



150 Years Old, and Better than Ever

SINCE ITS FOUNDING IN 1872, YELLOWSTONE HAS BEEN A LANDSCAPE OF CHANGE

By David Frey

Credit: Douglas Smith/National Park Service

Most days, Doug Smith figures his job has the same mix of frustration and satisfaction as anybody else's. But then there are other days. Days where he sets out on horseback across the wilds of Yellowstone into places tourists rarely tread. Days when clear blue mountain skies melt behind distant peaks in sagebrush-scented air. Days on the trail when a pack of gray wolves—the species Smith was hired to help reintroduce to the park—moves across the meadow, splits their formation and pauses to size him up. One gazes at him, seems to look through him, then the pack lets out a howl.

"That is worth everything in life," said Smith, senior wildlife biologist at Yellowstone National Park and a TWS member. "I was a fervent believer in [reintroduction], and I busted my butt to be a part of it. To have an experience like that in the remote expanse in Yellowstone, it kind of makes your life and makes you believe your career choice is a good one."

If national parks were "America's best idea," as the Ken Burns documentary series proclaimed, and Yellowstone is the country's first national park, then America's best idea is better than ever, Smith

figures. As it celebrates its 150th anniversary this year, the park is healthier, and its ecosystem functioning better, than any time in its history as a park, he believes. It's not just the return of wolves (*Canis lupus*), he said. Mountain lion (*Puma concolor*), grizzly bear (*Ursus arctos horribilis*) and black bear (*U. americanus*) populations have grown. Elk (*Cervus canadensis*), which once overran the park, have returned to more ecologically balanced numbers. Trumpeter swans (*Cygnus buccinator*) have rebounded. Bison (*Bison bison*), once on the verge of extinction, numbered just 50 in the park in 1970 but have grown to 5,000. The vegetation is closer than ever to its historical condition.

"We're as good as we've been in our entire history," Smith said.

None of this was an accident. It was the result of management, but management using the least human interference as possible—an approach that would be difficult to replicate elsewhere. Yellowstone is a rare place in the Lower 48 States—2.2 million acres that have never been grazed, logged, developed or mined. Cars and RVs may line the roads and fill the campgrounds in the summer, but that's just in a

▲ Doug Blanton, a biologist with Yellowstone's bison program, descends from Specimen Ridge Soda as the Butte Valley unfolds in the distance.



Credit: Thomas Moran

▲ Artist Thomas Moran's landscapes captivated the public with their depictions of Yellowstone's grandeur.

sliver of the territory—the remainder hardly sees a soul. Beyond the park boundaries lie another 10 million to 20 million acres of the Greater Yellowstone Ecosystem, encompassing national forest and other public lands in Montana, Wyoming and Idaho.

Wildlife wasn't a priority when the park was founded. The notion of ecology didn't exist. But over the years, scientific understanding has changed, and management has changed with it. "The National Park Service was founded on scenic beauty, not ecological integrity," Smith said. "Here we are at 150 [years]. I think we've returned ecological integrity to the park."

A first for the world

Humans likely occupied what is now Yellowstone for the last 15,000 years, pursuing mammoths and giant bison through its glacial-carved valleys, and gathering berries, seeds and plants they found along the way. When European fur traders arrived in the 1700s, they encountered Native Americans, including the Sioux and Crow tribes in the region.

Over the next century, successive expeditions climbed its peaks, traversed its valleys and documented its otherworldly landscape of hot springs and geysers. Writing in the magazine *Western Monthly*, members of an 1869 expedition marveled at "the beautiful places we had found fashioned by the practiced hand of nature, that man had not

desecrated." The following year, U.S. Surveyor-General Henry Washburn, Montana politician and businessman Nathaniel Langford and attorney Cornelius Hedges led an expedition to measure some of its natural features.

In 1871, Ferdinand Hayden, head of the U.S. Geological and Geographical Survey of the Territories, led a team of biologists, geologists and other scientists into Yellowstone, accompanied by artists and a photographer whose images sparked the public's imagination.

That same year, Langford and his companions promoted a bill to keep Yellowstone free of development. Six years earlier,

Congress had already preserved the landscapes of Yosemite, entrusting its protection to the state of California. On March 1, 1872, President Ulysses S. Grant signed the Yellowstone National Park Protection Act, creating the world's first national park. Without a National Park Service, all-black regiments known as Buffalo Soldiers became some of the first rangers to patrol these newly protected lands.

"We need national parks," said Mark Boyce, a TWS member who has conducted extensive research in Yellowstone. "We need these protected areas as ecological baselines to compare with how we alter the environments outside the parks."

Changing visions

That's largely the way park managers view Yellowstone now, but it wasn't always this way. "I think there's a misconception out there that because it was established in 1872 and everything around the park was wild, everything was pristine," Smith said. "It wasn't. That is probably the biggest misconception about Yellowstone that there is. It was established early. It was remote. It was undeveloped. But it wasn't unimpacted."

Early on, before the park was founded, the fur trade, market hunting and predator control affected wildlife in the area. Even after the park was established, poaching was common. With the 20th century came



fire suppression, removing the natural cycles that regenerated forests and cleared out debris.

When visitors first started arriving, Smith said, “people didn’t want to go to a hellion wilderness. They wanted to vacation in luxury.” Until the mid-1960s, wildlife was actively managed to enhance those luxury park experiences. Wolves were eliminated—at least 136 were killed in the park between 1914 and 1926—and mountain lions nearly so. Without natural predators, elk were routinely culled to keep them from exceeding set population limits. “The park was dominated by elk,” Smith said. “It impacted the environment.”

That began to change in 1963 when a group of prominent scientists led by Starker Leopold, son of wildlife management pioneer Aldo Leopold, suggested a new approach to managing wildlife throughout the national park system—one less reliant on human interference and more on what came to be known as “natural regulation.” Their report, which came to be known as the [Leopold Report](#), emphasized protecting—or re-creating—native ecosystems and, when possible, allowing predators to fulfill their roles.

“In essence, we are calling for a set of ecologic skills unknown in this country today,” they wrote. “Americans have shown a great capacity for degrading and fragmenting native biotas. So far, we have not exercised much imagination or ingenuity in rebuilding damaged biotas.”

While advocating for a more hands-off approach, in Yellowstone they also saw the need to keep reducing out-of-control elk herds. The public was less enthused. When images of elk culling appeared on the evening news in 1968, opposition to the effort grew. The National Park Service ended the program, but elk numbers soared over the ensuing decades, opening the agency to new rounds of criticism as the numerous elk took a toll on native vegetation.

“Then, of course, we reintroduced wolves,” Smith said.

‘We did the right thing well’

When the Park Service hired Mike Phillips to reintroduce wolves to Yellowstone, it fulfilled a childhood dream. As a 12-year-old boy in 1970,

▶ TWS member Mark Boyce spent decades studying the effects of wolf predation on elk like the one pictured here in Yellowstone National Park.



Credit: Jim Peaco/National Park Service

he watched a National Geographic television documentary about legendary biologists Frank and John Craighead conducting grizzly bear research in Yellowstone. Their work with these big predators inspired him.

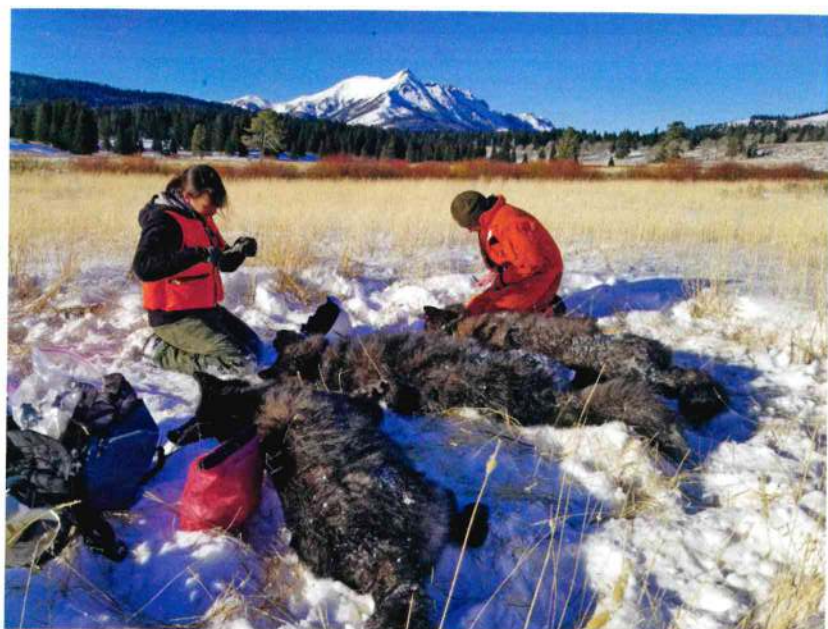
“I said to myself, that’s what I want to do,” Phillips said.

Phillips, a TWS member and the 2022 recipient of the Aldo Leopold Memorial Award, wasn’t a stranger to helping wolves recover. He served as the field coordinator in the U.S. Fish and Wildlife Service’s efforts to recover red wolves (*Canis rufus*) to the Southeast. In 1994, he was hired as project

▲ Mike Phillips, left, joins, left to right, Yellowstone’s Jim Evanoff, U.S. Fish and Wildlife Service Director Mollie Beattie, Yellowstone Superintendent Mike Finley and Interior Secretary Bruce Babbitt in releasing the first wolves to Yellowstone National Park.



Credit: Mark Boyce



Credit: Kira Cassidy/National Park Service

▲ Erin and Dan Stahler, two biologists with the Yellowstone Wolf Project, process three wolves after helicopter capture, with Electric Peak rising in the background.

leader to return gray wolves to Yellowstone. A 1987 Northern Rocky Mountain Wolf Recovery Plan proposed reintroducing an “experimental population” of wolves into the park. It was a controversial plan, with heated arguments from those who sought to restore the endangered species and opponents who feared the impacts the predators could bring to people, livestock and other wildlife.

“It was controversial, but in a good way,” Phillips said. “There was a great deal of enthusiasm about the Yellowstone wolf project in the beginning. There was tremendous support nationwide.”

But there was also tremendous opposition. Court actions tried to block reintroduction, even after the first wolves arrived in crates from Canada, waiting to be released into a landscape where no pack had roamed in 70 years. “We had hanging over our heads that the judge may shut the whole thing down,” he said.

In January 1995, Interior Secretary Bruce Babbitt joined Phillips and others in Yellowstone, trudging through snow to release the first of 14 wolves in the park. A year later, 17 more wolves arrived. The next year brought 10 more from Montana. Over time, Yellowstone’s wolf population grew. Since 2010, their numbers have hovered around 95 wolves in the park. “We did the right thing well,” Phillips said.

A changing landscape

Since wolves returned, biologists have watched closely to see how Yellowstone’s ecosystem would respond. Among them was Boyce, who started

studying elk dynamics in the park and continued to see what effects wolves would have on their numbers. “It’s the most celebrated ecological experiment in history,” Boyce said.

Prior to wolf reintroduction, Boyce and his fellow researchers modeled ungulate response. Their models suggested a gradual decline in elk numbers, and for the first 10 years, he said, they were amazingly accurate. Then, the effects of predation seemed to take off. It wasn’t just wolves going after the elk, he discovered. With no more eradication efforts, the populations of other predators were also on the rise. Growing numbers of cougars were taking a few elk, but grizzlies were having an even bigger effect.

“Grizzly bears became major players on the landscape, becoming major causes of elk-calf mortality,” he said.

The northern range elk herd’s numbers have continued to fall, from a high of over 14,000 in the 1999-2000 winter to 5,800 in 2019. The result, many biologists say, is a trophic cascade that has transformed the landscape. Boyce and others have found that with less browsing by elk, aspens, willows and other woody vegetation have rebounded, improving the health of stream systems and enabling beavers (*Castor canadensis*) and other wildlife to return. “Complex and unexpected ecosystem responses to wolf recovery in Yellowstone reinforce the value of national parks and other protected areas as ecological baseline reserves,” he wrote in a 2018 paper in the *Journal of Mammalogy* synthesizing 30 years of research (Boyce 2018).

The notion has been controversial. In a recent critical study, researchers said that while they also found a trophic cascade, “it was weaker than the one” found by earlier studies (Brice et al. 2021). Boyce believes too much is made of the controversy. In a system as vast and complex as Yellowstone, he said, different areas show different responses. “I think everybody’s got it right,” he said, about the different research findings. “It’s just a matter of where you’re looking.”

For Smith, the difference is not just in the landscape. It’s the way the park feels. “When I first came to Yellowstone, there were no wolves. A wolf-less country—it’s different. It’s flat. Unalive. Unexciting. Being here, hired before the reintroducing and going around, flying it, seeing it as a wolf-less landscape, and then getting to see it containing wolves—you almost see it come alive.”



'A birthing ground'

It's not just wolves. It's the return of mountain lions and grizzlies and an ecosystem that is more intact than it was since before the park was created.

But challenges remain. Some biologists are concerned that there may be too many bison in the park, and surrounding communities worry the migratory species could spread brucellosis to cattle outside the park boundaries. As a result, the park continues to cull bison—Yellowstone **aimed** to cull 900 this year.

States surrounding Yellowstone also continue to worry about wolf conflicts. New laws in **Idaho** and **Montana** seek to slash wolf numbers (see article on page 31). Smith fears the Montana legislation will have dramatic consequences for Yellowstone wolves, which may roam beyond the park's boundaries where they're at greater risk of being shot.

"Yellowstone was one of the best-studied examples in the world of an unexploited wolf population, and after this winter I can no longer say that," Smith said.

The park also continues trying to keep pace with rising visitor numbers. Last year, the park hosted over 4.8 million visitors during its **busiest** year ever.

Over the past two years, the park has invested \$100 million in efforts to improve transportation infrastructure, reduce traffic congestion and enhance visitor experiences, with future expenditures expected this year and next.

Those numbers are a testament to the place that Yellowstone continues to hold in the hearts of visitors who come in search of spewing geysers, roaming bison, and maybe a glimpse of a wolf in the distance.

"Public lands connect us as a nation," Phillips said, "and I submit there is no more important tract of public land in the American psyche than Yellowstone National Park. It's a birthing ground. It's a birthing ground for the idea that some land should be managed, should be viewed, should be tended with a keen interest on what nature wants to do—largely on its own." ■



David Frey is the managing editor for The Wildlife Society.

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