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National Parks
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**ADMIRING THE VIEW** from Inspiration Point in Yosemite National Park, 1980. ©ROGER MINICK

## FEATURES



COVER:
**A KITE FLIER soaks up the last rays of sun at San Francisco's Ocean Beach, part of Golden Gate National Recreation Area.**
©PHILIP PACHECO

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**RUSS KLEINMAN**, a late-blooming moss aficionado, discovered this moss, *Schistidium rivulare*, in the Pinos Altos Range in New Mexico in 2015.

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# DEPARTMENTS

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**ON THE WEB**
Follow NPCA on Facebook, Twitter and Instagram and get park news, travel tips and more on NPCA's blog: **npca.org/blog.**

© JENNIFER YOUNT PHOTOGRAPHY

# Summer, At Last

**Summer is here,** and change is in the air. The weather is warming, a challenging school year is ending, more of our friends and family members are getting vaccinated every day, and long-awaited vacations are within reach. I'm ready for all of it.

A few years ago, three generations of my family gathered for a memorable vacation in Yellowstone and Grand Teton national parks. To see these places through my grandchildren's eyes was deeply rewarding, and the experience made me excited to continue our adventures and show them more of what our national parks have to offer. Sadly, the pandemic put a hold on those plans.

Now, as public health guidance evolves and infection rates fall, I'm eager, like so many of you, to pick up where we left off. But it won't quite be business as usual in the park system this summer. Many park entrances, buildings and services could still be closed or unavailable. Some national parks have implemented new reservation systems. Communities near parks could have limited medical facilities. And despite all this, we anticipate record-breaking crowds at many parks this year, based on early information.

To make the most of your trips, consider getting off the beaten track. If Maine is on your list, try Katahdin Woods and Waters National Monument, a newly minted International Dark Sky Sanctuary, where moose and lynx are abundant, and you can see waterfalls and ancient rock formations. In Utah, even Capitol Reef National Park, the least visited of the "mighty five," has become busier recently, but the state's spectacular national monuments are typically less crowded. Or step back in time and visit Florissant Fossil Beds National Monument in Colorado, where you'll find one of the world's richest and most diverse fossil deposits.

Whether you visit a Civil War battlefield near your home or take an epic road trip to a national park, safely enjoy your adventures. And don't forget to thank our park rangers, who work so hard to protect the places we love.

With gratitude,
Theresa Pierno

# Editor's Note

©PHILIP PACHECO

**MORI POINT** in Golden Gate National Recreation Area.

# Something Old, Something New

**One of the pleasures** of travel stories is that they can transport you to a beloved, familiar place. When I lived in San Francisco, I visited many of the spots Julia Busiek highlights in her article about Golden Gate National Recreation Area (p. 32). I used to walk my dog at Fort Funston, which is heaven for humans and pups alike with its sandy stretch of beach, wild dunes and ragged bluffs. As a transplanted New Yorker, I could hardly believe at first that the park was inside city limits. I have rosy, nostalgic associations with many other places in Julia's story: I remember Ocean Beach bonfires and furiously biking through the wind and fog on the Golden Gate Bridge and Saturday mornings in the Marin Headlands. The wildflowers, the hills, the light: All those things became part of me then, and revisiting old haunts with Julia and photographer Philip Pacheco was a delight.

But the sprawling urban park has dozens of sites, and Julia's article introduced me to some new spots, too. Mori Point wasn't restored until after I moved away. And I've never visited Fort Point or the Sweeney Ridge lookout where Spanish colonizers first saw the San Francisco Bay. The story also opened my eyes to the brilliance of school-night camping. Before the COVID-19 outbreak, Julia would occasionally commute to work from the headlands, showing up, as she put it, with her sleeping bag in tow and the smell of campfire smoke in her hair.

We have all had to get creative about how to entertain ourselves during the pandemic, and I love this idea of a close-to-home excursion. I hope that many of you will be able to travel safely this summer. But if that's not in the cards, maybe your own towns and cities can offer you an alternative sort of adventure that mixes together the satisfactions of familiarity with the thrill of discovery.

Rona Marech
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NationalParks

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**WHO WE ARE**
Established in 1919, the National Parks Conservation Association is America's only private, nonprofit advocacy organization dedicated solely to protecting, preserving and enhancing the U.S. National Park System.

**WHAT WE DO**
NPCA protects and enhances America's national parks for present and future generations by identifying problems and generating support to resolve them.

**EDITORIAL MISSION**
National Parks magazine fosters an appreciation for the natural and historic treasures found in the parks, educates readers about the need to preserve those resources, and illustrates how member contributions drive our organization's park-protection efforts. The magazine uses the power of imagery and language to forge a lasting bond between NPCA and its members, while inspiring new readers to join the cause. National Parks magazine is among a member's chief benefits. Of the $25 membership dues, $6 covers a one-year subscription to the magazine.

**MAKE A DIFFERENCE**
Members can help defend America's natural and cultural heritage. Activists alert Congress and the administration to park threats, comment on park planning and adjacent land-use decisions, assist NPCA in developing partnerships, and educate the public and the media. Sign up to receive Park Notes, our monthly email newsletter at npca.org/join.

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If you have any questions about your membership, call Member Services at 800.628.7275. On a selective basis, NPCA makes its membership list available to organizations that our members may find of interest. If you would like your name removed from this list, please call us at the number listed above.

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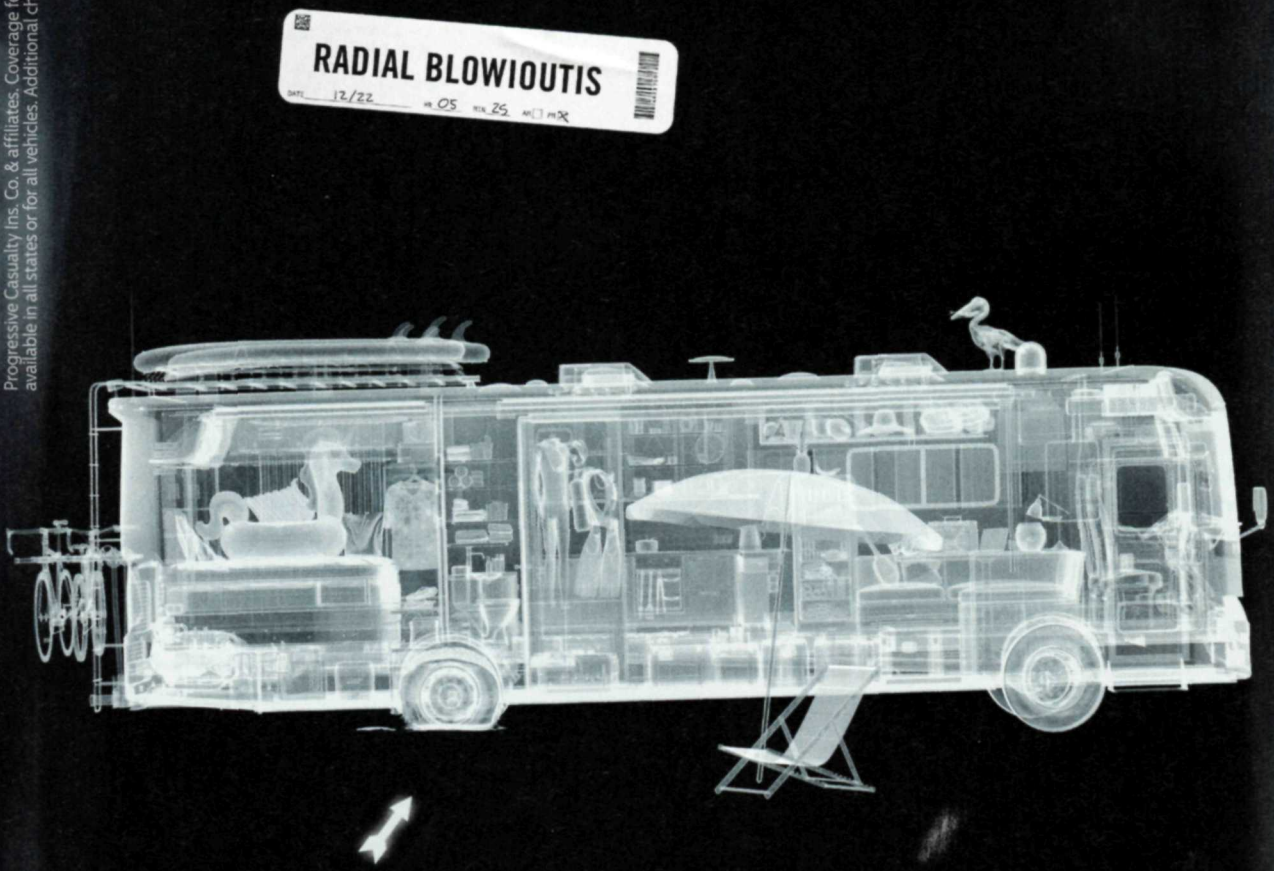


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# Letters


## IN PRAISE OF DIFFERENCE

We all know the value of diversity in our biosphere and among all creatures. Thank you for bringing our human diversity more fully into the pages of National Parks.

**KATE DALY**
*Reston, VA*

### RECALLING SACRIFICE

Thank you for publishing the article, "Lest We Forget," and bringing attention to Jeff Ohlfs' work to memorialize the Park Service employees and volunteers who have died while serving in our national parks. How sad that much of this history has been lost.

**KATHY VEJTASA**
*Roseburg, OR*

### A GEM OF A JOURNEY

Thanks for the article by Melanie Kaplan on the Chesapeake and Ohio Canal. It shows what happens when you put a good writer on a bike and set her loose in some of the East's nicest countryside. I know how beautiful the area is because I biked the canal from Cumberland to D.C. in 1985. It was the fulfillment of a childhood ambition postponed until my 40s.

It was a park back then, but just barely. I encountered so many tree roots on the towpath between Paw Paw and Hancock, I wondered if my 10-speed street bike would stay together. I hardly saw another soul.

At a resting place near Harpers Ferry, I marveled at the many modes of transportation around me, from the pedestrians on the path to the canoes on the Potomac River to the trains on the railway to the cars on the highway to the planes I could hear overhead. Accessible to so many people, the canal is used far more today than when I rode it. It is a true gem.

**DON BARKMAN**
*Oak Ridge, TN*

Thank you for the outstanding and informative story on the Chesapeake and Ohio Canal. It is by far the most beautifully written and attention-holding narrative that I have read in many years.

I am not a bicyclist nor a fan of long treks (plus I am past my prime), but you whetted my desire to follow in your tread marks. Your trip was a virtual pleasure.

**TERRY HALLADAY**
*Lakewood, CO*

### FACING THE MUSIC

I love music. And I love hiking and backpacking. But they're separate enjoyments, not a "delicious combination," as asserted by Anastasia Allison in your Spring 2021 article, "Musical Mountaineering." I don't go into the wilderness or the backcountry of national parks to come upon musicians playing their instruments, whether it's violins and keyboards or electric guitars, accordions or ukuleles. It's presumptuous of musicians to assume that others will enjoy what they do. While music may "leave no trace," it is nonetheless intrusive to those who seek the quiet of the natural world. Were I to encounter such musicians, I would politely but firmly tell them to pack up and go play at the visitor center.

**BOB LEROY**
*St. George, UT*

### MOONSTRUCK

Zach Cooley's photo in "Landing the Moonshot," in which the moon resembles an eye encircled by red rocks, is absolutely stunning. Thank you to Cooley and to the editors of National Parks magazine for publishing this work of art.

**CHARLES & NANCY BRABEC**
*Canvas, WV*

**Send letters to** National Parks Magazine, 777 6th Street NW, Suite 700, Washington, DC 20001-3723. Or email npmag@npca.org. Include your name, city and state. Published letters may be edited for length and clarity.

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**Today is a historic day for all of us who care for our public lands and waters.**

*NPCA President and CEO Theresa Pierno praising the confirmation of Deb Haaland as secretary of the Department of the Interior in a USA Today article. Haaland, who previously served as vice chair of the U.S. House Committee on Natural Resources while a representative for New Mexico, is the first Native American Cabinet secretary.*

---

**We are going into the 21st century looking at justice, equity, diversity and inclusion as not just amazing words but really putting some teeth behind the words.**

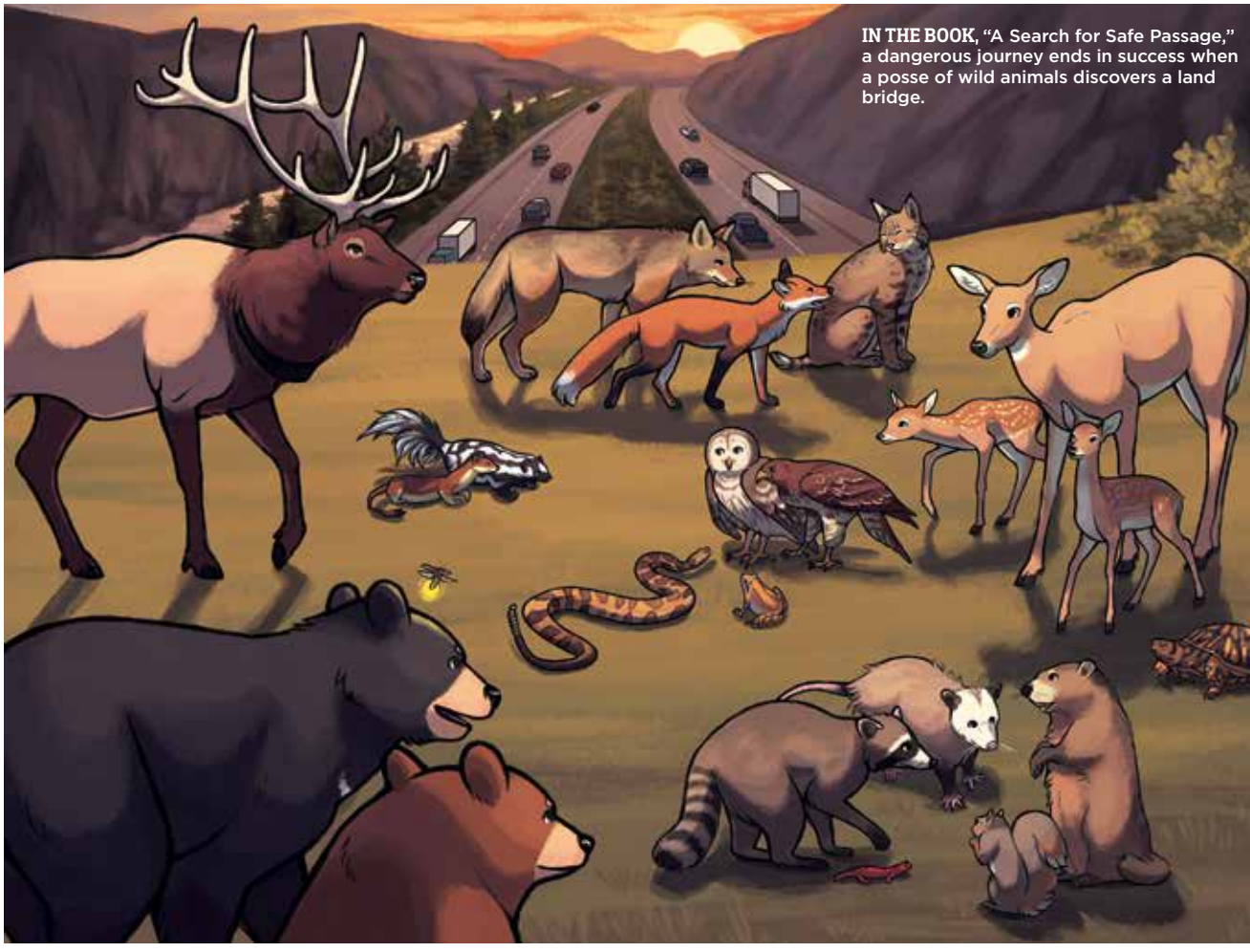
***Tracy Coppola, Colorado program manager, as quoted in an article in The Colorado Sun about how anti-Asian violence around the country has accelerated the effort to turn a former World War II incarceration camp into a national historic site. Amache, also known as Granada Relocation Center, held more than 7,500 people of Japanese descent (mostly Americans) who had been forced from their homes during the war.***

**People don't come to a national park to see oil wells.**

***Cara Capp, senior Everglades program manager, explaining NPCA's opposition to oil and gas exploration in Florida's Big Cypress National Preserve in The Hill. More than 100 groups, including NPCA, wrote to Interior Secretary Haaland in late March asking her to reject recent permits submitted by Burnett Oil Company, whose previous seismic testing activities razed more than 400 cypress trees and churned up over 100 miles of the preserve.***

**PHOTO:** INTERIOR SECRETARY DEB HAALAND VISITED UTAH'S BEARS EARS NATIONAL MONUMENT IN APRIL.

©AP PHOTO/RICK BOWMER, POOL



**IN THE BOOK,** "A Search for Safe Passage," a dangerous journey ends in success when a posse of wild animals discovers a land bridge.



# Safe Passages

A new children's book shows how highways can harm wildlife — and puts a spotlight on a deadly stretch of road near Great Smoky Mountains National Park.

**In the children's** chapter book "A Search for Safe Passage," author Frances Figart spins a tale of wildlife banding together to cope with the dangers of a human highway that cuts through the mountains where they live. A parade of beautifully illustrated animals, from a poem-reciting firefly to a ponderous turtle, meets new friends, receives guidance from a wise elk and ultimately discovers a natural land bridge that connects the two parts of their historic range.

Figart, creative services director for Great Smoky Mountains Association, said the recently released book, with illustrations by Emma DuFort, is part of an effort to raise awareness about the real-life situation along Interstate 40, a four-lane road that runs through the Pigeon River Gorge near Great Smoky Mountains National Park. Like the fictional highway, I-40 bisects prime habitat, disrupts migration corridors and makes it more difficult for animals traveling out of the park to find mates, food and shelter. Those that do try to cross are often hit and killed, and collisions can be deadly for drivers, too. As the warming climate forces animals to migrate farther and I-40 traffic increases, the problem is only going to get worse, Figart said.

To address this mounting human safety and wildlife conservation crisis, roughly 20 groups and agencies (including NPCA and Great Smoky Mountains Association, the park's

educational partner), formed Safe Passage: The I-40 Pigeon River Gorge Wildlife Crossing Project in 2021. Using data from camera traps and GPS-collared elk, coalition members are in the process of identifying the spots along I-40 where animals are either crossing successfully or dying in high numbers. Jeff Hunter, who is NPCA's senior program manager in the Southeast region and has been leading the Pigeon River Gorge work since 2017, said installing a wildlife overpass in a location where many collisions occur is the coalition's "big, hairy, audacious goal."

In the meantime, a more immediate opportunity has emerged. If the coalition can raise the capital, the North Carolina Department of Transportation will include wildlife-friendly measures when it replaces a bridged section of I-40 this fall. Hunter said improvements could include a quieter design, the use of cattle guards to prevent hooved animals — such as the area's growing elk population — from wandering onto nearby on- and off-ramps, and fencing to funnel wildlife under, rather than across, the interstate.

Figart, who traces her interest in wildlife back to her childhood in eastern Kentucky, said she channeled her 11-year-old self while writing the book. She harbors the dream that "A Search for Safe Passage" will land in the laps of budding road ecologists and engineers. "These projects take a lot of time," Figart said, alluding to the decades of planning and coordination — not to mention wrangling of funding and political support — required for projects such as constructing wildlife overpasses. "I wanted to provide a way for youth to really engage with this problem." After all, she added, "they're going to inherit this work."

**—KATHERINE DEGROFF**

*Learn more about the effort at smokiessafepassage.org.*

**A REAL-LIFE** image of a bobcat using a culvert to bypass I-40 inspired this scene from the book.

©EMMA DUFORT/GREAT SMOKY MOUNTAINS ASSOCIATION

# A (Driverless) Drive in the Park

**The Park Service** is not generally known for being at the vanguard of transportation technology — think mules and decades-old buses — but Yellowstone National Park is taking a big leap into the future this summer. Visitors, perhaps frustrated after sitting in their cars at the back of a bear jam or waiting for ages for a Grand Prismatic Spring parking spot, will be able to leave the driving to … no one. Thanks to a forward-looking pilot program, the park is offering free rides on electric driverless shuttles at Canyon Village through August.

The project, a partnership between the Park Service and Beep, a Florida-based provider of autonomous mobility services, is one component of the park's overall efforts to improve transportation. The pilot is limited to short trips between Canyon Village's visitor education center and nearby lodges and campgrounds, so it won't do much to relieve Yellowstone's congestion issues, but automated shuttles could become part of the solution over the long term as the technology matures. The sustainability advantage of electric vehicles is another plus, said Vanessa Lacayo, a regional Park Service spokesperson.

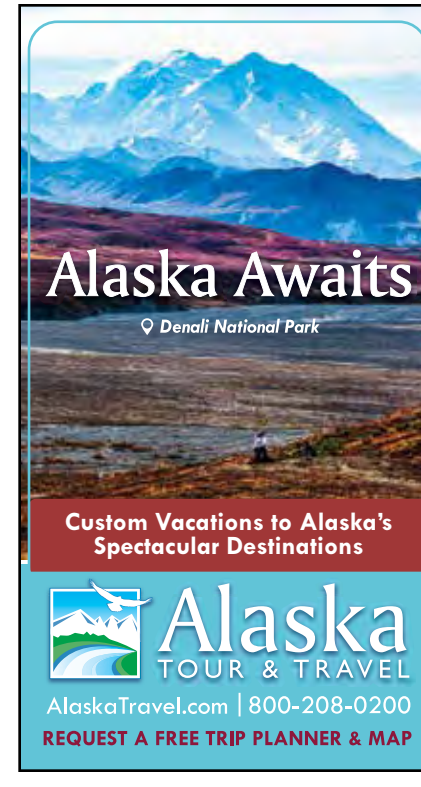
"That's probably the biggest driver, no pun intended," she said.

Safety is a primary concern for officials at Yellowstone (and Wright Brothers National Memorial in North Carolina, which Lacayo said is the only other park experimenting with the technology so far). Yellowstone visitors will be required to wear masks to mitigate coronavirus risks, and no more than six passengers will board at one time, among other precautions. The shuttles will run at speeds of up to 15 mph, and an attendant will be ready to take over control of the vehicle if necessary. Beep CEO Joe Moye said that the shuttles have successfully operated in urban environments rife with road hazards — albeit not of the bison or grizzly variety. He said sensors on each side of the vehicles allow them to react and brake about 10 times faster than humans, and the shuttles won't get distracted by stunning scenery or wildlife photo ops. "They're always on the lookout," he said.

NPS

—NICOLAS BRULLIARD





# Sacred Stone of the Southwest is on the Brink of Extinction

Centuries ago, Persians, Tibetans and Mayans considered turquoise a gemstone of the heavens, believing the striking blue stones were sacred pieces of sky. Today, the rarest and most valuable turquoise is found in the American Southwest— but the future of the blue beauty is unclear.

On a recent trip to Tucson, we spoke with fourth generation turquoise traders who explained that less than five percent of turquoise mined worldwide can be set into jewelry and only about twenty mines in the Southwest supply gem-quality turquoise. Once a thriving industry, many Southwest mines have run dry and are now closed.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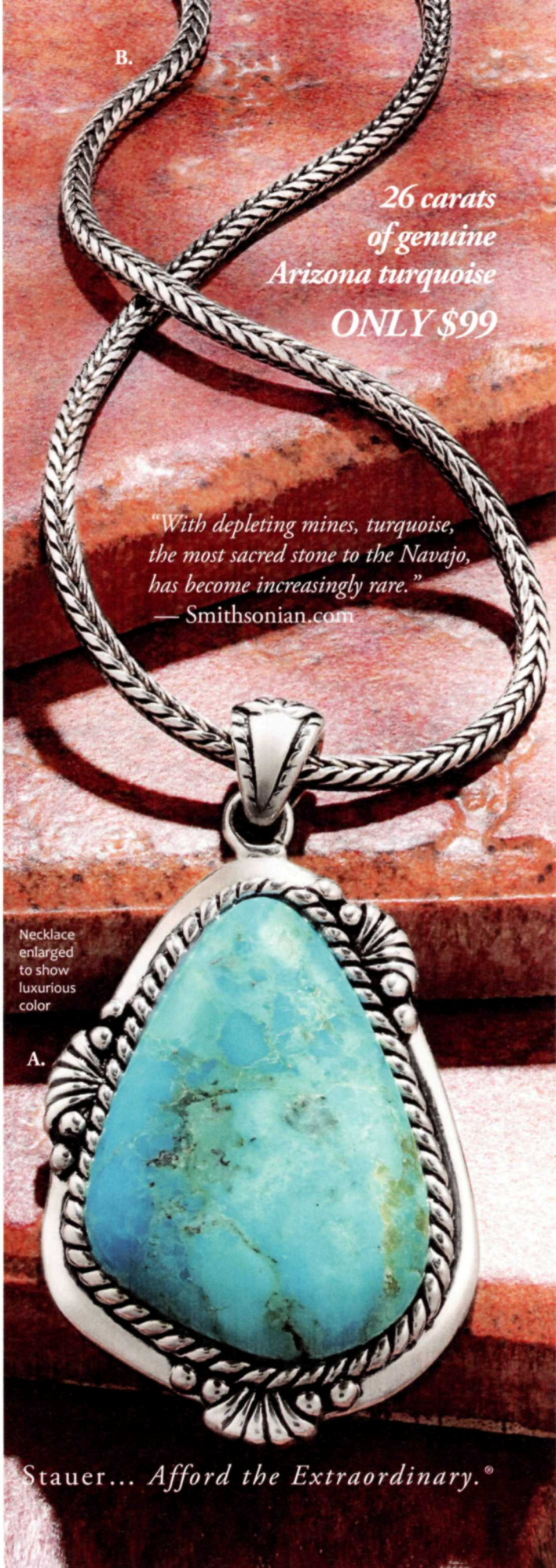
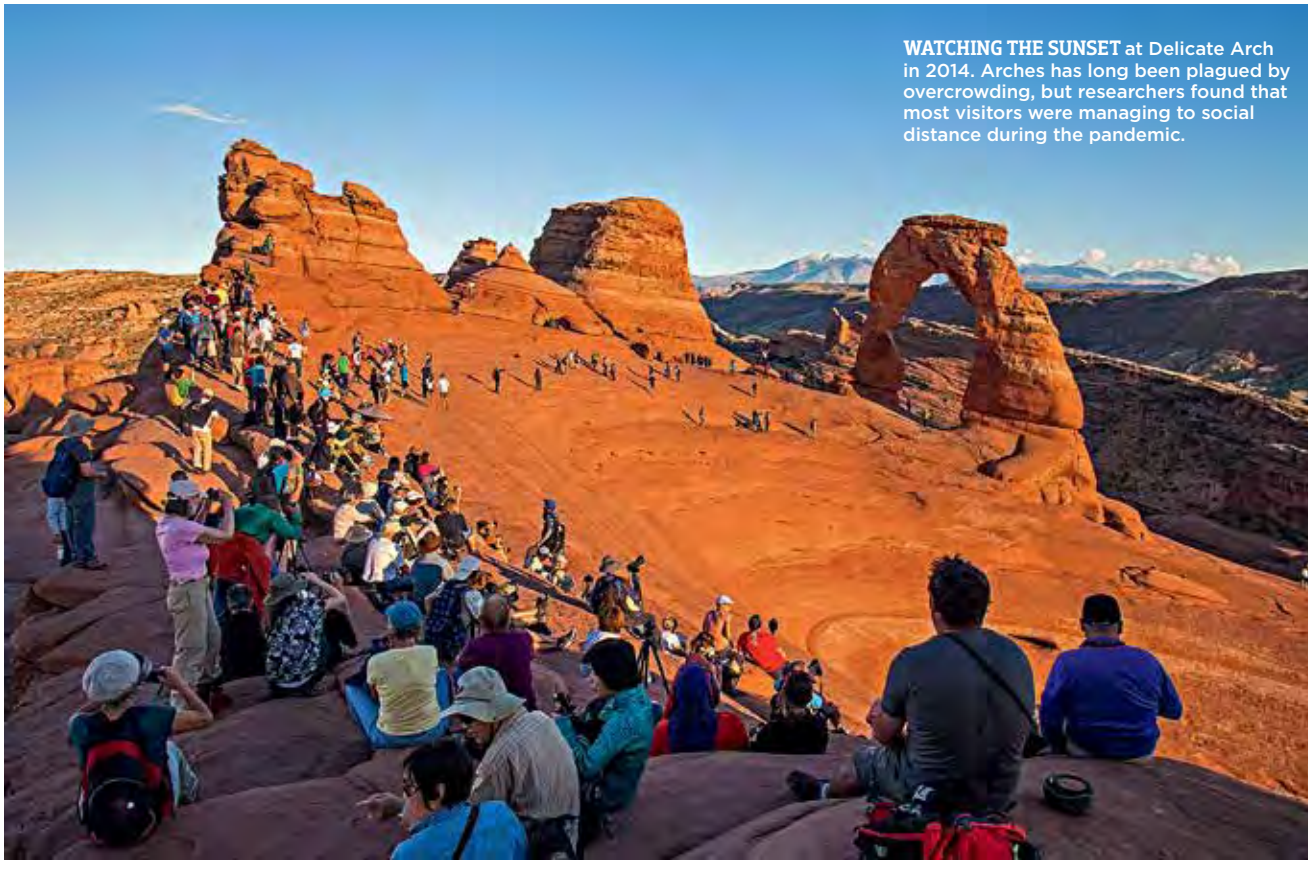




**WATCHING THE SUNSET** at Delicate Arch in 2014. Arches has long been plagued by overcrowding, but researchers found that most visitors were managing to social distance during the pandemic.



# Getting Some Distance

## Is social distancing in busy national parks achievable? During the pandemic, some researchers headed to Arches to find out.

**When COVID-19** led to temporary park closures early last year, it seemed like an all-around low-visitation year was inevitable for the National Park System. But that's not quite how it unfolded. Once sites reopened, many were swarmed again by pandemic-weary, nature-starved visitors seeking relief in the wide-open refuge of the outdoors. In the end, the National Park Service still logged 237 million visitors in 2020, and at least 12 sites saw record-breaking numbers.

The June surge at Arches National Park in Utah, a site that's long been plagued by overcrowding, caught the attention of Wayne Freimund, a professor of environment and society based nearby at Utah State University's Moab campus. By then, the Park Service had adopted the Center for Disease Control and Prevention's social distancing guidelines, but Freimund wondered: Would people really be able to stay apart in the park's busier areas near the visitor center and on well-loved trails, where footpaths can be narrow and shoulder-to-shoulder run-ins with fellow parkgoers are the norm? "It seemed like an untested hypothesis," he said.

Freimund teamed up with fellow Utah State professor Zach Miller — another visitor use expert who has advised managers in an array of parks — and other colleagues to learn more. Miller explained that despite the large size of many parks, park infrastructure tends to lead to social clustering, rather than distancing. "Most parks are designed to concentrate visitors around sites of interest," he said. "Yet we also have a health crisis. Are we creating an environment in which we are driving risks?"

With park officials' blessing, Miller installed a camera in the outdoor foyer of the Arches Visitor Center, with clear tape over the lens to obscure visitors'

features. During two days in July, the motion-activated camera captured one-minute videos, which were later painstakingly analyzed. Using behavioral cues to gauge visitors' social connections, the team counted numbers of groups and group members; how many groups encountered each other within 6 feet; and how many visitors wore masks. They then spun out the data using statistical models.

The results, published in February, show that 69% of all groups were able to avoid close encounters with other groups. Also, 61% wore masks, even though mask-wearing was not required in the park at the time. The researchers also noted a higher incidence of single visitors than in previous studies, suggesting that during the pandemic, more people were choosing to fly solo or breaking away from their parties, perhaps to ease congestion.

In short, where they had opportunities to reduce health risks, most visitors were doing so. "People were taking it seriously," Freimund said. "They were managing their own behavior. I was pleasantly surprised." Since the probability of non-socially distanced encounters rose with increased group size and numbers of groups, the team recommended that park staff encourage visitors to keep groups small and to take turns cycling through high-traffic spots — for example, near information stations and bathrooms.

Trail activity was trickier to study, both because trail width at Arches varies and because the blistering desert heat can cause cameras placed in the open sun to malfunction. But anecdotally, Freimund said visitors were stepping off trails to make way for other hikers, which could reduce health risks, even if it's harmful to trail-bordering flora and fragile soil crusts. At other parks, Miller and others have suggested making trails one-way loops where possible.

Continued input from researchers such as Freimund and Miller, who are both fellows at Utah State's Institute of Outdoor Recreation and Tourism and have studied visitor use in parks from Glacier to Acadia, could help park managers better understand and negotiate visitor flow, even after COVID-19 risks abate. Freimund said on-site research restrictions during the pandemic actually spurred creative approaches, such as utilizing geographic data collected via cellphones to study patterns of use in parks and in surrounding communities. "We're trying to adapt those tools to look at recreation and tourism," he said. And he still has lots of questions. For example: "What happens to visitation when the park has to shut the gate?" he asked. "Where do people end up going?"

—DORIAN FOX

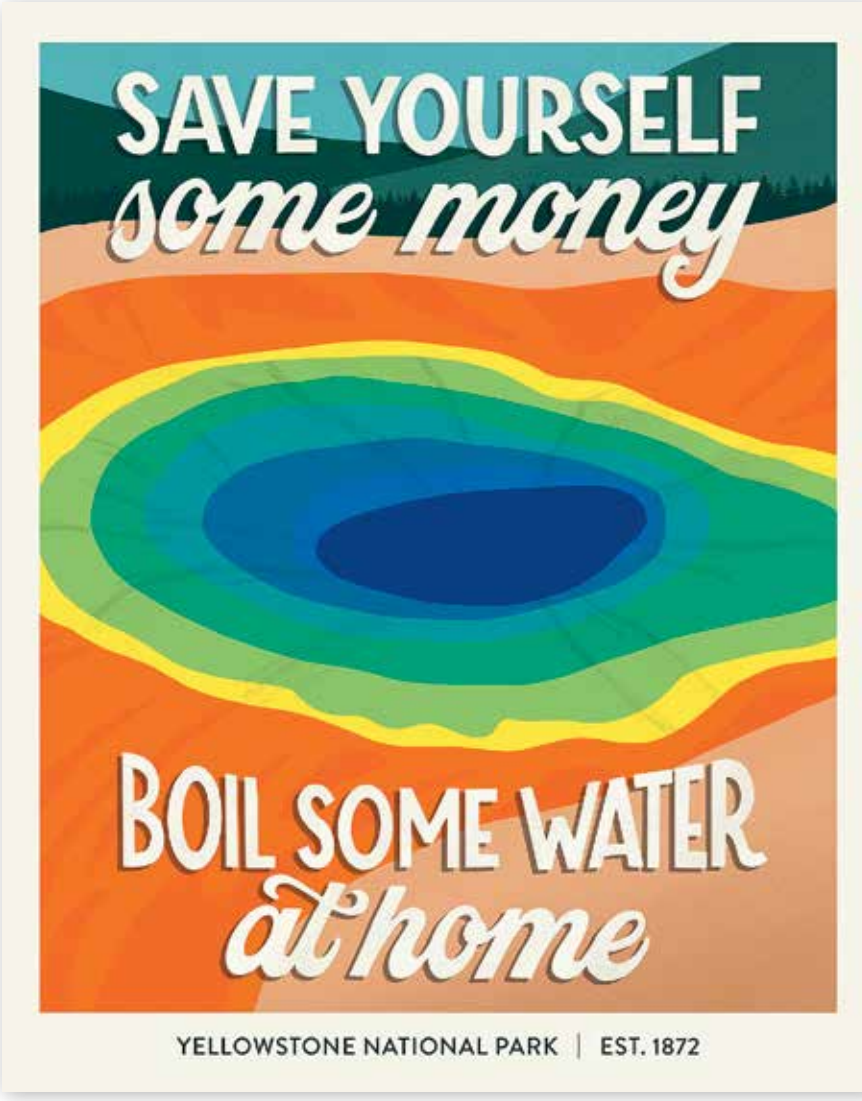
## NPCA at Work

**Anyone who** has recently traveled to popular national parks during the high season is surely familiar with the problem of overcrowding. Frustrated visitors have encountered gridlock traffic in Yosemite Valley, hours-long lines to enter Arches and full parking areas on Cadillac Mountain in Acadia. It's a complicated issue: How do you balance the desire to make national parks available to all people with the need to protect these places and the visitor experience?

During the pandemic, some national parks implemented timed-entry or reservations systems — or both — to limit heavy crowds. Encouraged by the success of these programs, staff at places such as Yosemite and Rocky Mountain plan to employ them again this summer and fall. In the coming months, Glacier will pilot a new timed-entry system; Acadia will continue honing a reservation system years in the making; and Zion will again require reservations for shuttle access to Zion Canyon. NPCA strongly supports these efforts, which reduce traffic in busy scenic spots and on trails and make it easier for parkgoers to access facilities and park their cars. Crowd control also helps protect the parks' animals, plants and other sensitive resources.

"The greatest problem facing parks including Yosemite, Glacier and Rocky Mountain — that is within the Park Service's control to fix — is overcrowding," said Cassidy Jones, Southwest outreach and engagement manager. "Reservations and timed-entry systems are one way that we can help ensure that visitor expectation meets experience. We owe it to our parks and their visitors."

For details about the reservation system in a particular park, go to recreation.gov.






**ARTIST AMBER SHARE** scours Yelp, Google and Tripadvisor to find the best worst reviews for her Subpar Parks illustrations.

# Overrated

## How artist Amber Share turned the rants of national park killjoys into a viral sensation.

**Most people rave** after visiting a national park. A quick Google search reveals scads of gushy — if banal — praise: "This place is breathtaking," "Oh, the views," "What a fantastic, beautiful park."

But even parks have their trolls.

"Too many birds," one displeased traveler wrote online after a trip to Channel Islands National Park. Other reviewers — taking to Yelp, Tripadvisor and Google — have expressed their own dissatisfaction: Olympic National Park has "no wow factor," Golden Gate National Recreation Area consists of "only fog," and Grand Canyon National Park is "a hole. A very, very large hole."

If you believe what you read, "cold, dark, damp and stinky" epitomizes the Mammoth Cave National Park experience, while Saguaro National Park is "OK if you like cactus." An underwhelmed tourist shrugged off Mount Rainier National Park, writing, "I've seen bigger mountains." Someone else described Zion National Park's scenery as "distant and impersonal." And Death Valley National Park takes the cake, according to one gloomy reviewer, as the "ugliest place I've ever seen."

When Amber Share, a North Carolina graphic designer and illustrator, stumbled upon a few of these one-star gems in the fall of 2019, she immediately recognized the comedic potential. "It was a lightning-bolt moment," she said.

Share found a delightfully awful review of Arches National Park ("Looks nothing like the license plate"), married it to an original illustration and posted it online. Convinced she'd struck creative gold, she began cranking out posters for other parks, dubbing the project Subpar Parks. Soon enough, through serendipity and the churn of social media, the world took notice. Her art went viral, her Instagram followers skyrocketed to over 320,000, and outlets from the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Los Angeles Times to NPR and The Wall Street Journal came calling. The attention catapulted Share's online business into overdrive. Today, sales are brisk enough to keep her and her husband working full time. Though fans can purchase any number of outdoors-themed goodies, Share said her cheeky Subpar Parks posters, stickers and postcards (of parks and public lands both here and abroad) remain her bestsellers.

This July, Plume — a division of Penguin Random House — will publish Share's book, "Subpar Parks: America's Most Extraordinary


©AMBER SHARE

National Parks and Their Least Impressed Visitors." The book, which includes some previously unreleased artworks, features playful roasts of all 63 U.S. national parks.

The wild popularity of Subpar Parks has been a surprise to the 32-year-old creator. "It's kind of a weird, dry humor," said Share, who is herself an avid backpacker and unabashed national park junkie. "It's not for everyone. But it's resonated with people far beyond what I ever expected."

Share hopes her drawings not only elicit chuckles but also remind people to take themselves, and their critics, a little less seriously. "If the best that Mother Nature has to offer can get a one-star review, you don't have a chance of pleasing everyone," she said. "So, you might as well stop trying."

**-KATHERINE DEGROFF**

# Tune In, Bliss Out

Drop into protected places around the world — or share your own recordings — at a new online archive, Sounds of Your Park.

**AT SOUNDS OF YOUR PARK,** tune in to everything from owls hooting to caribou stampeding to wild bees buzzing, one of the most popular clips so far.

©RON BIELEFELD/BIA/MINDEN PICTURES

**Here's a suggestion:** When life feels a little overwhelming, as it frequently does these days, pop on some headphones and immerse yourself in a faraway world. At the new online archive, Sounds of Your Park, you can listen to a dawn chorus of birds in California's Yosemite National Park or the soothing sounds of night in the bayou at Louisiana's Jean Lafitte National Historical Park and Preserve. Or, by clicking on a world map, head to Chiltern-Mount Pilot National Park in Australia to hear the plink of pobblebonk frogs or to Ivvavik National Park in northwestern Canada to hear a caribou stampede.

"This is an opportunity to stay safe and distant and reengage with nature," said Jacob Job, research associate with the Sound and Light Ecology Team at Colorado State University. That was his thinking in May of last year, during the depths of the pandemic, when he and George Wittemyer, a professor in Colorado State's fish, wildlife and conservation biology department, published an article in The Hill touting the benefits of tuning in to natural sounds, a magic-like practice that's good for everything from mood to productivity. The story guided readers to a handful of wild soundscapes.

That might have been the end of that public service announcement, but after a National Park Service bigwig caught wind of the article, international wheels started turning. Eventually, Parks Canada, the George Wright Society and the World Commission on Protected Areas joined the Park Service and Colorado State to build a sound archive, which the group unveiled in October. So far, the collection showcases over 100 recordings from parks and protected areas in nearly 20 countries, and it's constantly growing. Sound hounds are invited to submit recordings of nature or cultural events, from two minutes to two hours in length.

"It's not like we're done or ever will be done," Job said. "We want representation from every country. That would be a minor goal."

Other goals include publishing detailed instructions for amateur recorders and buying high-quality audio equipment to loan to park managers. One of Job's more far-reaching aspirations is to help make field recordings mainstream so that people start to think of "audiomarks" (wolves howling or geysers whooshing, say) as something significant enough to plan a trip around — like landmarks. And of course, the group wants to promote wild places around the world. "We're trying to let people know that these protected areas exist," Job said, "so they can receive attention and continued conservation."

—RONA MARECH

*To upload audio or listen, go to soundsofyourpark.com.*

**A RECENT STUDY** on the effect of a variety of natural sounds on health showed that the sounds of water have the greatest impact on improving positive emotions and health outcomes.

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# Mossing Around

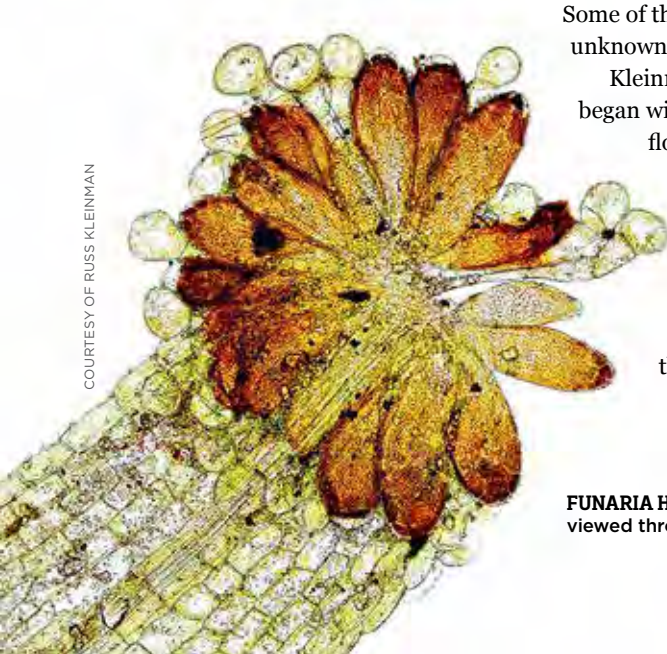
Why while away retirement on the golf course when you could become a moss expert and hunt down some of the least studied plants in New Mexico's national parks?

**WHEN RUSS KLEINMAN** retired from a 27-year career as a general surgeon, he didn't imagine he'd start rappelling into ice caves. He couldn't have foreseen that microscopes would displace the cutting boards in his kitchen, and he never guessed that he'd be publishing peer-reviewed papers in botanical journals. But that was before he discovered "mossing."

"Russ does not know how to do anything halfway," said Karen Blisard, his wife of 40 years. "Moderation is not his middle name."

Mossing, officially known as bryology, is the study of bryophytes — mosses, liverworts and hornworts. Bryophytes, which reproduce through spores and lack a traditional vascular system to distribute water and nutrients, are some of the planet's oldest land plants. They favor cool, damp climates and are found around the world. Bryophytes are difficult to identify, however, and most don't have common names. Even professional botanists often overlook them. Yet, in a decade of fieldwork that has included exhaustive inventories of three national parks, Kleinman and Blisard have collected thousands of specimens and documented more than 200 unique mosses and several dozen liverworts in New Mexico. Some of these plants were previously unknown in the state.

Kleinman's descent into bryology began with an interest in the wildflowers, trees and shrubs that he saw while backpacking around the Gila National Forest near his home in southwestern New Mexico. Once adept at identifying the larger vascular plants, he progressed to grasses. Then, in 2010, he met Kelly Allred, one of New Mexico's preeminent botanists.



COURTESY OF RUSS KLEINMAN

**FUNARIA HYGROMETRICA** viewed through a microscope.

"Kelly told Russ that if he knew five mosses, he would be one of the top bryologists in the state," Blisard recalled.

"How can you ignore that challenge?" Kleinman said.

Intrigued, Kleinman signed up for an annual botanical retreat with some of the country's top bryologists. Allred was there, too. The group spent their days prying mosses from limestone cliffs in New Mexico's Sacramento Mountains. In the evenings, they identified what they'd found. Different species of mosses and liverworts can look identical to the naked eye, and even under a magnifying glass. The only sure way to identify a bryophyte is with a microscope. Allred gamely stayed up into the early hours of the morning teaching Kleinman how to differentiate cellular structures under the scope.

Kleinman was mesmerized. The specimens were filamentlike — most moss leaves are only one-cell thick — but under the scope their intricate beauty was laid bare. The cells of a *Funaria hygrometrica* looked like a mason's handiwork. Cells of the *brachytheciaceae* family brought to mind a tangle of skinny worms. Others resembled woven baskets, or reptilian scales.

Blisard soon contracted her husband's passion for bryophytes, made liverworts her specialty and became his partner in crime. Liverworts are plants that either have leaves without a midrib or are flattened and resemble ribbons, and Blisard grew to love identifying them under the microscope, especially *Radula complanata*, whose unfurling leaves reminded her of a Chinese fan. The microscope work was a natural fit for Blisard, who, as a pathologist, spent 29 years analyzing biopsies of tumors or other tissues removed from the bodies of patients.

"It's helpful to know your way around a microscope," she said. "And what's nice about bryophytes is if you're wrong, nobody dies."

Allred said bryology is more accommodating to hobbyists than almost any other scientific discipline. While Ph.D.-level bryologists might study the genetic makeup of bryophytes, Allred said, the collection and identification are often done by nonprofessional scientists. One of the top bryologists in California was a commercial air conditioning mechanic.

"In the hard sciences, physics and all that, no amateur is paid any attention," he said. "In the history of bryology, amateurs have pretty much ruled the field."

To shore up their identification skills, Kleinman and Blisard started collecting all the bryophytes they could find. In 2010, they got a National Park Service permit to inventory the bryophytes at Gila Cliff Dwellings National Monument. Later, Kleinman and Blisard spent five years cataloging mosses and liverworts at Carlsbad Caverns National Park. They published both studies in a peer-reviewed bryology journal.

## Playing Possum

**Moss is** so adversity-tolerant that it can be hard to determine when it is actually dead. Under poor environmental conditions, mosses enter a state of dormancy, or cryptobiosis. Even after prolonged drought, moss can spring back to life with a few drops of water. In 2004, a moss sample from Antarctica was resurrected in a laboratory incubator after being frozen for more than 1,500 years.

©SUSAN CERNIK

**RUSS KLEINMAN** and Karen Blisard mossing in California.

Most recently, Kleinman, 66, and Blisard, 69, Allred and fellow mosser Kirsten Romig joined Laura Baumann, the biological science technician at El Malpais National Monument, to conduct a bryophyte inventory of the western New Mexico park. The fieldwork was grueling because much of the park is covered in uneven volcanic rock.

"It's like hiking on jagged glass," Kleinman said. "At the end of the project, the soles of our boots looked like they'd been ripped on by a Rottweiler."

When lava erupted from volcanic vents there — as recently as 2,500 years ago — it created a warren of subterranean caves and unique microhabitats for mosses. Despite the sunbeaten desert landscape on the surface, these caves are home to the southernmost perennial ice in the continental U.S.

"It's basically like being in a refrigerator," Baumann said. "Right at the entrance of some of these caves, where we get some sunlight, we end up with these big, lush moss gardens where you kind of expect to see fairies floating around."

Baumann said this inventory establishes a baseline understanding of the diversity of the park's bryophytes and helps explain their role in the complicated and fragile cave ecosystems. "We can't protect what we don't know," she said. "As conditions on the surface get warmer and drier, the caves will become warmer and drier, and we'll start to lose those special microclimates. There are all these cascades that happen in ecology. It's not usually one thing that goes. You take out one brick, and the wall starts to crumble."

Baumann taught Kleinman how to rappel down into these ice caves to collect hard-to-reach mosses. From 2016 to 2019, Kleinman and Blisard collected over 1,200 bryophyte specimens at El Malpais. After painstakingly identifying each one under their kitchen microscopes, they found 110 species, including six that are new to the state. Most of these specimens are filed away in an herbarium — essentially a plant library — at Western New Mexico University.

Although they've made significant contributions to bryology in New Mexico, some goals remain elusive. Whenever they're out mossing, Kleinman and Blisard are searching for a hornwort — a bryophyte that grows narrow, hornlike reproductive structures. No one has ever found one in New Mexico, although they grow in neighboring Arizona and Colorado.

"Hornworts are one of the Holy Grails of this area," said Blisard. "Whoever finds one will be really famous among a very small group of people." **NP**

**JACOB BAYNHAM** is a freelance journalist in Montana.

JOE GIERSCH/USGS

**A WESTERN GLACIER STONEFLY** in Glacier National Park, Montana. Icy runoffs from rock glaciers may sustain stoneflies long after surface glaciers have melted.

# A Chilly Refuge

## Rock glaciers, long neglected by science, may help creatures from pikas to stoneflies endure climate change.

**THE WESTERN GLACIER STONEFLY** may not be quite as renowned as the polar bear, but it's just as dependent on ice. The stonefly spends most of its short life scuttling under rocks in its aquatic larval stage before metamorphosing into a winged adult smaller than a paperclip, mating and, within days, dying. Its range encompasses just a few glacier-fed creeks, mostly in Glacier and Grand Teton national parks. Relying on icy runoff is a risky strategy these days: As carbon emissions have cooked the climate, glaciers and snowpack have dwindled, and mountain streams have begun to run dry. But the stonefly isn't a lost cause. Like many mountain dwellers, it has a secret stronghold, a little-known habitat type that should linger even in the face of rapid warming: the rock glacier.

When you imagine a glacier, what pops into your head? Likely a majestic hunk of radiant, bluish ice, squatting in a cirque, plastered to a mountainside or slumping into the ocean. But mountain ranges from the European Alps to California's Sierra Nevada are also chockablock with rock glaciers — huge volumes of ice hidden beneath blankets of stony debris. Although rock glaciers are inconspicuous, they're far more numerous than surface glaciers. In the mountains of the Great Basin, the vast swath of high desert that stretches from eastern California to western Wyoming, one study found that rock glaciers contain a whopping 93% of the total ice.

Rock glaciers aren't merely abundant — they're resilient. Shielded from the sun's rays by their blanket of rubble, rock glaciers — along with cold talus slopes, ice-filled moraines and other so-called cold rocky landforms — remain frozen solid even as neighboring surface glaciers diminish to puddles. Now some researchers believe that rock glaciers, and the habitats they create, could help defend western glacier stoneflies and other sensitive alpine species against climate change.

"Five years ago, I would've said that these stoneflies are gone in our lifetime," said Scott Hotaling, an alpine biologist at Washington State University. "I don't think that anymore."

Concealed by their bouldered shrouds, rock glaciers historically received little scientific attention. Among the first to appreciate these chilly redoubts was Connie Millar, a scientist emerita with the U.S. Forest Service. Over years of fieldwork in the Sierra Nevada, Millar discovered that the region's talus slopes and rock glaciers functioned as vast convection systems, circulating and storing pockets of frigid air within their rocky lattices. These cold cavities, Millar realized, provided ideal shelter for pikas, adorable rabbit relatives that easily succumb to heat stress. "It's like stepping off the tarmac in Phoenix and into an air-conditioned house," Millar said.

Although pikas are considered one of the species most susceptible to future warming, they've proved surprisingly resistant to climate change so far — and Millar thinks they'll continue to hold out. Based on geological evidence, she estimates that some north-facing rock glaciers may outlive surface glaciers by

several centuries, benefiting a vast, cold-adapted alpine menagerie. The frigid air that wafts from their rocky interiors bathes nearby wetlands and meadows. Critters from spiders to wolverines scamper across their boulder-strewn flanks. And the icy seeps that trickle from their cores sustain not only stoneflies but scores of other aquatic insects.

These bastions of biodiversity are particularly abundant in national parks, among them Grand Teton, Glacier, Olympic and North Cascades. John Muir wasn't thinking about pikas when he advocated for the protection of Yosemite, nor was George Bird Grinnell concerned about stoneflies when he pushed to establish Glacier. But it turns out that the rock and ice that define these protected places make for climate-resistant habitat as well as soul-nourishing scenery. "When we talk about conserving glacier-associated biodiversity, the national parks are almost the whole story," Hotaling said.

Rock glaciers are among the park system's most important types of climate refugia — ecological bulwarks whose natural features buffer plants and animals against warming — but refugia come in many forms. In California's Devils Postpile National Monument, steep valley walls cast sweeping shadows and capture massive pools of cold air. In Virginia's Shenandoah National Park, streams that are fed primarily by chilly groundwater may help sustain brook trout after other creeks have grown too warm to support these fish.

Identifying refugia can help park staff concentrate on those habitats that are likeliest to endure. In Acadia National Park, biologists expect drought-susceptible trees such as red spruce to persist along cool, damp coastlines, and wildflowers such as three-toothed cinquefoil to hang on atop mountain summits. The park is using refugia maps to guide cinquefoil restoration in subalpine areas and could turn to such maps in the future to direct efforts to control invasive shrubs in sensitive forest patches. "We're trying to identify spots where spruce will continue, and figure out how to manage in places where it won't," said Abe Miller-Rushing, the park's science coordinator.

In alpine park sites, rock glaciers could likewise become the focus of management efforts, said Toni Lyn Morelli, coordinator of the Refugia Research Coalition. Park staff could limit hiking near icy streams that support imperiled stoneflies or restore wetlands along the fringes of talus slopes. In the future, Morelli said, rock glaciers could even serve as relocation sites for climate-stressed organisms such as mountain sorrel, a plant that thrives in alpine meadows. "People feel pretty overwhelmed by climate change and its dire consequences," Morelli said. "Refugia conservation gives a little bit of hope."

NPS/LUSHA TRONSTAD

**SCOTT HOTALING WALKING** toward a rock glacier in Grand Teton National Park, Wyoming.

Not even rock glaciers, though, can withstand climate change indefinitely. Since 2015, Hotaling and his colleagues have kept close tabs on a dozen alpine sites in and around Grand Teton National Park, tracking both stream conditions and the fate of aquatic insects such as the western glacier stonefly. In 2020, said Lusha Tronstad, an entomologist at the University of Wyoming, one of their instruments began beaming back anomalously warm temperatures from a seep below Paintbrush Rock Glacier. It was a telling indication that the creek had shriveled, exposing the device to the air — and, perhaps, a harbinger of more dramatic losses to come. Rock glaciers will buy the stonefly and its ilk some time, but until we curb climate change, these alpine creatures are on thin ice. **NP**

**BEN GOLDFARB** is the author of "Eager: The Surprising, Secret Life of Beavers and Why They Matter."

## Cave Curiosity

©JEAN K. KREJCA

**Some of** the most unusual cold rocky landforms in the National Park Service's care occur in Yosemite. Over millennia, chunks of granite sloughed off the park's famous rock walls, creating vast boulder jumbles pocked with cool, interstitial caves. In 2006, scientists exploring these caves found something odd: a pseudoscorpion, a blind arachnid no larger than a fingernail. (Unlike true scorpions, pseudoscorpions lack tails and stingers, although they do have enlarged, pincer-like claws, known as palps.) The creature, which likely hunts mites, ants and other invertebrates, was eventually declared a new species, the Yosemite Cave Pseudoscorpion (*Parobisium yosemite*) — proof that cold rocky landforms are cauldrons of evolution as well as climate refugia.

# CALL IN THE WILD

*Search and rescue, CPR, a hair-raising ambulance ride. All in a day's work for a paramedic in Yosemite.*

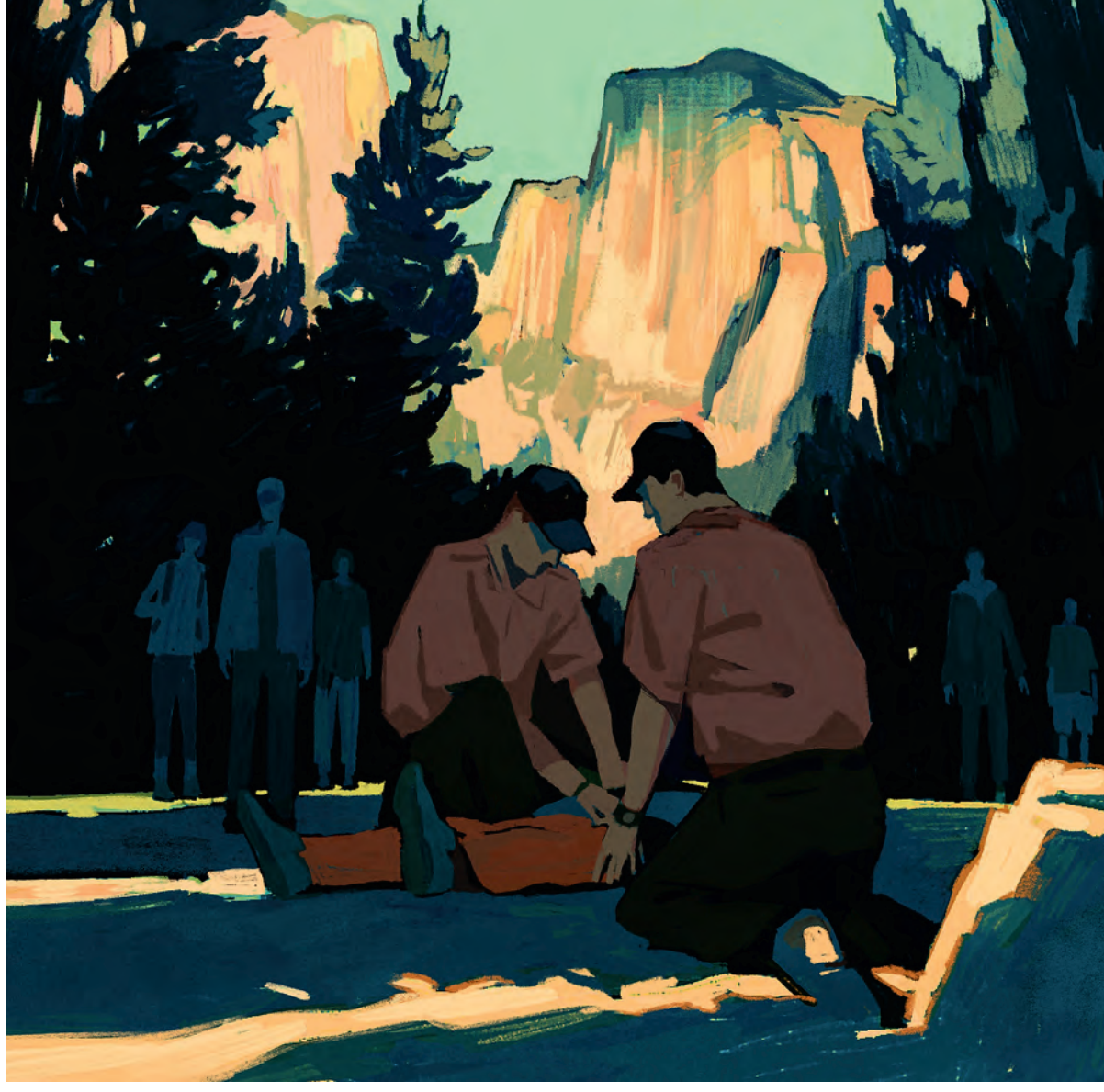
The first time I helped bring someone back from a cardiac arrest in a national park was on Saturday, April 4, 2015, at 4:39 p.m.

An hour earlier, Erwin Barret, a 56-year-old cattle farmer from Wisconsin, was having a heavenly day. It was the first time he'd visited Yosemite, and as he drove into the valley with his wife, Rebecca, and their 28-year-old son, Jake, he couldn't get over the magnificent waterfalls and the granite monoliths of El Capitan and Half Dome rising above the fog-blanketed forests. After lunch, Erwin and his family decided to hike around the rocks of Lower Yosemite Fall, the final 320 feet of one of America's tallest waterfalls. Hoping for a better view, Erwin scrambled to the top of a large boulder. But as he stood up, something about the dizzying scale of the granite cliffs and the sound of water crashing in all directions threw him off balance. Jake attempted to catch his father, but instead they both fell 10 feet into the shallow water and boulders below.

When the call came in, I was scarfing down a turkey wrap in the emergency medical services office at the Yosemite Medical Clinic. I'd missed lunch when I went out on a search and rescue mission up the Mist Trail earlier that day to help an elderly woman who'd fainted.

**BY KEVIN GRANGE**

ILLUSTRATIONS BY HOKYOUNG KIM



"Ambulance 3," the dispatcher called over the radio, "please respond to the rocks beneath Lower Yosemite Fall for a report of two people who fell off a boulder."

Standing, I squeezed the last bite of my sandwich into my mouth and hurried to the ambulance.

Luke Cohen, a law enforcement ranger, arrived on the scene first. If you were ever ill or injured in a remote place like Yosemite, Mount Rainier or Zion, Luke was the person you wanted responding. He was everything I aspired to be. Along with being a park ranger and paramedic, he was also highly trained in structure fire, wildland fire, search and rescue, and hazardous material emergencies, and he was certified in tactical EMS, high-angle rope and swift-water rescue. Like some kind of special-ops soldier, he was just as comfortable dangling out of a helicopter performing a short-haul rescue on the side of El Capitan as he was plucking a drowning victim from the Merced River's strong current. Best of all, Luke was a calm and consummate professional, no matter what the emergency. But when he gave his scene size-up over the radio that afternoon, he sounded panicked.

"I have two patients," he said, struggling to catch his breath, "one green tag, one red."

Color-coding patients as green, yellow, red or black tags was a way to quickly triage, or sort, patients in a multiple-casualty incident. A "green tag" meant the patient could walk and had minor wounds. A "yellow" patient was more severely injured, and a "red tag" meant the victim had critical, life-threatening injuries. A "black tag" meant call the coroner.

"Ambulance 3 copies update," I replied. "Arriving on scene."

Noah, my partner on the ambulance that afternoon, and I parked at the trailhead, grabbed our spinal immobilization equipment and basic life support bag — complete with oxygen, splinting supplies, bandages and devices known as "airway adjuncts," which are used to keep patients from choking on their own tongues — and raced up through the boulders and shallow water.

As we approached, I spotted the telltale signs of an

As we approached, I spotted the telltale signs of an emergency — a body lying supine, surrounded by worried bystanders who appeared helpless.

emergency — a body lying supine, surrounded by worried bystanders who appeared helpless. Fortunately for the patient though, Luke was also on the scene.

"This is Erwin," Luke announced as we arrived, gesturing to an overweight man in jeans and a red Wisconsin Badgers football shirt. "About 15 minutes ago, he fell into the water from approximately 10 feet, from that boulder just behind us. Family states he had a loss of consciousness lasting approximately one minute. They, along with a few bystanders, helped drag him from the shallow water, and now he's alert but says he can't move or feel his lower extremities. I also noticed he's growing increasingly lethargic."

Luke had started an IV in Erwin's right arm, covered him with a silver emergency blanket to prevent hypothermia and placed a cervical collar around his neck. But Erwin didn't look good. He was pale and shivering, and his body was wedged between two boulders. His eyes were closed, and he kept whispering, "Please help me."

"Hang in there, Dad," said Jake. "We're doing everything we can."

Miraculously, Jake had suffered only minor bruises and abrasions during the fall. He stood next to his mother.

As other search and rescue team members arrived, we quickly moved Erwin to a rigid backboard and carried him through the boulder field. We suspected Erwin had a brain bleed and a high thoracic spinal injury, either of which could kill him at any moment.

"Coming through!" I yelled at a throng of tourists snapping pictures on the footbridge. "Emergency!"

By then, we'd placed Erwin onto a gurney and were wheeling him down the paved path toward the ambulance.

"Go with Dad in the ambulance," Jake instructed his mother. "I'll drive over and meet you at the landing zone."

"OK," she replied, hurrying to the front passenger's seat.

In the back of the rig, we cranked up the heat and removed Erwin's wet clothes. Next, we obtained a set of vital signs and performed a detailed physical assessment. Erwin had a 3-inch laceration on the back of his head and an open gash on his right forearm … but we weren't blinded by bright, bloody things. His altered mental status and lower-limb paralysis were what concerned us the most.

"Stay with us Erwin," Noah said, pinching his shoulder. "Can you open your eyes for us?"

"Please … help … me," Erwin managed, his voice growing fainter.

"Start driving!" I yelled to the ranger at the wheel.

The ranger up front gunned it for Ahwahnee Meadow, five minutes away, where we'd meet a medevac helicopter. Luke had requested one as soon as he'd realized Erwin was critical.

As we started driving, dodging potholes on the bumpy road and launching off frost heaves, I leaned my head toward the front to give Rebecca an update on her husband. "We're warming him to prevent hypothermia. We've started an IV to give him warm saline, checked his vital signs, EKG and blood sugar. We've also dressed his wounds, and he's doing a lot better."

Of course, no sooner did I say that than Erwin decided to die on us.

"Stop the ambulance!" Noah yelled. "He coded!"

The driver slammed on the brakes as I began CPR. Erwin's belly bounced in a wavelike fashion with each compression, and I heard a few ribs snap like zip ties. This is quite normal when you perform high-quality CPR on older patients, but it is always hard to hear.

While I performed chest compressions, Noah slapped defibrillation pads on Erwin's chest, and Luke inserted an airway adjunct, then delivered breaths with a bag valve mask.

A moment later, Erwin moved slightly, and we

## Rebecca was beside herself in the front seat. Stop! Go! Stop! Go! Alive! Dead! Alive! Dead!

detected a heartbeat.

"I've got a pulse!" Noah yelled up to the driver. "Let's go!"

The ranger raced toward Ahwahnee Meadow, but seconds later, Erwin's eyes glazed over again.

"Stop the ambulance!"

We started CPR a second time and, within moments, Erwin's pulse returned again.

"Drive!"

The driver hit the gas.

"Stop!"

Rebecca was beside herself in the front seat. Stop! Go! Stop! Go! Alive! Dead! Alive! Dead! Such was the roller-coaster ride of running a cardiac arrest.

When I started to tire, we switched positions, and Luke began compressing Erwin's chest while Noah managed the airway. I scanned Erwin's arm for a second IV site but couldn't locate one easily. I wasn't going to spend any time fishing around, so instead I drilled an intraosseous needle into the marrow of Erwin's shinbone, allowing us to infuse fluids and medication directly into his venous system.

A moment later, Erwin blinked his eyes open.

"Drive!" Noah yelled again.

We arrived at Ahwahnee Meadow to find a landing zone set up and secured by a team of firefighters wearing yellow bunker gear. A few minutes later, the air ambulance appeared over Half Dome in the bright sunlight. Seeing the helicopter, ambulance, fire engine and multiple patrol vehicles, the tourists watching assumed absolute hell was breaking loose. But we knew it was just another day in one of America's national parks where anything could happen — and often did.

"Good luck, Erwin," I said, as we loaded him onto the bird and transferred care to the flight crew. "They'll take good care of you."

After the helicopter lifted off, bound for a trauma center in Fresno, and the law enforcement units and fire engine cleared, a quiet calm returned to Yosemite Valley. We debriefed after the

call — what went well, what we could improve — and then returned to the clinic to replace the equipment on our ambulance. Once everything was restocked, we radioed dispatch that we were back in service.

The call was officially over, but it did not end there. At least not for me.

Like a coach watching a game tape, I spent the rest of the day — and most of the night — reviewing every moment of the incident and asking myself: Did I miss anything? Could I have done anything differently? Or worked faster? Was there anything I should've checked but didn't? Did I provide compassionate care? I knew I'd never run the perfect call, but that didn't mean I wouldn't spend my whole career aspiring to.

As the night wore on, my thoughts drifted to my experiences as a paramedic and park ranger. During my time working for the National Park Service, I had attended to an unresponsive scuba diver in Yellowstone's Firehole River and a heart attack victim in the spurting shadow of Old Faithful. I'd joined multiday search and rescue missions and helped visitors who had overdosed, suffered from strokes and fallen while rock climbing.

Around 1 a.m., my worried thoughts started to abate. The images swirling in my mind grew fuzzy, like out-of-focus photographs, and I began to drift off to sleep. And it was about that time that law enforcement rangers spotted a man down in the meadow across from El Capitan. A dispatch voice sounded in the dark — "All units stand by for a page for Ambulance 3" — and then shrill alarm tones blared from my pager as it vibrated and rattled across my nightstand like a chattering teeth windup toy.

I threw on my uniform and ran to the rig.

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**KEVIN GRANGE** lives in Jackson Hole, Wyoming, where he writes and continues to work as a paramedic. This essay was excerpted from his book, "Wild Rescues: A Paramedic's Extreme Adventures in Yosemite, Yellowstone, and Grand Teton," published April 6, 2021, by Chicago Review Press. Names and identifying details of the patient and Park Service personnel have been changed to protect their privacy.

**HOKYOUNG KIM** is an illustrator based in Queens, New York. She is interested in telling stories with images and using light and shadow to create moods.

A POPULAR VIEWPOINT in the Marin Headlands

Treating the lockdown blues with a close-to-home adventure in Golden Gate National Recreation Area.

# Heading for the Hills

**Bright morning sunlight glinted off** the downtown skyline as we drove toward San Francisco on the Bay Bridge. From the elevated freeway, the Financial District looked like a glass-walled ghost town, block after block of darkened office buildings and vacant storefronts. I used to spend many of my waking weekday hours in a cubicle on the ninth floor of one of those towers and my lunch breaks weaving down crowded sidewalks, searching for an unclaimed patch of sun where I could eat my sandwich. Then the pandemic hit. My office, like so many others, closed indefinitely. I'd hardly set foot in the city for months.

It was early November. My sweetie, Marc, was in the passenger seat. We'd been by each other's side almost constantly since spring, anxiously counting our blessings: to still have jobs and to be able to keep doing them from the safety of our home in Oakland. Still, without much else to distract me, I'd been paying probably too much attention to the headlines. Coronavirus case counts were back on the rise, and we didn't know when a vaccine would be available. The outcome of the recent presidential election hadn't yet been declared. A background malaise had been steadily accumulating until I had to admit it was not really in the background anymore.

**By Julia Busiek • Photography by Philip Pacheco**

**YOUNG TOURISTS** from Virginia walk the Lands End labyrinth, which visitors have created with carefully placed stones. The maze isn't officially endorsed by the Park Service, but staff let it be (left). Below left: Surfers rinse off after taking a spin in the waters off Fort Point. Right: The 80,000-acre park includes more than three dozen sites spread across three counties, San Francisco, Marin and San Mateo. The closest airports are San Francisco, Oakland and San Jose international airports; various bus lines and Muni trains run to and through the sites, and biking between nearby locations is also a good option — and a way to avoid car traffic.


In the past, I'd have solved this sort of problem by pulling up a map of the West and planning a road trip to a place I'd never been. But as the virus spread throughout the spring and summer, small-town residents, concerned about hospital capacity, pleaded with would-be visitors to stay away. Park facilities closed, then opened, then closed again. At any rate, we never really wanted to get too far from home in case one of us woke up with a fever.

So we decided to treat our lockdown blues with a trip to our backyard national park: Golden Gate National Recreation Area. The park includes more than three dozen sites in and around San Francisco, from the ancient redwoods in Muir Woods National Monument to the former federal prison on Alcatraz Island. At over 80,000 acres, Golden Gate is one of America's largest urban national park sites, which partly explains why it's so popular. Seven million people live within an hour's drive, and 12.4 million visited the park in 2020.

In the seven years I've lived in the Bay Area, I've been lucky to work for, write about and even live in Golden Gate National Recreation Area. But I still haven't seen anywhere near all of it. When Marc and I consulted the park map, we noted the places we'd never visited and decided to organize our trip around those. A few weeks later, with the trunk full of bikes and camping gear and my deserted office building receding in the rearview mirror, we headed for the forests and beaches along the Bay Area's wild western edge.

Not 45 minutes after leaving home, we reached our first stop. The Mori Ridge Trail climbs up from Pacifica, a beachfront suburb south of San Francisco. Our visit coincided with the first big waves of the oncoming winter surf season, and as we started our hike uphill, we could hear them hammering the beach more than a mile away. After a few minutes of steep climbing, we emerged from the trees and paused to catch our breath and take in the view.

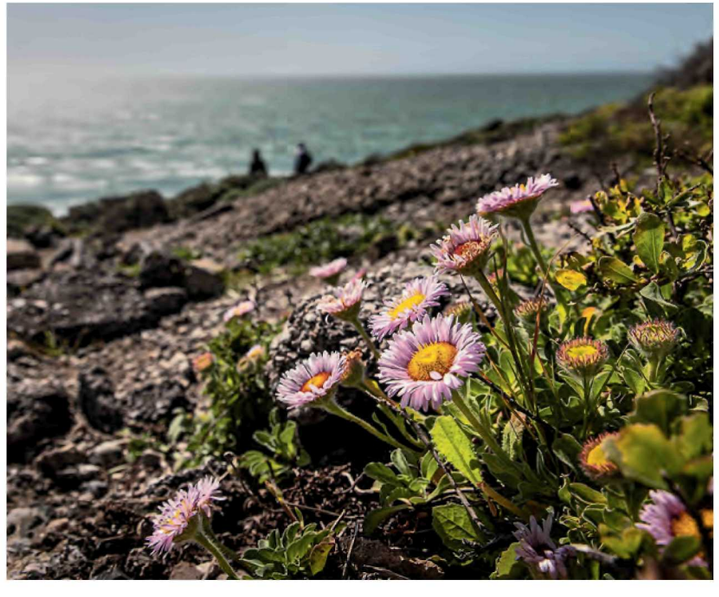
Montara Mountain, emerald green and nearly 2,000 feet high, rose straight up from the ocean to form the near southern horizon. The city of Pacifica filled in the valley floors between the mountains and the beach. To the north, we could see the neat outlying neighborhoods of western San Francisco and beyond that, the graceful spine of Mount Tamalpais. When we reached the crest of the ridge, the broad expanse of San Francisco Bay came into view, backed by the Oakland Hills and the massive shoulders of the East Bay's tallest point, Mount Diablo. If we'd brought binoculars, we probably could have spotted the steeple of the church next to our house in Oakland, 20 miles away.

After heading straight uphill for a mile, the trail flattened out. We walked along Sweeney Ridge until we reached the spot, indicated by a dot on our map, where Spanish colonizers, led by Gaspar de Portolá, first laid eyes on San Francisco Bay back in 1769.

"The Spanish were welcome in Ohlone territory at that time," said Jonathan Cordero, an assistant professor of sociology at California Lutheran University. An ethnohistorian who specializes in the California Mission Period and a Ramaytush Ohlone, he is descended from the people who have lived in this area for over 10,000 years. I called Cordero after our visit to learn more about this consequential encounter.

By all accounts, Cordero said, the soldiers and their mounts

**FARHAN LALANI** of San Francisco and his son Idris, 5, walk up the trail from the beach at Fort Funston (right). Far right top: With its 200-foot cliffs, sandy dunes and consistent winds, Fort Funston is one of the world's premier hang gliding spots. Far right bottom: Seaside daisies bloom on coastal cliffs at Mori Point.



arrived in Ramaytush territory sick, malnourished and exhausted after months of difficult travel. "People from those villages would have cared for them, fed them and helped them get well. And then the villagers guided the soldiers to the top of the ridge," where the Spanish saw the bay, he said.

At that point, Europeans had been sailing past the narrow Golden Gate strait for over two centuries, missing sight of the giant natural port of San Francisco Bay just beyond. Once the soldiers realized what they were looking at from atop the ridge, the race was on to establish a religious and military presence that would soon have devastating consequences for the area's people and resources.

"There's no getting past the fact that the Portolá expedition marked the beginning of the end for California Indians from Sonoma to San Diego who lived along the coast and inland," Cordero said. "We are still suffering from colonialization today."

Cordero consults with the Park Service, and in 2019, he helped develop an updated sign for the so-called "Portolá Discovery Site." The new sign reads, in part: "The notion that America was vast and empty, waiting to be discovered and settled by Europeans, was based on the pretense that no one of significance was here before."

**BACK DOWN AT THE TRAILHEAD** after the morning's 1,000-foot climb, we were ready take it easy for a bit. I love a granola bar and a swig of warm water as much as the next hungry hiker, but one of the perks of visiting a national park in a metropolis is that you're never far from a really good meal. We strolled down to Guerrero's Taqueria in Pacifica to pick up two giant burritos and two cups of horchata and set out to find a suitable picnic spot on Mori Point, one of the most recent additions to Golden Gate National Recreation Area.

Just across Highway 1 from the taqueria, Mori Point is 110 acres of open space crossed by a few well-marked trails. The place has a long, odd history: Native people (and subsequently, the Spanish) quarried limestone here. Later, it was a ranch, an unofficial playground for off-road vehicles and briefly, a motorcycle club's dirt track. Bootleggers sold liquor in a speakeasy here during Prohibition, and it's where Harold sends his hearse off the cliff at the end of the film "Harold and Maude." We walked to the tip of the point, which sticks out between two long, sandy beaches, and downed our burritos as waves exploded against the rocks, shooting whitewater high into the sky.

As the surrounding landscape got built up throughout the 20th century, Mori Point largely escaped development thanks in part to a force of Pacifica residents and conservation groups who blocked repeated proposals to build on the site, which remained in private ownership until the National Park Service acquired it in the early 2000s. But a very different sort of force shaped many of the other spots in the national recreation area: the United States military.

"For most of U.S. history, San Francisco Bay was the most important site on the West Coast: We had gold, shipping, dry docks and waterfront industries," said historian John A. Martini. So from the Gold Rush through to the Cold War, "the military just poured money into defense infrastructure surrounding San Francisco." While the Bay Area's civilian population — and footprint — grew, the military held on to thousands of acres along the coast, building a chain of forts and gun batteries from which to keep a careful watch on the sea and sky.

Eventually, military technology evolved to the point that coastal defenses were no longer necessary, said Martini, a former ranger who spent most of his 25 years with the Park Service at the Golden Gate parks. "The threat wasn't coming from warships, or even airplanes anymore: The development of intercontinental ballistic missiles in the 1960s rendered most of the Bay Area's defense infrastructure obsolete."

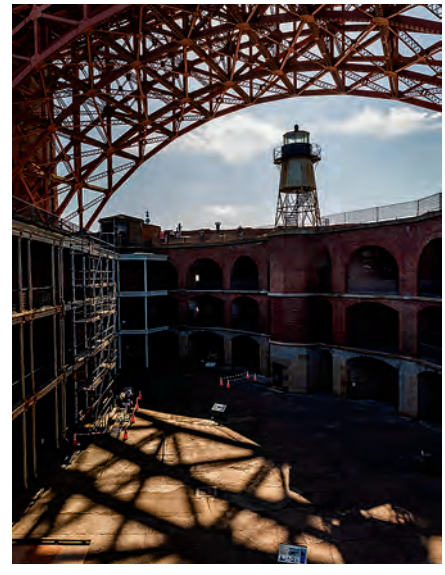
This change roughly coincided with the birth of the modern environmental movement in America — and in San Francisco, the drive to establish one of America's first urban national park sites. President Richard Nixon signed the law creating Golden Gate National Recreation Area in 1972, and Fort Mason, Alcatraz and Fort Point were among the first of many erstwhile military sites that would eventually gain Park Service protection.

Once we'd drained the last of our horchatas at Mori Point, we ambled back to our car and drove a few miles north up the coast to Fort Funston, seeking traces of the Bay Area's

**MORI POINT** in Pacifica, one of the most recent additions to Golden Gate National Recreation Area, wasn't acquired by the Park Service until the early 2000s (left). Below right: From atop Fort Point, visitors can look straight up into the nest of trusses that hold up the Golden Gate Bridge.

military past. We were circling in the parking lot hunting for a spot when I caught a strange movement out of the corner of my eye. I looked up in time to see a hang glider zip by, seemingly inches off the ground, then gracefully turn and soar out over the long beach toward the open ocean. With its 200-foot cliffs, sandy dunes and consistent winds, Fort Funston is one of the world's premier hang gliding spots. "What Australia's Great Barrier Reef is for scuba divers, Fort Funston is for hang gliders," said Steve Rodrigues, who's been flying here since the 1980s.

Some of the qualities that make this stretch of coast a hang glider's dream made it a strategically valuable spot for the military. For much of the 20th century, Fort Funston was home to numerous guns, aimed oceanward to repel attacks by sea. Today the guns are gone, but the structure that housed the largest ones remains. We spent a few minutes crawling around in a pair of concrete tunnels dug into a dune, imagining what it was like to be a soldier stationed here during World War II.



Martini counts more than 80 major fortification sites within Golden Gate, and park staff still periodically uncover smaller sites. "When the park was created, it was not with the thought that it had worthwhile historic resources," he said. "The enabling legislation mentioned recreation and scenic values. It wasn't until the Park Service got in and started looking around that they went, 'Oh my God, look at all this stuff! We've got historic buildings out the kazoo!'"

Not all of the park's historic buildings were born of military spending. My perennial favorite spot to impress visiting relatives in normal times is the Cliff House, a restaurant that teeters on the westernmost point of San Francisco. We'd splurge on cocktails and fresh-baked popovers at the upstairs bar, gawping through plate glass windows at Ocean Beach and the Pacific. But because of the pandemic, the Cliff House had been closed since March, aside from a few brief attempts at offering take-out only. (Soon after our visit, the restaurant's owners announced they were going out of business for good, and the Park Service said they would seek new tenants.) So Marc and I picked up some cheap beers after leaving Fort Funston, then drove up the Great Highway to toast the sunset on the restaurant's empty deck. The gathering wind deposited some beach grit into our drinks, and it was a little chillier than a seat at the bar, but we still got our happy hour with a view.

**WE SPENT THE NIGHT IN A ROOM** we'd rented in the basement of a grand old home a block uphill from the Cliff House. The previous day's gusty winds built into a gale overnight. By the time we headed out for coffee the next morning, the ocean's surface was a mess of mushy whitewater to the horizon.

Our plan was to ride bikes north along the coast from the Cliff House to the Golden Gate Bridge, stopping at a couple of park sites along the way — a route that would have us pedaling directly into the wind. Very reasonably, Marc proposed abandoning the bike idea. But my aversion to trying to find parking in San Francisco verges on pathological, so I buckled up my helmet and said something ill-fated like, "The wind will die down. You'll see."

From the Cliff House, we picked up a trail through Lands End. This horseshoe-shaped section of the park caps the northwestern corner of the city, where shoulder-to-shoulder houses give way abruptly to forest and the continent crumbles into broken rocks at the water's edge. We pedaled deeper into the forest until we lost all sight or sense of the city. All we could hear was the wind howling through the canopy above and the ocean bashing the cliffs below. After a mile or so, we locked our bikes to a tree and followed a short trail down through the forest and out to the end of a rocky spit, where we found a labyrinth that visitors had made by neatly arranging stones. (The labyrinth is not officially endorsed by the Park Service, but staff let it be.) I tried to get into the proper meditative headspace and pace my way through it, but the wind was strong enough to knock me off balance, and the labyrinth is close enough to the edge of the cliff to make losing footing sort of a serious proposition. So we retreated to the relative cover of the cypress forest and pedaled on. Soon we caught sight of our destination: the Golden Gate Bridge.

To get there, we pedaled (into the wind) through the ritzy Sea Cliff neighborhood, then (into the wind) along the coastal bluffs in the Presidio, a 2-square-mile former military base. Here, airy forests of sculpted cypress trees shelter enclaves of stately old houses and barracks. In 1989, Congress voted to end

**STUDENTS FROM** Alto International School of Menlo Park play a card game while camping at Bicentennial Campground in the Marin Headlands (above). Right: Ocean Beach sits at the edge of San Francisco and is home to the Cliff House restaurant, which went out of business during the pandemic, but may be revived.

the Presidio's military status and transfer the land to the Park Service. Today the Presidio's 24 miles of trails are open to the public, and you can rent a home or business space in one of its historic buildings. When I moved to California, my first apartment was in the park, in a former nurses' barracks.

At last we arrived at Fort Point National Historic Site, a three-story brick colossus crouched on the very northern tip of San Francisco. Dating to the mid-19th century, the structure is in what Martini calls "a remarkable state of preservation," because it was untouched by the Civil War. "For soldiers stationed at Fort Point, it was a war against boredom," Martini said.

*There are worse places to be bored,* I thought as Marc and I climbed a spiral staircase to the fort's roof for a better view of the mile-wide Golden Gate, which famously funnels a perpetual barrage of tides, wind and fog. A massive container ship lumbered under the bridge on its way out to sea. Peering over the brick parapets, we could look straight down on a gaggle of surfers bobbing in the bay, putting on a show of bravery in the face of the powerful waves that curled off the tip of the point.

But the real show at Fort Point is overhead. From atop the fort, you can look straight up into the nest of trusses that hold up the Golden Gate Bridge. You're close enough to count individual rivets, and you can see where the salt spray has eaten holes in the bridge's iconic orange paint. Between the towering waves hitting the point, 40-mph winds whistling through the towers and the six lanes of traffic rumbling overhead, it is an awesomely, almost painfully, loud place. Still, I was starstruck by our up-close perspective of this most Californian of landmarks.

After giving up on trying to capture the grandeur of the strait with our iPhone cameras, we biked back to our car, relieved to have the wind at our backs. An hour later, we were getting the more conventional view of the bridge as we made the short drive over it to the Marin Headlands, where we'd snagged a coveted campsite. Marc and I both had to be on Zoom calls at 9 the next morning, but the recreation area's Bicentennial Campground was only about 40 minutes from home, making it a fine candidate for our semi-regular tradition of "school-night sleep outs."

Though just a mile from San Francisco as the seagull flies, the Marin Headlands are surprisingly wild, an expanse of low coastal mountains, sea cliffs and sandy beaches. That's no accident: In the early 1970s, after years of activism, a band of conservationists managed to wrest 2,000 acres in the heart of this area from the jaws of impending development and help turn the land over to the Park Service to manage.

The road to our campground could have become a busy thoroughfare through a 30,000-person suburb, but instead it winds quietly along a willow-lined creek toward the coast. Our campsite was tucked in a hollow overlooking the ocean, so we had some protection from the weather. Still, while we wrestled the tent up and wrapped up in all our warm layers, I worried we were in for an uncomfortable night. My anxiety tipped into outright grumpiness when Marc pointed out a wall of black clouds building rapidly in the eastern sky. "If I didn't know any better, I'd say it looks like rain," he said.

"It won't rain," I said confidently. It had hardly rained a day since May, and my raincoat was tucked away in the back of my closet. Marc cocked an eyebrow, perhaps remembering the prediction I'd made that morning, just before we embarked on an unreasonably difficult (albeit beautiful!) upwind bike ride. Then, of course, it started to rain.

We dove into the tent and lay there, cozy while the storm closed in around us. Thankfully, it was just a short squall, blowing over as quickly as it came. As the raindrops tapered off, we poked our heads out and saw blue skies overhead. Better yet, behind the storm the air was completely calm. A minor miracle. "See?" I said triumphantly to Marc. "Told you the wind would die down!"

In the quiet after the storm, I felt my jaw unclench and my shoulders relax — a rare sensation during this crummiest of years. We strolled along the bluffs toward the end of the point. From this perspective, we could look back at pretty much everywhere we'd been over the course of our two-day voyage: the Golden Gate Bridge, the Presidio and Lands End, with the Cliff House, Ocean Beach, Fort Funston and Sweeney Ridge receding in the distance. A couple of deer and some coyotes appeared, sniffing at the still air. A gentle swell lapped at the rocks far below our feet. We watched the clouds blow out to sea and break up against the golden light of the setting sun and stayed standing there until the streetlights flickered on across the water in San Francisco.

**JULIA BUSIEK** has worked in national parks in Colorado, Hawaii, Washington and California. She lives in Oakland.

**PHILIP PACHECO** is an award-winning visual journalist based in the San Francisco Bay Area.

# TOURIST TIME CAPSULE

Before selfies were in and big hair was out, **Roger Minick** traveled the country capturing photos of visitors at national parks.

GRAND TETON NATIONAL PARK, WYOMING, 1980

Roger Minick didn't mind the wait. He would sit at national park overlooks, camera in hand, while minutes turned into hours, the mellow morning light ceding to midday glare. Other visitors focused on the landscape, but he was more attuned to the comings and goings of his fellow travelers. A curious or endearing family interaction, an intriguing accessory or a loud outfit might catch his eye. "Often I would see the clothes before I would see the people," he said.

The result is a kaleidoscopic archive containing thousands of photographs taken between 1979 and 2000 at popular destinations, from Bryce Canyon and Grand Teton national parks to Cape Canaveral and the Statue of Liberty. Before a battered railing at Grand Canyon National Park, a woman clutches binoculars, her black headband snug against a poof of curls. Three dapper friends sporting suspenders and hats pose in front of a steamy hydrothermal feature at Yellowstone National Park. The snapshots speak to the timeless tourist experience, that peculiar blend of wonder, kitsch and weariness. They're also now a record of a bygone era, one free of smartphones and selfie sticks.

"After time, they do become like time capsules," Minick said. "They


**BRYCE CANYON NATIONAL PARK, UTAH, 1980 & 1981**

really do take you back."

Minick spent six summers traveling the country for his Sightseer project. The first three years, he looped through roughly a dozen Western national parks, many of which he'd never seen. "It was a discovery on my part," he said. "And that was exciting." Then, after a 15-year hiatus, he returned to the road for three more summers, hitting landmarks across the Midwest and East. The images he took have lined gallery walls in San Francisco, Los Angeles and Osaka, Japan, and have appeared in two books.

The inspiration for the project stems from the time Minick spent teaching a landscape photography course at Yosemite National Park in the mid-1970s. He'd been intrigued by the carloads of visitors and their jostling, binocular-wielding, photo-happy behavior. So in May 1979, Minick and his wife rumbled away from their San Francisco Bay Area home in a Volkswagen van for two months of park-hopping. He shot his way from one panorama to the next, capturing all manner of tourists (whom he later referred to as "Sightseer americanus") in their natural habitat. Armed with canisters of 400-speed film, his trusty Hasselblad camera and a mounted flash, he would

**GLACIER NATIONAL PARK, MONTANA, 1981**

burn through three or four rolls a day.

Minick, 77, has been a professional photographer for more than 50 years and a teacher of his craft for half that time. He has received a Guggenheim Fellowship and three National Endowment for the Arts grants, and his work has been shown at galleries and museums across the country, including the San Francisco Museum of Modern Art and The Metropolitan Museum of Art in New York. Influenced by the black-and-white documentary style of trailblazers such as Dorothea Lange, he has journeyed from the Ozarks of his childhood to the Sacramento-San Joaquin Delta to record, in unvarnished and haunting detail, the life and landscapes there.

Like so many of his projects, the sightseer series started in black and white. But, after developing the prints from that initial summer, Minick realized he needed to make the switch to color to convey the vibrant, peculiar — and sometimes outlandish — sartorial choices of tourists. "What I was seeing — the way people dressed, the colors and their interaction with the landscape — it seemed somehow unique and represented something that was going on at that time," Minick said.

Most of the park visitors, even those who were harried or pressed for time, agreed when Minick asked to take their photo. (The offer of a free Polaroid from the camera he carried for just that purpose proved hard to refuse.) He'd allow people to assume whatever position felt comfortable, and then he'd get to work. He captured lone souls and assorted families, gap-toothed children and stooping seniors arrayed before cityscapes, waterfalls, parking lots and mountains. "It was just fun to play around, juxtaposing peo-

YELLOWSTONE NATIONAL PARK, WYOMING, 1980

CRATER LAKE NATIONAL PARK, OREGON, 1980

GRAND CANYON NATIONAL PARK, ARIZONA, 1980

**YOSEMITE NATIONAL PARK, CALIFORNIA, 1980**

ple and how they were dressed against the landscape," Minick said. In his photographs, lurid Hawaiian shirts, bare chests, cowboy hats and even a shower cap are paired incongruously with the scenery's grandeur.

One of Minick's favorite images still has the power to transport him back to the day he took it. It was July 4, 1980. The weather was dreary; tourists were sparse. Minick, aware that he and his wife would be leaving Crater Lake National Park the following day, felt crunched for time. "And lo and behold, this car pulls up," he said. "As soon as I saw the matching shirts, I was all over myself." Looking through his viewfinder, Minick balanced the shirts' bold graphics with the backdrop's jagged lines, confident that the day's soft light would serve him well. In the photo, bottom left on the previous spread, a woman (the proud creator of the shirts) stands alongside her companion. A camera occupies her hands, while his are sunk into the pockets of his plum-colored pants.

"It was a perfect moment," Minick said.

**—KATHERINE DEGROFF**

*For more information about the photo project, visit sightseerseries.com.*

# HISTORIC TRAVEL DESTINATIONS

## JOURNEY THROUGH HISTORY AT THE BILLY GRAHAM LIBRARY

Courtesy of Billy Graham Evangelistic Association. Used with permission. All rights reserved.

Come take a walk through history with one of the most influential voices of the 20th century at the Billy Graham Library in Charlotte, North Carolina. Interactive exhibits highlight the message of hope that Billy Graham preached for more than 80 years. Through state-of-the-art multimedia displays, films, and memorabilia, relive the historic moments of his life, tour the Graham family home, shop in Ruth's Attic bookstore, and enjoy lunch in the Graham Brothers Dairy Bar cafe. The Billy Graham Library will leave you inspired by this amazing man and his message that transcended culture, age, politics, and race.

Admission is free – come just as you are. For more information visit: BillyGrahamLibrary.org.

Courtesy Visit Anchorage/Alaska Stock

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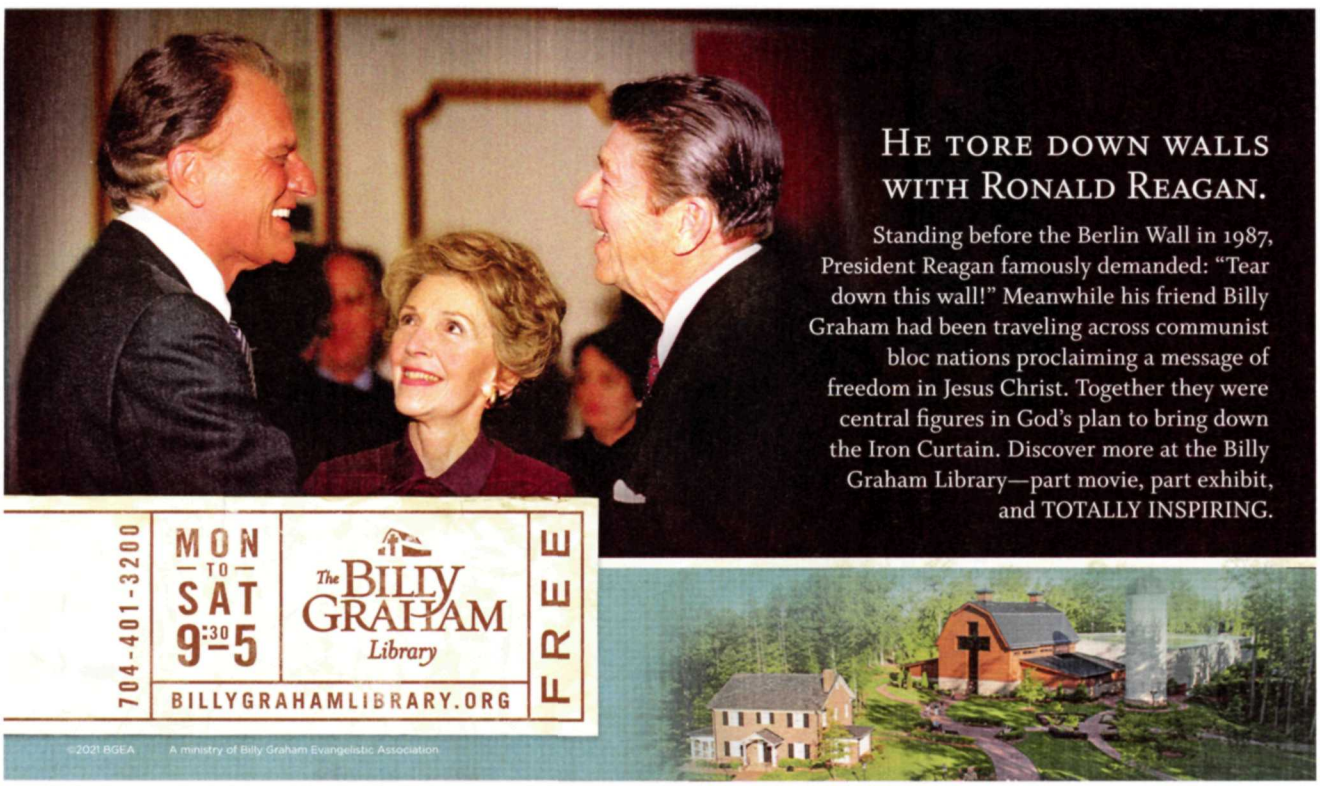

# HISTORIC TRAVEL **DESTINATIONS**

## WILLISTON, ND: HISTORY ON THE UPPER MISSOURI

Courtesy Williston CVB

Imagine the 19th Century springing to life as you and your family watch a blacksmith molding metal or a fur trader preparing a beaver hide. This kind of experience is just one of many reasons Williston, North Dakota is a great place for a vacation.

The Williston area is rich with legendary vistas and living history, like the annual Rendezvous at Fort Union Trading Post National Historic Site, built near the confluence of the Missouri and Yellowstone rivers in 1828. This fort was the center of trade with the Assiniboine, Cree, Crow, Blackfeet, Ojibwa, Hidatsa, Mandan and Arikara Indians.

Near Fort Union, visitors will find a monument to the Buffalo Soldiers at Fort Buford State Historic Site. A mile away, the Missouri-Yellowstone Confluence Interpretive Center offers the same magnificent views enjoyed by the Corps of Discovery. East of Williston at Lewis and Clark State Park, visitors walk interpretive trails showing what the famous explorers saw.

Theodore Roosevelt National Park, south of Williston, is one of the area's top attractions. In 1883, Theodore Roosevelt came to live the life of a cowboy. Today, the colorful North Dakota Badlands provide the scenic backdrop to the park honoring our 26th President. It is home to bison, mule deer, white-tailed deer, bighorn sheep, prairie dogs and over 180 species of songbirds.

The Williston area also offers new and affordable hotels, restaurants and shops, plus North Dakota's largest indoor rec center and world-class golf on the hills overlooking Lake Sakakawea.



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Courtesy Destination Gettysburg

Gettysburg, PA stands uniquely positioned as one of our nation's premiere historic travel destinations. Nestled in idyllic Adams County, it offers breathtakingly scenic landscapes, wide-ranging outdoor activities, adventurous dining and – perhaps most famously – an unparalleled, firsthand look at our country's dramatic and inspiring past.

Witness its hallowed battlefield, then take a stroll through the historically preserved downtown area. Gain insight into our nation's gripping backstory at interactive museums. Find the perfect gift at charming shops filled with antiques, handmade treasures and Civil War artifacts. If the spirit is willing, go for an evening ghost tour of famous haunts.

Cozy bed & breakfasts, rustic cabins, luxurious inns, your go-to hotel with every amenity, or that special guest house for the entire family – you'll find accommodations of every type in Gettysburg.

And, of course, the entire region is brimming with foodie-pleasing dining establishments, offering local farm-to-table cuisine in a wide variety of styles. Enjoy unique, contemporary meals prepared by award-winning chefs, or experience period-specific foods in a landmark setting. Regional craft beers, wines, ciders, mead, and spirits can be found along the Adams County Pour Tour – or experience the bounty of the region's farms and orchards along our new Adams County Crop Hop. Whatever your tastes, Gettysburg has you covered.

As we all define what the "new normal" looks like, Gettysburg is committed to the safety of their guests and community. Don't forget to check the online safety updates and, for now, please remember to bring your masks.

# HISTORIC TRAVEL **DESTINATIONS**

Courtesy ND Tourism

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**MOTHER JONES** on September 26, 1924, when she met President Calvin Coolidge at the White House in Washington, D.C. She was likely 87 years old at the time.

# Miners' Angel

A century ago, Mother Jones faced bullets and long odds in her quest to better the lives of coal laborers working in New River Gorge and other West Virginia mines.

**UNION ORGANIZERS TOLD** Mother Jones not to go to the coal mines on Laurel Creek. The strikes that started in West Virginia in June of 1902 had dragged on for months, and mine owners had only gotten more combative as time passed. In their attempt to unionize miners, the seven organizers had been beaten up and shot at, and gunmen hired by the mine operators were patrolling the access roads, ready to shoot any intruders on sight. This gave the grandmotherly activist all the more reason to hike the 6 miles of rough terrain separating Thayer, deep in New River Gorge, from the Laurel Creek mines. "That means the miners up there are prisoners and need me," she said.

From 1897 until the mid-1910s, Mother Jones returned time and again to unionize laborers in the mines located in what is now New River Gorge National Park and Preserve and other coal fields of West Virginia and help improve their working conditions. During a labor conflict that has been described as the largest U.S.-based insurrection outside the Civil War, she faced bullets and thugs and endured military trials and imprisonment. For weeks on end, she would crisscross the rugged countryside — often at night to avoid detection — to reach remote mining camps. And she did it all in her 60s and 70s.

"It takes such a dogged and persistent person to do this day after day after day," said Catherine Moore, the president of the board of the West Virginia Mine Wars Museum. "She was kind of a badass."

After spending the first six decades of her life in relative obscurity, Mary Harris Jones engineered a remarkable second act and became one of the most famous women in the country, known to her friends and enemies alike simply as Mother Jones. Defying prevalent gender norms, she butted heads and negotiated with the most powerful men of her time, including President Woodrow Wilson and business magnate John D. Rockefeller. But it is among the working class that she achieved iconic status, delivering electrifying and profanity-filled speeches that helped inspire "her boys" to fight for workplace rights and put the powerful on notice. In a 1912 address to West Virginia miners, she described the state's governor as a "goddamned dirty coward" and warned "this little governor" that if he didn't get rid of the mines' armed guards, "there is going to be one hell of a lot of bloodletting in these hills."

Mary Harris was born in Cork City, Ireland, likely in 1837, just a few years before a potato blight caused widespread famine and prompted more than 1 million people to leave their country. Harris' family emigrated to North America and settled in Toronto, where the young Mary eventually attended a school for teachers. She never graduated but still landed a teaching job in Monroe, Michigan, in 1859. Later, she worked as a dressmaker in Chicago, and in 1861, she married George Jones, a unionized iron worker, in Memphis. Mary Jones built her own family there, but it was all taken away from her by a yellow fever outbreak that tore through the city in 1867. One by one, her four young children and her husband died. Jones decided to rebuild her life in Chicago and return to dressmaking, but again, disaster struck when her shop and possessions were destroyed in the Great Chicago Fire of 1871.

"She does have this terribly tragic life, literally of famine, pestilence and fire," said Elliott J. Gorn, the author of a biography of Mother Jones.

It's unclear exactly what prompted Jones to become involved in the labor movement, but she soon dedicated herself to union work. She seemed to materialize every time a conflict arose between workers and employers, joining railroad, steel and textile workers in their efforts to improve their lot. She recruited union members, confronted bosses and garnered publicity for the plight of the workers, who considered her a savior of sorts — an elderly but vigorous Joan of Arc for the industrial age.

It was in the coal fields of West Virginia that Mother Jones waged her longest-running battle. Pay there was lower than in the coal mines of the Midwest; miners, who were compensated by weight of coal extracted, were often cheated at the scales; and the mining companies, which ran the stores, charged exorbitant prices. As a result of looser regulations, the work there was also more dangerous than at coal mines elsewhere in the country. The United Mine Workers of America first dispatched Mother Jones to the New River coal field in 1897, and she came back to West Virginia in 1902 to join a labor conflict that involved some 16,000 coal miners. At New River, Mother Jones established local unions in Thayer and Mount Hope, but the overall effort achieved relatively little. Several miners were killed by law enforcement and mine guards, and many labor organizers, including Mother Jones, were arrested on dubious charges. U.S. District Attorney Reese Blizzard called her "the most dangerous woman in America" for her ability to mobilize workers against their employers, but she received only a suspended sentence.

Tensions rose again in the spring of 1912 when mine operators on Paint Creek, some 15 miles northwest of New River Gorge, rejected miners' demands for small raises, refused to recognize the unions, and hired strikebreakers and more armed guards. Mother Jones was scheduled to give speeches out West, but as soon as she heard of the strikes, she gathered her possessions in a black shawl and hopped on a train. This time, the battle promised to be even fiercer, and many miners took up arms to protect themselves from the owners' gunmen. In September, the state's governor declared martial law and authorized military courts. In February 1913, exchanges of shots between miners and a posse assembled by a mine operator resulted in several casualties, including a miner killed in his tent. Miners retaliated a couple of days later by killing mine guards. Only miners were arrested, and when Mother Jones and others protested, they too were taken into custody and

## A Mine of Ideas


NPS

**Long before** Carter G. Woodson became known as the "father of Black history," he was working as a young man during the 1890s at the Nuttallburg coal mine, located in what is now New River Gorge National Park and Preserve. While there, he befriended Oliver Jones, a Black Civil War veteran and miner who operated a tearoom and sold sweets out of his house. Jones had assembled an extensive collection of books about Black historical figures and subscribed to several Black newspapers, but he didn't know how to read or write. "When he heard that Carter G. Woodson could read, he hired him to read to Black miners in exchange for ice cream," said Catherine Moore, who has researched the role of minority groups in West Virginia coal mines. Woodson not only broadened his knowledge of current affairs and history, but he also got to meet the Black intellectuals who would visit Jones regularly. "In this circle the history of the race was discussed frequently," Woodson wrote in an essay published in 1944, "and my interest in penetrating the past of my people was deepened and intensified."

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**MINERS POSING** on underground locomotives outside a mine in the New River coal field at the turn of the century.

charged with murder and conspiracy to commit murder. Mother Jones was allowed to send letters, give interviews and even go out — under escort — to buy beer, but the charges were serious. If convicted, she faced the death penalty. Still, she defiantly refused to recognize the legitimacy of the court and vowed to continue fighting for the miners.

"I am 80 years old, and I haven't long to live anyhow," she told The New York Times that March, exaggerating her age by a few years for effect. "Since I have to die, I would rather die for the cause to which I have given so much of my life."

Her allies mounted a campaign to set her and the other miners free, and she managed to send a telegram to the Senate majority leader asking him to investigate abuse by mine owners. Facing a torrent of bad publicity, West Virginia's governor freed Mother Jones after nearly three months of incarceration, and mine operators agreed to recognize unions.

"I would count it in my book as a net win on the miners' side," said Moore, who is at work on a book about the mine wars.

There wouldn't be many more such wins. Mother Jones returned to New River in 1917, where she gave a feisty speech comparing local mine barons to the kaiser Americans were fighting in Europe, but her influence was declining. In the culmination of the mine wars, as striking miners clashed violently with law enforcement and strikebreakers at Blair Mountain in southern West Virginia in 1921 — a battle that may have caused as many as 100 deaths — Mother Jones was criticized for trying to restrain the miners and appearing to side with the governor. In the meantime, John L. Lewis, a man she viewed as self-interested, took the helm of the United Mine Workers, and she was further marginalized. She published her autobiography in 1925 and died five years later in Hyattsville, Maryland.

After booming in the early 20th century, coal production in the New River coal field peaked again in the late 1940s, but it pretty much stopped in the decades that followed. In the late 1960s, outdoor enthusiasts and others started pushing for the protection of the river, which was designated a national river in 1978 and redesignated as a national park and preserve late last year. The slopes, which had once been stripped bare by miners and loggers, are again covered in forests. "Because these areas have been left alone, it has allowed the landscape to come back," said Eve West, the park's chief of interpretation. Even so, remnants of the gorge's industrial past, from lodging to cemeteries and mining equipment, are scattered throughout the park.

Today, Mother Jones magazine can readily be found on newsstands, but many people don't know anything about the woman it is named after. And few memorials have been built to honor her legacy besides a granite monument on her grave in Mount Olive, Illinois, and a clear plastic panel at the Department of Labor in Washington, D.C. Gorn, Rosemary Feurer, a labor history professor at Northern Illinois University, and many others want to add their own tribute. They are pushing for a statue of Mother Jones to be erected in downtown Chicago, where her labor career began. The point, they say, is to honor the memory of a major labor figure, but also to remind everyone that it took others' courage and tenacity to obtain protections and benefits many take for granted today, including the 40-hour work week and workplace safety regulations.

"When we remember her," Feurer said, "we also remember all these people who fought for basic decency." **NP**

**NICOLAS BRULLIARD** is senior editor of National Parks magazine.

# That Was Then

SAGUARO NATIONAL PARK

**PLANT PATHOLOGIST ALICE BOYLE APPLIES AN ANTIBIOTIC TREATMENT TO A SAGUARO,** Saguaro National Monument (later redesignated as a national park), Arizona, circa 1950.

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