to 2021 were built outside of incorporated areas, and 41 percent were built in subdivisions where individual lots exceeded 10 acres in size, a report from Headwaters Economics shows. Around Yellowstone and Grand Teton National Parks, residential property has increased 132 percent since 2000, according to a documentary by the Western Landowners Alliance called "Grizzlies and Grazing."

> "This grizzly bear question is a big deal. But I also see them as a small ingredient in a big stew."
>
> Cooper Hibbard

This rapid landscape transition means that any version of grizzly bear connectivity will rely, at least in part, on open space preservation and private land stewardship. And conservation easements, which allow ranchers to monetize their open space and wildlife habitat without disrupting their livestock operation, are one way they stand to benefit from a grizzly bear's presence on a landscape, Williams explains. With the bulldozer threatening both the rancher and the grizzly bear, then the "enemy of my enemy" adage must apply in some way.

While the federal government oscillates over the status and management of *Ursus arctos*, one thing remains clear: bears will continue to find refuge from a growing, urbanizing West in the kinds of landscapes that rural landowners have long occupied, worked, and stewarded, especially those interspersed with public parcels where habitat remains intact. As long as these checkerboard areas have water, food, cover, and distance from major population centers, they will continue to be fair game for grazing and grizzlies alike.

"We can adapt," Hibbard says. "We're building enough resilience into this system that we can roll with these punches, but we can't be lackadaisical about it. We have to be proactive."

Katie Hill *is a freelance journalist, writer, and editor based in western Montana. Her writing about wildlife science, conservation, public lands issues, and hunting has appeared in a variety of publications.*

Mike Lewelling/National Park Service

Fire at the Property Line

MIXED PUBLIC AND PRIVATE LANDS CAUSE FIRE MANAGEMENT CHALLENGES

By Kristen Pope

A bolt of lightning crashes down and hits some brush, which begins to smolder. The wind transforms wisps of smoke into visible flames and the small fire quickly becomes a mass of orange flames headed straight for neighboring homes. If this small ignition occurred on one of the six million acres of public land in the western US that are completely surrounded by private land, it would be more likely to become a bigger, more problematic fire, according to researchers.

Fire management is more challenging in areas where public and private lands meet, whether they are completely "stranded" or another part of the wildland-urban interface. The mix of land ownership types and uses can lead to very different objectives and approaches. One community in Oregon is taking on these challenges through a cooperative public-private effort that works with landowners to prepare for wildfires and reduce the risk of catastrophic fire in the first place.

The mix of public and private lands that shapes parts of the wildland-urban interface results from a number of factors, including policies from the time of westward expansion. During the 19th century, government grants were made along the new transcontinental railroad corridors to encourage people to build nearby, with every other parcel becoming private, and remaining parcels reserved by the government. Today, many of these reserved parcels are still public land, surrounded by private land and forming what's known as the checkerboard pattern found in some parts of the West.

University of Wyoming associate professor Bryan Leonard and colleagues explored how these and other lands surrounded by private lands, which they refer to as stranded lands, impact fire considerations in a 2021 article in *Environmental Research Letters*. The researchers studied fires that ignited on western public lands between 1992 and 2015 and found that ignitions on stranded public land were 14-23 percent more likely to grow to over an acre than other fires. They also analyzed the impact using 5-acre and 160-acre thresholds, and found similar results—that ignitions on stranded public lands are more likely to grow larger than those on more accessible public lands.

They also found that fires on stranded public lands were more likely to escape the crucial "initial attack" phase of firefighting, which involves rapid containment efforts that

occur within the first one to eight hours after an ignition and is a key indicator of how large fires are likely to ultimately become. "If it stays small, the damages are going to be pretty limited, but as soon as it escapes that initial containment, then it's much more likely to become problematic," Leonard says. Overall, they found that fires on stranded public lands become 18 percent larger than those that began on public land that is accessible.

In certain states, including Montana, Nevada, and Wyoming, the fires that began on stranded lands made up 10 percent of acres burned, in spite of only making up 3-6 percent of ignitions. Leonard and his colleagues also found that, on average, stranded fires were two to three times as large as non-stranded fires in these states

Not every state had the same results, though. In a few other states, including Colorado, Idaho, New Mexico, Oregon, and Utah, the 1 percent of fires that started on stranded public lands only accounted for 0.27-1.5 percent of the area burned in those states.

"I expect this has to do with differences in the extent and nature of stranded lands across these different states," Leonard says. "Montana, Nevada, and Wyoming have some of the most extensive checkerboarding of private and public land thanks to the legacy of the railroad land grants. While not all checkerboard lands are stranded, the two are often highly correlated, and it is not hard to imagine that conducting fire management activities is more difficult in a highly checkerboard landscape than in one with a relatively isolated stranded parcel."

Vegetation type, in addition to land ownership, may have contributed to this difference between states. "Most of the stranded lands in these three states are grasslands, which are associated with the faster initial spread of fires," Leonard says.

> If you have 10 private landowners, they have twelve different opinions about how to manage the land.
>
> Volker Radeloff

The reasons why fires that start on parcels of stranded public lands are more likely to become large could be related to the difficulty of accessing those lands for management, detection, and response. Even before a fire sparks, fuels management, like mechanical thinning, prescribed fire, and invasive weed management, can reduce the threat of wildfire. "While many public lands are in need of additional fuels treatment, this problem is systematically worse on stranded land due to access issues," Leonard says. In the study, stranded lands were 5 percent less likely to be the focus of management projects.

"The same access issues can also complicate and slow the initial attack once fires start, by creating confusion and logistical hurdles associated with determining land ownership and obtaining access," says Leonard. Even when private landowners are eager for assistance with fires and fire management on these lands, there can be barriers to access like locked gates that take up time. Leonard says, "These issues might be compounded in settings where the landowners have a less than amicable relationship with public land managers due to past access disputes."

While stranded public lands can lead to significant fire management hurdles, these only represent one type of situation where the junction of public and private lands complicates fire management. The wildland-urban interface (known as the WUI) is a transitional area where human development abuts undeveloped wildland vegetation, and is often found where public and private lands meet. The WUI has grown rapidly in recent decades, increasing by 33 percent from 1990 to 2010. A 2018 study found that houses in these areas are increasing by 41 percent, and that the WUI is the fastest-growing land use type in the Lower 48. That growth is attributable to multiple factors.

"[The WUI is] a beautiful place to live. Most people who care about the environment would like to live closer to nature, maybe see wildlife from their kitchen window," says Volker Radeloff, a professor in forest and landscape ecology at University of Wisconsin-Madison and one of the authors of the study. "The other major factor is that downtown areas are expensive to live in and there's a housing crisis, and so some people are also pushed out of urban areas and they have to move out into the wildlife-urban interface because that's the only place they can afford to live. When we look at the WUI, it spans the gamut. There is Malibu WUI, but also trailer parks. Every socioeconomic group is found in the WUI."

The continuing growth of the WUI is problematic for both fire risk and fire management. "If a fire occurs, it places more people at risk. They have to be evacuated, firefighters have to focus on protecting structures, and so forth," Radeloff says. "The other side of that coin is that most fires are started by people, so the people living in those landscapes, the power lines, barbecue grills toppling over, arson, the whole suite of different reasons for ignitions—they are all concentrated."

This is particularly true in the kind of WUI called the intermix, because it involves homes dotted among the vegetation. In contrast, the other type of WUI, interface WUI, involves high-density housing near a large tract of wild area. Interface WUI areas may have less

Jade Elhardt

Fuels management projects are less likely to focus on stranded lands, which may be part of why fires that start on stranded lands get larger, on average, than fires that begin on more accessible public land.

US Fish and Wildlife Service

Like stranded lands, areas were undeveloped forests abut residential development can post challenges for both pre-fire management and post-ignition fire response.

Jade Ehlardt

Oregon Department of Forestry crews conduct defensible space fuels treatments on private lands in Chiloquin, where a public-private partnership is working to improve fire management in the WUI.

vegetation to burn and more hard barriers, like roads and pavement, that can act as fire breaks, but when fires impact these areas, they can race through neighborhoods quickly, spreading from house to house.

The WUI also poses challenges to fire preparedness. When landowners have different management objectives—and budgets—it can be challenging to find good solutions. One private landowner may prefer a thick forest close to their home for privacy and wildlife observation, whereas a nearby homeowner may prioritize creating defensible space for fire protection. A public parcel of land might be managed for ecosystem services, while a timber tract may focus on maximizing the price of timber products.

"If you have 10 private landowners, they have twelve different opinions about how to manage the land, and there are different objectives," Radeloff says. "One will prioritize aesthetics over fire safety, over biodiversity values, over income from timber harvesting, and so forth. In the wildland-urban interface where houses are, the land is privately owned so it becomes very hard to coordinate and do something like a prescribed burn unless all landowners are in agreement."

Finding solutions to fire management when dealing with a variety of public and private landowners can be a challenge, but a partnership near Klamath Falls, Oregon, is working to reduce fire danger and promote forest health where public and private lands intermingle. The Chiloquin Community Forest and Fire Project (CCFFP) uses cross-boundary management to improve forest health while working on fire resistance and response.

The project focuses on a 38,800-acre area that is 60 percent forested and at high fire risk. The Chiloquin area includes large tracts of national forest with fingers of private land interspersed, largely running alongside waterways. It is a complex WUI area with a mix of landownership types and both industrial and nonindustrial uses.

"There are a lot of subdivisions that may be completely surrounded by Forest Service [land] or surrounded on three sides by Forest Service, so there is a lot of interface between the private and the public land in Chiloquin area," says Leigh Ann Vradenburg, project manager for Klamath Watershed Partnership, which is the watershed council overseeing the project. In her role, she works with federal and state agencies, nonprofits, and private landowners on ecosystem restoration projects in the Upper Klamath Basin.

CCFFP maps and inventories the region to identify priority treatment areas and obtains grants to reduce fire risk, including money for private landowners to manage fuels on their own land. Outreach is a key component of this effort, including meetings, workshops, mailings, phone calls, and on-the-ground visits. Vradenburg and partners also collaborate with larger forest health and wildfire resiliency projects to conduct large-scale planning efforts. She says CCFFP has more than 32 landowners participating, and the project has already treated more than 4,400 acres of private land.

One of the barriers they face is landowners' reluctance to treat their land if neighboring parcels are not doing fuel treatments. People in rural communities also like their privacy, she says, which includes visual barriers, such as trees separating them from roads and public lands where people might be recreating. However, she works to build trust and overcome these barriers.

"We're nonregulatory, we're nonthreatening," Vradenburg says. "We come in from the position of advocating for the landowner and helping them to understand what the forest could and should look like, but then also understanding what their needs are. Do they run cattle out there or have objectives for timber harvest? We're working to support them in their forest management and land management goals."

CCFFP is part of the Chiloquin Wildfire Initiative, which is a partnership with Chiloquin Fire and Rescue that focuses on creating defensible space around homes and helping landowners treat small properties, including providing brush trailers to help people haul off materials. Additionally, they are increasing outreach and education efforts, with plans to go to local schools and events to educate people about wildfire.

Cooperative public-private efforts like this initiative rely on the willingness of government entities and private landowners to work together to meet fire management challenges. "I think we were fortunate to have a good community to work with," Vradenburg says. "Sometimes it takes all the players in the right places and Chiloquin has been an example of that and the success of that is shown by the acres treated and the landowners involved and so it's something we're really proud of."

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

News from the Ruckelshaus Institute

Western Confluence is a publication of the Ruckelshaus Institute at the University of Wyoming's Haub School of Environment and Natural Resources. The institute supports community-driven approaches to environmental challenges through collaboration, convening, and communication. Learn more at uwyo.edu/ruckelshaus.

Western Confluence wins regional awards

Issue 12, which explored sustainable outdoor recreation and tourism, won two awards in the Society of Professional Journalists' Top of the Rockies competition. The contest received more than 1,850 entries from 80 news outlets and 20 freelancers in Colorado, New Mexico, Utah, and Wyoming. Graham Marema's image of pronghorn racing alongside a train, which accompanied "Train Trek: A vision for bringing passenger rail back to the rural West," won second place in the Illustration category. The issue's cover, featuring artwork by Birch Malotky and June Glasson and design by Tana Stith, won second place in the Front Page Design category.

Charity Barks/US Forest Service

Forest Planning Support

The Ruckelshaus Institute facilitated several meetings in 2025 as part of our five-year agreement with the US Forest Service to support forest planning across the Intermountain West. In January and May, we facilitated meetings in Pinedale, Wyoming, as the Bridger-Teton National Forest begins the process of revising its forest plan. In August, we facilitated communication between the Manti-La Sal National Forest and its cooperating agencies as the forest nears the end of its plan revision process, with four meetings across southeastern and central Utah.

SAVE THE DATE

NUCLEAR ENERGY: AN EMERGING ISSUE FORUM

April 13-14, 2026 | Laramie, Wyoming

Join us for a two-day, statewide forum exploring the full fuel cycle of nuclear energy—from uranium mining, through fuel refinement and energy generation, to spent fuel storage, as well as supporting industries. Convened in partnership with the University of Wyoming School of Energy Resources and the Wyoming Energy Authority, the forum will build a shared understanding of the benefits and risks of these various projects and consider under what conditions they might be right for Wyoming's communities.

Nuclear energy is also the topic for Issue 16 of *Western Confluence*. Stories will be published online throughout 2026 and in print January 2027.

Visit westernconfluence.org/subscribe-2/ to subscribe.

To Cross or Not to Cross

USING HAMLET'S QUEST FOR JUSTICE TO TEACH THE CORNER-CROSSING CASE

By Kelly Dunning

In my undergraduate classes, I teach that the Wyoming corner-crossing case is one of the past decade's most significant political developments regarding conservation. But I don't teach it like a history, its series of events and consequences simplified and smoothed by hindsight. Instead, I preserve the human story—of individuals' actions, motivations, and flaws—and emphasize the tension between Western identity, as shaped by private property rights and rugged individualism, and our collective stewardship of public land.

I do this with the aid of Shakespeare's *Hamlet*, telling my students that classic stories can illuminate fundamental human experiences like love, conflict, and strife across different cultures, contexts, and time. Like Horatio, the scholar and observer in *Hamlet*, those of us who study public lands bear witness to these historical events and try to make meaning of them for our students, our peers, and ourselves. Viewing the corner-crossing case through the lens of *Hamlet* can give us several lessons that help with this meaning-making.

The first lesson is about the murkiness of truth in the face of uncertainty. Prince Hamlet learns from his father's ghost that King Hamlet was murdered by Claudius, who now reigns as king. Doubting his senses, Hamlet feigns madness to investigate, creating several layers of uncertainty about what is true. At the heart of the corner-crossing case, meanwhile, are differing points of view over what exactly constitutes trespass and tradeoffs involving the right to access public land in a state that is strong on private property rights.

Watercolor by Kelly Dunning

Like Horatio, scholars bear witness to historical events and interpret them for our students, our peers, and ourselves.

Watercolor by Kelly Dunning

Unlike Hamlet, the corner crossers took decisive action that may lead to new clarity about one of the murkiest areas of public land law.

The next lesson is in the importance of courage in the face of power. Throughout the play, Hamlet tries to work up the courage to confront King Claudius, risking his own life by taking on the most powerful man in Denmark. The corner crossers similarly took on a powerful figure in an extended court battle characterized by strikingly mismatched access to resources.

Finally, *Hamlet* teaches us about the steep costs of inaction. While Hamlet hesitates, going back and forth on the morality and potential consequences of taking action—eventually leading to the deaths of nearly everyone in the play—the corner crossers acted decisively. Their action precipitated a chain of events that has given us more clarity over one of the most important issues in public land access and conservation in recent memory.

The Wyoming corner-crossing case, revisited through the lens of Shakespeare's masterpiece, *Hamlet*, reveals profound insights into the human condition and our relationship with the American West's landscapes. Using this lens with students fosters empathy, helping them navigate the tensions inherent in the West and become better stewards of the land. By embracing the nuances of the corner crossers' saga, we can forge a unified path forward as stewards of the land, ensuring it remains a shared legacy for all.

***Kelly Dunning** is the Timberline Professor of Sustainable Tourism and Outdoor Recreation at the University of Wyoming.*

The Legacy of Public Land Grantmaking in Patterns

PERSPECTIVE FROM JOHN LESHY

Public land grants in a checkerboard pattern have a long history in the United States, and in some places their effects are still being felt and contested. From the nation's early days, Congress used grants of public lands to support building what were then called "internal improvements"—infrastructure like canals and railroads that were crucial for US expansion across the continent. Because the Constitution gave Congress complete power over public lands, these grants were an effective answer to the argument that Congress lacked authority over such improvements.

The checkerboard pattern, whereby the US retained ownership of half of the lands while granting the other half, was first employed in an 1827 grant to Indiana for canal construction. The theory was that the US could, when it sold the retained lands, capture some of the value the improvements added to lands in the vicinity. Although the theory made such grants attractive to fiscal conservatives in Congress, it often did not work in practice. The improvements didn't always add value to the land, and sometimes the federal government gave the retained lands away, sold them at a low price, or simply kept them.

Beginning in 1862, the checkerboard model was used in making massive grants to transcontinental railroads that eventually totaled more than 100 million acres. Congressional approval of such grants were often tainted by corruption during what became known as the Gilded Age, when wealth was concentrated in a few powerful corporations and individuals.

For example, in the arid, spacious West, wealthy investors often acquired private parcels from railroads and then, using recently-invented barbed wire, built fences around the perimeter of the checkerboard, thereby gaining effective control over large amounts of the interspersed public land. This provoked outrage from prospective settlers, and others, who were denied access to the public lands. This persuaded Congress to enact the Unlawful Inclosures Act in 1885, which prohibited enclosing public lands. Although the Supreme Court applied the act to strike down one such scheme in its 1897 *Camfield* decision, eliminating enclosures proved difficult and progress was slow.

More recently, a conservative, property-rights-oriented Supreme Court has taken a narrower view of the act. This has encouraged—in a time marked once again by vast differences between the very well-off and everyone else—a revival of private efforts to limit access to public lands. A prominent example involved a wealthy owner of checkerboard land in Wyoming, who sued hunters for nearly $8 million in trespass damages after they stepped from one parcel of public land to another by crossing the airspace of his land.

The congressional practice of granting school trust lands has also sometimes caused problems in the modern era. Beginning with the admission of Ohio in 1803, Congress gave newly-admitted states 640-acre sections of public land within every 36-section township and required that the state use any income derived from these lands to support public schools. Over time, many of these state school sections became inholdings scattered throughout public lands that came to be protected under such designations as national parks or monuments. These protections could be threatened by, and act as an obstacle to, state efforts to generate revenue for schools from their granted lands.

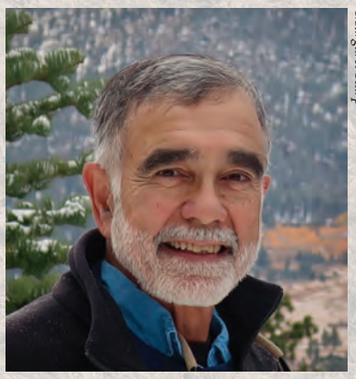
Conflicts involving both the checkerboard and state trust lands can and have been substantially diminished by reconfiguring ownership patterns through land exchanges and other means. For example, in the state of Utah over the last three decades, Congress has approved several negotiated, equal-value exchanges through which the US has acquired some 600,000 acres of scattered state inholdings in federal protected areas, and in return conveyed 300,000 acres to the state in configurations better suited to producing revenue.

Although considerable progress has been made in recent decades in reconfiguring ownership patterns to serve both development and conservation objectives, Congress recently took a little-noticed step in the opposite direction. The One Big Beautiful Bill Act that President Trump signed into law on July 4, 2025, contains unprecedented mandates to issue leases, on specified generous terms, to develop fossil fuels on tens of millions of acres of public lands. This is the first time the federal government has ever mandated the issuance of such leases on public lands, rather than just allowing or encouraging them.

While leases do not convey full title, they do convey legal rights to the public lands that can last for many decades. While any leases are in effect, they constitute private inholdings that can significantly complicate the management of large amounts of public land—including public land in the vicinity of the leased land that could be affected by any development of lease rights—much as the checkerboard does today, where it persists. In line with the idea that we are in a modern Gilded Age, these provisions were crafted in close association with the fossil fuel industry, which has made large political contributions to decision-makers, and were not made subject to extensive and rigorous debate in Congress before being enacted.

This rich history demonstrates how public land policy decisions can have long-lasting impacts. Especially in eras of concentrated wealth, even well-meaning land grants can fail to achieve their goals, have unintended side effects, and complicate efforts by land managers to conserve natural values on public lands for the benefit of future generations.

John Leshy *is professor emeritus at the University of California College of the Law San Francisco, former General Counsel of the US Department of the Interior, and author of a comprehensive history of public lands,* Our Common Ground.



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