

*The aptly named  
Beartooth Mountains,  
jutting like a  
carnivore's jawline  
of rugged wildness  
into the sky north  
of Yellowstone  
National Park, mark  
a dramatic entrance  
to the most iconic  
ecosystem in the  
lower 48 states.*

MICHAEL NICHOLS



*Grand Prismatic Spring, richest in color and mightiest of Yellowstone's hot springs, was first referenced by mountain man Osborne Russell in his 1839 journal.*

MICHAEL NICHOLS





*The American plains bison, once numbering in the tens of millions, began its journey back from the brink of extinction more than a century ago when just two dozen survivors were given refuge in Yellowstone National Park. Today some of their wild and free-ranging descendants find a home in Jackson Hole, Wyoming, like this herd roaming across the National Elk Refuge.*

CHARLIE HAMILTON JAMES

*Unforgettable even if viewed only once, the Teton Range rises as the famous centerpiece of Grand Teton National Park. As a new day dawns at Schwabacher's Landing, a bend of the Snake River renowned for its diversity of wildlife, the Tetons are indeed the epitome of purple mountains' majesty.*

CHARLIE HAMILTON JAMES





A JOURNEY THROUGH AMERICA'S WILD HEART

# YELLOWSTONE

DAVID QUAMMEN



NATIONAL GEOGRAPHIC

WASHINGTON, D.C.

PART ONE

# The Paradox of the Cultivated Wild

*The wild life of America exists in the  
consciousness of the people as a vital part  
of their national heritage.*

—GEORGE M. WRIGHT, JOSEPH S. DIXON, AND BEN H. THOMPSON,  
*Fauna of the National Parks of the United States, 1933*

*A lone bison trudges  
along the shore of  
ice-covered Mary's  
Bay on the north side  
of Yellowstone Lake.  
Having endured  
another winter, this  
hungry young bull,  
a member of the  
historic Pelican herd,  
will soon be rewarded  
with a panorama of  
green grass.*

MICHAEL NICHOLS





## *A Work in Progress*

# Yellowstone has long been a complicated idea in the American mind, as well as a wondrous reality on the ground.

It's a name—"yellow stone" in English, *roche jaune* to the French explorers, *Mi tse a-da-zi* to the Hidatsa people who had been in the region centuries longer—of uncertain provenance but probably inspired by yellowish sandstone bluffs along a tranquil stretch of river in what is now eastern Montana. Hence the Yellowstone River, still the longest undammed waterway in the contiguous United States. But the name traveled upstream on that river as the waters flowed down. It came to signify a very different place—a place different from

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*Sidewinding across the Midway Geyser Basin, the Firehole River has an ambiance unmatched by any other water corridor in Yellowstone National Park.*

MICHAEL NICHOLS

*anywhere*—hundreds of miles southwest of the yellowish stone bluffs, in the mountains where that river begins. This was a more severe landscape, a high-altitude wilderness, uplifted above the plains and rimmed by sharp peaks—a bizarre and spectacular redoubt that the Hidatsa themselves seldom if ever visited.

Some native peoples did go up there, distant ancestors of those now known as Sheep Eater, Bannock, Crow, and others, moving on and off that highland hideaway as their nomadism led them in search of food and furs and seasonally comfortable living. Because the elevation made for especially brutal winters, this land wasn't fought over, seized, and settled during the early waves of Euro-American invasion.

The geysers and the Grand Canyon of the Yellowstone would eventually play lead roles in making this a place with statutory protections. In the years 1869–1871, long after Colter and Bridger had spread steamy rumors, three different expeditions of more civilized white men, along with some military personnel, visited the area and took appreciative note of its scenic wonders, in particular the geysers and the canyon. One of those men, Nathaniel P. Langford, has been described (by Aubrey L. Haines, author of a two-volume history of Yellowstone) as “a sickly St. Paul bank clerk” who made his timely exit from Minnesota after a family-owned bank failed. Langford imagined better opportunities, less embarrassing circumstances, and came west. While playing a catalytic role in the 1870 Yellowstone expedition, led by Henry Washburn, Langford was a paid publicist for the Northern Pacific Railroad. Another member of that expedition, Walter Trumbull, noted afterward in a magazine article that the plateau seemed promising as sheep pasture, but he predicted: “When, however, by means of the Northern Pacific Railroad, the falls of the Yellowstone and the geyser basin are rendered easy of access, probably no portion of America will be more popular as a watering place or summer resort.” Langford and his cronies saw that such popularity would mean money in the tills of the Northern Pacific, and of whoever else got a piece of the action, selling rail tickets, filling hotels.

The 1871 expedition, led by Ferdinand V. Hayden, head of the U.S. Geological Survey of the Territories, was more official—supported by a modest congressional appropriation, given in the spirit of national

expansion and inventory—and included the photographer William H. Jackson and the painter Thomas Moran. Jackson’s photos and Moran’s canvasses subsequently helped people back east (most crucially, those in Congress) see and imagine Yellowstone. Moran created one especially thunderous painting in 1872, 7 feet by 12, “The Grand Canyon of the Yellowstone.” An agent for the Northern Pacific then planted a suggestion that lawmakers protect “the Great Geyser Basin” as a public park. Hayden seized that idea and, along with Langford and other minions of the railroad, lobbied for it, as delineated in a bill encompassing not just the geyser basins but also the Grand Canyon of the Yellowstone, Mammoth Hot Springs, Yellowstone Lake, the Lamar Valley, and other terrain, altogether a rectangle of some 2.1 million acres.

The Yosemite Valley in California, which had earlier been granted to that state for protection as a state park, served as a rough precedent; Niagara Falls back in New York, on the other hand, stood as a negative paradigm. Niagara was infamous to anyone who cared about America’s natural majesties, because private operators there had bought up the overlooks and blocked the views, turning that spectacle into a commercial peep show. Yellowstone, as a great public attraction promising to bring visitors and money westward, would be different.

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*Legendary Yellowstone superintendent Horace Albright dines with three park bears in 1924. Feeding bruins was encouraged by park officials early on as tourist entertainment.*

U.S. NATIONAL PARK SERVICE







Yellowstone in 1882, a more appealing side of Sheridan’s character emerged. In this very different context, he deplored the slaughter of “our noble game,” evidently even the bison, and offered troops to prevent it. He was also appalled that a commercial monopoly on visitor services had been granted to the so-called Yellowstone Park Improvement Company, a new entity closely allied with the Northern Pacific Railroad. “I regretted exceedingly to learn,” he reported to Washington, “that the national park had been rented out to private parties.” And he made one radically percipient observation: Congress had made the park too small.

Returning to Washington, Sheridan led a campaign by sportsmen and sympathetic lawmakers to extend Yellowstone’s boundaries by 40 miles along the east side and 10 miles along the south. That would have increased the park area by 2.1 million acres, almost doubling its size. More crucially, it would have added adjacent lowlands, to which elk and other ungulates migrate in winter.

Carried into Congress by Senator George G. Vest of Missouri, the Sheridan proposal failed. The boundaries stood. Those boundaries were later tweaked, in the 1920s and 1930s, adding some smallish areas and removing one, to reflect stream drainages rather than abstract lineation. But the need for winter range by big herbivores—especially elk and bison—remained a festering problem, and it still festers today.

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*The first guardians of Yellowstone were Army infantry officers, not park rangers. Here visiting soldiers affiliated with the U.S. Army Bicycle Corps pose on Minerva Terrace at Mammoth Hot Springs in 1896.*

HAYNES FOUNDATION COLLECTION

## *The Bear That Eats Flowers*

Lines on a map give an overview, but the best overview comes from 300 feet airborne above the landscape itself. So on a clear summer morning, I met Roger Stradley at an airport near Bozeman, Montana, for an aerial tour of Yellowstone in his yellow 1956 Piper Super Cub. He issued me a flight suit and a helmet, then showed me how to insert myself into the rear seat, a cramped space directly behind the pilot’s. I’ve been in kayaks with more legroom. “You don’t get *into* a Super Cub,” he said. “You put it *on*.” Small and light, with a high-lift wing and a strong engine, the Super Cub is still favored by bush pilots such as Stradley for its capacity to land and take off from short strips, and to fly slowly, riding the thermals like a condor.

Flying slow and low is especially useful for surveying wildlife, and Stradley is legendary among the biologists of Yellowstone Park who rely on overflights for their work, counting and radio-tracking bears, wolves, elk, and other wide-ranging animals. On the day I rode along, he was a robust, cheerful 76-year-old and had flown in the mountains for 62 years, logging a mere 70,000 hours. Before that, from the age of about six, he had sat on the lap of his dad, an old-school mountain pilot, who let little Roger control the stick, though he couldn’t reach the pedals. His younger brother Dave got the same training. They would bank and dip and try to hold a good line as their father laughed, keeping the plane stable with his feet. “We drove him all over the sky.” Dave retired from their Gallatin Flying Service a few

bison, amid grassy expanses dotted with small, dark tarns. Along the edge of the valley, large swaths of bare, dead timber still stood as scorched monuments to the great fires of 1988, which had tormented park managers and challenged hundreds of firefighters through that long, dreadful summer. Critics of fire policy found themselves unable, at the time, to imagine that Yellowstone could ever be lush and verdant again, but the fire ecologists have been proved right: Flame comes, flame goes; fire is part of the natural cycle of temperate forests. That the 1988 fires burned hotter and more extensively than lightning-caused fires normally would—that was unfortunate, yes, but not ecologically catastrophic, and represented consequences of a century of fire-suppression policy (with Smokey the Bear as emblem), inordinate fuel buildup, extended drought, and high winds at inopportune moments, not willful mismanagement, as the critics claimed. From the air, the mosaic of scars reflecting those interconnected conflagrations of 1988 now lingered more conspicuously in some parts of the park—such as here—than in others. The fire scars, and their greening over time, echoed a broader Yellowstone theme: disturbance and recovery.

As we approached the lower reaches of Pelican Creek, where it meanders through willowy flats, we spotted a bison carcass in the water, with a grizzly on it, feeding. Forty feet away, watching patiently, waiting their turn, sat two black wolves. “That’s a big bear,” Stradley said. The wolves may have been thinking the same thing.

The bison carcass wasn’t noticeable when he flew through here yesterday, Stradley added. It must have been dead in the shallows, a

winterkill, kept chilled by the water, until the bear found it and opened it up. That would release the smell, bringing other meat eaters. “I don’t know where the ravens are. They should be here already.” Almost a mile on, we passed above another big grizzly, a dark boar, walking upwind toward the dead bison. Claims would be adjudicated by strength, ferocity, and persistence; little would go to waste. Ravens, when they did arrive, would dodge in and out boldly, pecking away bits while the grizzlies or the wolves were too occupied to object.

We flew down the eastern shore of Yellowstone Lake into another roadless area, protected on one side by water and another by the Absaroka Range, here including Mount Langford, named for the man who shilled Yellowstone on behalf of the Northern Pacific. Most visitors to the park remain within a few hundred yards of their cars, and therefore never see such bits of the wondrous, difficult Yellowstone backcountry. Near the southern tip of the lake’s Southeast Arm is the delta of the upper Yellowstone River, a broad bottomland of willows, grasses, and shrubs in five shades of green. The lake receives water from little creeks on all sides, but its largest input is this stream, draining north from a vast wilderness outside the park’s southeastern corner. Today the upper river was brownish olive, reflecting fast July runoff from melting snow, though I noticed one oxbow pond, its water a deep tranquil blue.

We flew upstream in stately progress, so low and slow that it felt like we were riding a kite. We crossed the park boundary, an invisible

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*World-renowned Jackson Hole mountaineer and adventure photographer Jimmy Chin captures the Tetons during a sunrise takeoff.*

JIMMY CHIN





feeding hay to elk during winter, hoping to keep them from migrating out of the park and into danger from hunters, and he encouraged his rangers to kill predators, especially wolves, mountain lions, and coyotes. Sportfishing was another visitor draw, so white pelicans, gorgeous big birds but nefarious trout eaters, were suppressed at their breeding colonies. One colony was on Molly Island, a remote site in the Southeast Arm of Yellowstone Lake, where few tourists ever saw it. Beginning in 1924, under Albright's administration, park personnel with help from the U.S. Fish Commission crushed pelican eggs and killed chicks on Molly Island. An assistant chief ranger reported about 200 eggs destroyed in 1926 and 83 young pelicans killed in 1927; in 1928, he added proudly if ungrammatically, "we killed 131 every young pelican on the island, that year nothing escaped."

Persecution of the "bad" animals in Yellowstone was an old project, though, dating well back before Albright. Predators had been shot, trapped, and poisoned since the 1870s. One superintendent even encouraged commercial trappers to kill beaver by the hundreds, so that they wouldn't build dams and flood his park. Otters were classified as predatory, damning them also to suppression, and for a while there was a fatwa against skunks. During the army years, both noncommissioned officers and civilian scouts were "authorized and directed to kill mountain lions, coyotes, and timber wolves," by order of the secretary

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*Two American classics from the past converge in Yellowstone's Hayden Valley—one whose time has passed, the other experiencing a renaissance of appreciation, nominated by Congress to be the country's official land mammal.*

DAVID GUTTENFELDER

of the interior. Wolf killing ended only when the wolves were all gone, extirpated not just from Yellowstone (by around 1930) but throughout the American West. Poisoning and shooting of coyotes continued until about 1935. But bears were different.

Bears were omnivorous and, as some people saw them, cute. They were also smart and opportunistic. Beginning as early as 1883, they adjusted to feeding on food refuse from garbage dumps near the park hotels, and that behavior made them easily visible and therefore a popular tourist attraction. They also learned to accept handouts from passing visitors, a trend that started in the stagecoach era and continued after private automobiles were allowed into the park, beginning in 1915. Albright encouraged the handouts game, leading people to think that bears—even grizzlies—were companionable, benign, and feckless. Near the hotels at Old Faithful, Lake, and Canyon, the dumps became theaters where tourists sat on bleacher seats to watch the "bear show" on summer evenings. The historian James A. Pritchard, documenting this enterprise (and Albright's view of it), wrote that "if two thousand people could crowd into an amphitheater" and see a number of grizzlies feeding on garbage, "the scale of the attraction simply attested to Yellowstone's preeminent place as a showpiece of nature."

Not just during Albright's tenure but for 80 years, Yellowstone's grizzlies and black bears consumed human garbage in vast quantities, coming to depend on it unwholesomely, with the blessings of the park managers and to the amusement of the visiting public. "One of the duties of the National Park Service," Albright himself wrote, after



*It's not identified on any tourist maps, but the discovery of this "bear bathtub"—a spring-fed watering hole where grizzlies and black bears come to drink, bathe, and frolic—has yielded fascinating insights into bear behavior thanks to on-site remote cameras.*

MICHAEL NICHOLS WITH  
RONAN DONOVAN AND THE  
NATIONAL PARK SERVICE

*(opposite)*  
*A grizzly bear mama floats in the cool waters of the bear bathtub, her twin cubs waiting to take the plunge.*

MICHAEL NICHOLS WITH  
RONAN DONOVAN AND THE  
NATIONAL PARK SERVICE



## VOICES

### ***Francine Spang-Willis***

EDUCATOR, MONTANA STATE UNIVERSITY

“I am a descendant of Chief Dull Knife and Pawnee Woman of the Northern Cheyenne Nation. I am also a descendant of a pioneer family. The work I do in archaeology and education helps me to help others have a deeper understanding of the American Indian connection to the landscape and our shared American history. There are numerous sites in the Yellowstone area that remind us that our ancestors lived and interacted with every inch of this sacred landscape for thousands of years. Artificial boundaries may exist on the land, but we still have a deep connection to all of it. We still live and interact with it.”

*A member of the Northern Cheyenne Tribe, anthropologist Francine Spang-Willis surveys the view from the Bridger Mountains, northwest of Yellowstone, a range ironically named after a white fur trapper and not one of the Native Americans who lived there long before his 1823 arrival.*

ERIKA LARSEN





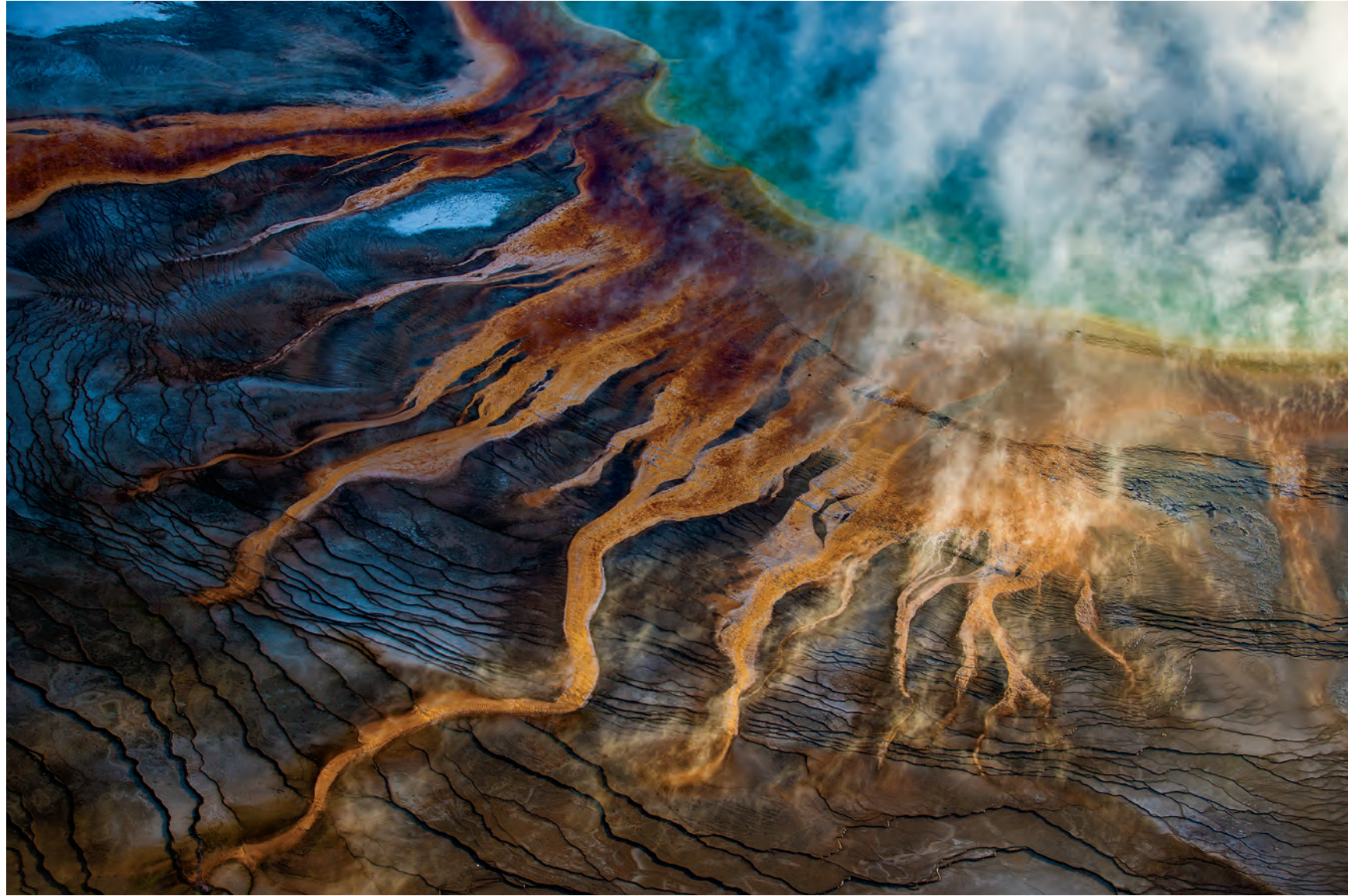
*(following pages)*

*They might look like watercolor paintings portraying flaring tendrils of the sun, but the dazzling spectra of Grand Prismatic Spring (left) and Gentian Pool (right) actually reflect a palette of microscopic life—organisms specially adapted to live amid scalding water. The green is the chlorophyll they use to absorb sunlight. To protect it from human impacts, Gentian has no trail around its perimeter.*

MICHAEL NICHOLS

*Norris Geyser Basin is said to resemble a barren moonscape. As geysers erupt and fumaroles puff columns of sulfurous steam into the sky, the landscape feels like that of another planet.*

MICHAEL NICHOLS



Detail

# Visiting the Park

*The motto Congress gave Yellowstone—“For the benefit and enjoyment of the people”—may sound straightforward . . . but it isn’t.*

Some call Yellowstone “the People’s Park,” and the numbers confirm the nickname. In 2015 the number of visitors to Yellowstone, including repeats, exceeded four million—a record number. Though the top destination remains Old Faithful, a recent study suggests visitors would be willing to pay significantly more to enter the park if they could count on seeing not just a geyser but also a bear along the road. Traffic jams generated by bear sightings can sometimes stretch for miles. All those visitors, to Grand Teton National Park as well as Yellowstone, pump an estimated billion dollars into the local economy.

Yellowstone superintendent Dan Wenk worries that the crowds, increasingly international, need to understand more about such matters as safe interaction with wildlife. And he worries about the park’s future. On the one hand, Wenk wonders whether millennials see how important it is to preserve the park. On the other, he also worries that too many people come to the park already. It’s an old worry: In 1972 a *National Geographic* article commemorating the park’s 100th anniversary was titled “The Pitfalls of Success.” Nearly twice as many visitors come to the park now as did then. The answer, Wenk thinks, isn’t more hotels, roads, and parking lots. If anything, the human footprint needs to shrink to protect the wildlife the humans come to see. “What might work for Disneyland,” Wenk says, “is not the antidote for Yellowstone.”



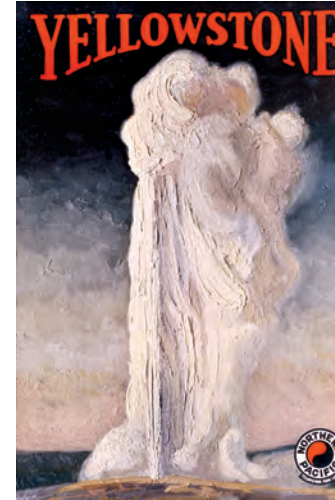
*The most famous geyser in the world, Old Faithful, so named for its cycle of predictable eruptions, has been one of Yellowstone’s main attractions since the park was created in 1872. In earlier and less enlightened times, tourists were allowed to stroll literally to the gusher’s edge.*

UNDERWOOD & UNDERWOOD

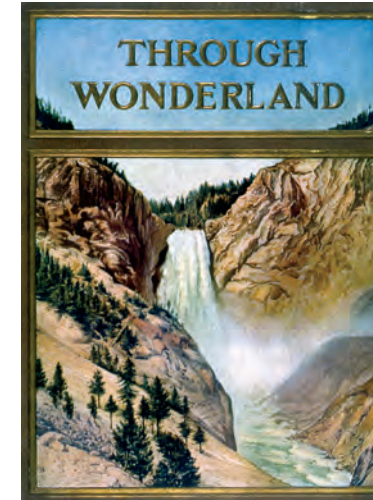
(opposite)

*Created to help spur ridership on the Northern Pacific Railroad line, Yellowstone advertising has for decades promised a destination where tourists could commune with nature, wildlife, and frontier traditions.*

NATIONAL PARK SERVICE



1933



1910



1921



1923



1927



1910





*At a prominent scenic overlook in Grand Teton National Park, a visitor records one view of the Tetons for posterity—with the real peaks rising in the background.*

CHARLIE HAMILTON JAMES

*Near West Thumb, off the southwestern corner of Yellowstone Lake, travelers gaze into the depths of an aquamarine hot cauldron bubbling with boiling water cooked by magma heat miles below.*

ERIC KRUSZEWSKI



*(opposite)*  
*No summer pilgrimage to Yellowstone has been complete without a stop at Old Faithful Geyser. Legendary for its semireliable punctuality, the natural wonder erupts every 65 to 90 minutes and shoots up to a height of more than 180 feet.*

MICHAEL NICHOLS





*Powerful, unpredictable, and potentially dangerous, a bull elk is swarmed by human admirers along the Grand Loop Road in the center of Yellowstone. Park regulations require people stay 25 yards away from wildlife, a rule sometimes ignored, often at visitors' peril.*

ROBB KENDRICK

*(opposite)  
The intersection of human spaces and wildness is what makes navigating through Yellowstone unforgettable. Here, a cow elk inspects a pair of youthful explorers on the boardwalks at Mammoth Hot Springs.*

MICHAEL NICHOLS





*First an outpost for cowboys in the late 19th century, Jackson Hole has evolved into a mecca for outdoor recreationists. Here, friends ride a chairlift to the top of Snow King Mountain, with the Tetons rising in the distance.*

CHARLIE HAMILTON JAMES

*(opposite)*  
*The swim team from Santiago High School in Corona, California, braves Boiling River, a natural hot tub formed where Yellowstone's hot springs flow into the Gardiner River. Such springs can be perilously hot. More Yellowstone visitors have died by being scalded than by being mauled by bears.*

MICHAEL NICHOLS



*Like Old Faithful, Grand Geyser—the biggest geyser in Yellowstone—resides in the Upper Geyser Basin. Its eruptions are not as frequent, though: Grand spouts about three times a day. Its shooting stream can climb to 200 feet.*

MICHAEL NICHOLS





*(opposite)*

*At a curio shop in Jackson, Wyoming, visitors posed with stuffed animals, including a brown bear—a Kodiak from Alaska, not a local grizzly. The desire to touch the quintessence of wildness, preferably without threat to life and limb, endures in many of us.*

DAVID GUTTENFELDER

*The presence of black bears in Yellowstone semitamed on human food was common into the early 1970s, when this photo was taken. Soon after, park policy shifted in an effort to wean begging bears off garbage and table scraps.*

JONATHAN BLAIR



## VOICES

### *Dan Wenk*

SUPERINTENDENT, YELLOWSTONE NATIONAL PARK

“All citizens of America, whether they realize it or not, are stewards of Yellowstone. It belongs to all of us . . . I believe we are rapidly coming to a point where one of two things is going to happen. Either we as a society agree to limit the number of visitors in order to protect resources that are incredibly sensitive to disturbance or we allow the number to grow unchecked—knowing that we are diminishing, perhaps irreparably, the very things that attract people worldwide to this one-of-a-kind national park.”

*After four decades with the National Park Service, Yellowstone superintendent Dan Wenk, the top protector in charge, intends to end his career here. “Few can ever say they got to look at the well-being of the first national park in the world,” he says. “This, to me, represents the summit.”*

ERIKA LARSEN



PART TWO

# The Return of the Wild

*The air is electric and full of ozone, healing, reviving, exhilarating, kept pure by frost and fire, while the scenery is wild enough to awaken the dead.*

—JOHN MUIR, 1901

*A picture of placid serenity, a bull moose wades the Buffalo Fork of the Snake River in Grand Teton National Park. Habitat loss, predation by wolves and grizzly bears, diseases, drought, and hunting—all have caused a decline in the moose population throughout the Greater Yellowstone Ecosystem.*

CHARLIE HAMILTON JAMES





### *What It's All About*

## On a cold morning in December at the Gardiner airstrip, I buckled into the back of a cherry-red Hughes 500D helicopter beside Doug Smith,

chief biologist for the Yellowstone Wolf Project. Seconds later the chopper levitated and then plunged toward the Yellowstone River, under the touch of Jim Pope, a wildlife-capture pilot with a sense of aerobatic panache. Pope leveled us off and then climbed again, sweeping south into the park, across the foothills, up over Sepulcher Mountain. Releasing a death grip on part of the cabin, I double-checked my seatbelt, since the helicopter was wearing no doors.

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*Frosty-faced after ascending a steep snow slope at Eagle Pass, a remote corner of the Greater Yellowstone Ecosystem located near Yellowstone's southeastern border, a grizzly triggers a remote-controlled camera trap.*

JOE RIIS

Freezing wind ripped through our bubble as the treetops flashed by, 200 feet below. Then we set down gently on a clear patch of snow behind Sepulcher, where Pope's crew—a pair of “muggers,” whose job was to fire a charge-propelled net, jump out, and tranquilize captured animals—had already immobilized two wolves.

The return of the wolf to Yellowstone is one of America's great conservation success stories. During 1995 and 1996, almost seven decades after eradication, 31 wolves from western Canada were released from acclimation pens in the Lamar Valley. They took hold of the new landscape, they bred, they proliferated, they thrived in the park, and they spread throughout the region. Another 35 wolves were





mountain pine beetles, but in recent years the beetle-kill has gotten much worse, probably because of climate change. Severely cold weather, especially deep cold snaps that occur early in winter or late in spring, can knock down the beetle population; but that sort of weather is now rare, and since 2003 a vast beetle outbreak in the Yellowstone ecosystem has been killing whitebark pine like never before.

Thirty miles east of Cooke City, Montana, off the high road that climbs across Beartooth Pass in the Absarokas, lies Island Lake, with an elevation of about 9,000 feet, surrounded by boulder fields, alpine meadows, and groves of whitebark pine. Some of those trees are healthy, and some are dead, choked, desiccated, their needles gone rusty red. Standing amid them on a cool September morning, a retired U.S. Forest Service entomologist named Jesse Logan, a leading expert on whitebark and its insect enemies, briefed me on the intricacies of this situation. “The whole defensive strategy of the whitebark is escape,” he said. “It’s a hell of a survivor. But it’s not much of a competitor.” At high elevations, in cold and harsh conditions, whitebark largely escapes competition from other conifers—ponderosa pine, lodgepole, Douglas fir. But it doesn’t escape the beetle, not anymore.

Logan spent much of his career on pines and their insect enemies. His aerial surveys, done with a colleague, William MacFarlane, from Utah State University, suggest that almost half of the whitebark distribution in the Yellowstone ecosystem has now suffered severe

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*Jackson Lake is the biggest body of water in Grand Teton National Park, made more magnificent because it rests at the foot of the Tetons.*

MICHAEL NICHOLS

mortality from mountain pine beetle, and 82 percent has suffered at least moderate die-offs. He pulled some bark off a dead tree to show me the beetles’ tunnels, vertical and crisscrossing, like a subway map of New York. As the warming climate rises upslope to these high elevations, allowing beetle outbreaks that never end, where else can whitebark go? “My sense is that the loss of this food resource is really important to grizzlies,” he said. He’s not a bear biologist, and others disagree, but the issue is serious.

Army cutworm moths are more unexpected, more fortuitous in the grizzly bear’s diet because, unlike whitebark nuts and cutthroat trout, they come from elsewhere. These little gray moths, familiar annoyances around porch lights and screen doors on July evenings in Cody, Wyoming, and commonly called “millers,” migrate hundreds of miles in early summer from lowland farming areas—on the Great Plains and in the Intermountain West, where in the larval stage they are crop pests—to high elevations in the Absarokas. They spend the hot days hunkering in cool, moist recesses amid scree slopes (fields of broken, tumbled rocks) above 9,000 feet, and at night they fly out to drink nectar from wildflowers on alpine meadows. Metabolizing the nectar, they lay on rich stores of fat, enough to see them through their arduous return migrations, in autumn, back to crop fields in Kansas, Nebraska, or wherever. A moth that arrives in the mountains in June, having 40 percent body fat, can increase to 65 percent fat by September. For a grizzly bear, lapping up such creatures from amid the scree is like eating pill capsules filled with olive oil by the handful. A grizzly can consume up to 40,000 moths in a day, representing

and songbirds? Or is reality a little more intricate? Some scientists and wolf advocates tell this story in happy, simplistic terms. “But it’s an unproven theory that gets undue attention,” Middleton said, “in the quest to have wolves shine rainbows out of their asses.”

Arthur Middleton is an improbable fit for the role of Wyoming elk maven: a kid from a fancy eastern prep school who did a master’s degree at the Yale School of Forestry and Environmental Studies, then came west in 2005, having landed work on a study of elk-wolf interactions commissioned by the Wyoming Game and Fish Department. Arriving in Cody to meet his new collaborator, he admitted that he’d never *seen* a wolf or an elk. But he learned fast, and he loved the mountains. He put global positioning system (GPS) collars on elk, clarifying poorly understood patterns of their movement between summer and winter ranges. He collated similar data from other researchers and made eye-opening digital maps. Look where these animals *go*. “Most of Yellowstone’s elk,” he said later, “are not *in* Yellowstone for most of the year.” They are off the plateau, down on winter range, where the snow isn’t so deep and the temperatures aren’t so brutal, largely on private ranches. Middleton’s elk work began as a Ph.D. project through the University of Wyoming and would continue on a postdoc fellowship from Yale. His hair was long, his speech was slow and considered, and his brow scrunched when he pondered something carefully. Within a short time, at least one Cody-based game warden started referring to him as “the elk hippie.”

Middleton’s mapping of the elk data showed at least nine distinct migratory herds, each moving seasonally in a different direction.

Many of Grand Teton’s elk winter on the National Elk Refuge, just north of Jackson, Wyoming. Thousands from the other herds move down onto big private ranches. The massive slaughter in the late 19th century took numbers way down, followed by the elk boom under Horace Albright’s protection and then a policy reversal after elk seemed *too* abundant, especially on the northern range of Yellowstone Park, resulting in an active elk-reduction program that lasted from 1934 to 1967. Whipsaw changes. During that long elk-reduction regime, park rangers shot 13,753 elk from the northern herd, private hunters killed 41,400 when those animals migrated out of the park, and almost 7,000 were trapped and shipped away to forests and zoos elsewhere. Then came the late 1960s, when the park superintendent and his chief biologist, influenced by the Leopold Report and some fashionable new thinking in ecology, embraced a policy called “natural regulation.” That served to codify in two words—but not solve—the paradox of the cultivated wild. Just what the words “natural regulation” might mean in a given instance was unclear, and the policy has never been an absolute one.

As for elk, natural factors such as drought and fire, and indirect human influences such as climate change exacerbating drought and fire, plus the wolf reintroduction, plus the planting of lake trout in Yellowstone Lake (with consequences for cutthroat trout and grizzlies),

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*Downstream from the Oxbow Bend of the Snake River, Schwabacher’s Landing is known for its exceptional wildlife watching and sightlines to the zeniths of the Tetons.*

CHARLIE HAMILTON JAMES





to winter range, but then the wolves den, and when the elk migrate back to the highlands in spring, the wolves with their dependent pups remain where they have dened, feeding sometimes on cattle. Only with state compensation for such losses, plus patience, can ranches absorb these costs.

But there are felicities too, if you're a Cody boy who loves the region, to living and working on this wildish landscape, he acknowledged. "We have everything here on the ranch that Yellowstone Park has, with exception of maybe the buffalo. I mean, we've got grizzly bears, we've got the wolves, we've got mountain lions, we've got big-horn sheep, we've got the elk, we've got the deer, we've got the moose." And no tour busses unloading crowds of people, all eager to take pictures of themselves in front of a famous geyser.

When he first came here, Bales said, he had his reservations about absentee owners and the big ranches just getting bigger. "But I really changed my tune." He began to understand that those owners have a love for the landscape too, and that if it wasn't for them and people like them today, "this whole valley would look like the North Fork." The North Fork of the Shoshone in its lower reaches, the valley through which Highway 14 leads from Cody to Yellowstone Park, is a promenade of motels and tourist lodges and restaurants and homes on small plots pushing out as far as private lands will allow, right up against the national forest. The upper South Fork road, by contrast, leads nowhere but to a dead end along the river, passing the TE and just a few other large private ranches on its way.

"These places are huge for the existence of wildlife," he said.

### *The Creeping Crisis*

Dave Hallac stood in his office at the Yellowstone Center for Resources (YCR), the park body charged with science and resource management, which is housed in a rambling old clapboard building amid the formidable stone structures of Mammoth. A smart, candid man with an oval face and thinning hair who was originally from New Jersey, Hallac was serving his last day as chief of the YCR—head scientist at Yellowstone Park—before departing to a promotion elsewhere. His office had the look of farewell when I found him there, between final tasks, his shelves and desk already bare, his books and reports and photographs packed into boxes awaiting removal. He closed the door, which was a little unusual on that open-door corridor, and as we sat amid the boxes, he repeated to me something he had said passingly a couple of months earlier—something so arrestingly blunt that I had asked him to elaborate. "I think we're losing this place," he said. "Slowly. Incrementally. In a cumulative fashion." He hesitated. "I call it a sort of 'creeping crisis.'"

Hallac ticked through a list of interrelated concerns, nagging issues in Yellowstone and familiar to us both: bison management, elk migration, grizzly bear conservation, private lands development in the region surrounding the park, human population growth driving that development, invasive species and their impacts on native species,

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*Playing with one's food may not be polite for people, but this coyote cannot help it after finding a tasty vole in a meadow full of exotic dandelions in the Lamar Valley.*





*(preceding pages)*

*A rooster tail of blowing snow kicks up as high winds hit the Tetons on the brink of sunset. Tallest in this eminently photogenic range is the Grand Teton, at 13,775 feet above sea level.*

CHARLIE HAMILTON JAMES

*(opposite)*

*Red foxes often survey the panorama around them by standing on snow dunes in winter. Here, a fox stretches his legs before heading out to hunt as night falls in Grand Teton National Park.*

CHARLIE HAMILTON JAMES

*A case study in natural camouflage, a long-tailed weasel, its winter coat in a white phase, stands at attention.*

CHARLIE HAMILTON JAMES



*Blending into the tall grass, a great gray owl lies in wait for dinner. Rodents, even young hares or rabbits, are favorite staples of the great gray.*

RONAN DONOVAN





*While a human presence proliferates around the world, parts of the Yellowstone region are wilder than they've been in a century. Grizzlies are spreading their range, for example. Here, a bear in Grand Teton National Park fends off ravens from a bison carcass dumped by rangers—a scene that's both wild and not.*

CHARLIE HAMILTON JAMES

*Detail*

## The Complex Food Web

*In the drama of eat and be eaten that connects all living organisms, keystone species such as bears, elk, and cutthroat trout play a crucial role.*

For decades, particularly before the region sported restaurants, visitors enjoyed fishing for their dinners. But supply was limited: Nearly half the park's lakes and streams lacked fish. To protect the scarce stock, park managers killed fish-eating wildlife, such as bears and pelicans. They also asked the U.S. Fish Commission to stock the waters "so that the pleasure seeker can enjoy fine fishing within a few rods of any hotel or camp."

Between 1881 and 1955, 310 million fish were planted in Yellowstone, wreaking havoc on the ecosystem's equilibrium. Native fish—such as the Yellowstone cutthroat trout, a source of food for dozens of animals—were displaced, attacked, and bastardized by non-native species. From 1978 to 2010 cutthroat numbers in the lake declined even more precipitously, owing to a combination of drought, parasitic disease, and competition from invasive species. As cutthroat numbers fell, predators found other food, impacting those species. Grizzlies took more elk. Bald eagles' prey came to include swan cygnets.

Today the priority is on protecting the park's 13 native fish types. Strict catch-and-release rules governing rod-toting human and management practices are helping the native fish rebound.



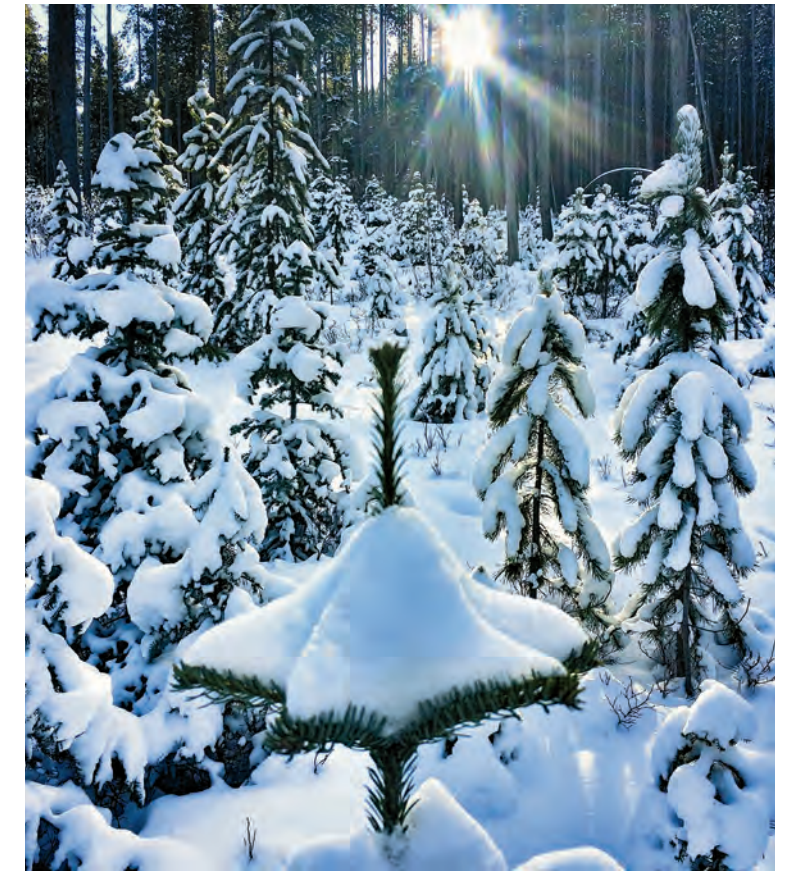
*(opposite)*

*With winter advancing fast, a Yellowstone grizzly bear, caught via a camera trap, breaks into a cache of whitebark pinecones stashed by red squirrels.*

DREW RUSH

*Following a blizzard in the Custer-Gallatin National Forest near Bozeman, Montana, a pine forest is covered in marvelous crystalline snow sculptures.*

DAVID GUTTENFELDER







*Once nearly wiped out by fur trappers, river otters have rebounded and now are common sights along rivers such as the Snake in Jackson Hole. Here, an adult otter and companion feast on cutthroat trout.*

CHARLIE HAMILTON JAMES

*(opposite)*  
*Maggies, members of the crow family, are especially adept at shadowing predators. Here, a bird tries to steal fish from a clan of otters. If the magpie isn't careful, it could become lunch.*

CHARLIE HAMILTON JAMES



*The Greater Yellowstone Ecosystem is globally famous for its native cutthroat trout, highly prized by anglers, but climate change threatens to severely impact these cold-water relics from the Ice Age. Here, cutthroats spawn in a tributary to the Gros Ventre River on the edge of Jackson Hole.*

CHARLIE HAMILTON JAMES





PART THREE

# Beyond the Frame

*If the national park idea is . . . the best idea America ever had, wilderness preservation is the highest refinement of that idea.*

—WALLACE STEGNER, 1990

*Crossing the Thorofare Plateau, the Cody herd—one of nine major wapiti, or elk, subpopulations in Greater Yellowstone—moves from the high country toward areas at lower elevation for the winter. Here, big game animals can still migrate long distances, a valuable characteristic of this magnificent ecosystem.*

JOE RIIS





### *Abducted by Aliens*

## Some problems can be fixed. Some mistakes can be rectified. The extirpation of wolves from Yellowstone National Park and the vacancy of

the wolf's ecological niche fall in that category. Seldom in United States history has such a bold conservation initiative yielded such a resounding and controversial success.

The first wolves that recolonized Yellowstone, after 60 years of wolf absence, were captured in western Canada during January 1995, by tranquilizer darting from helicopters, and transported south in large wooden shipping crates by plane and then by truck to the Lamar

Valley. It must have been a harrowing journey. For 10 weeks they lived in acclimation pens, largish areas behind high fencing, each pen enclosing roughly an acre. There were three pens, all located discreetly up little drainages beyond sight from the Lamar road—one at Rose Creek, one at Crystal Creek, one farther upstream at Soda Butte—and containing a total of 14 translocated wolves. At first the wolves scarcely dared step out of the crates. They had been abducted by aliens, after all, and who knew what might happen next? Packmates from Canada, already familiar to one another, were assigned to the same pens, in an effort to minimize trauma. They ate roadkill deer, elk, moose, and bison brought on mule-drawn sleds by park biologists, who otherwise left them alone.

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*No longer lone, an adopted member of the Phantom Springs wolf pack stands tall in Grand Teton National Park. After an absence of about 70 years, wolves returned to the park in 1998, moving down from Yellowstone.*

CHARLIE HAMILTON JAMES

## Wolfers

Just down the valley from Soda Butte, Rick McIntyre and I met a group of visitors that included Elli Radinger, a wolf devotee, author of nature books, and tour operator from Germany. Radinger began leading wolf-focused tours to Yellowstone back in 2000, she told me, and continued at the rate of about three or four per year until recently. Since delisting occurred, though, and her German clientele learned that the Lamar wolves could now be legally shot when they wander north across the park boundary into Montana, that portion of her business has crashed. “People have a very personal relationship to these Yellowstone wolves,” she said. “They found out about the hunting outside—and especially about the killing of some of our favorite wolves. And they said, ‘We’re not going there anymore.’” It is, she added, “really a very emotional thing.”

Just beyond the park boundary lies remote terrain that, according to Montana’s administrative map for hunting and fishing, falls within Region 3. One of the state’s wolf biologists for Region 3 is a young woman named Abby Nelson, who grew up riding horses in Greenwich, Connecticut, before coming west to Colorado College. Nelson studied veterinary science and wildlife biology, getting a master’s degree from the University of Wyoming and spending three winters as a volunteer, then further time as a hired tech on Doug Smith’s wolf program in Yellowstone. She began work for the state of Montana in 2010, trapping wolves to affix radio collars, following their movements throughout her region, monitoring their fates.

When I visited her camp on West Rosebud Creek, one of the most hidden-away corners of Montana, she was trapping for the Rosebud Pack—a mating pair with three new pups—in order to get a collar into that group. She had six leghold traps set on her trapline, each with padded jaws, carefully buried, and tactically located to intercept the wolves where they walked. I rode along on the back of her four-wheeler while she checked the traps, all empty that morning. Then she placed a seventh trap, setting the jaws, laying it into a recess she had dug, covering it with a screen, then with finely sieved dirt and pine needles, making fastidious adjustments with a whisk broom, adding canine urine (a territorial attractant) from a bottle, all while standing on a small canvas tarp and wearing gloves, to avoid leaving any suspiciously human scent. They don’t teach these skills in Greenwich.

The wolf population in Montana had risen above 600, she told me, despite fairly liberal hunting and trapping quotas, with 230 animals taken in the past year. The inherent growth rate was such that only sizable harvest would keep the population size within the state’s desired limits. Part of her job was to verify and record each wolf death within her region. “It’s hard to kill wolves,” she said. “And the thing about wolves, whether you like them or hate them—they’re so fecund, they’ll still hold their numbers.” The average wolf litter is about five and a half pups, and an alpha pair can produce a litter each year.

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*A wolf pack follows grizzly bear tracks through the snow to what might be the next meal, likely to be elk.*

RONAN DONOVAN



clipboard. Then we went on, circling beneath the snowy glower of Mount Sheridan (named for General Phil) toward the lake.

Before wolf reintroduction, this clement drainage supported 40 or 50 elk through each winter. A few would die of starvation if not cold, and the local grizzly bears, emerging in spring from their dens, would feast on those carcasses. That much had been documented by earlier carcass surveys before the Gunther-Smith era. But the dynamics changed in the late 1990s, when the wolf reentered the picture. Dispersing down from the Lamar release points within just a couple years, venturesome wolves discovered easy pickings at Witch Creek. They killed some of the elk, probably by driving them out of the warm zone into deep snow, as wolves do, and scared the others away. Nowadays no elk winter in the little basin, and therefore no elk carcasses lie available when the grizzlies awake, groggy and famished from their long hibernation. But the odd thing, Gunther told me, is that Witch Creek's grizzlies have remained. The elk are gone; the wolves are gone. But the big bears seem to like the area for its remoteness and security.

What do they eat in spring?

“Earthworms,” he said. Earthworms plus a few other items—including pocket gophers and spring beauty wildflowers and ants. That was the simple version of a complicated story to which he would return later in our trip.

We made camp in the Heart Lake Ranger Cabin, which in past years would have been bunkered with four feet of snow into early May but this year was clear. Instead of shoveling it out, we basked on the front porch, drinking beer (from a cache in the root cellar) and admiring the

view. Next morning we hiked the soggy west side of the lake, Gunther scouting for grizzly tracks and Smith, whose portfolio includes birds as well as wolves, taking note of each flicker, junco, and sapsucker. On the return, we traversed higher upslope to Rustic Geyser, an oval pool 30 feet wide and filled with steaming turquoise water. In the deep end lay the skull and leg bones of an elk that had blundered to its death. Gunther recorded some bear scat nearby and then drew my attention to large clumps of sod that had been ripped out of a wet, grassy bank. “This was an earthworm dig,” he said. “It’s kind of amazing, something as big as a grizzly bear, making a living from earthworms.” The bears rely on this resource only briefly, he explained, while spring snowmelt saturating the soil drives the worms up near the surface. They might also excavate gophers, eat the sugary corms of spring beauties, and consume quantities of clover and grass. A month later, when elk return here for calving, the grizzlies would prey on their calves.

Another irony, he added, is that these earthworms are exotics, not members of native species. (My later research confirmed it: After the last ice age, native earthworms were absent from northern North America, including the Yellowstone area, and into that absence came European earthworms, transported inadvertently by people bringing over their preferred old-world plants in soil. The European worms thrived and became dominant, as European humans did, in the new world.) “Not all exotics are necessarily bad,” Gunther added. Soil

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*Bocats usually prowl furtively, though in recent years a family has become visible along the Madison River in Yellowstone.*

MICHAEL NICHOLS









*(preceding pages)*  
***In 1912 the National Elk Refuge was created to help keep wapiti herds alive. In winter several thousand elk converge on the refuge, where they are fed, and many tourists show up to watch them.***

CHARLIE HAMILTON JAMES

***Few wildlife events in North America are more dramatic to witness than the autumnal head-to-head combat between bull elk.***

CHARLIE HAMILTON JAMES

*(opposite)*  
***In late winter bull elk, like this one at the National Elk Refuge, shed their antlers. They will spend the rest of the year growing new ones, just in time to joust again during breeding season.***

CHARLIE HAMILTON JAMES





*Hurling herself up and over, a female coyote long-jumps toward a snow tunnel where a vole is trying to escape. This hunting expedition in Yellowstone's Hayden Valley near Mud Volcano produced 15 voles for the coyote in less than 10 minutes.*

RONAN DONOVAN



*It can be a brutal,  
hard-knocks life,  
even for a wolf.  
Here, in Pelican  
Valley, a member of  
the Mollie wolfpack  
inspects the remains  
of an elk bull that a  
few days earlier had  
killed the pack's  
alpha male as the  
wolves tried to bring  
down the wapiti.*

RONAN DONOVAN



*Detail*

# Migrations

*Seasonal migrations follow paths carved into the landscape long before humans drew in boundaries of ownership or protection.*

In spring hoofbeats return to the mountains of the Greater Yellowstone Ecosystem. Pronghorn, North America's land-speed champions, migrate more than a hundred miles from the Green River Valley into Grand Teton National Park. Mule deer mosey 150 miles north from the Red Desert Basin to the mountains around Hoback Basin, just south of the park. Herds of elk stream into Yellowstone Park along a web of migration routes; in October they fan back out again. Tanzania's Serengeti Plain, with its thunderous migrations, comes to mind—except these are happening in the western United States, in an expanding modern economy. And that's the challenge.

The circulation of the ungulates is like a heartbeat that pumps life into the ecosystem; it “gives animation to the spirit of this amazing place,” says Arthur Middleton, an ecologist at Yale. “But there is a risk of cardiac arrest.” If the migration corridors are the arteries of the ecosystem, he adds, in some cases they're being constricted and blocked by myriad human developments: oil fields, subdivisions, highways, fences. An initiative to preserve the migratory path of the pronghorn offers hope by uniting government land managers, landowners, conservationists, and hunters. Middleton and his colleagues are compiling an atlas of migrations to guide policymakers. All share the aim of allowing pronghorn to follow the paths their ancestors have followed for millennia—and even cut loose at 55 miles an hour now and then.

*New research on elk migration has revealed the truly amazing and breathtaking lengths that wapiti go to to pass between winter and summer range—journeying literally up and over mountains.*

JOE RIIS





*National Geographic photographer Joe Riis, working with scientist Arthur Middleton and a team of colleagues, has chronicled the dramatic migrations of elk. They ford raging rivers (opposite), such as the South Fork of the Shoshone River, at 6,000 feet in elevation, and return from summer grasses to pass along the edge of steep mountain cliffs (right), near the Thorofare Plateau.*

JOE RIIS





*A bald eagle helps itself to the carcass of a pronghorn (antelope) that died while trying to swim the Upper Green River.*

JOE RIIS



*South of Yellowstone, pronghorn migrate seasonally, spending summers in Grand Teton National Park and winters in the Upper Green River Basin, more than 100 miles away. The corridor is called Path of the Pronghorn.*

JOE RIIS



*(opposite)*

*The migratory paths are part of ancient behavior passed along through generations—and information about these migrations is essential to discussions on how to protect this aspect of wildness in Greater Yellowstone.*

JOE RIIS

*If a migratory corridor becomes disrupted, pronghorn trying to leave Grand Teton Park during the winter could get stranded and die. Seemingly simple things, such as restringing fences with wildlife-friendly line, can have huge positive consequences.*

JOE RIIS







## VOICES

### ***Bill Hoppe***

RANCHER, WOLF-RELEASE CRITIC

“My great-grandfather was the first white man born in the Montana Territory. We have always lived in this area, even before there was a national park. We love this area, and we love the park. It is really when they started calling it an ecosystem that all the problems began. People from all over the world having an opinion on how this area should be managed and how we should be ranching, hunting, and living our lives. People that have never once had a grizzly at their front door when their wife walks out to go to work in the morning.”

*Bill Hoppe has deep connections to his homeland on the edge of Yellowstone, and he's not happy about outsiders preaching how it ought to be managed.*

ERIKA LARSEN



PART FOUR

# The Future of the Wild

*There is one spot left, a single rock about which this tide will break, and past which it will sweep, leaving it undefiled by the unsightly traces of civilization. Here in this Yellowstone Park the large game of the West may be preserved from extermination.*

—GEORGE BIRD GRINNELL, 1882

*Hillary Anderson cuts a mythical cowgirl figure for the 21st century as she rides the range above her father-in-law's ranch in the Tom Miner Basin, north of Yellowstone.*

CORY RICHARDS







*(preceding pages)*

*Local cowboys guide visiting dudes on a horseback ride into Yellowstone's Lamar Valley. It's an activity that still endures in a landscape more "Wild West" in some ways than at any point in 140 years.*

ERIKA LARSEN

*Tumbling 150 feet in cascading ribbons, Dunanda Falls on Boundary Creek meets the twilight with a rare "moon-bow," an evening equivalent of a rainbow, formed at its feet.*

MICHAEL NICHOLS



*A glimpse of the New West: In the Gravelly Mountains of Montana, John Helle and his two sons stay with their 1,400 sheep (opposite) on public lands through the summer grazing season. A Peruvian shepherd and two Akbash guard dogs including this one (right) help tend the massive flock. Constant vigilance and bear spray replace bullets as a way of managing bears and wolves.*

DAVID GUTTENFELDER



*Employing the traditional method of hauling a harvested elk home for butchering, a hunter pulls his quarry out of the backcountry just beyond the northern boundary of Yellowstone. Elk hunting is a savored activity for Montanans and a business contributing millions of dollars to the regional economy.*

DAVID GUTTENFELDER



## VOICES

### ***Leo Teton***

MEMBER OF THE SHOSHONE-BANNOCK TRIBES  
*Fort Hall Reservation, Idaho*

“What does the buffalo mean to me? In the 1800s the buffalo was almost extinct due to the killing by the white men. But today we still use the buffalo in all our ceremonies. As a sweat lodge owner, I use the buffalo skull in my lodge. I place the buffalo skull in front of my doorway on a dirt mound. This altar represents strength and good, long, healthy life to all those who enter . . . We pray for the buffalo to have a good travel to the other side, the animal spirit world.”

*At Fort Hall, Idaho, outside a sweat lodge where Shoshone-Bannock tribal members gather for ritual purification ceremonies, Leo Teton stands next to a pole ornamented with bison skulls.*

ERIKA LARSEN





*To enter Hayden Valley in summer when bison cows and calves spread far and wide across the rolling hills, and to hear bulls snorting in the rut, kicking up dust and wallowing, is like glimpsing into the American prairie centuries ago.*

MICHAEL NICHOLS





*(opposite)*  
*Bison specialist Todd Traucht inspects a Yellowstone animal before shipping it to the Fort Peck Indian Reservation in eastern Montana, where the tribe is enthusiastically building its own herd.*

DAVID GUTTENFELDER

*At the Fort Belknap Indian Reservation in north-central Montana, Yellowstone bison are held in a facility until they, too, can pass quarantine, proving they don't carry disease.*

DAVID GUTTENFELDER





*(preceding pages)*

*Younger generations of ranchers are learning to employ new nonlethal techniques for coexisting with grizzlies and wolves, including fladry lines strung with colorful fabric (left) as a visual deterrent to wolves. For westerners living near Yellowstone, so much is changing. Here, four-year-old Elle Anderson (right) chases a ball—and, with any luck, a meaningful future on her parents' ranch in Montana.*

LOUISE JOHNS

*The Thorofare region, one of Greater Yellowstone's healthy highways for elk, cradles wildlife populations unbothered by the trappings of modernity and becomes a touchstone for thinking about the meaning of progress.*

JOE RIIS





*Every year NASA spacecraft send back images of other planets devoid of life, while right here, in America's backyard, there's an exotic landscape, teeming with spectacular life forms large and small, that exceeds anything seen on Mars.*

MICHAEL NICHOLS

*Views of the Grand Canyon of the Yellowstone, like this one from Artist Point, never fail to elicit awe. Somehow we know that this is what “breathtaking” is supposed to be.*

MICHAEL NICHOLS



## VOICES

### ***Becky Weed***

RANCHER, BELGRADE, MONTANA

“We can pick our poison. Castle-building landowners who are busily resurrecting a feudal society while chopping up habitat. Ranchers and politicians who are too quick to put wildlife in the crosshairs as a scapegoat for deeper ills in our agricultural economic system. Energy companies’ boom-and-bust frenzies. The press of all the rest of humanity. It’s hard to condemn any one sector without acknowledging the warts and complicity of any other, but collectively we’re degrading the magic that makes this region unique. Can we slow down, scale back, and proceed with less of an air of entitlement?”

*Sheep farmer, conservationist, naturalist, and businesswoman Becky Weed and her husband, David Tyler, raise sheep on pastures not treated with chemicals and guard their flocks with dogs and llamas, not guns. In the New West, they and others are pioneering fresh approaches to living in harmony with the wild.*

ERIKA LARSEN

