





PERC's influence on national park policy spans decades. In the mid-1990s, our research helped spark the Recreation Fee Demonstration Program, the first legislative initiative to allow parks to retain visitor fee revenue and reinvest it onsite. The simple but profound shift—letting parks keep the money they earn from visitors—aligned incentives for better management, improved visitor services, and laid the foundation for a lasting federal policy that continues today.

In 2015, PERC testified before Congress on the growing crisis of deferred maintenance. As lawmakers continued to add new units to the national park system, budgets grew strained, and existing parks languished. Our message was clear: Conservation starts with taking care of what we already own. That message gained traction and helped redirect the national dialogue toward park stewardship, not just expansion.

Three years later, in 2018, our researchers were once again at the center of the conversation—this time championing the idea of a dedicated endowment-like fund to maintain national parks. Those ideas became the backbone of the Legacy Restoration Fund, established through the Great American Outdoors Act, to help pay for overdue maintenance needs on parks and other public lands.

That legacy of influence continues today. In this issue of PERC Reports, Brian Yablonski (p. 4) describes how another PERC idea—charging international visitors more to help maintain America's parks—is becoming reality. With a presidential executive order now in place, this common-sense reform could transform global admiration for our parks into tangible support to protect them.

Tate Watkins (p. 14) lays out a broader vision for reform. He shows how creativity, flexibility, and local leadership—not just more money—are key to solving our parks' most persistent challenges. His essay outlines five principles for modernizing park

Kat Dwyer (p. 26) zooms in on Yellowstone—the park that started it all but now faces unprecedented pressures. Her essay explores how targeted entrance fees and smarter funding models can help Yellowstone endure record visitation while adequately maintaining it for the next generation.

Jarrett Dieterle (p. 34) takes readers to an unexpected corner of the park system: historic battlefields. He reveals how private preservation efforts are not only saving pieces of American history, but also restoring ecosystems and supporting biodiversity in the process.

Finally, Birch Malotky (p. 42) reminds us that conserving wildlife inside park boundaries is only part of the challenge. Many species rely on seasonal migrations that carry them far beyond park borders. Her essay explores how creatively conserving surrounding landscapes—especially private lands—will be essential to the long-term success of park-based wildlife protection.

Together, these stories are rooted in the idea that stewardship is best achieved not through top-down mandates, but through local initiative, private ingenuity, and practical incentives. PERC has been part of that revolution from the beginning.

Now, as record crowds and environmental pressures put new strains on the park system, these ideas are more relevant than ever. The future of our national parks depends on them.



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The Property and Environment Research Center (PERC) is a nonprofit institute based in Bozeman, Montana, that creates innovative conservation solutions through markets

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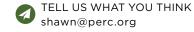
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What America Gave the World

PERC delivers a big idea for America's best idea

The news reached me Fourth of July Eve at our family mountain cabin in the Paradise Valley of Montana. President Donald Trump had just signed an executive order titled "Making America Beautiful Again by Improving Our National Parks." The order directed the secretary of the interior to increase entrance fees on international visitors coming to our national parks to help pay for their aging infrastructure—an idea long overdue and long advocated by PERC.

The setting to receive this big news could not have been more perfect, or appropriate. The cabin's back deck has a view into Yellowstone National Park, the world's first national park. And it provides a view of a historic campsite integral to the creation of the national parks.

In 1871, the famous Hayden Expedition into Yellowstone camped in a meadow just below our cabin before working its way to the travertine terraces that would come to be known as Mammoth Hot Springs. Led by the head of the U.S. Geological Survey, Ferdinand Hayden, the expedition included two unlikely travelers: an oil painter named Thomas Moran and a landscape photographer named William Henry Jackson.

Since travel to the remote regions of the West was difficult, it was Moran and Jackson's sketches and photographs of the wonderland that helped to solidify congressional support for establishing Yellowstone as a national park. In 1872, the year the park was established by Congress, Moran painted the spectacular Grand Canyon of the Yellowstone, a seven-foot-by-twelve-foot

scene of the Lower Falls of the Yellowstone River that today hangs in the Department of the Interior in Washington, D.C. Less grand is a historic photo taken by Jackson of the Hayden Expedition's Paradise Valley campsite, which now hangs on a wall in our cabin. It serves as a daily reminder to me of the park's origin story. And what a story it is.

The idea to add Moran to the expedition, along with an offer to cover his travel expenses, came from Jay Cooke, owner of the Northern Pacific Railway. Moreover, as Hayden was drafting the post-expedition report, he received a note from Cooke's lobbyist, A.B. Nettleton, suggesting that "Congress pass a bill reserving the Great Geyser Basin as a public park forever." Nettleton asked Hayden to include it in the report, which he did. For Cooke, these were shrewd business moves that would establish the Northern Pacific as the premier route for conveying the multitude of tourists eager to see the new national park. Without the quiet support and lobbying of the railroad, the park idea may never have blossomed.

And so began the national parks, along with the role of the railroads in helping to create additional iconic parks. It was a quintessential America First moment—because we were first. Sometimes a good idea is just a good idea, and this was arguably America's best idea—one enthusiastically embraced across the globe. Every national park around the world today, from Kruger in South Africa to Torres del Paine in Chile to Galapagos in Ecuador, and more than 6,000 other "protected areas," can trace their origins to Yellowstone.

Yet today America's national parks struggle under the weight of a staggering \$23 billion deferred maintenance backlog. Routine maintenance routinely becomes deferred maintenance. And park employee housing is in short supply and often unaffordable.

That's where our international visitors come in. Surprisingly, at America's national parks, which contain some of the most breathtaking places on earth, international guests pay the same entry fee as U.S. residents. In our most visited national parks, the gate fee is just \$35 per vehicle for seven days of access. That's a rare bargain, not just for Americans, but more so for foreign tourists who count entry fees as a miniscule portion of their overall travel costs. Meanwhile, in national parks in other countries like South Africa, Chile and Ecuador, international visitors pay five or six times what residents pay.

A smart-pricing, market-based rescue plan for our national parks would tap into this demand to help pay for the wear and tear created in part by international visitors. Conservation at its core is taking care of what you already own, and better management of our public lands should be at the top of our policymakers' list. That's why the president's executive order is so heartening.

PERC researchers estimate that with roughly 14 million international visitors to U.S. national parks annually, a \$100 surcharge could generate \$1.2 billion a year to address crumbling infrastructure, improve the visitor experience, and enhance conservation efforts nationwide. Relying more on user fees would also depoliticize park funding, which mostly comes from fickle congressional appropriations. Generating more revenue through visitor entrance fees—of which 80 percent stays in the park where it's collected, with the remaining 20 percent

Better management of our public lands should be at the top of our policymakers' list.







Sometimes a good idea is just a good idea, regardless of politics.

reinvested in sites that do not collect fees—would allow parks to become less dependent on the Beltway.

Which all brings me back to the painter Thomas Moran. In March, PERC's policy director Hannah Downey and I found ourselves seated in front of Moran's Grand Canyon of the Yellowstone. We were waiting to visit Interior Secretary Doug Burgum to discuss this idea. For us, a visit to the painting had become routine at the Interior Department, partly as inspiration and partly as a reminder of our home back in Montana and its significance as the cradle of conservation. Only this time, in my enthusiasm to identify some new feature in the painting, I got a little too close, sounding alarms and causing security to scurry. We heard an officer radioing, "Moran secure. Moran secure."

And so, our first meeting with the new secretary began with a confessional and an apology. From there we dove into an array of PERC recommendations, including the idea that we charge international visitors more to support our national parks. It was an idea that Secretary Burgum fully and enthusiastically embraced, culminating in the secretary

providing us with a supportive quote for a *Wall Street Journal* op-ed, the idea's inclusion in the president and secretary's budget recommendations, and the president signing the executive order.

Though there is still plenty of work to be done on implementation, and ensuring that the revenues go to help our parks in the best ways possible, this common-sense idea is now more real than ever before. Americans of all stripes and politics have asked us why this has taken so long to come to fruition. It's a hard question to answer. Sometimes the stars just have to align, and enlightenment turns into action. It's all part of PERC's quest to do epic things for conservation.

While America is owed nothing, it is more than appropriate for the world to help give back to what we epically gave to the world. Sometimes a good idea is just a good idea, regardless of politics. And this one is a big idea for America's best idea.



Brian Yablonski is the CEO of PERC. In "Frontiers," he describes how PERC seeks to advance creative conservation through incentives, innovation, and cooperation.



Argentina launches jaguar insurance. In a groundbreaking effort to protect one of Latin America's most endangered predators, Argentina has launched the world's first insurance program to safeguard jaguars—while compensating local livestock owners for losses. Developed by the United Nations Development Program, local government agencies, and conservation partners, the policy reimburses farmers for animals lost to predation—aiming to curb retaliatory killings and promote better livestock management. By rewarding stewardship over conflict, this pioneering model could help shape future wildlife conservation efforts across Latin America and beyond.



Woolly mice are here. Are mammoths next? They're small, fuzzy, and engineered with Ice Age DNA. Scientists at Colossal Biosciences have created "woolly mice" by inserting mammoth genes into lab mice, giving them long, golden coats and cold-resistant fat. It's a surreal, and oddly adorable, step toward resurrecting the extinct woolly mammoth. The company aims to birth mammoth-like elephant calves by 2028, arguing that these creatures could help revive Arctic ecosystems. Whether it's conservation's next frontier or science fiction creeping into reality, this bold experiment is hard to ignore.



Smelly jelly could help restore coral reefs. Scientists at the Scripps Institution of Oceanography have created a jelly-like gel, dubbed SNAP-X, that mimics the chemical "scent" of healthy reefs, drawing coral larvae to settle and grow in degraded habitats. In lab tests, surfaces treated with the gel attracted up to 20 times more coral recruits than untreated ones, offering a potential boost to reef restoration efforts. Still in early stages, the experimental gel could help restore reefs' genetic diversity at a time when half of the world's coral reefs have already been lost or

severely damaged.





Montana's new PERC-inspired prescribed fire law. With wildfires growing hotter, faster, and more destructive across the American West, Montana has officially signed into law a forward-looking solution: the Prescribed Fire Manager Certification and Liability Act. Championed by PERC and inspired by our "Burn Back Better" research report, the new law establishes a certification program to train and empower Montanans to use prescribed fire to restore forest health, reduce fuel buildup, and protect communities. As fire seasons intensify, the new law offers a proactive step toward restoring fire-prone landscapes.

You hiked it, now help it. A new app designed to connect hikers with local nonprofits maintaining the paths beneath their boots has launched in Colorado. By using location-based alerts, the Trailfunds platform highlights nearby stewardship efforts and offers users a simple way to donate, volunteer, or learn more, bridging a long-standing gap between trail users and trail crews. As public land agencies face mounting budget cuts, Trailfunds offers a timely, techpowered boost to help hikers keep our trails open and accessible.





Communal conservation leads the way in Africa. Across Africa, the future of wildlife increasingly depends not on national parks, but on land managed by local communities. A new analysis from Maliasili, a Vermont-based NGO, finds that in Kenya, nearly two-thirds of large mammals live on communal or private lands, and conservancies now span 16 percent of the country—more than its protected parks. In Namibia, community-run conservancies cover a fifth of the nation and have helped triple the elephant population by connecting wildlife corridors. Fueled by ecotourism and carbon credit revenue, these grassroots models are reducing poaching, reviving predators, and proving that the best hope for conservation lies with the people who live alongside the wildlife.



Summer Bummer?

Time to stop fighting and get smart about national parks

BY SHAWN REGAN AND TATE WATKINS

spate of headlines this spring warned of "crippled" national parks amid funding uncertainty and a federal hiring freeze. One urged potential visitors to "lower your expectations" this summer. One explained how a hiring freeze could affect your trip. Another suggested tips for "how to visit crowded (and underfunded) national parks this summer." *The New York Times* even published "An Acadia-to-Zion Guide to Visiting National Parks in an Uncertain Summer."

Much of the public debate about national parks revolves around two numbers: budget and staffing levels. Park advocacy groups call for more funding and more employees. Government reformers urge efficiency and leaner operations, including within the park service. But focusing on the blunt numbers of money and employees overlooks a deeper opportunity to rethink how our parks are managed.

At PERC, rather than arguing over whether the National Park Service should be bigger or smaller, we ask: What will make our national parks better? That question doesn't lend itself to one-size-fits-all answers. Yosemite's needs differ from those of Biscayne. And how to best manage crowds, conserve resources, and improve visitor experiences can vary even within a single park from season to season.

The better approach, which we have advocated for decades, is to empower those closest to the ground—park superintendents, local managers, and frontline staff—to make more of the decisions that matter. And provide them with predictable, user-generated funding streams, along with the flexibility to innovate, set smarter policies, and spend resources where they're needed most. Then hold them accountable for results.

This is not just a philosophical stance. It's a practical one, backed by years of PERC research into how incentives, authority, and accountability can improve stewardship of public lands.

Smarter Stewardship

The first step is to stop digging a maintenance hole. PERC has a history of highlighting the enormous deferred maintenance backlog across the park system—from crumbling roads to outdated water systems to deteriorating visitor facilities. While the Great American Outdoors Act in 2020 provided a temporary infusion of funding, we still need a long-term mindset focused on caring for what we already own.

That means avoiding new development when we can't take care of existing infrastructure. And it means using resources more wisely by focusing on real needs rather than expanding the footprint of problems we haven't solved.

National parks offer incredible value to visitors. And in many cases, the cost of admission hasn't kept pace with demand, leading to strained infrastructure and overcrowded parks. More flexible, market-aligned fees can improve visitor experiences by generating funding to maintain the very resources people come to see.

International visitors, in particular, are an untapped source of park support. As PERC has noted, targeted fees for foreign tourists—who currently do not pay a premium at U.S. parks, even as Americans are often charged more than locals when we visit national parks in other countries—could generate meaningful revenue to reinvest in America's parks while still offering a world-class deal. Thankfully, the Department of the Interior is now considering this idea.

Rather than arguing over whether the National Park Service should be bigger or smaller, we ask: What will make our national parks better?

Finally, parks need the authority to spend fee revenues flexibly. Current rules often tie managers' hands, forcing cookie-cutter decisions rather than tailored solutions. By untying those hands—and giving superintendents real tools to address real problems—we can empower local leaders to be better stewards.

Of course, flexibility must come with accountability. Local managers should be evaluated not on how well they follow top-down orders, but on how effectively they work on the ground—serving visitors, conserving the incredible resources within our parks, and delivering value.

Beyond the Headlines

Budget fights and hiring freezes make for splashy headlines, but they rarely capture the full story. The real challenge—and opportunity—of the day lies in how we care for national parks. That means moving beyond a binary debate over "more or less" and instead embracing a vision for better.

This spirit of thoughtful, meaningful improvement is what drives our work at PERC. We believe America's national parks deserve more than stopgap measures and political posturing; they deserve the kind of forward-thinking stewardship that matches their extraordinary value to our nation.

In the pages that follow, we'll continue to explore ideas, showcase successes, and challenge conventional wisdom—all in service of ensuring that these irreplaceable landscapes remain vibrant, accessible, and well-cared-for for generations to come. Because when it comes to our national parks, better isn't just possible—it's essential.







ROCK

DOME PLATEAU

ewpoint

VALLEY

sco from

45mi 72km

To Castle Valley fron

Double Arch

North Window

Parade of Elephants

To Castle Valley from junction of 191 and 128
16mi 26km

ore than a century after the creation of the National Park Service, Americans' love for our parks shows no sign of fading. Crowds continue to grow, summers bring record visitation, and parks regularly top bucket lists for travelers from around the world. These treasured landscapes are more popular—and more strained—than ever.

That strain is increasingly visible. Headlines about traffic jams, overflowing trash cans, and deferred maintenance have become as routine as the changing of the seasons. Across the system, roads crumble, water systems fail, and trails fall into disrepair. Meanwhile, staffing levels have declined, squeezed by budget pressures and federal hiring hurdles. Adjusted for inflation, operations funding for the National Park Service has stagnated for years, spanning multiple presidential administrations. All the while, Congress continues to create new parks, often without commensurate resources to manage and maintain them.

The result is a troubling contradiction: Even as public enthusiasm for parks surges, our ability to steward them has struggled to keep pace. Crowds themselves aren't the problem. After all, hundreds of millions of visitors flocking to national parks each year is a sign that people care deeply about these places. But the high visitation exposes the consequences of broken management models and outdated funding structures—a system that hasn't evolved to meet modern needs.

Despite these challenges, a path forward is emerging. Solutions demand more than simplistic calls for more money or fewer visitors. Instead, they require smarter management, more flexibility, and a willingness to innovate. Parks need tools, authority, and incentives to solve problems in creative, site-specific ways. And as many parks across the country are already showing, local leadership and thoughtful experimentation can make sure our parks remain unrivaled destinations for generations to come.

Strategies for Stewardship

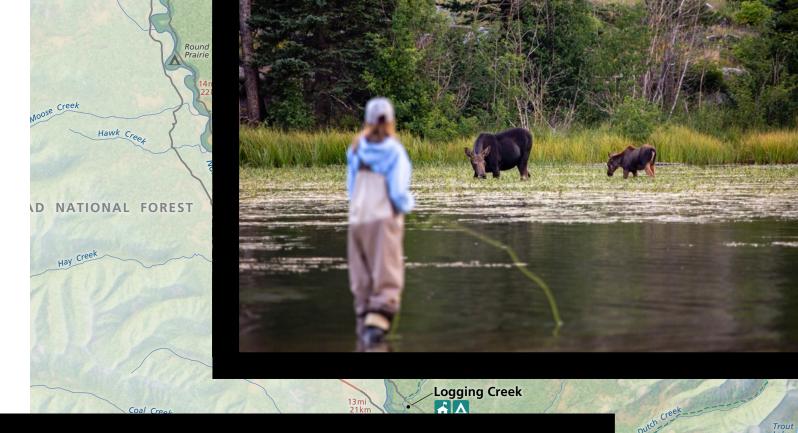
For decades, the default response to park challenges has been reactive: patch funding shortfalls with occasional boosts in appropriations, paper over growing maintenance needs with temporary programs, and defer strategy-making to Washington, D.C. Yet such approaches are rarely sufficient

Greater flexibility in how fees and other park-generated funds are spent would foster more responsive, targeted improvements.

for the on-the-ground realities of managing such a diverse set of public landscapes.

As PERC has laid out in research spanning several decades—from examining early fee structures in the 1990s, to studying ways to break the backlog at the 2016 centennial, to analyzing the Great American Outdoors Act more recentlythe park system is due for structural reforms that modernize management and reorient it toward long-term stewardship. Many of the challenges facing national parks today—whether in infrastructure, visitor management, or staffing-stem from outdated models of funding and operations and misplaced incentives. There's no one-size-fits-all fix for the challenges facing America's national parks. But several broad strategies offer ways to think about stewarding these landscapes into the future strategies grounded in flexibility, sound incentives, respect for local conditions, and clear accountability.

Here are five principles that can help guide national parks toward a more resilient, responsive future.



West Glacier Railroad Depot

PERC.ORG 17



Whitefish Lake

Stop Encouraging Deferred Maintenance

The maintenance backlog across national parks stands at \$23 billion, and that figure has continued to grow despite a generational investment from the Legacy Restoration Fund of the Great American Outdoors Act, enacted in 2020. That's partly because, under current policy, there's a perverse incentive for park managers to defer repairs until they become emergencies, given that's often when dedicated funding becomes available. This "break it to fix it" model discourages proactive stewardship.

Instead, we need a maintenance framework that rewards early action and stops fixating on "deferred" needs, which have never been defined in a systematic way. Funding maintenance should be a priority whether it's routine and preventative or overdue, and individual park managers should be empowered with more authority over—and accountability for—spending decisions. Similarly, new assets, let alone new parks, should not be added to the system if not accompanied by a sustainable plan to properly maintain them. And when special funding is available, as through the Legacy Restoration Fund, it should first and foremost be disbursed according to transparent metrics—

like the volume of use, risk to public safety, and the ability to support staff and infrastructure—rather than vague or political goals like geographic equity, as has happened in the past.

Set Smarter Fees

National parks remain a tremendous value, especially considering their popularity. Yet fee structures are blunt and outdated. The roughly one-quarter of national park sites that charge for entry have modest fees despite parks' enormous popularity and value. Fee structures do not keep up with inflation, and many aspects of park pricing have barely evolved in decades. The mismatch between demand and pricing contributes to overuse and underfunding.

Differential pricing, particularly for international visitors, offers one promising path to raise substantial revenue that can help steward our ailing parks. Tourists from abroad already spend heavily to visit U.S. parks and wouldn't be deterred by modest fee increases. A recent executive order from President Donald Trump directs the Department of the Interior to establish differential pricing for non-residents to generate

revenue to improve and enhance parks. Allowing parks to refine fee structures can better align pricing with value. Likewise, variable pricing based on season or days of the week could also help smooth visitation and optimize revenue. By aligning fees more closely with use and value, parks can manage impacts and improve their ability to maintain infrastructure, while making sure sites remain open and accessible to all.

\$ Spend Revenues Wisely

The federal recreation fee system has come a long way since the days when parks had to remit their revenues to the "black hole" of the U.S. Treasury rather than retain and spend those monies themselves. But too often, revenue generated at the park level is still constrained by agency rules that limit how it can be used. Superintendents and local staff are best positioned to know their park's unique needs—whether that's hiring seasonal employees, fixing a bridge, or staffing a new visitor service—but they're not always empowered to act.

Greater flexibility in how fees and other park-generated funds are spent would foster more responsive, targeted improvements. With that flexibility must come transparency and accountability. And empowering managers to make spending decisions can actually foster accountability, since it becomes clear who is responsible for prioritizing expenditures.

Embrace Public-Private Partnerships

The private sector can offer valuable tools for parks—especially in areas like technology, infrastructure, and visitor experience. Apps that track real-time congestion, platforms that reward off-peak visits, and public-private models for expanding housing options for employees are just a few examples.

Rather than resisting outside involvement, park managers should be encouraged to pilot new partnerships. Contracting

out services or collaborating with "friends groups" that support individual parks, other nonprofits, and specialized businesses can expand capacity and improve service. Importantly, these partnerships should preserve the public character of parks while enhancing the ability to meet visitor needs.

Innovate with Visitor Management

As visitation rises, simply expanding access is no longer viable. Parks must adopt smarter tools to manage when, where, and how people visit. That doesn't mean turning people away—it means making visits better.

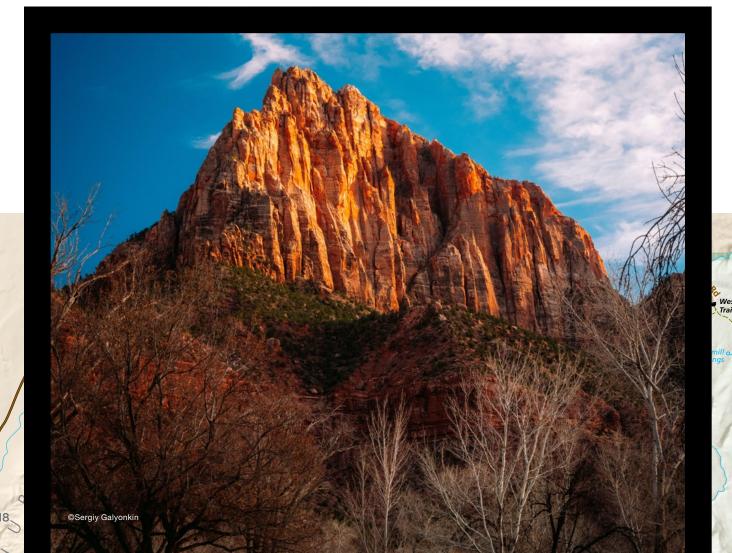
Timed-entry systems, reservation platforms, and shuttle services can all help reduce bottlenecks and distribute crowds more evenly. But innovation should be iterative: Not every solution works everywhere, and systems should be designed with flexibility in mind. Offering a mix of advanced reservations and walk-up availability, for instance, accommodates both planners and spontaneous travelers.

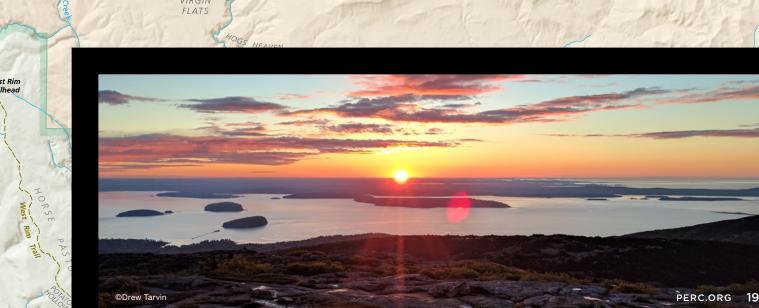
Highlights in Innovation

Park It Forward: Great Smoky Mountains National Park

Due to its unique history, Great Smoky Mountains National Park cannot charge an entrance fee. When the land was deeded to the federal government in the 1930s, a restriction in the agreement prohibited the park from collecting entry fees, a condition that still holds. As a result, the most-visited national park in the country has long struggled to raise operations revenue to help serve its now more than 12 million annual visitors.

In 2023, the park implemented a "Park It Forward" program to help bridge this funding gap. Under the initiative, visitors are required to purchase parking tags for their vehicles





if they plan to park anywhere within the national park boundaries for more than 15 minutes. The fees are modest—\$5 per day, \$15 per week, or \$40 annually—but the potential impact is significant. All proceeds stay within the park, and the first year of the program generated more than \$10 million that directly supported visitor safety, trail maintenance, facilities repairs, and staffing.

The program preserves the principle of free entry while ensuring that the people who use the park most—and impact its infrastructure and resources most—contribute to its upkeep. It's a model of how creative thinking, and a willingness to innovate within historical constraints, can generate new resources and improve long-term sustainability.

Rapid-Response Creativity: **Yellowstone Floods**

In 2022, historic late-spring flooding forced the closure of Yellowstone's northern entrances. Faced with a summer of potentially unmanageable congestion and strain on park resources, officials launched a novel if simple system: alternate vehicle access days based on license plate numbers. The system was straightforward, temporary, and imperfect—but it helped avoid wider-scale closures by distributing crowds more evenly and ensuring the park's suddenly limited capacity wasn't overwhelmed. The idea showcased how responsive leadership and on-the-fly thinking can help parks adapt under pressure.

Under the system, vehicles with even- or odd-numbered license plates were allowed entry on alternating days. The approach was simple to understand, quick to implement, and easy to enforce. While not flawless—it led to some visitor confusion and occasional complaints—it helped manage the pressures of visitation and buy valuable time for infrastructure repairs and planning.

The episode is a powerful reminder of what local autonomy and quick thinking can achieve. Rather than waiting for top-down directives, Yellowstone's managers took action and kept the park functioning during one of its more challenging seasons.

Sunrise Management: Acadia and Haleakala National Parks

At both Acadia and Haleakala National Parks, sunrise viewing has become a highlight for visitors—and a major management challenge. Five thousand miles and several hours apart, the summits of Cadillac Mountain in Maine above Bar Harbor and Haleakala in Maui both offer breathtaking sunrise

Rather than viewing record visitation as a threat, we should see it as an invitation to do better.

views, drawing large crowds that overwhelm parking lots and disturb fragile environments.

To manage the crush, both parks implemented advance reservation systems for sunrise access. In Acadia, visitors must reserve vehicle access to Cadillac Mountain during sunrise hours from late spring through early fall. Haleakala requires a sunrise reservation year-round to limit capacity, reducing congestion and protecting the sensitive alpine ecosystem.

The systems have worked well. Visitors appreciate the predictability, staff can better manage crowds, and local communities have seen reduced impacts from predawn traffic. Importantly, the programs maintain access while improving the experience—an example of how targeted, time-specific reservation tools can solve discrete problems without diminishing the appeal of parks.

1 Crowded Corridors: Glacier, Rocky Mountain, and Arches

Several high-traffic national parks have embraced timedentry and reservation systems to manage vehicle access to their most congested areas. In Glacier National Park, visitors must reserve entry to the engineering marvel that is Going-to-the-Sun Road during peak hours in summer—a policy aimed at easing pressure on a narrow, historic road that can quickly become jammed.

Similarly, Rocky Mountain National Park uses a timedentry system to manage access to Bear Lake Road and other popular areas, helping distribute visitation across the day and avoid overwhelming parking infrastructure. Arches National Park implemented a reservation system during peak season to prevent excessive queuing and lessen visitor frustration.

These corridor-specific strategies help preserve iconic routes and views while protecting fragile ecosystems nearby. Rather than shutting down access, the systems allow parks to shape visitation patterns—and ensure that when visitors do arrive, they have a higher-quality experience.

Apps, and Lotteries: Zion **National Park**

Zion has long been a leader in adapting to booming visitation. Its mandatory shuttle system, launched in 2000, eliminated private vehicle traffic from Zion Canyon and dramatically improved the visitor experience. The park has since layered on digital tools, including real-time crowd- and parkingtrackers via mobile apps, to help visitors avoid congestion and make more informed choices.

Zion has also pioneered permit management for highdemand trails. In 2022, it implemented a lottery system for the popular Angels Landing hike. The lottery ensures fair access while reducing trail crowding and improving safety on the exposed, often dangerous route. It also allows rangers to focus their attention where it's needed most, rather than managing visitor behavior through reactive enforcement.

Together, Zion's integrated approach—blending infrastructure, digital tools, and demand-based access—demonstrates how parks can take a holistic view of managing extreme popularity.

Unimpaired for the Future

Stewarding America's national parks for the next century will require more than nostalgia and reverence—it demands reform, innovation, and a willingness to confront hard truths. Parks are among our most beloved public institutions, and that popularity brings both promise and pressure.

Rather than viewing record visitation as a threat, we should see it as an invitation to do better. That means giving park leaders the authority and flexibility to tailor solutions to their specific challenges. It means refining funding models so they reward

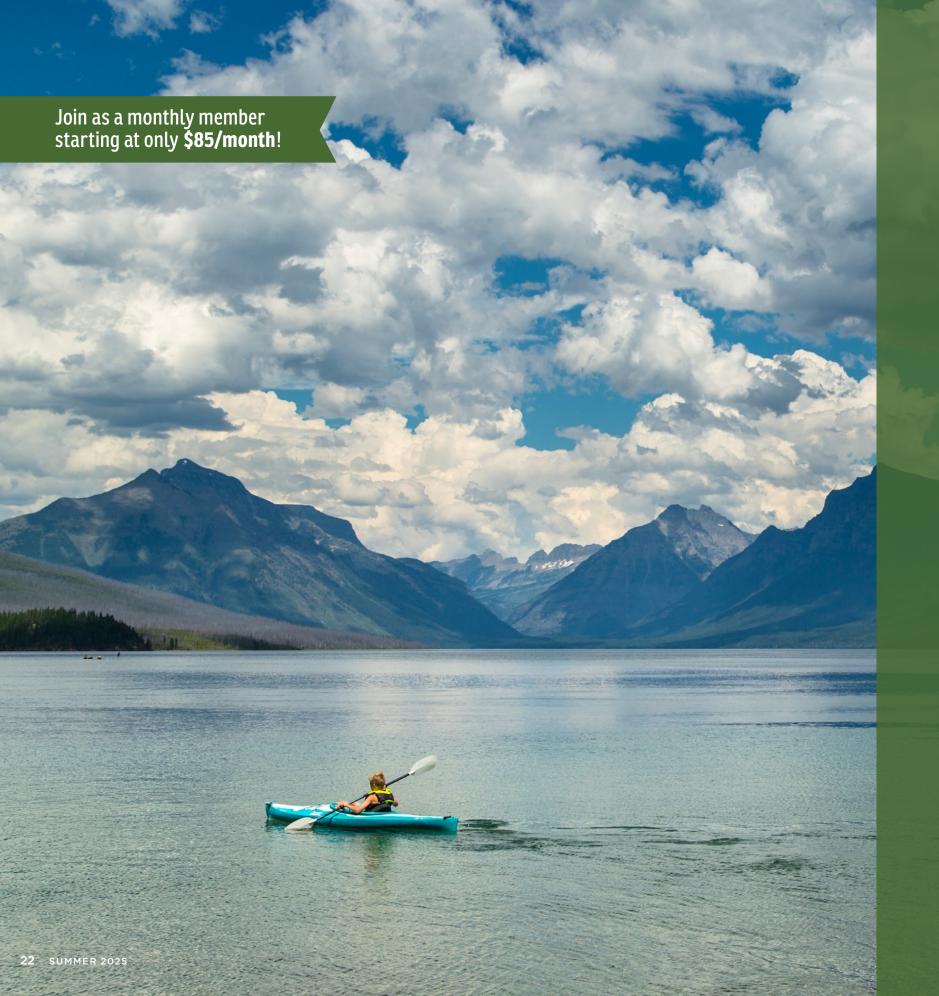
rather than neglect stewardship. And it means recognizing that the best answers often come not from Washington, but from the people closest to the ground.

The future of our parks won't be secured by doing more of the same. But by learning from what's already working—and by trusting the creativity of those tasked with protecting these places—we can keep them unimpaired for the enjoyment of future generations.



Tate Watkins is a research fellow at PERC and managing editor of PERC Reports.







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\$1,000 - \$4,999 \$5,000 - \$9,999 \$10,000 - \$24,999 \$25,000 - \$99,999

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Visitors glide through park entrances without stopping, thanks to pre-purchased digital passes automatically recognized by overhead scanners-no booths, no bottlenecks.



Interactive apps and displays show live crowd density on trails using GPS data from visitors' phones. Color-coded maps help hikers choose less crowded routes and optimize their experience.



3 AI POWERED TRASH BINS

Smart solar powered bins sort recyclables, compact trash, and alert bots to empty them when full.



4 AERIAL TRAMS

To disperse crowds, an airy modern gondola system helps transport visitors to remote areas of the park without the need for expanding costly roads, allowing visitors to gently soar over ecologically sensitive areas rather than pave through them.



5 RESCUE DRONES

Autonomous drones equipped with medical kits, blankets, and trail mix for stranded or injured hikers as they await rangers via GPS-enabled rapid response system.

6 AI POWERED WILDLIFE TRACKER PREDICTION

Bots analyze animal movement patterns, weather data, and visitor traffic to predict where wildlife-human interactions are most likely, allowing rangers to proactively manage these areas.



Z WILDLIFE ENCOUNTER ALERTS

A network of sensors and cameras allow rangers to be notified in real time when wildlife and visitors dangerously co-mingle.

8 WILDLIFE RESISTANT PICNIC PODS

Transparent, climate-controlled picnic domes where visitors can eat in peace while bears glare jealously from a safe distance.



Autonomous robots work 24/7 to plant native species, remove invasive plants, and maintain trails, guided by ecological algorithms.

10 STORYTELLER HOLOGRAMS

Historical figures, indigenous storytellers, or park founders appear around campfires to share tales and cultural knowledge.

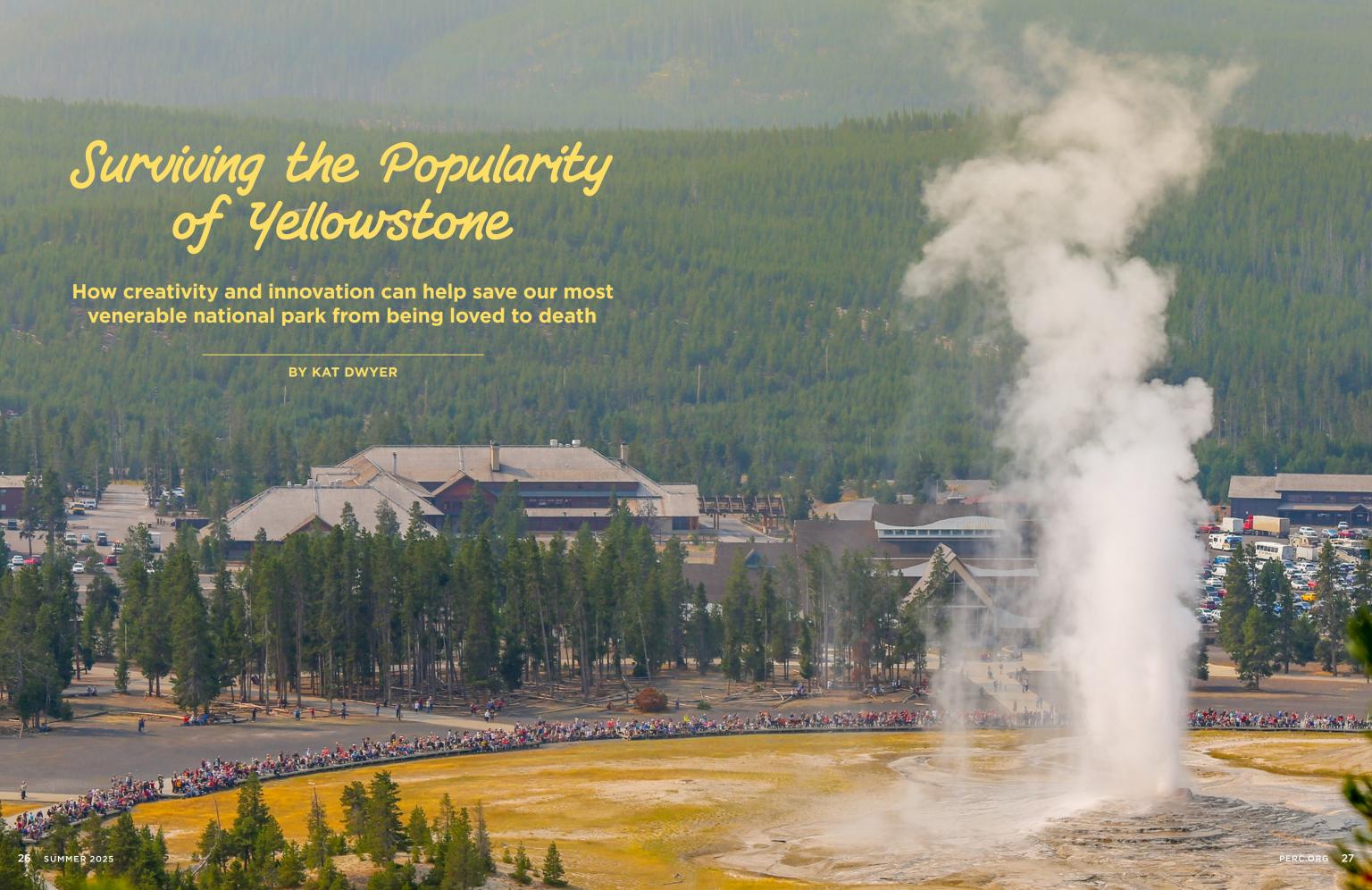


Visitors don AR glasses to experience how landscapes looked eons ago, complete with dinosaurs, mammoths, and pre-Columbian cultures overlaid on current terrain.



Genetically modified fungi create naturally glowing trail markers that activate at dusk, providing eco-friendly nighttime navigation without light pollution.

Illustration by Always with Honor PERC.ORG 25



n 1872, Congress did something radical. It set aside two million acres of geothermal wonderland and sweeping mountain vistas nestled in the heart of what today is known as the Greater Yellowstone Ecosystem. The monumental achievement established a new precedent for conserving America's natural heritage and laid the foundation for the National Park System. Yellowstone National Park became the crown jewel of the American conservation movement—a "pleasuring ground for the benefit and enjoyment of the people," according to the act that established it. More than 150 years later, Americans have taken that directive to heart.

In 2025, Yellowstone is as popular as ever. Visitation routinely exceeds 4 million people per year, and in 2021, it reached an all-time high with nearly 4.9 million visits. Despite a string of recent disruptions that might have kept tourists away—severe wildfire seasons, a once-in-500-years flood, and a global pandemic—Yellowstone continues to draw crowds from around the world. It's a testament to the park's enduring power to inspire.

But these record-breaking crowds bring more with them than enthusiasm and curiosity—their presence also comes with a cost. More cars on the roads and boots on the ground threaten the integrity of the park and its resources as soaring costs and a growing backlog of maintenance projects overburden the park's limited resources. Today, the park faces infrastructure challenges from crumbling roads and bridges to outdated visitor facilities and wastewater systems. And with more people flocking to the park each year, the challenges are only compounding.

If Yellowstone is to endure for another 150 years, it's time to confront this paradox head-on: How do we conserve a park enjoyed by millions without loving it to death?

"When you have roughly 30,000 visitations a month in the winter months, and in the range of a million a month in the summer months, you've got a lot to manage."

-Cam Sholly, Yellowstone National Park Superintendent



A Backlog of Challenges

A quick scroll through the popular Instagram account "Tourons of Yellowstone" adds some color to the issue of booming visitation: A tourist dips his finger into the superheated Grand Prismatic Spring; an overly confident visitor attempts a selfie with a family of grizzly bears; a mother and child venture dangerously close to a herd of bison.

But these somewhat comical displays of human error aren't the biggest issue with surging visitation. The simple maintenance and upkeep of park infrastructure and resources is the real challenge. And with an eye-popping \$1.5 billion price tag for overdue maintenance—more than any other national park in the country—this challenge threatens the long-term physical and fiscal health of the park.

Last year offers a snapshot of the impact of increased visitation on park infrastructure: Up to 80 medical calls per

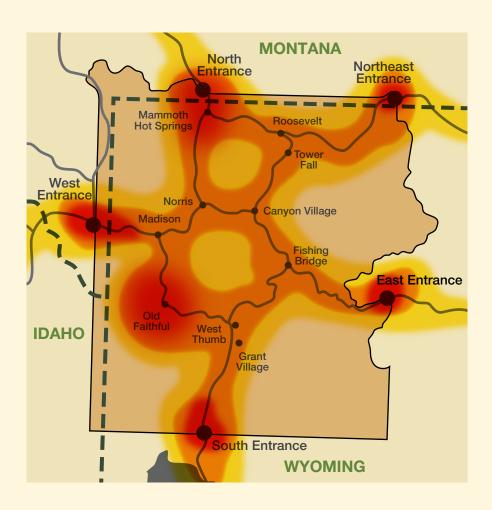
week in the summer; a million pounds of garbage to be disposed of per month; 270 million gallons of drinking water treated. As Superintendent Cam Sholly recently told WyoFile, "When you have roughly 30,000 visitations a month in the winter months, and in the range of a million a month in the summer months, you've got a lot to manage."

Most people who travel to Yellowstone don't stray more than a half mile from paved roads, which means the impact of visitation within the vast 2.2 million-acre park is highly concentrated. This concentration accelerates infrastructure deterioration, with foot traffic degrading boardwalks and trailheads, parking lots overflowing with vehicles, and aging septic and wastewater facilities struggling to keep up. A failure in just one of these systems not only inconveniences visitors; it risks polluting the environment that makes Yellowstone so unique.

Most of Yellowstone's nearly five million annual visitors don't stray more than a half mile from its paved roads, concentrating the impact of visitation within the vast 2.2 million-acre park.



Yellowstone Superintendent Cam Sholly



Yellowstone's wastewater treatment plant in Grant Village serves as a prime example. Built in the 1980s, this aging facility has struggled to keep up with seasonal demand and ongoing maintenance needs, posing a real risk to the surrounding environment. The facility's deteriorating condition could result in sewage being discharged into Yellowstone Lake, a critical headwater and habitat for native cutthroat trout. The risk of failure at this plant is well known, and the park service plans to replace it, but the example highlights the scale of the challenge Yellowstone faces with aging infrastructure.

The billion-dollar backlog of deferred maintenance projects at Yellowstone is stark, but it's only part of a much larger challenge nationwide. Across the National Park System, nearly \$23 billion in overdue maintenance projects has piled up. In 2020, Congress devoted \$6.5 billion to this problem through the Great American Outdoors Act. At Yellowstone, this funding is helping to improve utility systems across the park, replace the Yellowstone River Bridge, and rehabilitate iconic historical sites like Fort Yellowstone and Old Faithful Inn. Yet despite this investment, the maintenance backlog across national parks has continued to grow, as it has for decades. (For more, see p. 14.)

Other concerns persist. Headlines about budget cuts and staffing reductions have sparked fears that parks may be unprepared for the demands of the busy summer season. (For more, see p. 10.) In Yellowstone, however, much of the concern seems overwrought. To date, only seven out of the park's 30 probationary hires had been laid off—only to return weeks later after a federal injunction blocked their firing. An additional 13 full-time employees accepted voluntary resignation offers.

"Our total staffing numbers are within or above the staffing levels we've had in previous years," Superintendent Sholly said when asked ahead of the peak season, noting that the park had more than 750 staff this year. "It's going to be an outstanding summer," he added.

Ultimately, however, the underlying issue persists: Our parks need a more reliable funding stream to stay on top of the mounting costs of increased visitation. Infrastructure repairs may not grab headlines like a bison selfie gone wrong, but they're critical to the long-term health of places like Yellowstone.

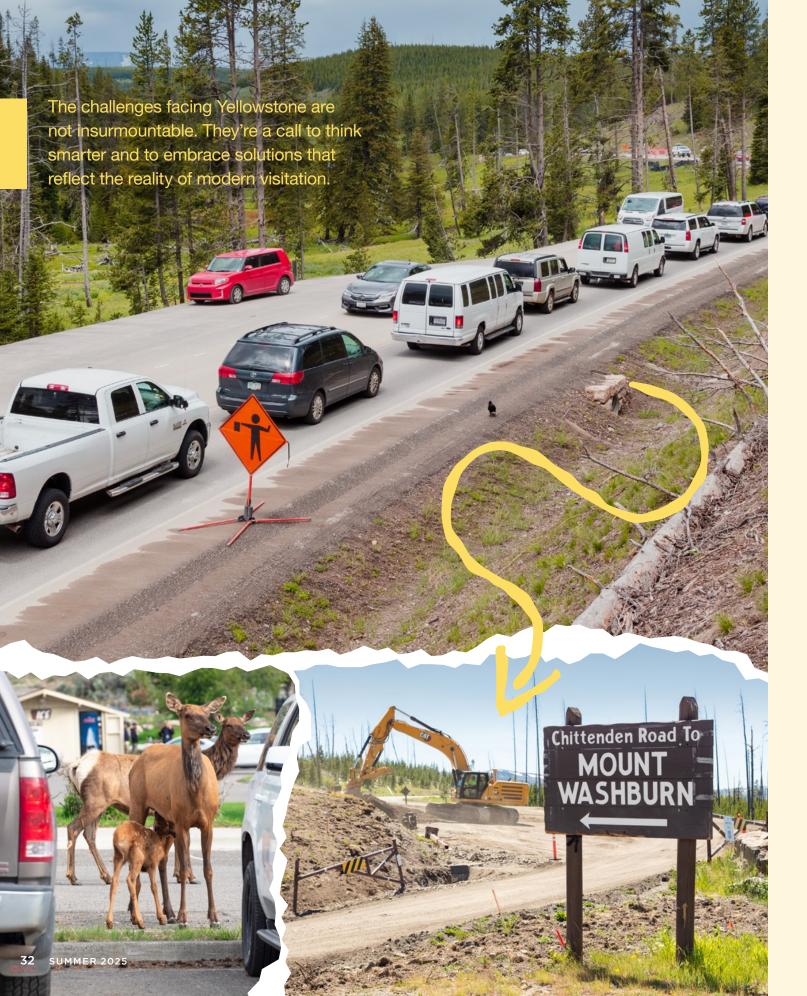
A Smarter Way to Fund the Fix

Meeting Yellowstone's long-term needs will require more than reactive repairs or one-time funding boosts. It demands a smarter, more sustainable way to pay for the park's upkeep.

One under-tapped source of potential revenue is international visitors. Roughly 15 percent of visitors to Yellowstone come from abroad, and many of these guests pay top dollar to travel thousands of miles for a once-in-a-lifetime trip. Charging these tourists a modest premium for entry could generate meaningful revenue without burdening domestic families or significantly discouraging international visitation.

Infrastructure repairs may not grab headlines like a bison selfie gone wrong, but they're critical to the long-term health of places like Yellowstone.







New PERC research by University of Wyoming economist Steve Newbold estimates how sensitive visitors are to changes in Yellowstone's entrance fees. Using travel cost data and visitor surveys, the analysis found that demand for Yellowstone is highly inelastic, meaning that fee increases wouldn't significantly deter visitation for domestic or international travelers. For example, raising prices by just \$5 per person would more than double revenue from entrance fees while reducing visitation by just 2.8 percent.

Unsurprisingly, those visiting from abroad are the least price-sensitive. When compared to the cost of air travel, rental cars, hotels, and dining out while traveling across the globe, paying an extra \$20—or even \$100—to enter an iconic national park is truly just a drop in the bucket of travel expenses. The new research estimates that a \$100 surcharge for international visitors would raise \$55.2 million in new revenue—more than quadrupling total gate-fee receipts—and result in only a 1.3 percent drop in visits. The additional revenue would more than cover the entire park's annual routine maintenance costs, estimated to be \$43 million. And because the vast majority of entry-fee revenue stays in the park where it's collected, the benefits would be felt on the ground.

Of course, entrance fees alone won't fill Yellowstone's \$1.5 billion deferred maintenance hole. But they can play a critical role in keeping routine repairs and upkeep on track, helping to make sure the hole doesn't get any deeper. By applying common-sense, market-based insights, we can harness the park's popularity and tap a revenue stream that generates millions to help steward this wondrous place.

A Legacy Worth Preserving

Yellowstone's legacy is rooted in innovation. Long ago, at its founding, it set the global standard for conservation, proving that wild places were worth protecting not just for their ecological value, but for the benefit and enjoyment of people. That founding ethos remains relevant today, but it must be matched with equally innovative stewardship.

The challenges facing Yellowstone are not insurmountable. They're a call to think smarter and to embrace solutions that reflect the reality of modern visitation. Market-based strategies like targeted entrance fee reforms and international visitor surcharges can help relieve pressure on the park's infrastructure and provide funding that scales with visitation—ensuring that Yellowstone remains resilient, not only for the next visitor, but for the next generation.

If Yellowstone is to remain the crown jewel of our national parks, we must treat it like the treasure it is. That means investing in its care with the same imagination and commitment that led to its creation more than 150 years ago. Because a park that has inspired the world deserves a future as grand as its past.



Kat Dwyer is PERC's marketing and

From Battlefields to Biodiversity



Private efforts to save our heritage are also saving our ecosystems

BY JARRETT DIETERLE

Virginia, has exactly one review on Google Maps—a solitary 5-star rating, referencing "another overlooked bit of history." Go there today, and it would be a surprise if you saw another human soul at this American Civil War site. Despite the area in and around Petersburg being home to the final, dramatic acts of the war, Fort Welch is mostly frequented these days by impassioned history nerds and diehard Civil War buffs.

The fort's namesake is as obscure as its location. Named after Colonel Norval E. Welch—the "coward" colonel who allegedly lost his nerve during the climactic moments of the Battle of Gettysburg, while commanding the 16th Michigan Infantry Regiment on Little Round Top—one could hardly be blamed for failing to grasp why a military installation would be christened after such a soldier. But Welch's story didn't end at Little Round Top. After a period back home in Ann Arbor, Michigan, to recuperate his nerves and his reputation—Welch was likely suffering from what we would now recognize and treat as PTSD—he returned to the front lines and led his men at the Battle of Peebles Farm near Petersburg on September 30, 1864.

Despite his enlistment having technically just expired, Col. Welch, in an attempt to inspire his troops—and likely restore his honor—launched himself over a Confederate redoubt during the battle, as he dramatically called out, "On boys, and over!" For his efforts, he received two bullets in his skull and instant martyrdom as a hero. And, of course, the eponymous fort that stands as a silent memorial to his sacrifice.

Preserve and Conserve

Were it not for private land conservation efforts, Col. Welch's Fort, and perhaps his story, would be permanently lost in the mists of time. The American Battlefield Trust (ABT) has to date acquired close to 60,000 acres of former American battlefield sites, including the grounds upon which Fort Welch rests. ABT and other like-minded historic preservation organizations have saved swaths of hallowed grounds, spanning battle sites from the Revolutionary War, Civil War, and War of 1812, and in geographical locations from Massachusetts to Florida to New Mexico. But just like Col. Welch's story didn't end at Little Round Top, the story of American battlefield conservation doesn't end with historic preservation.

Increasingly, the symbiotic relationship between historical battlefield preservation and environmental conservation is being recognized by groups on both sides of the equation. For years, the National Park Service at sites like Gettysburg—with its over 6,000 Google Maps reviews, as of this writing—has pioneered the restoration of battlefield terrain to its natural landscape at the time of the battle. At Gettysburg, this has not only included landscaping efforts to rehabilitate historic habitats—like the famous Peach Orchard—but also the removal of human-made structures like motels and golf courses (and even the original Gettysburg NPS visitor center, which was appallingly sited over a key point in the Union line).

But it is at battlefields farther off the beaten path—places like Fort Welch, which are only accessible by foot and are sparsely visited compared to the throngs that converge on Little Round Top each year—where the true impact of battlefield environmental conservation can be seen.

On the grounds around Fort Welch and the so-called Breakthrough point at Petersburg, ABT has preserved hundreds of acres on which it has removed postbellum buildings (such as a defunct hog farm) and eradicated a host of invasive species that

Increasingly, the symbiotic relationship between historical battlefield preservation and environmental conservation is being recognized by groups on both sides of the equation.

had taken root on the land. In turn, the trust replanted natural grasses and restored wetlands with vegetative tree buffers, all of which reclaimed natural habitat for the Bachman's sparrow and the spotted turtle, both species of concern in the region.

ABT has also preserved over 25,000 acres and a million linear feet of rivers and streams in the fragile Chesapeake Bay ecosystem. As one small example, the benefits of these efforts can be appreciated in the incidental protection of so-called "witness trees" in the bay's watershed. Witness trees—called such due to being old enough to have seen the fighting at the Civil War battle site they overlook—have been cited as key players in America's bald eagle recovery of the 1970s-90s, given that eagles show a marked preference for nesting in the branches of these towering trees. While many are finally dying of natural causes, they would have assuredly succumbed to the human axe decades prior had they not been protected.

Farther to the West, at Perryville Battlefield in Kentucky, a project that originated with a small planting of 20 acres of native grasses sparked a notable increase in wildlife diversity, with the resurgence of birds, butterflies, and other native plants. The success of the endeavor eventually unlocked a federal grant and an expansion of these native grass plantings, culminating in sightings of northern short-eared owls, which are listed as threatened or endangered in seven eastern U.S. states.

Nothing may attest to ABT's dedication to environmental stewardship more than the presence of an on-staff conservation biologist to head the trust's ecosystem restoration endeavors, or its quarterly "The Nature of History" newsletter, which highlights its conservation efforts. (Moreover, ABT uses an Aldo Leopold quote as one of its rallying creeds.)

Beyond habitat restoration, battlefield preservation efforts have played perhaps an even more critical role in saving countless historic sites from turning into shopping center parking lots particularly up and down the East Coast. In 2008, Walmart was planning to build a superstore on grounds that were part of the famed Battle of the Wilderness during Ulysses S. Grant's 1864 Overland Campaign. ABT (then known as the Civil War Trust) partnered with local battlefield preservation organizations, such as Friends of the Wilderness and Preservation Virginia, to persuade the company to relocate its megastore outside of battlefield grounds. Walmart then donated the original 50 acres of land to the Commonwealth of Virginia, in a decision that was cited as a win-win for all involved.

To be sure, battlefield preservation is not some pure Rothbardian free-market panacea for environmental conservation and cooperation. ABT has adroitly blended legal challenges alongside more cooperative conservation efforts-including in the aforementioned Walmart relocation—while groups like the National Parks Conservation Association have more exclusively relied upon direct advocacy to save battlefield sites, rather than purely cooperative initiatives.



Groups like ABT also harness government grants alongside their private donations, as evidenced by Virginia Gov. Glenn Youngkin's recent announcement of close to \$4 million in grants to historic preservation groups to protect battlefields across the state. Despite its deployment of government funds, ABT nonetheless relies to a great extent on private contributions and proudly declines to take government money for its operating expenses. Nor does it have a hefty endowment of funds sitting in bank vaults, given that, in its words, "there is no time" to waste in saving threatened battlefields.

Private Reinforcements

Perhaps the most welcome impact of private battlefield conservation organizations is their ability to act as a force amplifier to the chronically underfunded National Park Service. ABT claims that it has saved more than four times the amount of battlefield lands as the federal agency, and often this land is in close proximity to or attached to existing park units.

Near Fort Welch, for instance, National Park Service land connects with the ABT land upon which the fort rests. The ABT land, in turn, connects with battlefield land owned by Pamplin Historical Park and the National Museum of the Civil War Soldier, the largest privately owned civil war historical site in the country. (Pamplin Park acquired its land when a wealthy businessman and philanthropist, whose relatives owned the land during the Civil War, purchased it and established the park in the early 1990s.)

Forty-some miles to the north, at Gaines Mill Battlefield, in Hanover County, Virginia, the National Park Service owns 60 acres of battlefield ground, while ABT has saved 363 acres at the site. The two tracts are conjoined, so a would-be hiker could park in the park service's lot, walk the national park trails, and then "extend" his or her hike into the larger tract of ABT land.

Sadly, battlefield conservation losses have been nearly as frequent as the wins, underscoring the immense development pressure in states like Virginia. The famed "unfinished railroad cut" that Gen. James Longstreet used to devastating effect against the Union Army in the Battle of the Wilderness sits in the middle of a subdivision—and as of your correspondent's 2022 visit to the area, the remaining vestiges of the railroad cut seem to lie in the path of an expanded phase of development. The land underlying the Battle of Haw's Shop was recently lost to a planned 24-unit

development featuring homes selling north of \$600,000. The looming data center rollouts along the East Coast may pose the next great threat to battlefield land.

These setbacks underscore the need for continued fresh thinking where battlefield preservation dovetails with environmental conservation. Given the already close-knit relationship between the National Park Service and organizations like ABT, concepts like the franchise model deserve greater consideration. As laid out by PERC researchers, a national park franchise setup entails a private entity maintaining ownership of the park land but managing it in accordance with agency rules and guidance.

Battlefield sites could provide some of the most promising opportunities for a franchise model, given that historic preservation organizations would potentially be ideally suited candidates to step into a franchisee role. To provide funds for park maintenance, franchisees could employ a system of modest user fees, which visitors to the park could pay upon entrance. (Such a "toll" would be unlikely to deter your average Civil War enthusiast, many of whom make a hobby out of touring every battle site they can find.)

While such a model does not currently exist at a Civil War battlefield park—and according to PERC, there are only eight such national park units in the country that are jointly managed by the park service and private partners—there are at least some noteworthy examples of private-public partnering between the National Park Service and battlefield nonprofits. Arrangements like Cedar Creek Battlefield Foundation's operation of the battlefield museum and visitor center at Cedar Creek and Belle Grove Park in the Shenandoah Valley show how private partners can augment existing agency services. This type of setup could be readily expanded to a full-on franchising model, if not at Cedar Creek, then at similar battlefields around the country.

Devastation to Redemption

In recent years, historical scholarship has begun to highlight the immense and devastating environmental consequences of the American Civil War. The Union and Confederate Armies consumed an estimated 400,000 acres of forests annually just to provide themselves with firewood, and the war and its aftermath have been blamed for everything from ushering in an era of river poisoning to the extinction of the passenger pigeon.



Now, over 150 years later, this bill of environmental indictment is being counteracted by battlefield preservation organizations seeking to save America's treasured historical landmarks and conserve its environmental ecosystems. As historian Ted Widmer—after an extensive recounting of the Civil War's environmental destruction—put it: "Paradoxically, there are few places in the United States today where it is easier to savor nature than a Civil War battlefield."

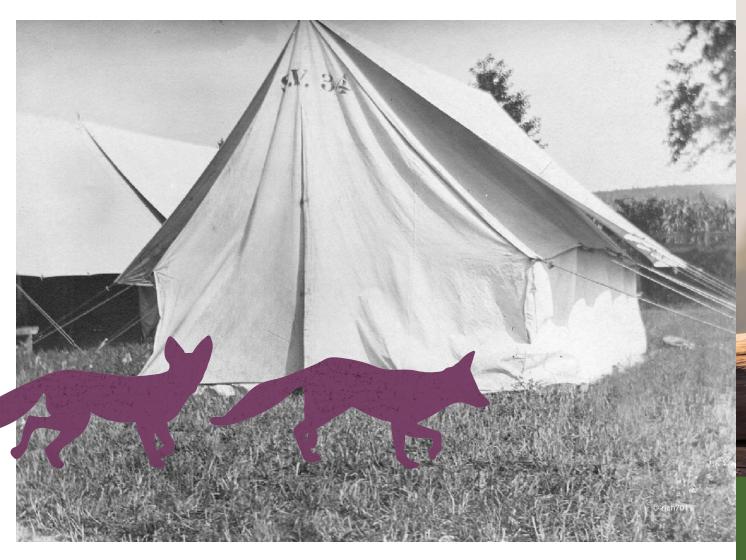
"Paradoxically, there are few places in the United States today where it is easier to savor nature than a Civil War battlefield."

-Ted Widmer

Due to "generations of activism," Widmer lauds an "extensive network of fields and cemeteries" that have been protected, which he says create "beautiful oases of tranquility" that have become "precisely the opposite" of what they once were during the war. In other words, the story didn't end with the battle-desecrated landscape Americans found themselves living in at the war's conclusion. Nor has it ended in the face of modern development threats, like those in central Virginia. Rather, like Col. Welch and his fort, the story is still being written, and it can still be redeemed.



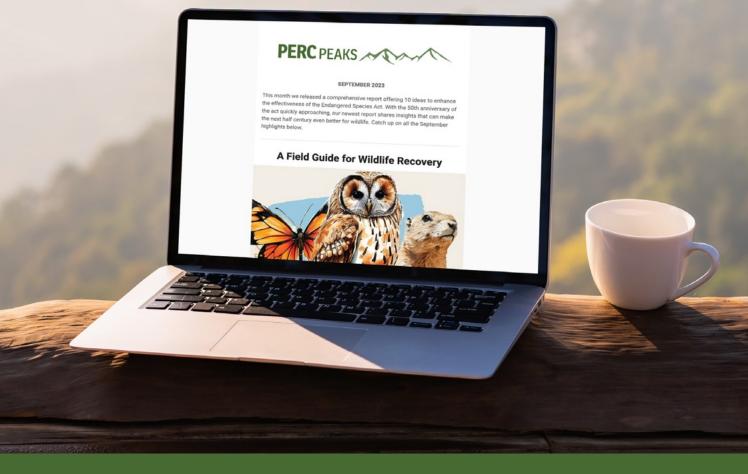
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America's most iconic wildlife need more than our national parks can provide

BY BIRCH MALOTKY

n May, the harlequin ducks arrive at LeHardy Rapids in Yellowstone National Park. Sleek, steely-blue birds with slashes and patches of white and a chestnut crown and flank, the males follow their mates to the clear mountain streams where they were born, then breed and depart by the end of the month to molt along the northern shores of Vancouver Island. In the few weeks between when the park's roads open and the females disappear to nest along the streambank, avid birdwatchers and curious visitors have a slim window of opportunity to spot the continent's only duck species specialized for fast-moving water leaping in and out of the churning river.

By June, more visitors arrive to search for grizzly and black bears in roadside meadows, wolf pups newly emerged from dens in the Lamar Valley, spawning cutthroat trout, and herds of bison, elk, and pronghorn sheltering knobby-kneed calves. More than half of Yellowstone's 4.7 million annual visitors (as of 2024) will arrive in the summer months, traversing the high country for cool critter sightings when it is green and lush, and before many of the park's most iconic wildlife seek shelter from the upcoming winter tens, hundreds, or even thousands of miles away.

For these animals in Yellowstone—and the Florida panthers and roseate spoonbills of the Everglades, the humpback whales of Glacier Bay, the grizzlies in Glacier, Rocky Mountain's elk, the raptors soaring over Acadia each fall, and many of Big Bend's nearly 450 observed bird species—America's national parks provide critical habitat for part of their lifecycle or a segment of their population, but only comprise a portion of the land and resources that these species need to survive and thrive in the long term. As scientific understanding, the threat of development, and public interest all grow, land managers,

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Everglades was the first national park established to protect an ecosystem, rather than a specific scenic or geologic feature.

conservationists, and park enthusiasts alike are figuring out how to support wildlife beyond the borders of national parks, and how to motivate this urgent work.

The Legacy of Monumentalism

There's no question that wildlife conservation is fundamental to the National Park Service's mission today, and that the habitat and protection parks provide is critical to many charismatic and lesser-known species. Yellowstone was the cornerstone of wolf reintroduction and bison restoration after federally sanctioned mass extermination drove both to near extinction. Shenandoah National Park's cool, moist mountaintops shelter the sole population of the endangered Shenandoah salamander in the

world. Five species of tiny pupfish persist only in the hot, salty, and isolated waters of Death Valley National Park.

"Parks definitely aren't enough, even though they are incredibly important," says Arthur Middleton, one of the nation's foremost experts on ungulate migration and a longtime champion of large landscape conservation. Middleton, an associate professor of wildlife management and policy at the University of California, Berkeley, and director of the Beyond Yellowstone Program, offers several reasons that parks cannot on their own be expected to support thriving wildlife populations: "One, they aren't always in the right places." For example, no parks protect biodiversity hotspots like the Southeast's longleaf pine forests or New Mexico's sky islands. "Two," he continues, "even the biggest ones are not

big enough to sustain some of the most valued wildlife." The Arctic National Wildlife Refuge is 20 million acres, and still the porcupine caribou travel well beyond its boundaries on their annual migration. "Three, there aren't enough of them and there aren't going to be enough of them because we're never going to make a lot more big parks."

The reason for this mismatch between what wildlife need and what parks provide is that most parks simply weren't designed to protect animal populations. Instead, as historian Alfred Runte writes in National Parks: The American Experience, nationalism tempered by economic interests drove the protection and promotion of the West's most scenic and striking landscapes. Early parks like Yosemite and Yellowstone were established on the back of a young nation trying to prove its worth by measuring the size of its waterfalls against those in the Alps, elevating the antiquity of the redwoods over that of the pyramids, and calling a geyser's crater a little Coliseum. Proponents of these parks and others only found Congress amenable because the lands were largely considered worthless for settlement, timber harvest, or mineral extraction.

Everglades was the first national park established to protect an ecosystem—in 1947—rather than a scenic or geologic feature, but only the portion of that "river of grass" with the least potential for development was included. Even the sprawling Alaskan parks, which Runte describes as preservationists' last chance "to design national parks around entire watersheds, animal migration routes, and similar ecological rather than political boundaries," cannot entirely be called a success. "In park after park," Runte writes, "critical wildlife habitat had either been fragmented to accommodate resource extraction or excluded entirely."

"There's always been experts in or around parks who have noticed this shortcoming," says Middleton. "There were and are Indigenous societies that have been there since before the parks who are quick to say, 'Why would anybody have ever expected only this square on the landscape to account for all the important life and relationships that are meaningful about this place?" Even General Phillip Sheridan, Yellowstone's first manager, noted that elk and other animals would leave the park in the winter and recommended that Congress expand its borders. But it has taken decades, the growing field of ecology, and most recently, the evolution of GPS tracking and the power to process those data, to more fully and precisely understand the importance of landscape connectivity for nearly all wildlife.

Toward Connection

Most obviously, landscape connectivity that spans human-drawn boundaries supports the numerous species that dwell in parks for some of the year but rely on different kinds of habitat or food sources elsewhere during other seasons. In the Greater Yellowstone Ecosystem (GYE)—the interconnected matrix of federal, state, Tribal, and private land around Yellowstone

"For many landowners, particularly multigenerational producers, they're living at the margin, so any additional costs from wildlife really matter."

-Hilary Byerly Flint

and Grand Teton National Parks—ungulates like pronghorn, mule deer, and elk take advantage of rich pastures within the high-elevation parks during summer and then migrate out of the parks during winter to escape snow and seek higher-quality forage.

They leave in height order, with pronghorn, the shortest and least able to navigate deep snow, departing first, then elk, and eventually the long-legged moose. Some elk make it no farther than private hayfields near Yellowstone or the National Elk Refuge just outside Jackson, whereas the 200-mile "Path of the Pronghorn" from Grand Teton to the Green River Basin is the longest land migration in the contiguous United States. Migratory birds also call parks home for parts of the year, either wintering in the GYE like thousands of trumpeter swans that migrate from Canada, or nesting in the parks like harlequin ducks, bald eagles, mountain bluebirds, yellow warblers, and nearly 100 others.

In a study of 30 radio-collared wolverines in the Greater Yellowstone Ecosystem, researchers found that 80 percent of the individuals' home ranges extended over three or more major management units, like a national park, national forest, or Bureau of Land Management district. Even more striking is that, unlike many animals who may only use the full extent of their range over the course of an entire year, these wolverines were patrolling nearly their whole range in just a month.

But the field of ecology has shown that landscape connectivity is important for more than just an individual animal's lifecycle. It's also essential for maintaining genetic flow between population segments, which helps prevent inbreeding and keeps populations healthier and more resilient to changing conditions. For example, in the decades since a handful of wolves crossed an ice bridge in the 1940s and colonized Isle Royale National Park, the bridge formed less frequently, and gene flow with the mainland was restricted. Faced with a heavily inbred, remnant population of a single male and his one female offspring, managers in 2018 decided to bring 19 Great Lakes Region wolves to the island park. Today, Isle Royale supports 30 wolves in several packs that are successfully reproducing.

Connectivity among populations also makes species less vulnerable to local or global extinction. Consider the Devils Hole pupfish; if a natural disaster or human development wiped out the one pool in the world where it lives—encompassed by a detached unit of Death Valley National Park—the species would be gone forever. In contrast, if there were another pool

with a different population connected to it, they could potentially recolonize. Ecologists refer to the minimum viable population as the number of animals needed to weather the potential impacts of environmental, demographic, and genetic changes over time. A 1985 paper in Biological Conservation found that none of the eight largest western national parks were big enough on their own to support the minimum population necessary for the long-term survival of their largest wildlife species.

The implications of these seemingly abstract concepts are real, and at times passionately litigated in the courts and the media. When the U.S. Fish and Wildlife Service delisted GYE grizzly bears in 2017, environmental groups sued, and won, arguing that even though the population had exceeded the stated recovery goal of 500 bears, its genetic isolation from more northern grizzly populations posed a long-term threat that hadn't been accounted for. Many in the Greater Yellowstone Region accused the Fish and Wildlife Service of moving the goalposts. Last year, Wyoming and Montana relocated two grizzlies from the Northern Continental Divide Ecosystem to the GYE and renewed calls for delisting, saying that in lieu of natural connectivity between the populations, the states had a demonstrated plan to address concerns over a lack of genetic diversity.

But what about those who want to see grizzlies dispersing into the GYE on their own, or stem the tide of migratory bird decline, or make sure their kids and grandkids can watch bull elk bugling their hearts out against a stunning backdrop of snow-capped Tetons, just like when they were little? "It's going to take other state and federal lands," says Middleton, "and private and Tribal lands, all being stewarded well. And there can be something kind of beautiful about that … because it means

there is an opportunity for everybody to be part of taking care of a park and helping it fulfill its mission."

But it needs to happen fast. "There's just not enough time to screw around," says Middleton. "There aren't decades for us to argue and figure out and try to get it just right. We need to act in the next few years, five years, 10 years, to protect some of the best habitat around the parks that's still not developed."

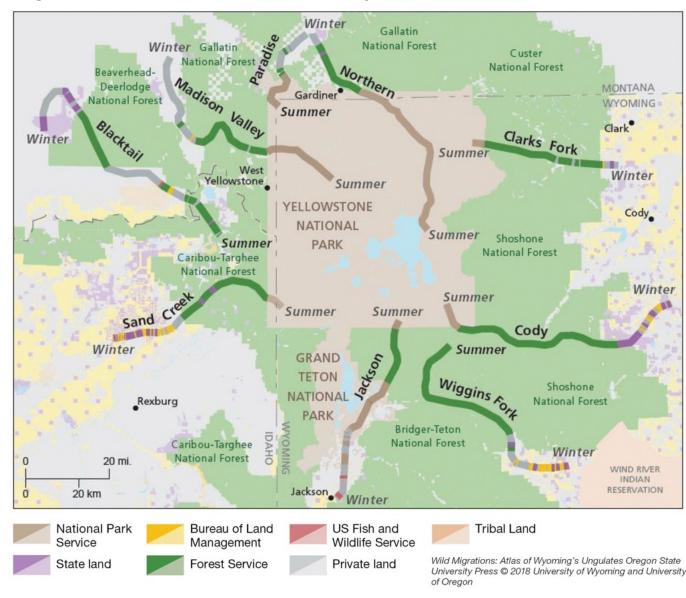
The Promise of Private Lands

Subdivisions are one of the worst things that can happen to wildlife habitat, but subdivisions are coming, and it's partially the fault of our extraordinary parks—because national parks attract development. Temple Stoellinger, a PERC senior fellow and a wildlife law and policy expert from the University of Wyoming's Haub School of Environment and Natural Resources and College of Law, notes some of the catalysts for recent development near parks. She points to popular TV shows like "Yellowstone" and the ability to work remotely as partial drivers of post-pandemic booms in places like Cody, Wyoming, and Bozeman, Montana. These development booms, she says, are "chunking up winter habitat" for elk, deer, and others. "If you think about the fences being built around each of these 30-acre ranchettes, plus the barking dog, plus the roads to get there, each one is shrinking habitat for wildlife in a critical time of year when they're already stressed."

Where such private lands are still intact—say, in the form of a multi-generational ranch—they can provide better habitat for wide-ranging wildlife than public lands. That's no accident; early settlers, today's ranchers, and elk in the winter all want the same thing: land along rivers and streams that is more fertile and warmer than the land around it.



Migration Corridors and Land Ownership



Most of these landowners are "really proud to provide habitat for wildlife and enjoy seeing these animals on their land," says Hilary Byerly Flint, a senior research scientist at the University of Wyoming Haub School of Environment and Natural Resources who led a survey of more than 1,000 landowners who live in mule deer, elk, and pronghorn habitat. "But the large majority of them have also experienced some kind of conflict from having these animals on their property, so it's costly for them."

This conflict comes in a variety of forms. Carnivores eat or kill livestock and threaten human safety. Big game compete for forage, damage fences, and can spread diseases to cattle. "For many landowners, particularly multi-generational producers, they're living at the margin, so any additional costs from wildlife really matter," says Byerly Flint. "But also, any additional revenue in support of covering those costs can perhaps make a difference." So, when it comes to conserving the lands around national parks, voluntary, compensated approaches can not only support landowners' stewardship of wildlife habitat but also keep them financially viable, warding off the ranchettes.

A Growing Toolbox

For federal agencies, state governments, and nonprofits, purchasing conservation easements—deeded restrictions on future development—on agricultural lands is a tried and true strategy



landowners to improve wildlife habitat or be more tolerant of wildlife on their land."

—Temple Stoellinger

for preserving open space while also supporting the livelihoods of working families and compensating them for the critical wildlife habitat they provide. Easements can be especially useful in areas like the GYE where protecting habitat through land acquisition is difficult because of high land values and, in some cases, resistance to increased federal ownership. And recent programs like the U.S. Department of Agriculture's Migratory Big Game Initiative have helped target the impact of conservation easements further by prioritizing areas within critical big game habitat.

"For a long time," Stoellinger says, "it felt like conservation easements were the only tool, and that's just not appealing to everybody." Permanently giving up development rights, and lowering the value of your land, is a major decision that can reverberate through generations. "Now we're seeing a more holistic toolbox of how to work with private landowners to improve wildlife habitat or be more tolerant of wildlife on their land," she says.

In terms of habitat protection, term conservation easements (as opposed to perpetual ones) lower the commitment for landowners to something like 30 years rather than forever. "If even that is too restrictive, shorter-term habitat leases are another option," says Stoellinger. The Migratory Big Game Initiative used the existing USDA Conservation Reserve Program as a kind of habitat lease, whereby landowners were paid to not develop or farm their land for 15 years.

Moreover, a growing number of private efforts and public programs offer funds to support habitat improvement on private lands. Examples include removing encroaching shrubs from sagebrush, investing in wildfire recovery, managing invasive species, and restoring wetlands and streams. Fence removal or replacement, with wildlife-friendly fencing or even with new, virtual fencing technologies, is another critical component of supporting animal movement in and out of national parks. Wildlife crossings and fish passages also help reduce habitat fragmentation by overcoming barriers to migration.

Finally, conflict reduction can help support private landowners living and working with wildlife outside of national parks at a variety of scales. This may take the form of range riding, livestock carcass removal, improved food storage, compensation for losses, and disease management, either state-run or via emerging models like the East Yellowstone Brucellosis Compensation Fund administered by PERC.

One of the biggest barriers in the GYE, however, is the same one that Stoellinger identified in a survey she led of nearly 50 state and local policies from around the country meant to support landscape connectivity: funding.

Chipping In

The good news is that, despite federal cuts to staffing and funding freezes that have left the delivery of many wildlife conservation and conflict reduction programs in the lurch, "there's a lot of evidence that people care about nature, and wildlife, and open space," says Middleton. "They're showing us with their feet, they're showing us with their willingness to travel and pay. So there's got to be ways to convert that into new resources and opportunities for protection and stewardship."

The National Park Service reported more than 331 million visitors to its 400-plus units in 2024. Grand Teton and Yellowstone combined counted more than 8 million visits. A variety of researchers, think tanks, and both the Montana and Wyoming legislatures have suggested that park visitors could be a valuable source of support for conserving the very wildlife that they are so often traveling to see. In India, for example, visitor

fees for tiger reserves help fund conflict mitigation outside of the parks, among other things. No parallel currently exists in the United States.

Byerly Flint, in an intercept survey of nearly 1,000 people in and around Grand Teton and Yellowstone National Parks published in May, investigated this very idea. 77 percent of respondents reported that viewing wildlife was one of the primary reasons for their trip. The researchers also found that 93 percent of people supported establishing a wildlife conservation fund to collect voluntary donations, 75 percent supported a wildlife conservation tax or fee on goods or services, and 66 percent supported a mandatory wildlife conservation fee.

"Visitors may not always make the connections between the wildlife that they are seeing within the parks and the threatened and fragmented landscape outside the park on which those wildlife depend," says Byerly Flint, "but it's clear they recognize a need because they're willing to pay to support conservation."

What's particularly interesting about this study is that Byerly Flint's team also asked visitors if they were less likely to visit national parks if there were fewer wildlife. Most said yes. "I think it's no surprise to anyone that wildlife is important to park visitors," she says. "But to see half of respondents say that they would visit the parks less often if there were fewer wildlife to see, it demonstrates just how critical these abundant and thriving wildlife populations are to park visitation and visitor experience." Through some widely used economic analyses, the team concluded that not only are people willing to pay to support conservation outside of

the parks, but also that loss of wide-ranging wildlife could lead to greater declines in visitation than a fee increase would.

A previous study, led by Middleton, indicated that a moderate fee of less than \$10 per entrance, or a sales tax increase of one to two percent in and around Grand Teton and Yellowstone, could generate \$10-\$20 million annually. That would be enough to provide matching funds for several conservation easements or highway crossings, various human-wildlife conflict mitigation efforts, and the entire annual cost of state compensation for livestock loss to predators in the GYE.

There are, of course, questions and concerns about how any kind of fee or fund would be implemented and how the proceeds would be managed and spent. In particular, there is interest and further research into how fees could be structured such that they don't disproportionately impact low-income visitors by increasing real or perceived barriers to visitation.

As for all the other ideas and strategies out there for protecting wildlife in and outside of parks, fostering stewardship of the land they rely on, building landscape connectivity, and funding it all, Middleton says, "We need more, not less. We need everybody doing all the things. We need all of it."



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