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C&O CANAL engineers walled off a channel of the Potomac River to create the Widewater basin, where boats would wait their turn before moving upstream through lock 15.

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THIS PETROGLYPH in Basin and Range National Monument is known as the Electric Deer. The lights of Las Vegas, about 80 miles to the south, glow on the horizon.

©STEPHEN ALVAREZ

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National Parks (ISSN0276-8186) is published quarterly (December, March, June & September) by the National Parks Conservation Association, 777 6th Street NW, Suite 700, Washington, DC 20001-3723. Single copies are $2.95. National Parks® is a registered trademark of NPCA, ©2021 by NPCA. Printed in the United States. Periodicals postage paid at Washington, DC, and additional mailing offices. Articles are published for educational purposes and do not necessarily reflect the views of this association. POSTMASTER: Send address changes and circulation inquiries to: National Parks, Member Services, 777 6th Street NW, Suite 700, Washington, DC 20001-3723.

NICHOLAS WAITE BENSON, right, with his father, John Everett Benson. The younger Benson represents the third generation of master carvers in the family.

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CLOCKWISE FROM TOP: ©TOM PICH PHOTOGRAPHY-NYC, ©JONATHAN LARSEN/DIADEM IMAGES/ALAMY STOCK PHOTO, COURTESY OF KAREN CARR, ©H. MARK WEIDMAN PHOTOGRAPHY/ALAMY STOCK PHOTO.

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

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Working Together

I write this letter to you, members of the National Parks Conservation Association, having just watched the inauguration of President Joe Biden and Vice President Kamala Harris. President Biden offered a message of unity and hope, calling for renewal and resolve. A great place to start is by joining together to protect our national parks.

Parks represent the democratic ideal. They reflect who we are and the values we hold. National parks exist as they do today, for all to experience, because of those who came before us: Elected leaders and citizen activists alike stood up for parks when it mattered the most. And now we have the opportunity to renew our collective commitment to these vast landscapes, historic structures and sacred cultural sites for the benefit of tomorrow's visitors.

Working together, we can help reduce pollution from power plants, vehicles, oil and gas facilities, and other sources that harm the air and water in national parks. We can support our national economy and enhance our public lands by increasing funding for desperately needed infrastructure repairs, programming and staff in parks. We can work to ensure our public lands are more welcoming to all by supporting equity and justice for African Americans, Native Americans and other people of color in agency workplaces and in land management decision-making. And we can help make sure that those who visit national parks, as well as those who work in them, have clear guidelines and adequate safety equipment to protect themselves and others as we continue to fight against a global pandemic.

These will be among NPCA's top priorities as we endeavor to work with the new administration. We know we can count on you to join us in this worthy effort.

With gratitude,
Theresa Pierno

Editor's Note

©STEPHEN ALVAREZ

PETROGLYPHS IN Basin and Range National Monument, Nevada.

On Photography Ethics

I fell in love with Stephen Alvarez's photographs of ancient art from around the world as soon as I saw them. The images are beautiful, but what is especially compelling to me is the way they make millennia-old works feel strangely alive. As Alvarez says in Kate Siber's story (page 44), it's like the artists are talking to us across an unimaginable gulf of time.

Photographing ancient works is difficult, not only because of logistical challenges, but also because of the sacred nature of the art. Some Native Americans consider certain imagery too sensitive to share. In other cases, publishing photos could be harmful by encouraging visitation or increasing the risk of vandalism. For these reasons, Alvarez proceeds with great care. As Siber explains, he develops relationships with tribes, sometimes over years, and secures permission before photographing sites and sharing images. To be as attentive to Indigenous concerns as possible in our photo selection of U.S. sites, the magazine staff (in consultation with colleagues and Alvarez) decided only to publish images of places that have been publicly acknowledged by the Park Service or Bureau of Land Management — and have undergone the government's tribal consultation. In addition, many Pueblo Indians are opposed to showing kachinas (ancestral spirits), so we took those images out of consideration. And we avoided images of little-known locations to protect the sites from discovery.

Though showing Indigenous art can be delicate, we feel that featuring these photos is the right thing to do — especially given the larger political context. The fate of Bears Ears and Grand Staircase-Escalante national monuments, both pictured inside, is currently in question. The Trump administration drastically reduced the size of these monuments, but the new administration is looking at reversing the rollbacks. Alvarez's photos speak to this moment by highlighting the kind of cultural treasures at stake in the battle over America's public lands. We are so glad to be sharing them with you.

Rona Marech
NPMAG@NPCA.ORG

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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Letters

MOUNT INSPIRATION

Those who enjoyed the sort of magical tone in the article "Circling the Mountain" about Mount Tamalpais might want to listen to David Crosby's brilliant song, "Tamalpais High," on his equally brilliant 1971 album, "If I Could Only Remember My Name." Having always wondered what the song title referred to, I now know that I need to try and circumnavigate Mount Tamalpais if I get back out to Marin County.

BILL LELBACH
Greene, NY

CLOSING THE GAPS

There are 11 national scenic trails, and only one of them is continuous from end to end and secure for posterity: the Appalachian Trail ["The Long Way"]. All the others have gaps — hundreds of miles of gaps. In fact, over 25% of their combined length can't be hiked. This won't change until Congress grants to these 10 what was granted to the AT in 1968: eminent domain, which is absolutely essential to establish all long corridors including roads, railroads, power lines, gas lines and hiking trails.

JIM KERN
St. Augustine, FL

The writer is a longtime hiking advocate. His new book, "Broken Promise: The Plight of Our National Trails," comes out this spring.

WRITERS' RETREAT

The article "The Farthest Edge" by Dorian Fox reminded me of the wonderful book, "The Outermost House," by Henry Beston, an account of the year he spent on Cape Cod. Beston, who came for a late summer visit in 1926 and didn't leave until the fall of 1927, stayed in a two-room cottage called Fo'castle, 2 miles south of the Eastham Life Saving Station. Beston's book influenced Rachel Carson's writing and became a motivation for the creation of Cape Cod National Seashore in the 1960s.

MARY MARAN
Perkiomenville, PA

PACKER'S PRIDE

Having been a packer in the Spotted Bear Ranger District of the Bob Marshall Wilderness in the early 1970s, I read with great interest your article about packers in Glacier ["Wranglers of the West"]. Packers were an integral part of the development of many wilderness areas and continue to give tourists an opportunity to experience the backcountry. The "flair" mentioned in the article was often called "packer's pride" when I was packing. Every manty had to have its corners tucked in just so, every knot had to be tied securely, and the load had to be balanced. I too had "wrecks" with my string of mules, including when we met a grizzly sow with her cub or when backpackers peeked out from behind trees along the shared trail. I also remember reaping the benefits of a packer's job in Glacier when I was able to spend some nights at Sperry Chalet long before the disastrous fire. The article took me back to some of the most cherished years of my life.

BILL MCCONNELL
Brighton, MI

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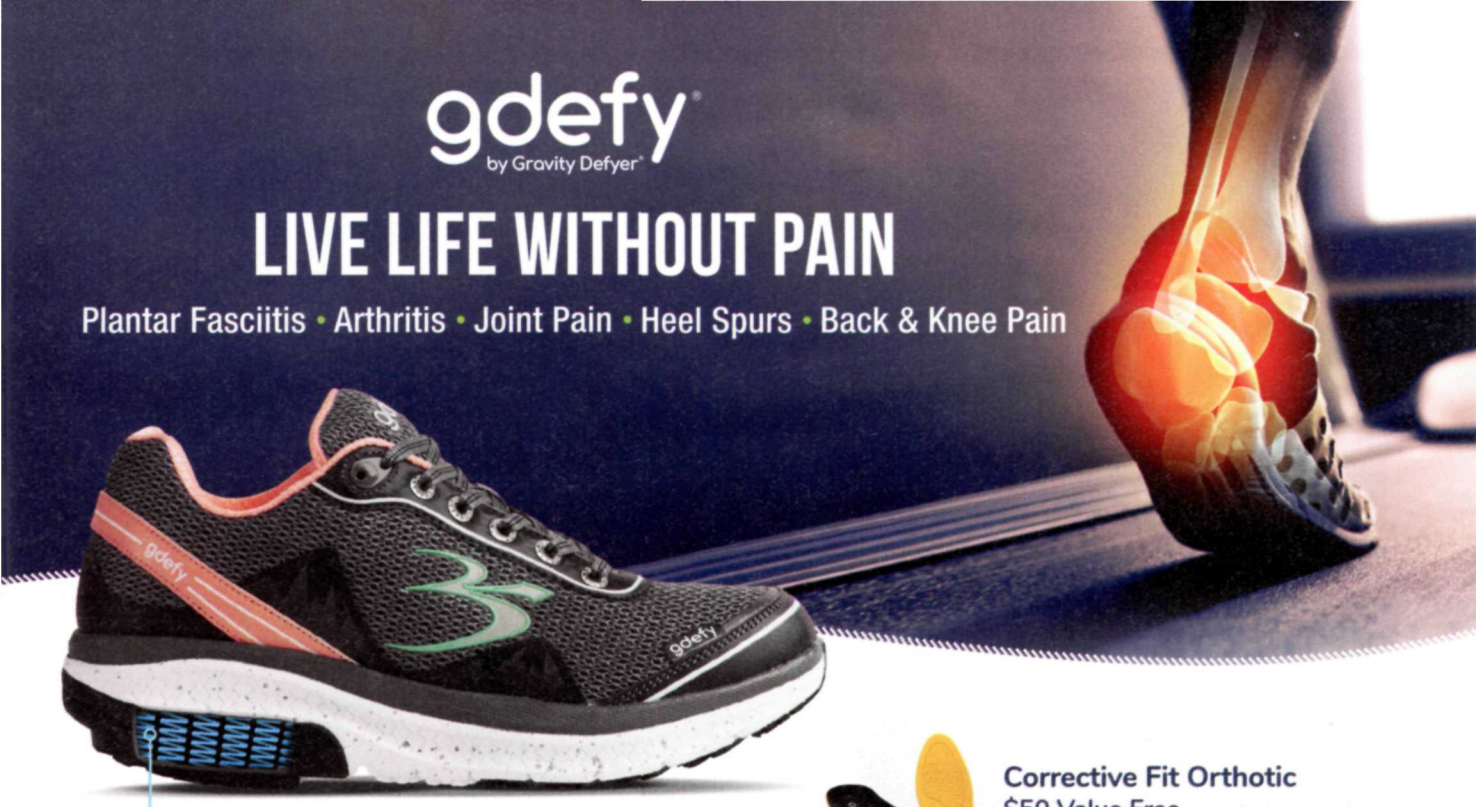

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Echoes

Today's decision smartly prioritizes the long-term health of people, national parks and wildlife, including the world's largest salmon run, over international mining interests.

Theresa Pierno, NPCA's president, in National Parks Traveler, reacting to the news that the U.S. Army Corps of Engineers had refused to issue a permit needed to advance Alaska's Pebble Mine. NCPA staff have been fighting the proposal for years, arguing that it would irreparably harm Alaska Native communities in the Bristol Bay region as well as wetlands, streams and the famous brown bears of Katmai and Lake Clark national parks.

The decision to hit pause and have a pause on new leases and reevaluate is excellent news, especially for places like Chaco [Culture National Historical Park].

Emily Wolf, NPCA's New Mexico program coordinator, speaking to The Fronteras Desk about President Joe Biden's executive order that places a moratorium on new oil and gas exploration on federal public lands and supports an initiative that would conserve 30% of U.S. land and water by 2030. The order temporarily protects numerous national parks, including Canyonlands, Rocky Mountain, Carlsbad Caverns and Arches, from the harmful impact of new energy development.

New River Gorge is a national treasure, with miles of breathtaking forests full of diverse wildlife and some of America's most distinct history.

Joy M. Oakes, NPCA's mid-Atlantic senior regional director, as quoted in National Parks Traveler in December, shortly before New River Gorge was officially upgraded to a national park and preserve thanks to a measure in a stimulus package. The designation is expected to boost tourism in the West Virginia park, a 72,000-acre site that is popular with whitewater rafters, climbers and other outdoor enthusiasts.

PHOTO: CRESCENT RIVER, LAKE CLARK NATIONAL PARK & PRESERVE, ALASKA.

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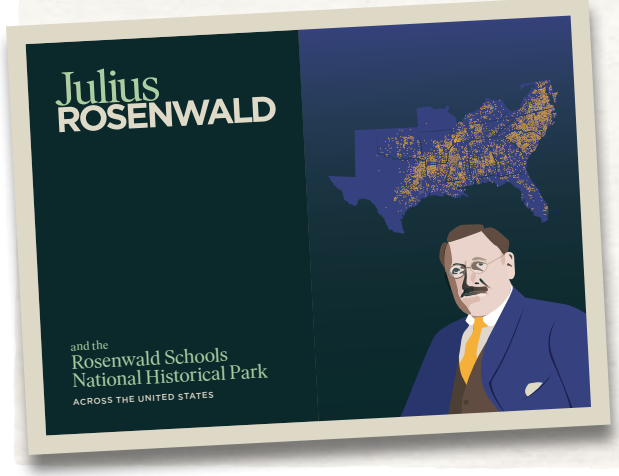
The Big Park Picture

What national park sites should be expanded or created next?

NPCA BELIEVES THAT as this complex nation continues to grow and evolve, so must its protected lands. Staff strongly supports the creation of new national parks and the expansion of existing park sites to tell a more complete story of the country's history and to preserve wild lands, waters, wildlife and cultural sites. Many of these proposed additions would contribute toward the goal of protecting 30% of America's lands and waters by 2030, a cornerstone of President Joe Biden's plan to fight climate change. Here are six sites at the top of NPCA's wish list that staff will continue to advocate for in the coming months and years. To learn more about NPCA's work, go to npca.org/postcardparks.

Julius Rosenwald & Rosenwald Schools National Historical Park

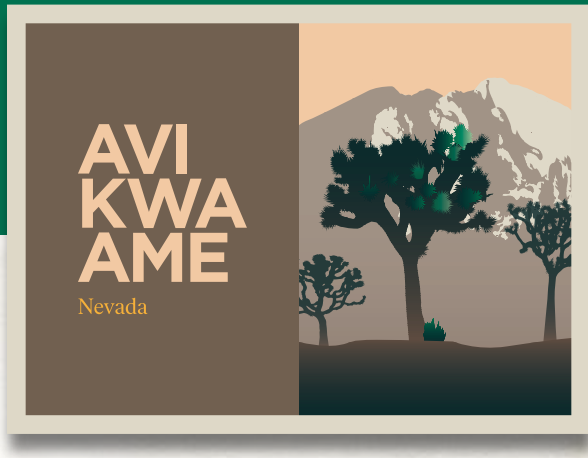
Julius Rosenwald, the son of German-Jewish immigrants, was a prominent philanthropist and businessman from Chicago. Driven by the Jewish concept of "tzedakah" — righteousness and charity — Rosenwald partnered with African American communities across the South to fund and build thousands of schoolhouses. Constructed between 1912 and 1932, these "Rosenwald Schools" were some of the first permanent educational facilities for Black people in rural areas. The plan to create a historical park (in Illinois and other states) that would honor Rosenwald and his legacy advanced earlier this year with passage of the Julius Rosenwald & Rosenwald Schools Act, which calls for the Park Service to conduct research and recommend appropriate ways to tell Rosenwald's story.



Fort Monroe National Monument

Fort Monroe preserves 400 years of American history. Some of the first enslaved Africans in English North America landed here in 1619, marking the beginning of centuries of enslavement in the U.S. The fort was held by Union Army forces during the Civil War, becoming an important refuge for self-emancipated people, including Harriet Tubman, who nursed the wounded there. After service in both World Wars, the post was decommissioned in 2005, and six years later, President Barack Obama designated sections of the fort as a national monument. Unfortunately, part of the peninsula remains unprotected. NPCA supports adding 40 coastal acres of land to the site, which would curtail irresponsible development in the area and unite the monument's two discontinuous pieces.

Illustrations by Christopher Abrams



Avi Kwa Ame National Monument

A new national monument in southern Nevada would permanently protect some of the most visually stunning, ecologically diverse and culturally significant lands in the Mojave Desert, including Avi Kwa Ame, or Spirit Mountain, which is sacred to Native American tribes in the region. The proposed monument would encompass several mountain ranges, Joshua tree woodlands, and many important cultural and historical sites. The monument, which the Bureau of Land Management would manage, also would connect three California sites (Mojave National Preserve and Castle Mountains and Mojave Trails national monuments) with Nevada's Lake Mead National Recreation Area and the Colorado River plateau.

Blackwell School National Historic Site

Nestled in the borderlands of West Texas, the Blackwell School tells the story of de facto segregation that took place there in the early 1900s, when students of Mexican descent were educated separately from their white peers at so-called "Mexican schools." Today, the Blackwell School is one of the last such school buildings still standing. If established, the historic site would be one of only a handful of Park Service units dedicated solely to highlighting modern Latino history and culture.

Casa Grande Ruins National Monument

More than a century ago, Congress protected the "Great House" of the Gila Valley's ancient people — one of the largest prehistoric structures ever built in North America — by designating a reserve that would later become the 480-acre Casa Grande Ruins National Monument. A proposed expansion would add approximately 415 acres containing key archaeological sites — including a platform mound and ballcourt — to the monument to tell a fuller story of the people of the Hohokam era.

Santa Monica Mountains National Recreation Area

The Rim of the Valley proposal, which would add 191,000 acres to the national recreation area, represents an opportunity for the Park Service to protect historic sites as well as the greater Los Angeles area's unique Mediterranean ecosystem and some of the last wild lands there. The expanded park would encompass Griffith Park, the Simi Hills, El Pueblo de Los Angeles, portions of the Los Angeles River and the Arroyo Seco watershed. The expansion would also protect a vital corridor for wildlife, including mountain lions, bobcats, raptors and threatened red-legged frogs.

Man of Letters

A third-generation stone carver, Nicholas Benson has left enduring marks on some of the park system's most iconic monuments.

©TOM PICH PHOTOGRAPHY-NYC

FATHER AND SON (John and Nicholas Benson) photographed in 2007 inside the John Stevens Shop, which was founded more than 300 years ago.

In 1705, John Stevens, a mason originally from England, founded a shop in Newport, Rhode Island. The John Stevens Shop, which the Stevens family helmed for several generations, produced gravestones and other custom stone artifacts for around 200 years, moving across Thames Street to its current location around 1800. Then in 1927, John Howard Benson, a sculptor by training, bought the business, teaching himself the craft of lettering. His son, John Everett Benson, took over in 1963 and ran the shop for 30 years. That's when Nicholas Waite Benson was handed the reins. A master carver like his father and grandfather, he is the owner and creative director of the shop, one of the oldest continuously operating businesses in the country.

One morning in November, Benson sat casually on a countertop in his workshop. Sun spilled through the big windows onto cups of brushes, rows of mallets and paper mock-ups of gravestone designs. Tabletop-sized pieces of slate leaned against wood beams. Hung on one wall of the meticulously organized workspace was a portrait of Benson's grandfather, who revived techniques pioneered by Roman artisans around 2 A.D. Those methods, which Benson still employs, entail painting letters with a broad-edged brush directly onto stone, then chiseling them out in what's known as a "V-cut" cross-section, for the wedge-shaped gullies that form the lines of each character.

"My father built on my grandfather's lettering, and I continued to do that," Benson explained. All three also studied the art form extensively, "so we have a lot of academic knowledge about the history of letterform."

Locally, the Benson family's work adorns stone markers at Newport's Common Burying Ground and Island Cemetery. But over decades, their hand-hewn text has found a grander stage on various national monuments and memorials, many of them in the National Park System. Benson's grandfather carved his marks on the Marine Corps War Memorial in Arlington, Virginia. His father's first job after inheriting the shop — at 26 years old — was inscribing John F. Kennedy's gravesite in Arlington National Cemetery; he later worked on the Franklin Delano Roosevelt and Vietnam Veterans memorials in Washington, D.C. Benson did lettering for the World War II Memorial in Washington, which was dedicated in 2004, and half a dozen years later, cut words on the towering Martin Luther King, Jr. Memorial, also in the U.S. capital. (One of the lines he carved, from King's "drum major" sermon, became the subject of a controversy after poet Maya Angelou, among others, raised objections because it was a paraphrase. Sculptor Lei Yixin later carved striations into the monument's side to erase the inaccurate text.) Most recently, Benson and a small team inscribed quotations at the Dwight D. Eisenhower Memorial, a 4-acre park near the National Mall designed by architect Frank Gehry and dedicated in September.

At 56, Benson is energetic, with a laborer's wiry build. His loose, roaming conversational style stands in contrast to his work mode, which demands an almost insane level of patience and focus. Tapping out fluid strokes with a mallet and chisel, he's lucky if he carves a couple dozen 2-inch characters a day. On projects that require bigger characters, it's more like 15. That pace can

Common obverse shown actual size

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leave digital-age observers befuddled.

"Some people don't see value in what I'm doing. They say, 'You got hundreds of thousands of typefaces out there, and CNC machines that can make V-cut lettering,'" he said, referring to computer-controlled carving technology. "'Why are you doing this?'"

The answer, in part, lies in the satisfaction of doing challenging work, but also in the letterforms themselves. Depending on the project, some are tapered and lean, while others loop in calligraphic swirls. They are elegant and imposing at once. And his characters have, well, character. Machines simply can't replicate the subtle inconsistencies of hand-wrought work that, as Benson describes it, provide evidence of a human endeavor.

"Nick's work is exquisite," said Marjorie Hunt, folklife curator at the Smithsonian Center for Folklife and Cultural Heritage. "What I would underscore is the fact that he combines hand-designed work with hand-carved work." In addition, Benson's grasp of design gives his layouts a unique coherence, said Hunt, who met Benson in 2000 while doing research. She later featured him in "Good Work: Masters of the Building Arts," a documentary she co-directed. "People don't realize the skill and knowledge involved," she said. "All you see is this incredibly beautiful lettering."

In typography circles, at least, Benson's talent is well known. When the need arises, famed architects seek him out. He's received a National Endowment for the Arts National Heritage Fellowship, and in 2010, he was awarded a prestigious MacArthur Fellowship — a so-called "genius grant."

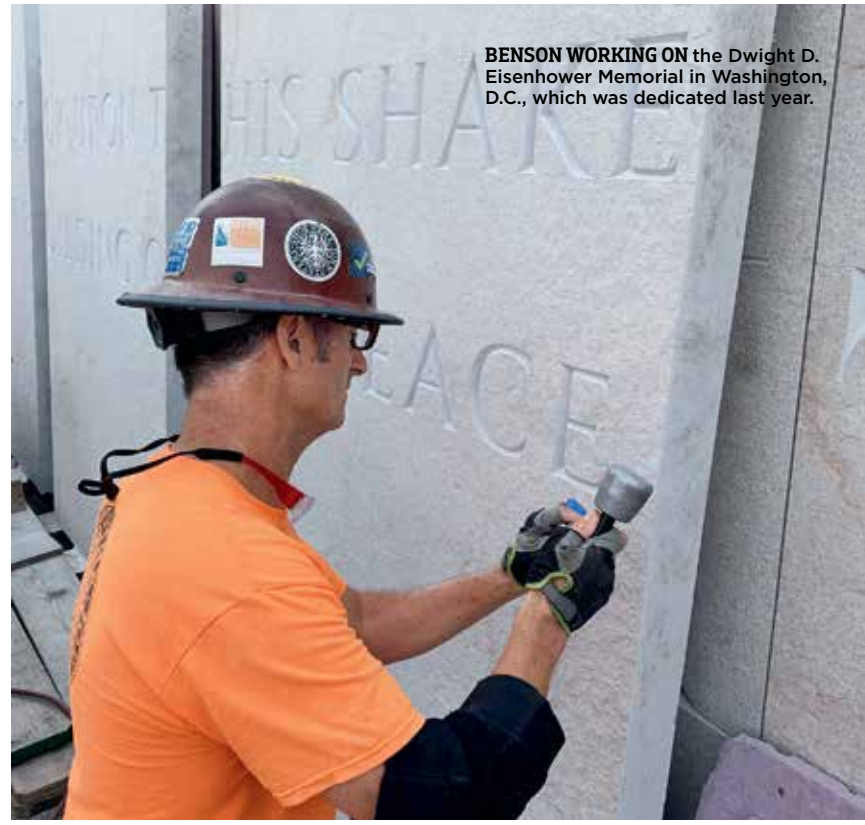
Like his father, Benson began apprenticing in the shop when he was 15. By 18, he was carving for clients. He went on to Purchase College, State University of New York, majoring in drawing and design. He further honed his aesthetic sensibility during a year in Switzerland, where he studied calligraphic and typographic design at the Basel School of Design.

For all its conceptual trappings, Benson's work is ultimately physical, and chiseling rock for 40 years has taken a toll. "Everybody's like, 'Do you have carpal tunnel?' Yes, of course I have carpal tunnel," he said. "Tendonitis, tennis elbow. All those things constantly plague the artisan." His father, too, suffered wear and tear — including nerve damage in his hands from the pneumatic hammers used on big monuments, before the fine details are finished with chisels. People often ask Benson what he does about the aches, and he usually responds the same way: "Suck it up," he said.

Benson aggressively pursued work on the new Eisenhower memorial, which interprets the former president's roles as a statesman and general with bronze figures, bas-reliefs, inscribed walls and a steel tapestry depicting the cliffs of Normandy. "I was so interested in designing a typeface based on the neoclassical Roman lettering that's all over D.C.," he said. His visual touchstone, he elaborated, was the Lincoln Memorial, with its neat, clear blocks of justified text.

Benson formed a four-person crew — including a colleague from the shop and one carver he met through Instagram — and rented an apartment near the worksite. The number of words, selected from some of Eisenhower's famous speeches, was daunting: just over 900, or around 4,500 characters. Each day, donning hardhats, he and the others hammered and chiseled slabs of specially quarried Spanish limestone. Even with pneumatic tools speeding things up, the carving took five months to complete.

Kristin Ragins, a senior associate at Gehry Partners LLP, which managed



BENSON WORKING ON the Dwight D. Eisenhower Memorial in Washington, D.C., which was dedicated last year.

COURTESY OF NICHOLAS BENSON

the memorial's design over more than a decade of negotiations, said Benson's hard work paid off. "It's a very sculptural thing," she said, "the way the sun creates a shadow and makes the letter pop out in the sunshine." Her favorite inscription in the park, she said, is on the back side of the presidential wall, where long quotations from Eisenhower's first inaugural address in 1953 and 1961 Farewell Address are featured side by side in mottled stone. "It feels like a piece of parchment, old but reverent," she explained.

COURTESY OF NICHOLAS BENSON

A SAMPLE LETTER for the Eisenhower memorial.

Since receiving the MacArthur grant, Benson has felt freer to pursue more artistic projects. At one point during the shop visit, he uncovered a large slate slab, revealing engraved rows of what looked like wild filigree, but was actually, he explained, a long string of computer code. In recent years, he's become fascinated with capturing digital languages in beautiful, analog forms. "I'm taking something that may exist for seconds, in terms of its use," he said, "and playing it against this thing that, if taken care of properly, will last for thousands of years." He spent a year carving the slate piece, stealing time before workdays. He's created similar works on paper, with thick fields of pen strokes that look like brambles.

Though painstaking artisan work can seem out of sync with a high-speed, disposable culture, Benson is hopeful about the enduring appeal of handmade things. His daughter, who is 21, recently began apprenticing under him. She has shown an entrepreneurial streak, cranking out ornamental pieces she sells via Instagram, but Benson said she's reluctant to take on the stress of administrating the family business. Although Benson intends to keep at it for another decade or so, the fate of the shop beyond that is unknown.

For now, work at the shop is steady, Benson said, even if monument-sized jobs are mostly on pause due to COVID-19. Whatever the project's scale, the struggle for perfection keeps him engaged. "There are instances when I'm doing a simple layout for a little marker stone and there's some little stroke that I do, and I'm just like, 'Ah, that's excellent,'" he said. "Because it never stops being difficult. It's always difficult."

DORIAN FOX is a writer, freelance editor and writing teacher based in Boston.

AN ARTIST RECONSTRUCTED this Ice Age scene based on information gleaned by scientists analyzing tracks left more than 10,000 years ago in what is now White Sands National Park.

COURTESY OF KAREN CARR

Fossil Tales

At White Sands National Park, history unfolds one 10,000-year-old footprint at a time.

Two sets of footprints chart a fragile path across the bleached playa of White Sands National Park and into nearby White Sands Missile Range. Only appearing when conditions are just right, these "ghost tracks" might be visible one day and invisible the next, their faint impressions all that remains of a small woman, or adolescent, who made a roundtrip journey in the distant past. At that time, grasses covered this area of New Mexico, and large mammals, such as Columbian mammoths and dire wolves, roamed.

In a study published last fall, researchers identified 427 prints extending for nearly 1 mile, making this the longest fossilized path of its kind documented to date. After painstakingly excavating 140 of them and analyzing 90 with the aid of 3-D imaging, the team, including White Sands Resource Program Manager David Bustos, pieced together the story of someone on a mission. The pace was brisk, the terrain slippery, the destination — as evidenced by the unerringly direct path — probably familiar to the walker. This trailblazer carried a toddler on at least the outbound journey, shifting the weight from hip to hip and occasionally setting the child down.

These are not the only tracks that lie just beneath the gypsum surface at White Sands, which is home to the largest collection of Ice Age megafauna tracks in the world. Kelly Carroll, the park's chief of interpretation, estimates there to be tens of thousands — if not hundreds of thousands — scattered across roughly 80,000 acres.

"The stories the tracks tell are just so incredible," said Bustos, who has spent the last 15 years coordinating with researchers from around the world to document and study the fossils. In one spot, they found evidence of a baby mammoth walking alongside its mother. It ambled off, returned to her side (perhaps to nurse) and then struck out again. Elsewhere, a human and a giant ground sloth slipped in the same mud puddle. Researchers even uncovered a mammoth track crisscrossed by the prints of children. "The kids were jumping in the mud," Carroll said. "Just like kids do these days."

Unfortunately, once exposed to the elements, the tracks — and the tales they tell of life more than 10,000 years ago — begin to erode. Most are gone within two to three years; some disappear even faster. Lacking a way to preserve the prints, researchers are left with the overwhelming task of trying to document them before they're gone.

"In my mind, it's like it's on fire or a tornado is coming," Bustos said. "We're racing to try to record these things as quickly as we can."

–KATHERINE DEGROFF

Landing the Moonshot

Last October, Phoenix-based photographer Zach Cooley made the 500-mile trip to Arches National Park in Utah to capture this image of the moon staring out of a sandstone socket. Traveling during a pandemic turned out to be the easy part. To get the shot, Cooley had to track the lunar orbit, account for the position of the sun, figure out how far away to set up his camera (in this case, over half a mile), and then find a spot unobstructed by trees or rocks. He was reminded how much chance still plays a role when he arrived in the area a few days early and saw haze from nearby wildfires tinting the air. "Even with all the planning and the apps, you can never really know," he said. "You have to hope for a clear sky."

-K.D.

©ZACH COOLEY

ANASTASIA ALLISON AND ROSE FREEMAN play as the sun rises over Hidden Lake Peaks in North Cascades National Park.

©MITCH PITTMAN

Musical Mountaineering

A tuneful duo spreads joy one alpine allegro and sunrise sonata at a time.

Standing at a trailhead just outside North Cascades National Park at 3 a.m. one September morning, Anastasia Allison and Rose Freeman surveyed their packs to confirm they had the essentials. Compass, headlamp, sunscreen, first-aid kit, knife, matches, map, food, water, extra clothes. Check. Violin, lightweight keyboard and recital dresses. Check, check and check.

Two hours later, Allison, a violinist, and Freeman, a pianist, stood barefoot atop a granite slab performing "Amazing Grace" in the most majestic of musical halls: a 6,650-foot-high saddle in the mighty Cascade Range. As the duo played at Maple Pass, the rising sun pierced a gray cloud, which crashed over a far ridge like a sea wave. Before long, the glacial-scoured mountains and alpine meadows were bathed in light.

"There is something special that you cannot articulate about music and nature being combined," said Allison, a former ranger who used to play her violin while walking campground patrols and hosting interpretive programs. "It's the most delicious combination of the things that we love most in our lives: music, wilderness and friendship."

Allison, 40, and Freeman, 29, initially connected on social media and later met at a coffee shop in Mill Creek, Washington, where they discovered a mutual love of mountaineering and playing music outside. "We each had the spark to play music in the wilderness ever since we were little girls," said Freeman, whose day job is teaching piano. "Being in nature and playing music connected us with ourselves and the world around us in a way that nothing else could."

They first performed as the Musical Mountaineers in 2017 after coming up with a strict set of concert guidelines: They would plan their mountaintop gigs at the last minute on account of the moody Pacific Northwest weather. They would choose uncrowded hikes, perform at dawn and avoid publicly announcing their concerts to honor the leave-no-trace ethic that frowns upon large gatherings in the wild. They also agreed not to accept payment for their al fresco concerts, which they saw as a passion project rather than a money-making venture.

"Our music is an offering to the world around us," said Allison, the founder of an outdoor gear start-up. "When people listen to our music, we want them to feel a deep sense of belonging. We want them

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to listen to the music and see the beauty of nature and know that it is a reflection of who they are."

For one of their first concerts, atop Sauk Mountain, the Musical Mountaineers performed "Ashokan Farewell," a somber waltz, with the 10,781-foot Mount Baker presiding in the distance. Since then, they've performed more than 40 times around the Evergreen State and at the black-sand beaches of Northern California's Lost Coast. While Allison and Freeman have played classical music and devotional hymns such as "On Eagle's Wings" and "Morning Has Broken," they favor simple improvisations on account of the fierce winds they often encounter, which can flip music book pages (or sometimes even tip over Freeman's keyboard stand). The Musical Mountaineers, who perform during all four seasons, also have had to contend with swarms of mosquitoes, frigid temperatures, deep snow and sudden rain showers — conditions Freeman takes in Zen-like stride. "When we play music, we can be resilient in that moment no matter what's happening around us," she said. "We don't ignore the challenges, but recognize them and still press forward, being there for ourselves and others."

Stumbling upon Allison and Freeman in the backcountry is a bit like seeing a double rainbow. Their alpine allegros often elicit waves of gratitude and joy. Julie Metz, a middle school teacher in Bellevue, Washington, was moved to tears when she and her husband happened upon the Musical Mountaineers playing in the Mount Baker-Snoqualmie National Forest on a hike celebrating her 50th birthday. The experience prompted Metz to create a classroom theme that year that she hoped would encourage students to figure out what excites them and share their gifts. She called the curriculum "What's in Your Backpack?"

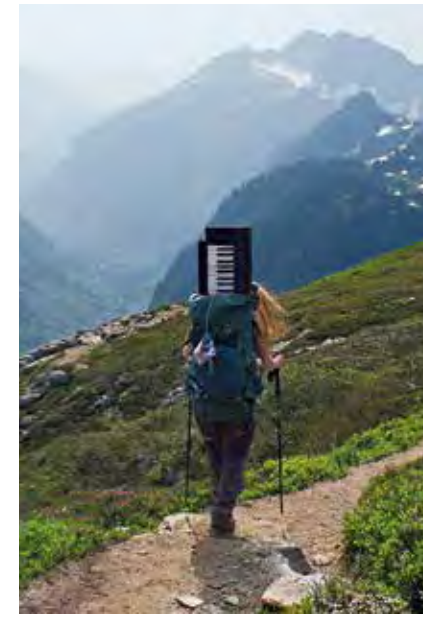
"A piano in a backpack on a mountaintop doesn't initially make any sense at all," Metz explained, "but if you take what you have to give the world and you put it out there, it's going to make the world a more beautiful place."

Along with inspiring a small number of lucky passersby, Allison and Freeman also reach listeners through their social media channels, where they have thousands of followers. (The musicians are active on Instagram and have 150 videos on YouTube, most of which they filmed themselves.) Rebecca Austin, a registered nurse from Washington who has known the duo for years, regularly plays their YouTube videos for patients she treats. "I've started numerous tough IVs while the patients sit in awe, watching their videos," Austin said. "It's a favorite nursing trick I keep up my sleeve, which always leaves patients feeling upbeat and happy."

Occasionally, the Musical Mountaineers perform indoors. To date, they've played benefits at such spots as Seattle's famed Benaroya Hall and Mount Rainier's historic Paradise Inn, raising money for conservation groups from the North Cascades Institute to Washington's National Park Fund. Those concerts have been on hold during the COVID-19 pandemic, but the duo has adapted to restrictions during the last year by uploading previously unreleased videos, giving talks, playing virtual concerts and sharing their work on Insight Timer, a meditation app. In the future, Allison and Freeman hope to play outdoor concerts at Olympic, Zion and Canyonlands national parks, among others.

That September morning at Maple Pass, Allison and Freeman played the final notes of "Amazing Grace," then waited while the sound gradually evaporated. The stillness and silence at the end of their performances are always a powerful part of the experience of playing, they said. "It's as if music hasn't really stopped, but becomes where we are," Freeman said. "It soaks into the landscape, and we're even more aware of the birds, the soft gentle breeze, and the gift of life around us."

Allison hopes the people who see them play will be inspired to follow the joy in their own lives. "Musical Mountaineers is built around the idea that everyone can bring their unique 'music' into the world. What lights someone up inside? What are they passionate about? What hidden ideas have they kept in their heart?" Allison asked. "We want to inspire people to dream big and bring more good into the world."



COURTESY OF ANASTASIA ALLISON

ROSE FREEMAN — with all her essentials in her pack — heads home after a sunrise performance in North Cascades National Park.

KEVIN GRANGE is an author and paramedic living in Jackson Hole, Wyoming. His new book, "Wild Rescues: A Paramedic's Extreme Adventures in Yosemite, Yellowstone, and Grand Teton" will be published in April.

©JONATHAN LARSEN/DIADEM IMAGES/ALAMY STOCK PHOTO

AFTER SPENDING the past 17 years underground, Brood X periodical cicadas will emerge this spring and swarm the mid-Atlantic region, including many national park sites such as Gettysburg National Military Park and the National Mall.

Like Clockwork

Ready or not, the Brood X cicadas are coming — maybe to a park near you.

WHEN WOLF TRAP NATIONAL PARK for the Performing Arts in Virginia staged a live performance of "A Prairie Home Companion" on May 29, 2004, there were some uninvited — but not unexpected — guests in attendance. Lots of them, in fact.

"The 17-year cicada — Brood X cicadas — have hatched. And they are flying among us," said Garrison Keillor, host of the longtime public radio program. "There's one on you right now. Don't panic. It's OK," he quipped, before launching into a folksy, old-timey tune called "Cicada Song" that distilled the epic lives of the curious insects into eight bouncy rhyming couplets.

Now, the offspring of those 2004 periodical cicadas — *trillions* of them — are poised to make their dramatic, noisy return this spring, as Americans across 15 states, from North Carolina to Indiana to New Jersey, will soon discover. And many parks in the mid-Atlantic region, including Gettysburg National Military Park, Chesapeake & Ohio Canal National Historical Park and sections of the Appalachian National Scenic Trail, will be right in the thick of it all.

If the spectacle isn't coming to your own backyard, you can always experience it on America's Front Yard. "We're fortunate to be a part of the area where Brood X emerges," said Leslie Frattaroli, natural resources program manager for the National Mall and Memorial Parks. "Natural events like this are a perfect showcase for the importance of natural resources in urban areas."

While harmless to humans, Brood X cicadas will definitely leave a mark on the landscapes where they appear. The dime-sized holes caused by emerging nymphs allow air and water into the ground, and the carcasses of dead adults return nutrients to the soil. But there will be damage, too. Female cicadas lay their eggs in the slender branches of deciduous trees by first sawing a slit with their ovipositors, a behavior that has no long-lasting effect on mature trees but will cause the tips of their branches to wither, droop and drop. Saplings and recently transplanted trees are at greater risk and can best be protected by covering them in netting, as chemical insecticides cause significant harm to the ecosystem. The cicadas

themselves can be forgiven for all this commotion — after all, they've got only one thing on their insect minds.

"Those teenagers have been underground for 17 years and, hey, in May, they're coming up," said Michael Raupp, professor of entomology at the University of Maryland. "It's going to be a big boy band up in the treetops as the males try to attract their mates."

Unlike the annual cicadas that appear in much of the country during the dog days each summer, periodical cicadas (Brood X actually includes three species that all belong to the genus Magicicada) have a life cycle that beggars belief. After spending 17 years underground (or 13 years for some broods) sucking sap from tree roots, they emerge as one in staggering numbers — more than their many predators can eat. The survivors take to the treetops, and the cacophonous sound of male cicadas seeking willing female partners soon fills the air. After weeks of what may well be the world's biggest and noisiest public display of affection, the last of the cicadas dies away. Once the eggs hatch, nymphs no larger than grains of rice rain down from the treetops and burrow into the ground, where they will wait to repeat the cycle many years later.

"This has been going on for eons. This happens nowhere else on the planet except right here in eastern North America," said Raupp, who likens the phenomenon to a National Geographic special one can view firsthand. "You can observe every interesting element of biology: birth, death, predation, courtship — it's just going to be a fascinating opportunity to learn about nature."

Some of our predecessors may have been a bit more practical. Native Americans feasted on cicadas — the emerging nymphs are soft and shrimplike and, by some accounts, taste a bit like asparagus. (Raupp, who once shared a skewer of cooked cicadas with host Jay Leno on "The Tonight Show," described their flavor as delicate and nutty. Leno remarked that they tasted better than Cheetos.) But the periodical cicadas also fed suspicion. Some tribes believed they were harbingers of war and famine, and early European settlers equated them with biblical plagues of locusts. A report on the coming emergence in the April 3, 1751, edition of the Maryland Gazette ended with this plea: "May God avert our impending Calamities." Eventually, apprehension gave way to fascination. Scientist Benjamin Banneker kept a detailed personal journal that revealed his preoccupation with and careful study of the insects that, as he wrote in a June 1800 entry, "like the Comets, make but a short stay with us."

"This has been going on for eons. This happens nowhere else on the planet except right here in eastern North America."

Whatever your take on the impending arrival of the Brood X periodical cicadas, one thing is for certain: After everything we've experienced lately, it will be reassuring to watch Mother Nature do her thing, on cue and as predicted, just like clockwork.

"You can count on it," Raupp said. "It's as reliable as the blooming of the cherry blossoms on the Mall every year. It is going to happen, absolutely." **NP**

TODD CHRISTOPHER is the senior director of digital and editorial strategy at NPCA and author of "The Green Hour: A Daily Dose of Nature for Happier, Healthier, Smarter Kids."

A Man Beyond Measure

©MPVHISTORY/ALAMY STOCK PHOTO

One of the earliest American naturalists to observe, document and predict the 17-year life cycle of Brood X periodical cicadas was Benjamin Banneker. Born in 1731 to a free African American woman and a formerly enslaved man in Baltimore County, Maryland, Banneker is mostly remembered for helping to survey the District of Columbia and set the original boundaries of the nation's new federal capital in 1791. Also renowned for publishing almanacs, calculating astronomical events and carving a working clock entirely from wood, Banneker devoted much of his life to exploring the mysteries of mathematics, time and nature — including the Brood X cicada emergences of 1749, 1766, 1783 and 1800. His namesake park in Washington is part of the National Mall and Memorial Parks.

MORE FREQUENT WILDFIRES could drastically reduce lodgepole pine forests' ability to regenerate themselves, according to a recent study.

Pines in Peril

Grand Teton's lodgepole forests are exquisitely adapted to wildfire — but can they survive a changing climate?

IN 1988, a fire ecologist named Monica Turner clambered into a helicopter and soared over Yellowstone National Park's still-smoldering forests. One fire after another had torched the park that infamous summer, ultimately burning some 800,000 acres, and Turner expected devastation. Instead she beheld a green-and-black quilt, burned forests and living ones mingled across the landscape. A year later, lodgepole pine seedlings carpeted the ground so densely that, she said, "you couldn't put your foot down without squashing a whole bunch of them." The Greater Yellowstone Ecosystem's forests, she realized, were more resilient than anyone had imagined.

That resilience is a tribute to the evolutionary history of the lodgepole pine, a tree whose relationship to wildfire runs deep. The species' ramrod trunks and slender crowns blanket much of the Mountain West, including Yellowstone and nearby Grand Teton National Park. The pine achieved its dominance through a crafty trick. Many lodgepole pines produce serotinous cones — cones whose scales remain glued shut by resin, sometimes for decades, until the heat of a wildfire opens the cones, melts their seal and releases their seeds into newly fertile, sunlit soil.

"Fire is a wild force of nature that we think of as part of our ecosystem," said Diane Abendroth, fire ecologist at Grand Teton. The park's lodgepole forests, she added, have been sculpted by fire "for as long as they've been in existence."

Today, though, the longstanding fire patterns that gave rise to lodgepole pines are shifting. A growing body of research suggests that larger and more frequent fires, fueled by climate change, will test lodgepole forests' ability to regenerate — leading to dramatic changes in some of the country's most iconic national parks. "We don't know exactly what, or exactly how," said Nathan Gill, an ecologist at Texas Tech University. "But there will certainly be flux in the composition of the forest."

That's the lesson from a recent study set in the footprint of the Berry Fire, which burned over 20,000 acres in 2016. The largest conflagration in Grand Teton's history, it was unusual both in its intensity and its timing. While the park's lodgepole forests have historically gone a century or more between large blazes, the Berry Fire overran some stands that had burned less than 20 years earlier. Such short fire intervals could spell trouble for lodgepole pines, which can take decades to produce a sufficient supply of serotinous cones. "If fires come before the trees produce cones, we don't have a local seed

source," said Turner, now a professor at the University of Wisconsin.

Fortunately, lodgepole pines have another trick up their needle-draped sleeves. Long before they're ready to produce serotinous cones, the young pines start cranking out nonserotinous cones, whose seeds are borne away by the breeze, no fire needed. In 2018, Gill, Turner and their colleague Tyler Hoecker decided to investigate the fate of these windblown seeds. Theirs was a simple but important question: If young lodgepole forests burned before producing enough serotinous cones, could nearby trees compensate by supplying windblown seeds?

To collect pine seeds, the team placed a series of trays in and around the recently burned forest. Some trays they put near lodgepole pines that had sprouted just 18 years prior. Some they put by 30-year-old stands — trees a bit closer to middle age. And still others they left near old giants, pines that had towered over the park for more than 100 years. Then they let their trays sit for a summer, slowly gathering seeds deposited by the swirling Wyoming winds.

When, that October, Gill and Hoecker came back to collect the trays, they found more or less what you'd expect. Burned areas near the youngest stands had collected few seeds, because their trees hadn't had time to produce many cones. The middle-aged stands had more cones but weren't quite tall enough to broadcast their seeds long distances. Only the oldest, tallest trees were capable of scattering seeds far and wide across the singed landscape. You might liken it to throwing a paper airplane off a skyscraper: The higher your launch point, the more opportunity the wind has to carry your craft.

The researchers' intuitive discovery comes with alarming implications. As infernos like the Berry Fire become more frequent, fewer old lodgepole pines will grace Grand Teton. Fewer old trees means less seed dispersal. And less seed dispersal means that lodgepole forests will be slower to regenerate in burned areas — or in some cases may not regenerate at all.

The lesson: Resilience has its limits. Lodgepole forests thrive in the wake of sporadic fires, but not when they burn every few years. Unfortunately, the Greater Yellowstone Ecosystem is experiencing more frequent fires. According to recent climate modeling, Turner said, the region stands to lose around one-third of its conifer forests by 2100 even if greenhouse gas emissions level off by mid-century. If we continue to burn fossil fuels unabated, the landscape could be transformed into something very different than what we see today.

What exactly will succeed lodgepole pine, the charismatic megaflora that has long defined Yellowstone and Grand Teton? In some places it may be aspen; in others, Douglas fir; in still others, shrub habitat. But while Turner isn't rosy about lodgepole pines' future, she learned in 1988 never to count the species out. National parks, she said, "are still the best places to understand how well nature can adapt to these changes." **NP**

A Fiery Year

Few wildfires are as aptly named as the East Troublesome Fire. The massive blaze overran Rocky Mountain National Park in late October, forcing the park to close and nearby residents to evacuate. Historic cabins and other structures were reduced to smoldering rubble. By the time cold weather doused the inferno, the East Troublesome and Cameron Peak fires (the latter pictured below) had singed 30,000 acres within the park — about 9% of its total area.

Among the many reasons that 2020 will live in infamy: With more than 10 million acres burned, it was one of the most intense fire seasons in recorded American history. Across the West, national park sites were afflicted by flames. Wildfires closed Point Reyes, charred Saguaro and caused officials to contemplate the evacuation of Crater Lake. Smoke from the Creek Fire turned Yosemite's air hazardous, requiring a week-long shutdown and casting an eerie red pall over Half Dome.

Although wildfires have rejuvenated park ecosystems for millennia, the season's severity portends an ominous future. Consider the unusually explosive behavior of the East Troublesome Fire, which burned so hot its smoke plumes towered 40,000 feet above the earth. As one Park Service official told Colorado Public Radio: "We have not had this level of fire activity in the park for 105 years."

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

getting away from it all on a five-day cycling trip along the C&O Canal.

a change of SCENERY

By Melanie D.G. Kaplan • Photos by Michael Kircher

Three days and 117 miles into my bike ride along the Chesapeake and Ohio Canal, I started seeing things.

With 4.2 miles to go until the next campsite, I was imagining mileposts where they didn't exist. It was the latest chapter in an exasperating day: I'd suffered from a headache for most of the morning and then had tripped on wobbly legs, falling hard. Meeting friends for lunch in Shepherdstown, West Virginia, was a welcome reprieve, but the break had disrupted my rhythm on the bike, and I may have been a little overzealous in my fish taco frenzy. Now I was back on the towpath, alone, tired and on the verge of an après-feast collapse. My fingers were sticky from layers of sunscreen, chain grease, chocolate energy gel and hand sanitizer. With every micro-swerve around wayward rocks and roots, the extra weight packed onto my bike threatened to topple me sideways.

Squinting at a marker in the distance, I was certain I'd conquered another mile since the last numbered post, only to cruise past a cunning tree stump. Time and again, I saw phantom mileposts in fallen trees, shadows and thin air. When the portable toilet at Huckleberry Hill campsite finally came into view, I thought I might weep.

I slowed to a stop on the towpath and surveyed my home for the night: a small, empty clearing in the woods with a lone picnic table. The late afternoon sunlight filtered through the trees, and I saw the water glimmering beyond the half-bare branches. For days, the Potomac River had been my constant companion, yet we'd always kept a polite distance. Now I ached for contact — to dip my toes in and splash cold water on my face. I parked my bike, quickly pitched my tent, kicked off my sneakers and walked down to the river.

Chesapeake and Ohio Canal National Historical Park stretches 184.5 miles between Cumberland, Maryland, and Washington, D.C., and encompasses nearly 20,000 acres. It is home to 1,200 native plant species, hundreds of animal species, one dynamic river and innumerable spots of breathtaking beauty. Growing up in Maryland, I picnicked with my family in Great Falls Park, which runs along a spectacular section of the river with waterfalls and cascading rapids, and I visited the canal with my classmates to ride a mule-towed boat (the origin of the term "towpath"), a replica of those used during the canal's working days. I'd explored small sections of the linear park as an adult, and almost a decade ago, one of my first dates with a triathlete was a 52-mile round-trip pedal between White's Ferry, Maryland, and Harpers Ferry, West Virginia — with zero preparation on my part. I wouldn't recommend biking the canal this way, but if the excursion had been my date's way of testing my fortitude, I guess I passed. Plus, it planted the seed for future C&O rides.

COURTESY OF SPECIAL COLLECTIONS RESEARCH CENTER/ THE GEORGE WASHINGTON UNIVERSITY

Last spring and summer, I had coped with the stress of the pandemic by spending more time on my bike, and when I decided to plan my first multiday ride, the canal beckoned. Eager for a change of scenery, a disruption of my daily routine and the thrill of an outdoor adventure, I planned an end-to-end, five-day trip, which meant a pace of no more than 50 miles a day. I scheduled the journey for two weeks before the presidential election and vowed to stay off all electronic devices.

In the months before my ride, I biked more frequently and played hooky one day for an exhausting 60-mile excursion along the canal and the parallel Western Maryland Rail Trail, which — unlike the towpath — is paved. I also hunkered down with stories about our first president, who rode horseback along the volatile Potomac (known for its floods, rapids and dry spells) at age 16. For much of his life, George Washington dreamed of a trade route that would connect the Ohio River Valley to the Eastern Seaboard. Before becoming chief executive of the country in 1789, Washington was named president of the Potowmack Canal Company. He oversaw the beginnings of a primitive canal system but didn't live to see its completion.

By 1850, the canal — then run by the Chesapeake and Ohio

A GREAT BLUE HERON at Swains Lock in Travilah, Maryland (right). Inset above: Boaters on the canal in the early 1900s. Previous pages: A cyclist between locks 16 and 17.

Canal Company — reached its current length. (It never stretched as far as Pittsburgh or the Chesapeake Bay, as originally intended.) For more than 75 years, mules hauled boats of coal and other raw materials from the Western Maryland mountains to foundries, lime kilns, blacksmiths and mills in Georgetown and beyond. In its heyday, just after the Civil War, the route was so popular that boats sat in traffic, waiting to pass through locks. But a devastating flood in 1889 halted business, and the canal company — losing a fierce competition with the railroad — was never profitable again. Boat operations ceased in 1924.

Over the next decades, the National Park Service proposed (and Congress approved) turning the canal into a scenic highway, but starting in the 1950s, Supreme Court Justice William O. Douglas, a conservationist, led an effort to reverse course and protect the canal. He called it "a refuge, a place of retreat, a long stretch of quiet and peace." A section of the canal became a national monument in 1961; the park was expanded to include the entire canal and surrounding lands and was redesignated a national historical park in 1971, the year I was born.

Before I set off on the towpath in October, I read everything I could about packing a bike, which intimidated me far more than the miles. I made overnight reservations at two of the historic lockhouses, organized my freeze-dried meals and borrowed a tiny camp stove. In the final days, I bought spare tubes and practiced getting a tire off and on my bike. After that critical success, I stopped agonizing about getting a flat, which just left all the other concerns: overpacking, overlooking essentials, falling, freezing or starving. The night before my departure, I packed two waterproof panniers and loaded the car. It was time to let nature do its healing.

The next afternoon was an autumn day out of central casting: The air was crisp, and the sun seemed to accentuate every fall color. I walked around Cumberland, stalling, certain I'd forgotten something important. My plan was to bike only a short distance the first day; my friend Robert had agreed to meet me at a campsite just 10 miles away, and my partner, James, who had given me a ride from Washington, would unicycle the first stretch and camp with Robert and me before driving home the next morning. (Yes, unicycle. I'll stick with two wheels, thank you.) At the trailside bike shop, I asked a mechanic to help me zero my bike odometer. Then, out of excuses, I rode onto the towpath and began my journey. Behind me were the steeples of Cumberland, once a thriving canal town; to my left, the canal and train tracks; to my right, the sparkling Potomac and colorful mountains. Soon we were passing backyards in a residential area and farms with fields like technicolored green carpet. I watched a young deer wade in the canal and stopped to explore a small family cemetery.

After about an hour, we pulled over at Irons Mountain, one of the Park Service's 31 free hiker-biker campsites. I set up my tent less than 100 yards from the railroad tracks, and James and I talked to a trio of backpackers who were hiking a small section of the park as practice for a thru-hike. At dusk, Robert rolled off the towpath, towing a large, box-shaped trailer.

I told Robert and James how I'd started off my ride surprised by the speedometer reading. It was higher than I expected, so I was feeling smug about all my training — only to realize later that the mechanic had reset it to kilometers instead of miles. We all laughed.

That night, I pulled out "Captain Kate," a young adult novel about a 12-year-old girl in Civil War Cumberland who pilots her family's boat down the canal after her father dies. I'd packed it figuring I wouldn't be able to absorb anything more complicated after long days of biking. Overnight, the trains sounded like they were barreling through my tent, waking me for long stretches. The next morning, I woke to see steam rising from the Potomac. I was shivering and tired but excited to start moving. James headed back to Cumberland, and Robert and I, wearing all of our warm clothes, headed south.

Along the quiet canal, I initially kept my eyes on the path. Robert, a far more experienced rider, served as our leader, scouting out the towpath just ahead of me. Within the first couple of hours, he had spotted a pileated woodpecker (somehow recalling the brilliant red crest from his fourth grade book report), a beaver, wood ducks and turtles. The weather warmed, and I stopped to shed several layers. When I caught up to Robert, my arms were bare. "Sun's out, guns out," he said.

After a quick detour for lunch, we found ourselves at the entrance to the Paw Paw Tunnel, where the canal and towpath go straight through a mountain for nearly two-thirds of a mile. An engineering marvel, the tunnel took 14 years to complete. I'd read it could be dangerous to bike through and was fully prepared to walk if things got dicey. With bike lights to guide me, I coasted cautiously on the narrow and slick path, separated from the canal by only a wooden railing. A couple times my tire slipped, and I panicked, imagining skidding into the dark canal, but I steadied myself and remained upright, biking to the end.

On the other side, the path was covered with pine needles. I stopped to turn off my lights and check a faint clicking coming from my bike rack. With nearly 40 pounds of weight in gear and supplies, I knew there was extra torque on the rack, which could loosen bolts. Everything seemed secure. Then, 3 miles before reaching Fifteenmile Creek, where I'd camp and Robert would pick up his car to head home, I heard a thud. My bike ground to a crawl, and I turned around to see my bags and tent drag-

NPCA at Work

A portion of the C&O Canal National Historical Park could be closed for as many as five years if an interstate-widening proposal by Maryland Gov. Larry Hogan moves forward. The project, which calls for adding four toll lanes on two different highways, could destroy 1,500 acres of forest canopy near the nation's capital, pollute 30 miles of local streams, and impair the visitor experience and natural habitat at seven national park sites (with unsightly sound barriers, wetland destruction and land loss among other eventualities), according to NPCA's Pamela Goddard, senior program director for the mid-Atlantic region. The multibillion-dollar project would displace people living within the proposed expansion corridor and set back the state's efforts to substantially limit greenhouse-gas emissions by 2030. Adding lanes encourages people to drive, compounding the problem, and takes critical green space from national parks, said Goddard, who has been working with a coalition of allies to defeat the proposal. "It's a bad project," she said. "It hurts parks, it's going to cost a fortune, and it's not going to address traffic congestion." — K.D.

AN ORIGINAL stone mile marker near lock 11 reads "9 miles to W.C." — the abbreviation for Washington City.

ging on the path. The bike rack had pivoted off its axle, and the bolts that held it together were gone. Eagle-eyed Robert backtracked, found one and suggested we pile my bags in his trailer. "We'll figure out a plan at the campsite," he said.

At Fifteenmile Creek, we befriended two campers with a pickup truck full of tools that they were happy to lend to the cause. They secured my remaining bolt and added a zip tie. With my bungee cord, I was back in business. That night in the tent, I continued reading about Kate's adventure. We were moving in the same direction on the towpath, through the same towns, and we both ate oatmeal for breakfast and beans for dinner. But while I overcame a broken bike rack, she avoided Confederate soldiers and cut her hair to disguise herself as a boy, part of an elaborate scheme to skip school and get her family's coal-filled boat to Georgetown.

I was still thinking about the book the next morning when I set out on the trail. Like Kate, I loved when the towpath was a narrow causeway between the Potomac and canal. In other sections, the path veered away from the river and hugged a field or forest. The towpath itself can vary widely: A lot of the surface is crushed limestone, but sometimes it's grassy, gravelly or muddy. The route is generally flat, although headed toward Georgetown there's a slight decline at each of the 74 locks that were used to raise and lower boats. I was thankful I wasn't riding in the opposite direction.

Midafternoon, after passing the town of Hancock, Maryland, I arrived at Lockhouse 49, where I'd be spending the night. One of 27 remaining lockhouses (seven of which are rentable), it's a sparsely decorated brick house with slightly sloping wood floors, braided rugs and no running water. After hanging my dewy tent on the porch to dry, I tightened the bolts on my bike and rack and organized my gear, waving to the occasional cyclist on the towpath. I fell asleep by 8 that evening, though at 1:30, my eyes blinked open. I rolled over to look out the window next to my bed and saw Orion in the sky, above the towpath, blinking back at me.

The morning was spectacular as I headed out for what I expected to be my longest day. I looked across the glassy river to West Virginia and could see the trees perfectly reflected in the water, a fall bouquet of yellow, orange and green. As I pedaled, colorful leaves floated down in front of me, landing softly on a yellow trail. On the curvy towpath, the rising sun was sometimes directly in front of me, other times behind me or to my right, casting parallelograms of light onto my route. At one point, I felt like I was pedaling through a Disney montage: Squirrels leapt, a white-tailed deer bounded across the path, a great blue heron took off from a log in the canal, and fish jumped in the river. When a blue bird flitted across the path, I had to chuckle out loud.

I went hours without passing any humans and drank up the solitude. Even though I had scarcely seen friends or family during the seemingly endless quarantine, I'd been cocooned with

THE PAW PAW TUNNEL, where the canal and towpath go straight through a mountain for nearly two-thirds of a mile, took 14 years to complete (left). Right top: The park draws roughly 5 million visitors in a typical year. Middle: Kayakers on a footbridge near The Old Angler's Inn head to the Potomac River. Bottom: The writer spent a night at Lockhouse 49, one of seven rentable lockhouses along the canal.

James almost nonstop. Now, for the first time in the better part of a year, I'd been alone long enough to find comfort in my own company.

As much as I was savoring the time by myself, I also enjoyed chatting with other cyclists and thru-hikers. I met some cyclists who were biking the canal in three days, rushing to catch a train in Washington or hurrying the other way to Cumberland. But even the fast-trackers, arriving at campsites after dark, were approachable, kind and glad to exchange tips about trail conditions and water and food access. Over the past couple days, I had met two men from Boston hiking the towpath in my direction and a retired couple from Northern Virginia who had biked the canal annually for 30 years; this year their cargo included slippers, camp chairs and a Pomeranian.

In Williamsport, Maryland, once an important coal transfer point, the towpath crossed over Conococheague Creek on one of the canal's most impressive stone aqueducts, which had been restored recently. I saw a fishing boat and greeted a few runners and dog walkers. One man, seeing my bags and tent, yelled out words of encouragement: "99 to go!"

By 9:30, it was 70 degrees, and I was already hungry. I stopped every few miles to fuel up with trail mix or a peanut butter tortilla wrap and to listen to water rushing around rocks in the river. Since I had planned moderate distances most days, I had expected to take detours and bike through towns like Williamsport and Sharpsburg, home to Antietam National Battlefield. But at every canal town, I found myself focused on reaching my next meal or campsite and reluctant to add mileage.

Before long, my hunger turned into a headache. I thought I was eating plenty, but I was burning enough calories to operate at a deficit; the miles and extra weight had caught up to me. The fish tacos in Shepherdstown solved the hunger problem but afterward, I felt foggy. Everything was moving in slow motion, and I didn't think I could make it to Harpers Ferry,

MISSION ACCOMPLISHED! The writer rests at Mile Marker 0 in Washington, at the end of her 184.5-mile journey (above). Right inset: Cumberland, Maryland, the other end of the towpath where Kaplan had started her trip five days earlier.

the historic town just west of the point where West Virginia, Virginia and Maryland meet. I absentmindedly pondered how long I could go without pedaling. I tried to pass time by calculating distances in my head, but the milepost numbers going down and my odometer numbers going up was enough to confound me. As I approached a backpacker, I slowed and asked where the next campsite was. "4.2 miles," he said, adding that he would be stopping there for the night. A wave of relief rushed over me — not only was the distance manageable, but our short exchange had alleviated my fears about camping alone. "I might see you there," I said.

Before I'd left home, James' hardcore unicyclist friend Leo, who had recently completed the entire towpath on his one wheel, shared some tips and told me how much he relished plunging into the water after long days of riding. Once I'd finally made it to Huckleberry Hill and was alone in the setting sun, I headed to the river for my own long-awaited dip. But when I stepped in, thick mud swallowed my feet; with each step, I sank deeper. Deflated, I moaned out loud before extracting my broken flip-flops. A moment later, I laughed. Nothing could dampen my joy: I had biked 46 miles and now looked forward to a glorious night of camping on the bank of the Potomac. Barefoot and muddy, I walked back to my tent.

My new backpacker friend walked into camp just before dark. Preston was a pro: A retired civil servant, he had hiked 1,200 miles of the Appalachian Trail in sections and was averaging 20 miles a day on his end-to-end C&O hike. We bonded over our journeys and the pleasure of being digitally unconnected. It was warm enough to keep my rain flap open once I had crawled into my tent, and I could see the crescent moon reflected in the Potomac. An owl cooed, and the reassuring train whistle, which I'd heard every night, echoed across the water. For what seemed like an eternity, the taps of leaves landing on my tent and plunks in the water kept me awake, but eventually, I gave in to sleep.

In the morning, Preston got ready as I was making oatmeal and hit the trail before sunrise; we agreed to look for each other at Harpers Ferry. I took my time packing and loading gear, then set off in daylight. As I approached town, the Potomac changed dramatically, with large boulders dotting the water. I recognized Preston's backpack at the base of the pedestrian bridge and left my bike nearby. Clouds hung low, and winds swirled as I left the towpath and crossed the river into West Virginia to reach The Point, the confluence of the Potomac and Shenandoah rivers. A couple of birding and hiking groups passed me (on the Maryland side of the water, the Appalachian Trail runs along the towpath for 3 miles). Church bells rang, and a freight train disappeared into the mountain, a sight that reminded me of my father's model train set and that, at full scale, never fails to amaze me. I waited a few minutes for Preston, then left a note on his pack and pressed on.

Back on the saddle and thankful for the shady tree canopy, I soon started passing places that felt like home. I rode by Horsepen Branch campsite, close to some fields where I'd seen sunflowers explode in the summer, and Riley's Lock, where I'd kayaked for years. It was my second-to-last day, and I felt euphoric: I'd settled into a good rhythm, and I saw a shower in my near future. For once, mileposts came faster than I expected, and then, remarkably, I was at mile 27. Realizing that my solo time was now scarce, I tried to slow down, but the dogged mileposts kept coming. Hundreds of geese flew overhead, moving south at probably twice my speed. And from a half-mile away, I saw Lockhouse 21, a small, welcoming white house glowing in the warm sun. Another 46-mile day was over.

The 1916 house (originally built in the 1830s) is called Swains Lock after the family that lived there for more than a century. After a long shower, I sat on the grass in front of the house with friends who showed up to help me celebrate my final night. James brought pizza for everyone, our friend Sally made brownies, and Leo asked for mile-by-mile accounts from my ride. Later that night, I finished "Captain Kate" and slept soundly, waking once and desperately missing the sounds of the wilderness.

I set out the next morning in a thick fog. Crossing over the

canal on a small bridge, I looked both ways on the towpath and weighed my options. To the south, I could imagine each of the remaining 16 miles: I would bike right into morning rush hour — runners in face masks, walkers on their phones, cyclists carrying tennis rackets and fishing rods. I'd pass names familiar to me from childhood: Great Falls, Glen Echo, Fletchers Cove. I'd ride into Georgetown, over Rock Creek and at last, to the final milepost, across from the famous Watergate complex. Another 5 miles, and I'd be back on Capitol Hill with James, luxuriating in the comforts of home and sweet cuddles from my beagle, Hamilton. If I backtracked and went north, I could delay my reentry into a stressful world. I would once again enjoy long stretches of quiet, and I'd probably bump into Preston, who, I would later learn, would go on to have his own personal best hiking day — 32 miles. I imagined stretching out my food supply and squeezing in just one more night of camping — seeing stars, hearing animals, feeling scared and invigorated and alive.

I listened to the rush of the water at the lock for another minute and resolved to stick with my plan. Then I waited for a break in the flow of exercisers on the path, stood up on my pedals and steered south, heading, unhurriedly, to Mile 0.

MELANIE D.G. KAPLAN is a Washington, D.C.-based writer. She spent the winter daydreaming about her next bike touring trip, wondering if she could increase her cargo weight with 28 pounds of beagle.

MICHAEL KIRCHER is a nature and documentary photographer based in Kensington, Maryland. Equally at home on city streets and backcountry trails, you can most often find him documenting life along the Potomac River.

TRAVEL ESSENTIALS

It's nearly impossible to get lost on the canal, but that doesn't mean you should take this trip on the fly. Whether you're hiking or biking a full day or the full length, familiarize yourself with sections and service options before you head out, and you'll be better prepared when plans veer off course.

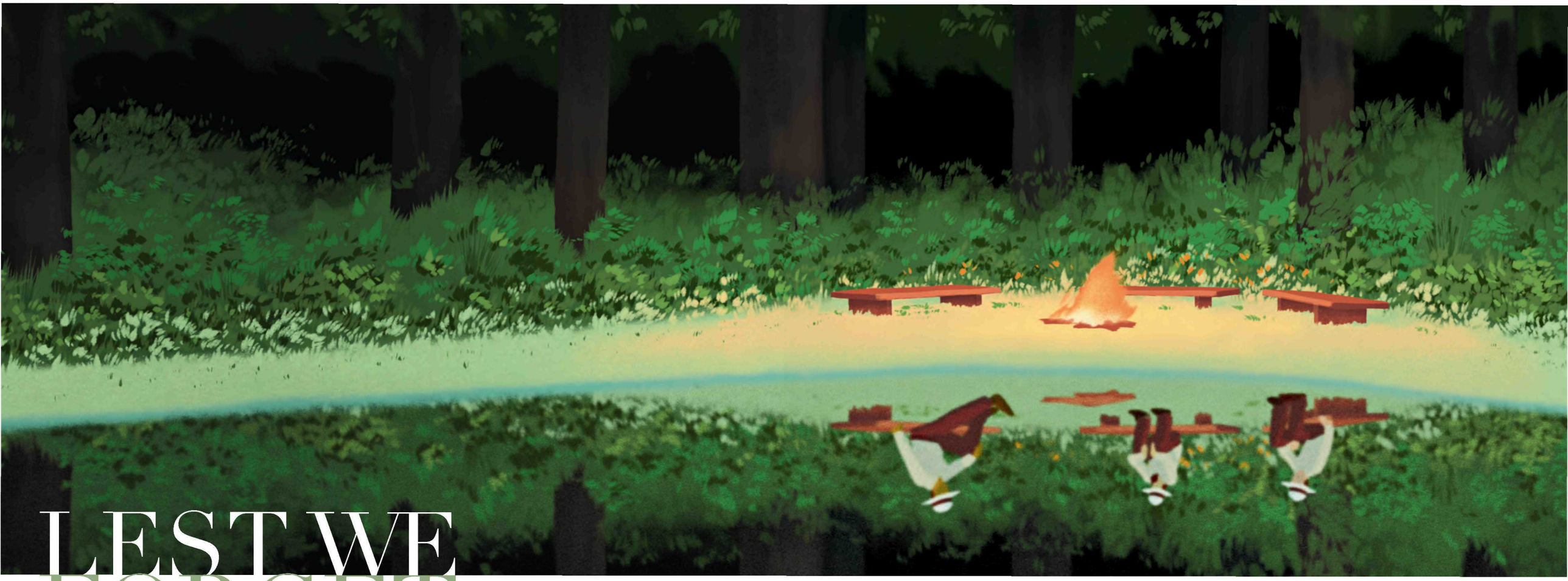
In the towns along the path, thru-hikers and bikers will find numerous places to sleep, refuel, eat and tune up. Some restaurants are easily reachable from the towpath, including favorites such as School House Kitchen in Oldtown, Bill's Place in Little Orleans, Buddy Lou's Eats Drinks & Antiques in Hancock and White's Ferry Grill in Dickerson. Shepherdstown has some of the best food options, but the hill to get into town from the towpath is no joke.

The Park Service offers drive-in car camping at Antietam Creek, McCoys Ferry, Fifteen-mile Creek, Paw Paw Tunnel and Spring Gap. The free hiker-biker campsites, inaccessible by car, are located along the towpath, typically every 5 to 7 miles; some are as many as 16 miles apart. Seven historic lockhouses (with varied amenities) are available to rent through the Canal Trust.

Several paved trails parallel the towpath, so if you're looking for a break from the bumps, hop on the gorgeous Western Maryland Rail Trail, which runs 28 miles between Little Orleans and Big Pool, or the heavily used Capital Crescent Trail, which parallels the canal for almost 2 miles starting in Georgetown. For the super ambitious, tack on the 150-mile Great Allegheny Passage, which continues from Cumberland to Pittsburgh. Amtrak offers bike reservations between Washington, Cumberland and Pittsburgh.

Make sure to check towpath conditions, updates and closures (expect construction at the Paw Paw Tunnel in 2021). Online planning resources are available from the Park Service, Canal Trust and C&O/GAP Facebook groups. BikeCandO.com has helpful packing tips, although some dining and lodging information is outdated. The park's Recreational Guide by Milepost was in my pocket the entire trip. My bible in planning was Mike High's mile-by-mile "The C&O Canal Companion." You might also want to read the Park Service's handbook, "Chesapeake & Ohio Canal."

Later this year, park partner Georgetown Heritage will reopen the visitor center in Georgetown and offer mile-long canal rides on a new, historically inspired boat powered by mules and motors. Finally, if you can't get to the park, the Park Service offers virtual tours, and the Canal Trust's mobile app includes 600 searchable points of interest.



LEST WE FORGET

One man's 30-year mission to honor the lives of more than 260 Park Service employees and volunteers who died while working in the parks.

By Katherine DeGroff · Illustrations by Leonardo Santamaria

Jeff Ohlfs likes to joke that a night out, in his household, is dinner in a graveyard.

Over the years, the former Joshua Tree National Park chief ranger has picked up the habit of visiting the cemeteries where fallen Park Service personnel are buried. He might tack on a visit to Arlington National Cemetery while in Washington, D.C., for business or modify the itinerary of a family vacation to accommodate a graveside outing. The routine is always the same. "I will stop in, pay my respects and grab a photo," Ohlfs said. So far, he's made it to nearly 60 graves.

Ohlfs' solemn pursuit is part of a pet project decades in the making: an online memorial dedicated to the employees and volunteers who have died while working in the national parks. "We need to honor these individuals," Ohlfs said, noting how everyone has his or her own story. "As Park Service people," he continued, "part of our job is to tell the story."

In 2016, after a 32-year Park Service career that started at what was then Pinnacles National Monument and ended at Joshua Tree, Ohlfs retired to nearby Twentynine Palms, California, where he lives with his wife and their dog. With more time on his hands, Ohlfs — a self-proclaimed closet historian — kicked his memorial work into overdrive, racing to make it public. His motivation was simple: "I wanted to make sure these people aren't forgotten," he said.

Last year, in time for the 104th anniversary of the Park Service, Ohlfs' employee memorial went live, to his great relief. "It has a home," he said. The memorial is hosted at NPShistory.com — a treasure trove of publications, brochures and reports that is the brainchild of Harry A. Butowsky, a retired Park Service historian, and Randall D. Payne, a Park Service volunteer.

"I was urging him just to get it done and put it up," Butowsky said, recalling Ohlfs' reluctance to launch the website before he had every last detail. "I said, 'Look, if we're missing names, don't worry about it. We can add the names.' ... But Jeff was very thorough. He didn't want to miss anyone."

The memorial, which spans more than a century, sparingly documents the lives of 264 men and women, and includes references to more than 90 parks in over 35 states and territories. Andrew Jack Gaylor, assistant

chief ranger for Yosemite National Park, for example, is listed as having died in 1921 of a "heart attack on high mountain patrol while sitting before his campfire … died with his boots on." A 2004 entry states that Suzanne Roberts, a ranger at Haleakalā National Park, died after being "hit in the upper back and head by a boulder in excess of three feet that fell from [a] cliff" as she was clearing a rockslide from a road.

Each life has been distilled into a handful of data points — job title, age, cause of death, years of service, final resting place. Most entries also include a photo of the person in uniform or on the job. Sometimes all Ohlfs has to post is an image of a gravestone, obtained online or taken during one of his cemetery side trips. "I wanted to show: This is where they are. This is their resting place," Ohlfs said.

The roots of this endeavor date back to 1988 when Ohlfs, then a ranger at Hot Springs National Park in central Arkansas, stumbled across a reference to the murder of James Alexander Cary, who served as a park policeman during the height of prohibition. In 1927, while staking out bootleggers southwest of town on West Mountain, Cary, 31,

There are 264 people commemorated in Jeff Ohlfs' online memorial so far. Writer Katherine DeGroff investigated the lives and premature deaths of a few of them.

NICHOLAS (NICK) HALL

Mount Rainier National Park, Washington, 2012

On June 21, 2012, a helicopter dispatched from a military base near Tacoma flew park ranger Nick Hall and other rescuers to the scene of four injured Texas climbers on the eastern flank of Mount Rainier, the 14,410-foot behemoth in the eponymous national park. Once there, team members worked for several hours to stabilize the seriously injured and secure them in stretchers, which would be lifted into the helicopter and flown to a nearby hospital. Conditions were perilous: slick snow, gusting winds, powerful rotor-blade downdrafts and a 35-degree slope.

Hall, the former Marine Corps sergeant tasked with leading the rescue's aerial response, was a skilled ski patroller who had worked as a climbing ranger at Mount Rainier for four seasons. Quietly confident, Hall possessed a dry wit and had an "intensely caring and professional" nature, according to Stefan Lofgren, the park's climbing program supervisor.

Just before 5 p.m., Hall lost his footing while attempting to control the slide of an empty litter. Despite efforts to stop his momentum, he fell 2,400 feet to his death.

The remaining rescuers, though reeling from the loss of their colleague, successfully evacuated three of the Texans. Rangers spent the night on the mountain with the last climber, who walked out with assistance the following day.

In 2017, the park honored the lives of Hall and three others who had died in the line of duty in the previous 25 years, with the designation of the Mount Rainier National Park Valor Memorial. Perhaps no one feels the weight of Hall's sacrifice more keenly than Lofgren, who received Hall's lifesaving assistance during his own mountainside emergency in 2011.

In a phone conversation

was shot and killed. He was the first park ranger slain in the line of duty. The case wasn't well known, and the story wasn't being told by the park, so Ohlfs took it upon himself to honor Cary by learning about the man's life and death, befriending the policeman's family in the process. He also pushed for the park to memorialize Cary but said he received no support. (A memorial was finally erected in 2016.) In the course of Ohlfs' informal research into Cary, it became clear there were many others who died while working in the parks but whose stories were largely unknown and untold.

"We honor our military fallen," Ohlfs said. "We honor our emergency services people. The National Park System isn't too far away from that." In fact, serving as a national park ranger, according to FBI data, is one of the most dangerous federal law enforcement details, with assaults against rangers outnumbering those against officers of the FBI, the Bureau of Alcohol, Tobacco, Firearms and Explosives, and the Drug Enforcement Administration, for example.

"We honor our military fallen. We honor our emergency services people. The National Park System isn't too far away from that."

While Ohlfs supports memorials specific to police officers or firefighters (such as the National Law Enforcement Officers Memorial in Washington, D.C.), he envisioned a more inclusive listing that honored everyone, no matter how long they worked for the Park Service, what position they held or how they died. In doing so, he said he hoped more people would "recognize that maintenance personnel and secretaries and superintendents and interpreters have all paid a price for the National Park Service."

In January of 1993, Ohlfs read an article in the Park Service's magazine, Courier, that revealed the installation of a plaque outside of the Park Service director's office in Washington, D.C., to honor those who perished while on the job. The Courier reproduced the plaque's list of names

in December, Lofgren shared how he radioed for help after struggling to breathe and suffering a seizure near Mount Rainier's Camp Muir. Hall responded to Lofgren's report of an "individual down," having no idea the person in need of aid was his boss. "I'd love to be able to call Nick up some day and say, 'Hey, Nick. Thanks, man. I really appreciate you being up there and taking care of me like you did that day,'" Lofgren said. "I will never be able to do that."

MASON MCLEOD, NEAL SPRADLIN & SETH SPRADLIN

Katmai National Park & Preserve, Alaska, 2010

If the Alaska Peninsula is a weathered forearm reaching into the Bering Sea, Katmai is the 4-million-acre elbow. Home to low-lying tundra, turquoise lakes and craggy Aleutian peaks, this formidable landscape swallowed a seaplane and its occupants in 2010.

The three Park Service employees on board — Mason McLeod, 26, and brothers Neal and Seth Spradlin (28 and 20, respectively) — were returning from a multiday project along the park's eastern coastline where they had been repairing an old ranger patrol cabin with two other employees. On August 21, despite oppressive clouds and rain, pilots landed two private air taxis at their remote camp. McLeod and the Spradlin brothers boarded one plane; their two colleagues boarded the other.

Though the planes, both bound for park headquarters in King Salmon, departed mere minutes apart, only one plane arrived as expected.

A multi-agency search for the aircraft piloted by Marco Alletto, 47, ended more than a month later — after 60,000 flight miles had been logged — when an aerial pass revealed pieces of wreckage along the coast. All four occupants were presumed dead.

McLeod, a National Merit Scholar from Florida with a fondness for Cormac McCarthy books, had recently earned his pilot's license and harbored dreams of being a bush pilot in Alaska. He was a "super outgoing, high-energy kid," said Troy Hamon, the chief natural resource manager and a boat instructor at Katmai, in a recent phone conversation. He remembered McLeod's determination, recounting how the young employee had refused to give up after failing to master a required docking skill in Hamon's boating class. McLeod met Hamon the following day and performed the maneuver flawlessly.

The outdoorsy Spradlin brothers had worked together at Katmai for two summers. Seth, in perpetual search of something to fix or build, was a wildlife artist

and asked all employees and alumni to supply information on those overlooked. Ohlfs heeded the call and began searching for more names, forwarding updates to a contact he had in the Washington D.C. Area Support Office.

Soon, his off-the-clock efforts took on a life of their own. He perused microfilm of back issues of the Courier and other Park Service publications for leads or references to park deaths. He read book after book about the parks, noting any mention of on-duty fatalities. He sent out inquiries to the relevant parks, followed up on possible deaths passed on to him by park staff, and scoured newspaper and museum archives, paying records fees out of his own pocket. "It's all detective work," Ohlfs said. "Law enforcement rangers like working a case."

A few years later, Ohlfs discovered a pamphlet published by the California Highway Patrol honoring its slain officers. Instead of the index of names featured on many memorials, including the Park Service plaque, this publication included other details, like the ones Ohlfs was amassing. Curious if the Park Service might do something similar, he shared the idea with his contact at the agency's Washington headquarters. There was a spark of interest, but it soon fizzled. Undaunted, Ohlfs forged ahead.

> Andrew Jack Gaylor, assistant chief ranger for Yosemite National Park, died of a heart attack in 1921 while sitting before his campfire on high mountain patrol. He died with his boots on.

Occasionally, family members of the deceased would reach out to him, grateful to be able to share their loved one's story. Others, their loss too private or too raw, refused to speak to him. He received a similarly mixed response from the park employees he contacted, none of whom are required to keep these kinds of details on record. "Some parks will bend over backwards to help," Ohlfs said. "And some will tell me to go pound sand."

saving money for college.

In his early 20s, Neal had lived nomadically, working his way from the family home in Indiana across the West and finally to Alaska, where he had resided for five years. Hamon described him as remarkably capable, noting his ease in the backcountry and on water. "He was one of those people who could do anything," he said.

RODERICK (RICK) HUTCHINSON & DIANE DUSTMAN

Yellowstone National Park, Wyoming, 1997

For nearly three decades, Yellowstone National Park benefited from the enthusiasm and expertise of Roderick (Rick) Hutchinson, a park geologist. Hutchinson — who began his career in 1970 as a Norris Geyser Basin naturalist — relished sharing his passion for the park's hydrothermal features with visitors and often delighted children by using water and his cupped hands to simulate a geyser. "He loved natural phenomena," his widow, Jennifer Whipple, said recently, recalling how he once woke her before dawn so they could catch a glimpse of the Hale-Bopp comet.

In 1997, Hutchinson and Diane Dustman, a park volunteer from Boston, embarked on a late-winter ski trip to the Heart Lake Geyser Basin as part of a parkwide hot springs inventory. Dustman, who had a geology degree and Master of Business Administration, had fallen in love with the park on a cross-country road trip years before and was eager to help digitize Hutchinson's findings.

The two snowmobiled to the trailhead and then skied to a patrol cabin on the shore of Heart Lake. They spent the next day touring the area. On March 3, two days shy of Hutchinson's 50th birthday, an avalanche swept down the slope on which they were skiing, burying them both.

When they failed to radio in their status (a routine part of backcountry work) or meet colleagues at the geyser basin as planned, the park began a full-out search, complete with dog teams, on-the-ground staff and helicopter support. Their bodies were found a few days later under several feet of snow.

The stories he has uncovered run the gamut from mundane to bizarre to mysterious. In 1959, George Sholly, the superintendent of what was then known as Badlands National Monument, suffered a heart attack while sitting at his desk. The previous year, engineering technician Charles Wallace died from tetanus as a result of a yellow jacket sting at Sequoia and Kings Canyon national parks. Seasonal ranger Ryan Weltman, surprised by a sudden turn in weather, drowned in 1994 when his kayak capsized on Yellowstone National Park's Shoshone Lake. Six women and one man, all between the ages of 20 and 45, died in a plane crash while conducting an aerial land survey at what would become Lake Clark National Park and Preserve in 1975.

Dozens more died repairing trails, operating heavy machinery, clearing snow or fighting fires. Still others perished during daring rescues to save the injured, the lost or the stranded. The history of the park system also includes the occasional sensational murder. Park staff have died at the hands of poachers, prison escapees, drunk drivers and, in one instance, an unstable dog owner.

> In 1927, while staking out bootleggers southwest of town on West Mountain, James Cary, 31, was shot and killed. He was the first park ranger slain in the line of duty.

Sometimes, the leads Ohlfs found proved particularly difficult to verify. He might have a name or a reference to a specific year and park where someone died, but little else. Last February, he submitted more than 20 outstanding names to the National Archives and Records Administration, and the list landed on the desk of archival reference technician George Fuller.

Fuller, who fondly recalls his own brief stint with the Park Service in 2014 as a museum technician at what is now Ocmulgee Mounds National Historical Park,

Whipple, who was Yellowstone's park botanist for many years, takes some consolation in the fact that Heart Lake Geyser Basin was Hutchinson's favorite spot. "If he had to be killed somewhere," she said, "it was the right place."

JOSEPH ANTHONY (TONY) DEAN

Grand Canyon National Park, Arizona, 1980

In 1978, Joseph "Tony" Dean moved his family from Washington, D.C., to Yellowstone National Park. The former Maryland high school teacher had spent nearly a decade at the Park Service, filling multiple roles in the National Capital region, from seasonal community relations specialist to manager of Frederick Douglass' home.

Taking the blended position of North District naturalist and park historian at Yellowstone meant a drastic change for the Dean family. They had little experience living outside of a city, and they would be the first Black family to live in the park. (Even today, despite the Park Service's efforts to diversify its workforce, employees are overwhelmingly white.)

"I think it took a lot of courage just to make that move to come here and assume a very visible and prominent role," said Linda Young, then a seasonal employee supervised by Dean. She recalled the small Mammoth community wholeheartedly welcoming the "instantly likable" Dean, his wife and their two children. Now Yellowstone's chief of the division of resource education and youth programs, Young credits Dean with securing her first permanent Park Service job.

In 1979, Dean accepted a position at the Horace M. Albright Training Center in Grand Canyon National Park. Though reluctant to uproot his family again, he believed in the center's mission and admired the commitment of the instructors, whose energy he had witnessed firsthand in his early days with the Park Service.

On November 1, 1980, participants in a three-day field course led by Dean woke up to find him missing from their campsite on Horseshoe Mesa, a U-shaped promontory about halfway between the canyon's South Rim and the Colorado River. After looking for him, the participants located Dean, 43, at the foot of a nearby cliff, where he had fallen to his death in what was later deemed an accident.

Young remembered being shocked by the news. Even 40 years later, she said, "it's still one of those claps-of-thunder moments. It didn't seem real."

has access to the personnel records of anyone who has worked for the federal government. He loves "helping people find pieces to their own puzzles" and was eager to assist Ohlfs with his project. "I think it's quite profound," Fuller said. "That he has dedicated so much time and energy and effort and his own resources to make this a reality is incredible."

Unlike physical monuments such as the Vietnam Veterans Memorial, Ohlfs' memorial does not offer the opportunity to trace a loved one's name on paper or leave behind personal tributes. The benefit of a digital site, however, is that it is as easy to visit as it is to share. Ohlfs hopes people will come forward with additional names, photos and stories as knowledge of the memorial expands.

Since it went live last August, about two dozen edits and updates have been submitted, mostly by former or current Park Service staff. Doug Crossen, supervisory facility operations specialist at Wind Cave National Park, was one of several people to offer new names. After noticing that Michael Carder, an equipment operator who died in 2017 while leading a trail crew at Jewel Cave National Monument, was missing from the memorial, Crossen contacted NPShistory.com to ensure Carder was included. "Mike loved his job, loved getting to work in the morning," Crossen recalled.

Ohlfs estimates it will take a few more years to plug the information gaps in existing entries or corroborate the additional leads that continue to trickle in. Even then, he won't be done. The bittersweet reality of a memorial to fallen park staff is that it will grow with the passage of time. "We hope it never happens, that the last one I put on there is the last one," Ohlfs said. "But it's going to be never-ending because that's just life."

To view the memorial, visit npshistory.com/employee-memorial.

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WILLIAM SHANER & ASHLEY SMITH

Fire Island National Seashore, New York, 1966

On May 21, 1966, William Shaner — a high school science teacher with a penchant for collecting rocks — clocked in for the first day of his summer naturalist job at Fire Island National Seashore. Located on a thin spit of land south of Long Island, the park is a favorite haunt of day-tripping urbanites, who go there to enjoy the sandy footpaths, beaches and maritime forest.

Shaner, 23, was speaking to visitors on the beach at Sailor's Haven mid-morning when he became aware of two teens in distress in the heavy surf. The emergency was also apparent to Ashley Smith, 37, a nearby park maintenance worker and U.S. Navy veteran.

The two men grabbed a flotation device and, shedding their shoes and outer clothes, began swimming out to assist the high school seniors. A bystander, 25-year-old barge crewmember James Lawler, retrieved a life preserver from a boat and joined the rescue. Shortly after reaching the boys and passing over the life preserver, all three men were swept farther out to sea.

James Del Giudice, a witness on shore, saw one boy make it back to land and set out to assist the teen who was still struggling. With the second teen safely on shore, Del Giudice then secured a rope, held by onlookers, to his waist before returning to the water to collect Smith, the only rescuer still visible. Smith, father of three daughters, died en route to the hospital. The bodies of Lawler and Shaner later washed to shore.

In light of their heroic efforts, all four men were awarded the Carnegie Hero Fund Commission's Carnegie medal. Shaner and Smith were also posthumously recognized with the Department of the Interior's valor award. In the 1970s,

around the time that Smith's daughter Kathleen worked at the national seashore, the Park Service commissioned a boat in Smith's honor. A decade later, the park commissioned a patrol vessel for Shaner.

THE WRITING ON THE WALL

Stephen Alvarez travels the globe to photograph ancient rock art. His collection from the American Southwest includes images of Canyonlands, Bears Ears and Grand Staircase-Escalante.

By Kate Siber
Photos by Stephen Alvarez

In the spring of 2010, National Geographic photographer Stephen Alvarez had just finished a grueling three-month assignment documenting Paris' underground places. Exhausted, he was looking forward to a relaxing beach vacation with his family. But on the way to the coast, his wife insisted on a detour to visit the replica of Lascaux, a cave full of prehistoric paintings in the southwest of France.

"I was like a petulant child," recalled Alvarez, now 56, with a laugh. After months of working beneath the surface of Paris, exploring centuries-old quarries and catacombs, "I was like, I don't want to go underground and see a bad reproduction of bad caveman art." Nonetheless, on the appointed day, he dutifully shuffled into the dim chamber with his wife, two children and a small group of visitors. The lights clicked on, and reproductions of the magnificent 17,000-year-old paintings and engravings came into view.

"Everyone in the room, maybe 20 of us in the tour, gasps, because the artwork — and this is just the reproduction of the artwork — is so sophisticated," he said. "I thought ancient people were intellectually primitive, and clearly they're not."

It was a lightbulb moment. Alvarez, who is also a film-

INVASIVE BURROS pose one of the main threats to the pictographs and petroglyphs of the Great Gallery of Horseshoe Canyon in Canyonlands National Park, Utah. The animals strip the vegetation from nearby areas, loosening sand that, lifted in the air by seasonal winds, contributes to the erosion of the art. Previous pages: Gold Butte, one of the country's newest national monuments, was established in 2016 partly because of its exceptional rock art. The Falling Man area features human figures and bighorn sheep, which are common motifs in Southwest rock art.

THIS STYLE of petroglyphs in Basin and Range National Monument is found only in the Pahranagat Valley area of southeastern Nevada (left). Above: "That's my favorite drive-in campsite in the world," said Stephen Alvarez, pictured in Bears Ears National Monument's Comb Wash in Utah. "It's such a peaceful, wonderful place." Alvarez typically takes hundreds of images during the day, then spends evenings recording details about the photographs.

maker and explorer, began to wonder if prehistoric art was a tantalizing clue to understanding the development of the modern human mind. Over the years, his curiosity spurred him to travel to 15 countries in search of the most intriguing works, culminating in a National Geographic magazine feature on the origins of art in 2015. During the project, Alvarez realized both the difficulty of accessing what he calls rock art sites and the profound impact they can have on viewers. So he dreamed up a novel idea: a digital archive of sites from around the globe that would let regular people gaze at seldom seen works for as long as they like and connect to the minds of our distant forebears. In 2016, the nonprofit Ancient Art Archive was born. A trove of photographs, videos and 3D models (essentially virtual tours that can be viewed on any computer), the archive aims to compile the most beautiful and significant prehistoric rock art, stories and markings from six continents.

While the archive includes the work of four other photographers, it is mostly stocked with Alvarez's own work, including photos from his National Geographic assignments, such as those documenting the Cave of Chauvet-Pont d'Arc, a famed French repository of 36,000-year-old paintings of rhinoceroses, mammoths, lions and bison.

"Standing in front of a drawing that old is just a revelation of an experience," said Alvarez. "What happens is it's like this artist talks to you, straight to you, from this unimaginable gulf of time. … I wanted as many people as possible to have that experience."

The works captured in the archive range from a 77,000-year-old engraved red ochre block from South Africa, which is one of the oldest-known pieces of artwork in the world, to 800-year-old petroglyphs in the American Southwest. Many of the significant prehistoric rock stories and markings in the U.S. that are included in the archive are located on public lands such as Grand

ON THE EDGE of Canyons of the Ancients National Monument in southwestern Colorado, an engraved boulder sits very close to the road, leaving it vulnerable to vandalism and plunder (left). Above: In Grand Staircase-Escalante National Monument in Utah, a would-be thief attempted to saw off a chunk of stone etched with petroglyphs. "Looting happens all the time," Alvarez said. "These saw marks sum up why I do what I do."

Staircase-Escalante National Monument, which harbors stick-like figures painted onto cliffs, and Canyonlands National Park, which features eerie 6-foot-tall pictographs of humanoid figures that could be thousands of years old.

Alvarez founded the archive in part to help protect these ancient and delicate sites. Threats include overwhelming levels of visitation, which lead to degradation and, in some cases, vandalism. (One way that foot traffic can damage pictographs in desert canyons is through abrasion caused by dust in the air.) Climate change also poses a significant hazard because it can shift the conditions that preserved the fragile artwork. In Mesa Verde National Park in Colorado, for instance, staff believe that freeze-thaw cycles are contributing to the erosion of stony amphitheaters that shelter ancient dwellings and petroglyphs. Petroglyphs have also been damaged by wildfires, which are raging more frequently as a result of climate trends. Political threats loom, too. In 2018, Alvarez undertook a project with the help of a grant from the National Geographic Society to document the artwork in seven national monuments that the Trump administration was considering for reduction, including Bears Ears and Grand Staircase-Escalante in Utah.

The goal of that project was to draw attention to the fact that one of the main reasons these parks were established was to protect the irreplaceable and spiritually significant cultural treasures within them, such as Bears Ears' Procession Panel, a depiction of some 180 humanoid figures descending on what is believed to be a kiva, a sacred ceremonial gathering place. The area's artwork is important to associated tribes, who collaborated in unprecedented ways to help establish Bears Ears.

In 2017, Bears Ears and Grand Staircase-Escalante national monuments were reduced in size by 85% and almost 50%, respectively. Some cherished pictographs, or paintings, and petroglyphs, or etchings, now sit outside of the monuments' boundaries, leaving them more vulnerable to damage from industrial activities such as mining. (Shortly after the Trump administration's drastic reduction of Bears Ears, NPCA, eight other conservation organizations and several tribes sued the administration and charged that the decision was an abuse of power and a violation of the 1906 Antiquities Act. The Biden administration said in January that it would review the reductions of Bears Ears and Grand Staircase to determine whether to restore the national monuments' original boundaries.)

In the U.S., Alvarez sometimes spends years developing relationships with local Indigenous communities and secures permission from them to shoot the sites and share the images. He also works closely with tribes who wish to use his work for educational purposes. For example, in the region around Tennessee's Devilstep Hollow Cave, which harbors ancient Native American petroglyphs and pictographs, Alvarez is partnering with school systems and libraries to host presentations for kids, many of whom are unaware this ancient artwork exists in their neighborhood. Alvarez and regional archaeologists have also presented 3D tours of a remote Alabama rock shelter, Chola Aayokachi', which protects 800-year-old rock art, to Chickasaw tribal members who live in Oklahoma — hundreds of miles away from their ancestral homeland.

"The response was overwhelming for many Chickasaws," said Brad R. Lieb, the director of archaeology for the Chickasaw Nation. "They were so interested to reconnect with these stories of their ancestors and to learn that the same characters can be found in sites as far as Kentucky and Wisconsin, all the way up and down the Mississippi River drainage."

Typically, Alvarez needs to obtain permits from relevant government authorities before visiting a site. When on the ground, he regularly faces travel hassles and weather challenges. In the desert Southwest, it's often too cold or too hot. In spring, the wind often kicks up dust storms, and in late summer, monsoons rush through most days, flooding once-passable roads. To access

THOUSANDS OF PETROGLYPHS dot the Sand Island Campground near Bears Ears National Monument (right). In some cases, visitors don't even need to get out of their cars to see them. Far right: The Big Man Panel, located in Bears Ears, features reddish pictographs of human figures. Visitors traced faint petroglyphs with chalk. Below: These painted outlines of human hands are in an area of Bears Ears that the Trump administration removed from the monument — illegally, according to NPCA. "I love handprints because they're so personal," Alvarez said. "I think of them as self-portraits. Someone has taken their hand and put it on the rock wall, then blown pigment either by chewing it up in their mouth or by aerosolizing it in a tube so their hand acts as a stencil. Even looking at them on the screen, I can't resist holding my hand up to see how my hand compares."

sites that are tucked deep into canyons, he often needs to drive long, rugged dirt roads and hike through sand and along steep rocky slopes.

Alvarez's own creative process can also be labor-intensive. With an assistant, he sets up shots with complex arrangements of lamps and 20-foot booms that allow unique angles. He frequently waits for hours and sometimes days for the best light to arrive.

As a younger photographer, Alvarez worked to develop a unique personal style, but he increasingly endeavors to get out of the way and let the ancient creator of the rock story or rock art speak through the image without any interpretation or editorialization. In the U.S., many of the sites he photographs are sacred places that continue to play important roles in the vibrant, living spiritual traditions of Indigenous communities, who interpret and relate to the works in myriad ways. "I think the important thing is to always be respectful," he said. "The Southwestern saying is 'Visit with respect,' and it doesn't just mean 'Don't walk on potsherds and arrowheads.' It means 'Take it seriously. Approach ancient artwork with humility.'"

Alvarez's new project, which launched last year, is the Mural of America, a collection of photos, videos and 3D models documenting a dozen prehistoric art sites across North America that speak to what it means to be an American and are open to public visitation. The roster of sites has yet to be finalized but may include areas like the Great Gallery of Horseshoe Canyon, a parade of evocative figures located on a cliff in a remote area of Canyonlands National Park.

While the Great Gallery is accessible to anyone willing to drive a long dusty dirt road and hike 7 miles round trip, many other sites that Alvarez has photographed are not open to the public at all — or are so sensitive that land managers or tribes ask him not to publicize their locations. So one of Alvarez's favorite things to do is to put a 3D headset on friends and show them these rarefied places. Unlike visitors, they can get as close to the artwork as they like. Most people are fascinated by it and want to know what it means. But that's one thing that the Ancient Art Archive shies away from. "The artist certainly had a meaning and a story in mind, and it was probably a story that was well known to the community where they were from," said Alvarez. "But the enigma is one of the reasons I love it so much."

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STEPHEN ALVAREZ is an award-winning National Geographic photographer, filmmaker and explorer. Go to ancientartarchive.org to learn more about his project.

HISTORIC TRAVEL DESTINATIONS

Courtesy Melanie Spohn/GMS

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DON TROIANI'S painting of a member of Britain's Colonial Marines during the War of 1812. A large portion of Britain's forces during the war was composed of Black soldiers from Britain's colonies and freed African Americans.

A Chance for Freedom

During the War of 1812, hundreds of enslaved African Americans gained their freedom on Cumberland Island by joining the ranks of the British occupier. For some, liberation was fleeting.

NED SIMMONS and dozens of others were asked to line up on shore by their former owner. Until the middle of January of 1815, he'd been an enslaved carpenter at the Dungeness plantation on Cumberland Island, but Simmons and other enslaved laborers had jumped at the opportunity when British soldiers took over the island and offered them freedom.

Now Louisa Greene Shaw, Dungeness' owner, made a desperate attempt to convince them to change their minds. "She gave them a long talk," a friend of the Shaw family wrote later. "Told them how kind they had been treated by all the family. All this had no effect."

Not one of them heeded Shaw's call. Many reboarded British ships, while others stayed on the island, either resuming their civilian duties to assist the occupiers or performing drills with Britain's Colonial Marines.

It was on January 10, 1815, that 13 British Navy ships had entered the waters of St. Andrew Sound off the coast of southern Georgia. After landing on the northern end of Cumberland Island, around 1,500 British troops marched south on the main road through salt-pruned oak wilderness. They reached Dungeness the next day, and Rear Adm. George Cockburn later installed his headquarters in the four-story mansion — the only prominent landmark for miles — and gave orders for the construction of fortifications and a wharf.

For the enslaved laborers and slaveholders on Cumberland, it may have been a surprise to see that over half of the British invasion force was Black. Some of these soldiers were freed African Americans who had joined Cockburn's Colonial Marines the previous year in the Chesapeake Bay. Others were formerly enslaved Caribbean members of the West Indian Regiments, originally purchased by the British but eventually freed after their military service.

Many of these Black troops had already fought winning engagements against American forces, including the British attack on Washington, D.C., and the burning of the U.S. Capitol in August 1814. Three weeks later, others were repelled in Baltimore, where a hastily assembled militia of white Americans,

free African Americans and enslaved Blacks defended the city.

The U.S. had declared war in June 1812, partially in response to the forced recruitment of American merchant sailors into the British Navy, which desperately sought manpower to enforce a blockade against Napoleonic France. After American forces prevailed at the Battle of Baltimore, the British shifted their strategy to inciting fears of a slave insurrection in the southeastern coastal states. (Britain had outlawed the slave trade in 1807, but it would wait until the 1830s to abolish slavery.)

In Fernandina, just south of Cumberland, British soldiers pinned to trees a proclamation by Vice Adm. Alexander Cochrane, Cockburn's superior: All enslaved people and their families disposed to emigrate from the United States were welcome aboard British ships where they could choose between enlisting or being sent as free settlers to a British colony. The news spread from one plantation to the next.

"Each plantation [on Cumberland] had British officers posted at them," said Pauline Wentworth, who has worked as a ranger for 22 years at Cumberland Island National Seashore, which encompasses the majority of the island. "This gave an opportunity for enslaved people to take advantage of Cochrane's proclamation."

Among the first to enlist was Simmons. Born into slavery around 1763, probably in South Carolina's low country, he was acquired early in life by Nathanael Greene, the future Revolutionary War general and father of Louisa Greene Shaw. It's quite possible that Simmons fought the British alongside Greene in the Continental Army. In 1791, Simmons helped escort President George Washington through cheering crowds in Savannah during his celebratory tour of the Southern states.

To encourage participation in the War of Independence, some white slaveholders had promised emancipation for military service. During those early years of the new republic, many enslaved African Americans believed freedom was on the horizon, but while the Northern states abolished slavery by the beginning of the 19th century, the Southern states did not.

"Slaves and free Blacks served as soldiers during a crisis," said historian Gene Allen Smith, author of "The Slaves' Gamble: Choosing Sides in the War of 1812." "But once the trouble passed, both groups were relegated to their former subservient positions."

When a new promise of freedom came during the winter of 1815, enslaved people from across the region fled to British patrols. Others rowed boats or paddled canoes to Cumberland. One of the most daring escapes happened on the night of February 23, 1815, when 66 enslaved Black men, women and children used a boat to slip away from a plantation on the St. Johns River in northern Florida. With the help of oars or poles, they followed the tides and moved through inland channels winding between cordgrass. They likely reached Cumberland the next morning and discovered a fortified Dungeness plantation with the Union Jack flag flying overhead. The Florida refugees, like most escapees, opted for relocation to a British colony, and they boarded ships to await evacuation.

"There was a chance for a new life," said Pamela Stafford, the director of Staffords on Cumberland Island, an organization focused on reuniting descendants of enslaved laborers on Cumberland and reacquainting them with the history of their ancestors. "It was a risk to them, but they took their chances with the British."

The risk didn't pay off for everyone. After three years of bloody battles, burned cities and atrocities committed by both sides, the war ended in a draw. The Treaty of Ghent, signed by both parties in December 1814 and ratified by U.S. President James Madison on February 17, 1815, stated that all taken territories and property — including slaves — must be restored immediately.

On March 6, 1815, two American representatives arrived on Cumberland Island with a recent issue of the National Intelligencer, a Washington, D.C., newspaper that included a copy of the treaty. When the American emissaries demanded that formerly enslaved

DUNGENESS RUINS at Cumberland Island National Seashore.

©RODNEY STAFFORD

PAMELA STAFFORD (on the far right) and her family members on Cumberland Island in 2017. Stafford is the director of Staffords on Cumberland Island, an organization focused on reuniting descendants of enslaved laborers on Cumberland and reacquainting them with the history of their ancestors.

people aboard British ships be returned, Cockburn declared an American newspaper article carried no authority over the British Navy. Attempting to stall, he demanded the representatives return to the mainland and prepare a certified transcript of the treaty. By the time the American emissaries returned to Cumberland, all but a few ships were gone. The rest of the British fleet had sailed under the cover of fog, carrying away dozens of freed African Americans.

The American representatives were not pleased with Cockburn's creatively narrow reading of the treaty: Only enslaved people who were on Cumberland as of the treaty's ratification date had to be returned. Those who had already boarded ships or departed would remain free, including about 1,500 from Cumberland and at least 2,500 from other areas. Many had already reached Bermuda and would soon be on their way to other colonies, including Trinidad and Halifax in Nova Scotia, where some would die of starvation during a particularly severe winter.

Cockburn's interpretation, however, meant that around 80 enslaved people from Cumberland who had remained on the island as workers or soldiers were returned to Shaw and other owners. Simmons, who had known only two months of freedom after 52 years of slavery, was one of the unlucky few. As British soldiers took away his musket and uniform, Simmons resisted, according to family oral history that appeared in Smith's book. Afterward, all that Simmons clutched was a single metal button.

Ultimately, the escape of so many slaves to the British during the War of 1812 increased suspicion and resentment among Southern slaveholders toward enslaved and free African Americans. "In the aftermath of the war, slavery became more entrenched," Smith said. "State legislatures prohibited individual slave owners from providing freedom to their slaves."

For the people who were returned to slavery on Cumberland and their descendants, freedom wouldn't come for half a century. When the Civil War broke out, Simmons was almost 100 years old and still living on the island. Word of the Emancipation Proclamation arrived there in February 1863, and Simmons, along with 60-year-old Lucinda Dorrell, who may have been Simmons' daughter, and her 73-year-old husband, Jack, crossed the St. Mary's River to Union-occupied Fernandina. Simmons was housed by missionaries who helped him learn to read, according to a Union reporter who met with him. Simmons would die just a few months later.

The Dungeness house burned right after the Civil War. The Carnegie family bought the estate in 1881 and built an even more imposing mansion on the site, but it too was destroyed in a fire in 1959.

Then in 1969, more than a century after Simmons' death, two archaeologists excavated a slave cabin, which historian Mary Bullard theorized may have been occupied by Simmons. Among the artifacts they found was a metal button from an 1808 British redcoat uniform. **NP**

MIKE BEZEMEK is the author of five books and many articles for publications such as Men's Journal, Outside Online and Mountaineers Books.

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777 6th Street NW, Suite 700, Washington, DC 20001-3723

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