

National Parks

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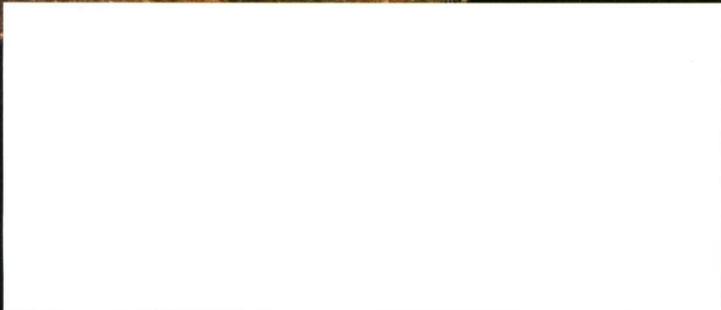
THE LASSEN EFFECT

Four Eye-Opening
Days of Steam, Stars,
and Volcanoes

*IS THERE HOPE
FOR BATS?*

*THE EVOLUTION
OF A BOLD
EXPERIMENT*

*HOLED UP IN
GLACIER*





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National Parks

SPRING 2016 / Vol. 90 No. 2

32

Hiking along the boardwalk at Bumpass Hell in Lassen Volcanic National Park.

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FEATURES

32

The Lassen Effect

Discovering Bumpass Hell, Chaos Jumbles, and the many marvels of Lassen Volcanic National Park.

By Kallie Markle

42

The Trouble With Bats

A decade after the emergence of white-nose syndrome, bats in national parks and around the country continue to die. Can researchers save them before it's too late?

By Dorian Fox

52

Then & Now

Out with unchecked looting and feeding the bears. In with prescribed fire and zero waste. Tracing the dramatic evolution of the Park Service over the course of a century.

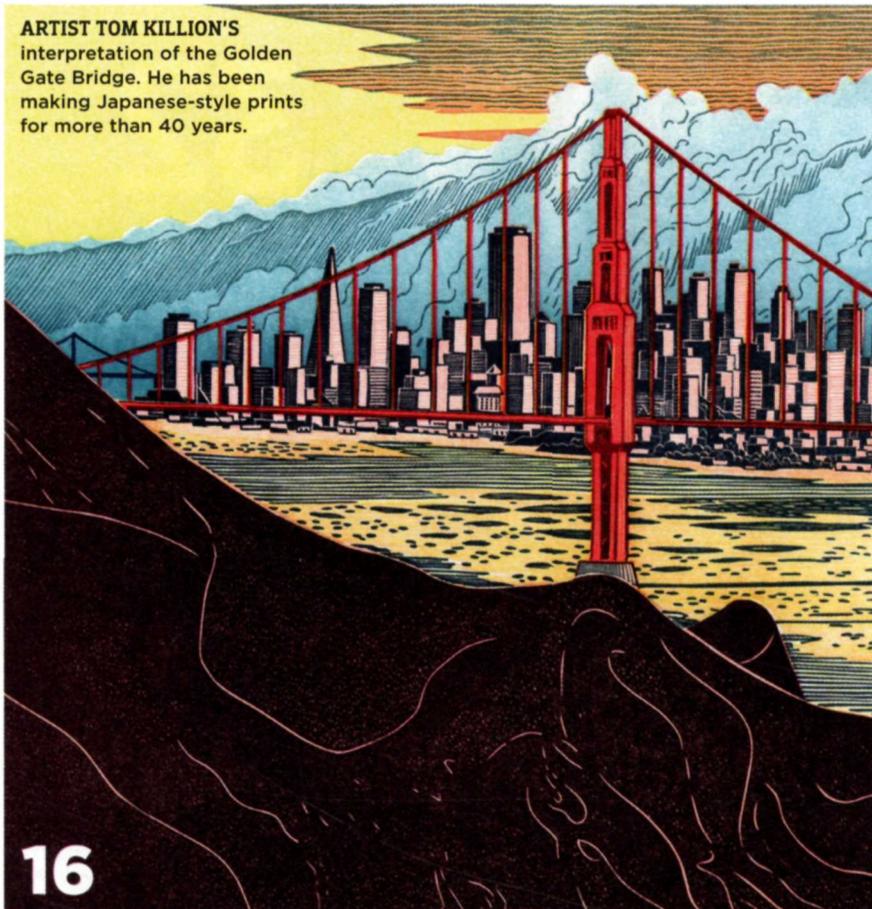
By Kate Siber

COVER ILLUSTRATION:
The Milky Way and a starry sky over Lassen Peak.

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CONTENTS

ARTIST TOM KILLION'S interpretation of the Golden Gate Bridge. He has been making Japanese-style prints for more than 40 years.



16



28



70



10

DEPARTMENTS

SPRING 2016 / Vol. 90 No. 2

3 President's Outlook

4 Editor's Note

6 Letters

8 Echoes

10 Trail Mix

Holed up for the winter in Glacier National Park, a printer captures the wild edge, how Ansel Adams saw the national parks.

24 Findings

Do pretty pictures inspire people to donate? Research shows photos of park threats may raise money faster.

By Cameron Walker

28 Denizens

Can a tiny beetle rescue Shenandoah's mighty hemlocks?

By Nicolas Brulliard

70 Backstory

Force-feeding and imprisonment could not stop suffragist Alice Paul's march forward.

By Nicolas Brulliard

72 That Was Then



THE GIFT SHOP

Who says you need to go on a vacation to get a souvenir? Visit NPCA's new online gift shop for T-shirts, mugs, hats, and gear that show off your love of national parks: npca.org/giftshop.



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Park Magic

We emerged from the cozy lodge into bone-chilling cold. It was the last night of 2015, and we planned to ring in the centennial year of the National Park Service at Yellowstone National Park in front of Old Faithful. True to its name, the geyser sent a spray of hot water high into the air toward the moonless sky. When we raised our glasses for a toast, we found that our champagne had frozen solid.

I have visited quite a few national parks in my time at NPCA. I have seen grizzly bears up close, as they clammed along the shore in Lake Clark National Park and Preserve. I have hiked in the dunes at Death Valley National Park and sailed off the coast of St. John, but standing beneath the stars at Yellowstone was one of my most transcendent park experiences.

We could hear the distant howls of coyotes; looking up, we had an unclouded view of the Milky Way.

This experience with NPCA's travel program made me think about the power of these places. To visit a park is to appreciate its grandeur, uniqueness, and history. When we appreciate places and hold powerful memories of them, we are more willing to speak up on their behalf.

During this centennial year, we encourage everyone to visit the national parks and experience them firsthand. Seeing bears, elk, and wolves in their own element can be transformational. Learning about Thomas Edison's inventions while standing in his lab or seeing the desk Frederick Douglass used can provide a potent reminder of the importance of preserving history and historic places.

That night in Yellowstone, I took a last look at the Milky Way and thought, "Next year, I should bring my children and grandchildren to experience the magic of this place." Then I turned, still holding my frozen champagne, and headed back to the warmth of the lodge.

Theresa Pierno



Editor's Note



© JACOB BAYNHAM

ON THE WAY to Many Glacier Hotel with 1-year-old Theo.

Being There

In journalism 101 classes, teachers frequently stress the importance of old-fashioned, shoe-leather reporting. To tell a vivid story, you often have to leave your desk. You need to be there.

Luckily for our contributors, being there often means traveling to extraordinary places, and that was certainly the case in this issue. To write about the country's white-nose syndrome crisis, Dorian Fox traveled to Acadia, where he followed bat researchers at work. Across the country, Kallie Markle made four trips to Lassen to fully experience its volcanoes, mountains, lakes, and hydrothermal marvels.

Jacob Baynham's journey was particularly ambitious. His reporting about winter caretakers in Glacier began at 4 a.m. on a blustery December day. With his wife and toddler in tow, he drove three hours to the park entrance, then trekked for 7 miles. He'd imagined it would be a fun family outing—and at first it was. With young Theo cozy in a backpack, they chatted and took photos of the dramatic views. But halfway there, the wind picked up, and Theo lost a boot. He started crying and didn't stop for the rest of the hike.

Happily, everything improved once they finally arrived. Theo warmed up, the interview went swimmingly, and their hosts drove them to their car, which was still possible that early in the season. They found Theo's boot on the way out.

Jacob has made some epic journeys while reporting in Southeast Asia and Afghanistan but said for a day's adventure, "this was probably the most extreme." He could have just called the caretakers. Dorian also could have researched his feature by phone. Kallie could have made fewer trips. But all these writers know the difference that being there makes. I'm grateful they went the extra miles; I think you will be, too.

Rona Marech
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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 of 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. Please sign up to receive Park Notes, our monthly e-mail newsletter. Go to npca.org to sign up.

HOW TO DONATE

To donate, please visit npca.org or call 800.628.7275. For information about bequests, planned gifts, and matching gifts, call our Development Department, extension 145 or 146.

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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 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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The Pillow Was the Problem

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Lindell has been featured on numerous talk shows, including *Fox Business News* and *Imus in the Morning*. Lindell and MyPillow have also appeared in feature stories in *The New York Times* and the *Minneapolis Star Tribune*. MyPillow has received the coveted "Q Star Award" for Product Concept of the Year from QVC, and has been selected as the Official Pillow of the National Sleep Foundation.

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NARRATIVE ARCH

Thanks for the piece on the 50th anniversary of topping out the St. Louis Arch ["Standing Tall"]. It brought back a lot of memories and provided some real insights. My father, Robert A. Dunlap, wrote most of the Arch coverage for the St. Louis Post-Dispatch. I did a photo essay of the buildings being demolished for a college course. I had a chance to assist a filmmaker who was documenting the construction, shooting on top

of, not inside, the Arch. Like your writer, I was a little goosey about heights and passed. My mistake.

BILL DUNLAP

Lake Oswego, OR

RECONSTRUCTING HISTORY

Thank you for the informative article on Reconstruction and, in particular, the historical context enabling Americans of all backgrounds to learn from those events ["A Complicated Past"]. Understanding this crucial, yet brief, period of the post-Civil War era allows Americans to better appreciate today's struggle for upholding our rights under the Constitution.

I strongly endorse the idea of the Park Service paying tribute to the efforts to educate the millions of Americans who do not know much at all of the Reconstruction era.

RICHARD PASS

Topanga, CA

GRAND JOURNEYS

Kate Siber's description of her first hike in the Grand Canyon ["The Space Between Things"] brought back

memories of camping with my father in New York State's Adirondack Park over 58 years ago. When I was 11, my father cajoled me into hiking up Mount Marcy and back in one day—14 miles round-trip and an elevation gain of 3,000 feet. While young boys are not supposed to cry, I nonetheless shed several tears that day as my legs struggled to keep up. But that hike showed me that such effort can be rewarded with spectacular beauty. Fortunately, I have had the chance as an adult to share similar moments with my family in our national parks, including a hike on Bright Angel Trail in Grand Canyon. Thanks to Kate for bringing back this memory and to my father for providing me with the opportunity.

CHRIS OTTERSTEDT

Auburn, IN

I was mesmerized by the article, "The

Space Between Things." Thank you for such a thoughtful and beautiful piece.

ANN CROMEY

San Francisco, CA

GREAT INTEREST IN THE GREAT WAR

While enjoying the Winter 2016 edition of National Parks magazine, something peculiar caught my eye in your article about plans for a World War I Memorial ["A Quest to Remember"]. The opening pages of the article depict soldiers marching in silhouette. These are not American soldiers but our British allies. Observe the second soldier from the right. The profile of his rifle is clearly that of the Lee Enfield .303, standard issue for Tommies in the Great War (and World War II). Our Doughboys used the Springfield 1903 model, which has a distinctly different profile. A small point in the big picture, I agree, but I thought it was worth

mentioning. Please keep us posted about the ongoing plans for the much-needed memorial so we can all help right the wrong.

SAL DI GRANDI
Mahopac, NY

I'm a contributor to NPCA, a retired National Park Service employee, and an Army veteran with ancestors who fought in the Great War. I lived and worked in Washington, D.C., from 1969 to 1972. On one of the many walks I took to visit the myriad historic sites in and around the capital, I once stumbled across the memorial honoring D.C. residents who had been killed in battle during World War I. I was appalled with the sparseness of the monument and its location, kind of shunted aside from the others on the National Mall.

I plan to share the story about the WWI memorial with my family and some friends who also believe that D.C. needs a worthwhile monument to all the American men who fought, and died, in that war.

ERIK HAUGE
Louisville, CO

In the article on the proposed World War I memorial at Pershing Park in Washington, D.C., you credit the landscape architectural firm of Oehme, van Sweden & Associates with planning the park's "original plantings." During the period of planning and construction of Pershing Park (1978-80), I was the Friedberg/Lindsey joint venture project manager for Pershing Park. The original planting plan for the park was designed by the Friedberg office and installed under my general direction. I personally selected the majority of the plantings including the grove of honey locust that rings a portion of the park's perimeter. It was not until after the park opened that Oehme, van Sweden & Associates was selected to plan the "New American Garden" overlay.

ALAIN C. DEVERGIE
Haymarket, VA

"A Quest to Remember" in the Winter issue was very poignant; Edwin Fountain is to be commended for championing restoration of the long-neglected District of Columbia World War I Memorial. Now Congress has designated a national memorial to the Great War, the "War to End All Wars." It is nearly a century since the Armistice and only fitting that there be such a commemoration along with those of other conflicts that involved America.

However, there was no mention of the National World War I Museum and Memorial in Kansas City, Missouri. Built mostly by contributions from citizens of Kansas City and dedicated by world leaders in the 1920s, it has been the premier memorial in the United States for WWI. The memorial suffered from years of neglect, but Kansas City restored it and significantly expanded the museum.

Today, the beautiful, solemn, and impressive monument has one of the largest and finest collections of WWI artifacts. To have not mentioned the world-class memorial and museum was a glaring omission and dis-

service to the citizens of Kansas City, Missouri.

DAVE BERGNER
Mesa, AZ

(former resident of Kansas City, MO)

We received many similar letters about the story, "A Quest to Remember." Though the article focused on one man's mission to establish a national memorial in Washington, D.C., we also should have mentioned the National WWI Museum and Memorial in Kansas City, Missouri. The Liberty Memorial site was dedicated in 1921, and the expanded museum opened in 2006. The museum is dedicated to preserving the objects, documents, history, and personal experiences of the war. We regret the omission.

-Editors

CORRECTION

In our Winter 2016 issue, the infographic on pages 10 and 11 ["100 Years at a Glance"] incorrectly stated the number of people who visited national parks in 1950. More than 32 million people visited national park sites that year.

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Echoes

The sun will shine on the desert a little differently for me today.

David Lamfrom, director of California Desert and Wildlife Programs, speaking to KCET after President Barack Obama designated three new national monuments in the California desert. Mojave Trails protects an undeveloped stretch of historic Route 66, Sand to Snow preserves a key wildlife corridor, and Castle Mountains is a high desert grassland that completes the Mojave National Preserve.

A lot of these school kids have never been at a national park, never been on the water ... Some of them are afraid. They are afraid of beavers. They think a beaver is going to eat them.

Pamela Goddard, Chesapeake and Virginia Program director, quoted in Hopewell News about a canoe trip that 200 area students took down the Lower Appomattox River. The event, sponsored by NPCA and Wilderness Inquiry, included lessons about Petersburg National Battlefield, the Civil War, nature, and canoeing.

It's a historic step forward for bison.

Stephanie Adams, Yellowstone Program manager, quoted in the Associated Press regarding Montana Gov. Steve Bullock's decision to allow bison to roam on land adjacent to Yellowstone National Park for the first time in decades. NPCA has long argued that the park's outdated bison management plan has led to the unnecessary slaughter of bison and could affect the long-term survival of the species.



© BEN HERNDON FOR TANDEM STILLLS + MOTION



LIVING IN GLACIER NATIONAL PARK for the winter frequently entails navigating treacherous patches of ice and climbing over snowdrifts that can rise more than two stories high. A view of Mount Jackson at sunset from an icy ridgetop.

© MARC ADAMUS/AURORA PHOTOS

Snowed In

Surviving a winter in Glacier National Park takes a strong marriage—and 25 pounds of coffee.

To reach Many Glacier Hotel in winter, you have to use your legs. A road will get you there, but it's closed from November to April. So you hike—or snowshoe or ski—for seven wind-swept miles, along the frozen shore of Lake Sherburne and through the deserted entrance to Glacier National Park, where ropes clank against a naked flagpole and a bald eagle struggles to stay aloft in the wind. Keep going

into the blowing snow until you see Swiftcurrent Lake and the angular wedge of Grinnell Point bearing down on it like the bow of an icebreaker. Here you will find Many Glacier Hotel, built 100 years ago in the style of a Swiss chalet. Nearby is an even older log cabin. And inside that cabin are David and Rebecca Wilson, a couple standing vigil over the hotel until spring.

One Saturday morning in Decem-

ber, David is reclining on the couch, watching *The Hobbit* on the cabin's flat-screen TV. He's 37, tall, with a beard and mussed brown hair—he looks like a young Jeff Daniels—and today he's nursing a headache. He brews his own beer in the two-bedroom cabin, and he had a few of the rich, nutty porters last night. "It was Friday," he explains.

David grew up with tools in his hand, helping his father build homes in Kentucky. He fell in love with Montana on his first visit and worked three summers in Glacier before he moved to Billings in 2011 to be a manager at a Wal-Mart. He lasted three years there and then signed

“For us, this is more normal than the season,” David says from the couch. “In the summer I feel like everyone is just visiting my little place out here.”

on as the engineering manager at Many Glacier. Getting paid to work with his hands in a place this pretty felt almost too good to be true.

Rebecca sits across the wood stove on another couch. She’s a quiet 36-year-old with a homesteader’s hardiness and appetite for bad weather. It’s gusty and below freezing outside, but Rebecca’s ready for worse. “We want to see a really big snow,” she says a little wistfully.

The Wilsons work in Many Glacier year-round. In the summer, Rebecca is a barista in the hotel cafe while David manages the maintenance. For the rest of the year, David is employed as the official caretaker (and Rebecca is his unofficial helper). The hotel is open only from June to September, so the Wilsons spend far more time alone here than with people. This is their second winter on the grounds.

“For us, this is more normal than the season,” David says from the couch. “In the summer I feel like everyone is just visiting my little place out here.”

Still, it takes careful planning to feel any sense of belonging in a place where temperatures routinely plummet below zero, the snow is steady, and the wind is constant. In the fall, the Wilsons trawl the aisles of Costco, amassing thousands of dollars’ worth of groceries to last them from October to April. It’s like shopping for a fallout shelter—but with a few extra luxuries.

“You have to think of what you might crave later on,” David says. “If you want crab legs in December, you have to get them now.”

The cabin is filled with food. A giant

box of powdered milk and two tubs of coconut oil sit on top of the fridge. The mudroom walls are lined with peanut butter, almond milk, and boxed wine. In the spare bedroom, plastic crates keep 50 pounds of basmati rice, 40 pounds of flour, and 25 pounds of lentils safe from the mice. Three freezers are stuffed with broccoli, spinach, and 15 pounds of bacon. A kitchen cupboard holds 25 pounds of Costco coffee. Bags of dried chilies occupy a wood table near the stove, beneath two shelves of seasonings. “The key to cooking here is spices,” David says. “Lots of spices.”

Last winter they missed fresh vegetables, so this year they’re growing their own under fluorescent tube lights. The sprouts of kale, spinach, and chives look a little anemic, but the Wilsons are unfazed. “We might run out of some things, but we have enough to live on,” Rebecca says gamely.

To stay sane, they stay busy. David’s base is a heated shop in the hotel where he cuts glass for windows, threads pipes, and does woodwork. It’s 200 yards from the cabin, a commute he makes with ski goggles, a mountaineering jacket, and snowshoes. When he walks there today, snow whirls across the frozen lake in tiny tornadoes that sparkle in the sunlight. Behind them Mount Gould, Angel Wing, and Mount Grinnell are postcard-perfect ramparts of pine, rock, and ice. “These mountains don’t look real,” David says. He climbs over dune-like snowdrifts—in mid-winter they rise two stories or more—and navigates treacherous patches of ice. “You always have to be mindful,” he says. “If you slip

and knock yourself out, who’s going to find you?”

David’s shop is den-like, lit by yellow bulbs. It had a window, but a few weeks ago, the wind was blowing snow through the sill and onto his computer, so he boarded it up. He’s building similar shutters for all of the hotel’s windows—160 so far. The wind is a relentless saboteur. It pushes open doors, punctures screens, and rips siding from the walls. David walks the perimeter daily to survey the damage. Inside the hotel, snow blows under doors and has to be swept off the carpet. Decks must be shoveled. The hotel is four stories high, with 215 rooms. “It’s like winterizing a small city,” David says.

Rebecca helps him as she can (she makes a lot of to-do lists), and David is glad for the company. Most people think of *The Shining* when they hear what the Wilsons do, and the hotel can get spooky. Rebecca once thought she saw David enter a room and then realized he was behind her. When David walks the long, unlit corridors of the hotel, he hears thumps, whistles, and creaks. “You can creep yourself out,” he says. “Being alone in a giant hotel in the middle of nowhere, your mind starts to work.”

Not everyone can handle it, according to the stories. A previous caretaker fled in mid-winter without any forewarning. He called his boss from civilization and said he wasn’t coming back. The isolation drove one couple to separate—the woman walked out, leaving her boyfriend to finish the winter there alone. Another couple didn’t speak for a month, sleeping in separate bedrooms



DAVID AND REBECCA WILSON are partly through their second winter as caretakers at Many Glacier Hotel. The long, cold season typically lasts from October to April.



until they finally reconciled.

The Wilsons can understand that. "Toward the end, you're just waiting for the road to open," Rebecca says. Last spring the plows cleared it in mid-April and the Wilsons were gone within half an hour, into Browning, where cars and people came as a shock. But they don't think the job strains their relationship. "We like to spend a lot of time together," Rebecca says. "We've always been that way."

"We fight out here just as much as we do in town," David adds. "And that's not very much."

Aside from the TV, they have a collection of books—Thoreau, Emerson, yes, even *The Shining*—and a German language audio tutorial. The cabin also has a slow Internet connection that allowed the Wilsons to keep a blog last winter. Their photographs and stories drew a loyal following of people who envied their solitude and the scenery in their backyard.

"They don't realize what it would really be like, though," David says. "You

have to know how to fix things. If a water line breaks, what are you going to do? Just anyone couldn't come in here and be comfortable."

But even when things get tough for them—when pipes break and the snowdrifts block their back door—the Wilsons need only walk onto their porch to remember why they're here. Stretching from their boots to the clouds is what George Bird Grinnell dubbed the "Crown of the Continent." It's a stark, ensnaring beauty, and all winter long the Wilsons share it only with the animals—bighorn sheep, coyotes, moose, grizzlies, and wolves.

"You get to see things people don't usually see," David says. "When you live here every day, it becomes the norm. But I could never get sick of this place."

—JACOB BAYNHAM

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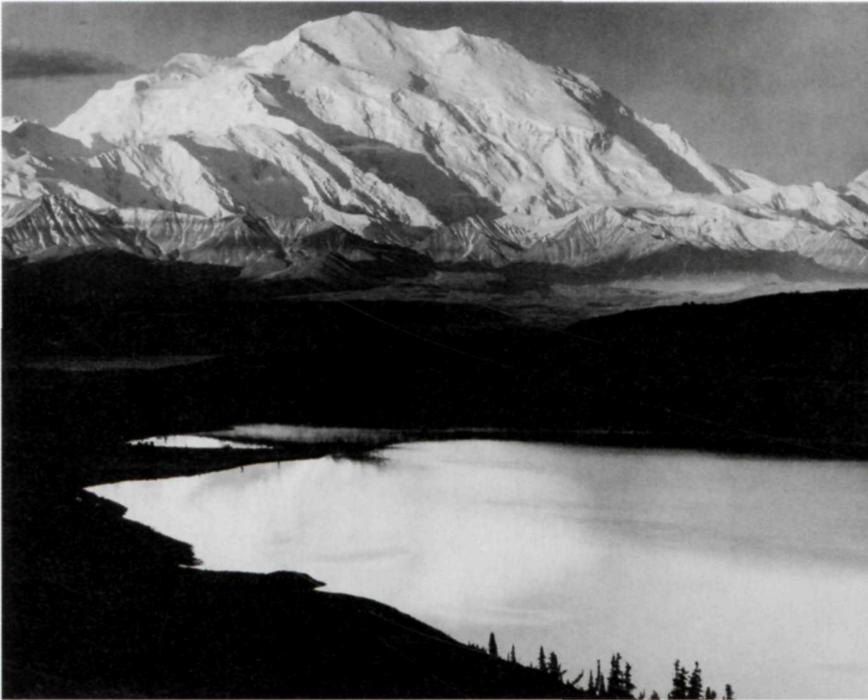
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ANSEL ADAMS' PHOTOGRAPH of Denali and Wonder Lake is one of nearly two dozen images of national parks included in an exhibition of the artist's work at Reynolda House Museum of American Art.

In Black and White

A new exhibition documents Ansel Adams' abiding passion for the national parks.

Rarely do artistic representations of icons turn into icons themselves, but that's the feat many of Ansel Adams' photographs have achieved. His black-and-white images of Yosemite's Half Dome and the Tetons have adorned posters, books, and calendars and become nearly synonymous with the national parks they represent.

"Even if you haven't been to a given national park, you will often know what it looks like in part because of Ansel Adams' photographs," said John Rohrbach, who curated an exhibition of the artist's work that opened at Reynolda House Museum of American Art in Winston-Salem in March.

Adams' passion for national parks dates back to his teenage years, when he captured images of Yosemite with

a cheap Kodak camera his parents had given him. Adams later acquired a mastery of both photography and processing techniques that allowed him to darken certain sections of his pictures while lightening others, creating stark contrasts between skies and landscapes. His love of the American West and its parks never abated.

The Reynolda House exhibition, culled from private collections and the Amon Carter Museum of American Art in Fort Worth, Texas, showcases nearly 40 photographs—most of them scenes from national parks. Some photographs, such as the 1927 shot of Half Dome in the winter, may trigger a feeling of déjà vu, but visitors might be surprised by the close-ups and smaller pictures, said Rohrbach, the senior curator of photo-

graphs at the Amon Carter Museum.

"We tend to think of Adams these days in terms of all those large prints, but those small prints really have a jewel-like beauty that's unexpected," he said.

A Sierra Club board member for decades, Adams was a vocal advocate for the preservation of wild spaces throughout his life. "People ask me why I am so presumptuous as to write letters to the newspapers and all that," he said in an interview shortly before his death in 1984. "Somebody has got to do it. I would like to get more people to write letters. So I keep my promise of doing at least one thing a day, one thing related to the environment in some way."

But it is his photographs that contributed most significantly to the conservation movement by showing what was at stake. His images of Kings Canyon are credited with helping pave the way for the creation of the eponymous national park in 1940.

Allison Perkins, Reynolda House's executive director, said the exhibition, which coincides with the National Park Service centennial, goes beyond the presentation of beautiful photographs and seeks to prolong Adams' legacy as both an artist and an environmentalist.

"While that's not the express mission of the museum, we can encourage people to be advocates of the natural world," she said, "and to be protective of these really sacred places."

—NICOLAS BRULLIARD

"Ansel Adams: Eloquent Light" will run through July 17. NPCA, which has partnered with the museum to support the exhibition, will co-host a presentation on photography and advocacy at the museum on April 28, featuring David Lamfrom, NPCA's California Desert and Wildlife Programs director. For more information, email southeast@npca.org or visit reynoldahouse.org/anseladams.

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Landscape Poetry

Artist Tom Killion has spent more than 40 years translating his love of the natural world into intricate, Japanese-style prints.

Since childhood, Tom Killion has considered the poppy-strewn slopes of Tennessee Valley his playground. He and his brother, who were raised in a small town north of San Francisco, would play Revolutionary War on the gentle trail leading to the pebbled beach, dubbing a pile of dirt on the former ranchlands “Bunker Hill.” Later, they would scatter their father’s ashes here in the valley.

In the spring of 2011, Killion returned again to the valley—part of Northern California’s Golden Gate National Recreation Area—and began work on a new print. He quickly drew the pocket beach, cliffs, and the sea, scribbling in the colors and details he wanted to include. He envisioned a bright, Southwestern light in the sky, the clouds rippling and catching the sunset.

But after going through the exacting, 250-hour process of creating the print—which involves transferring the sketch to a key block, carving that block and others to add layers of color, then using a small hand-cranked press to print the image on fine Japanese paper—he wasn’t happy. The yellow was too bright. “I almost threw all that paper away and started over,” he said.

Instead, he kept tinkering using a host of tricks he’d learned in more than four decades of printmaking. He carved more details into his color blocks, inserted bits of wood between the press and the paper to make certain colors pop, and added layers of color. Eventually, the

© TOM KILLION



Tennessee Cove, Marin Headlands, 2013.

print “took on its own life.”

“When things start going in a certain direction that I hadn’t really planned, I just go with them,” Killion, 63, said on a recent morning in his studio, which sits a few paces from his house and overlooks Tomales Bay in Point Reyes National Seashore. He pointed out the purples, grays, and pinks that backlight the beach, and the sunset light, stippled with golds and greens.

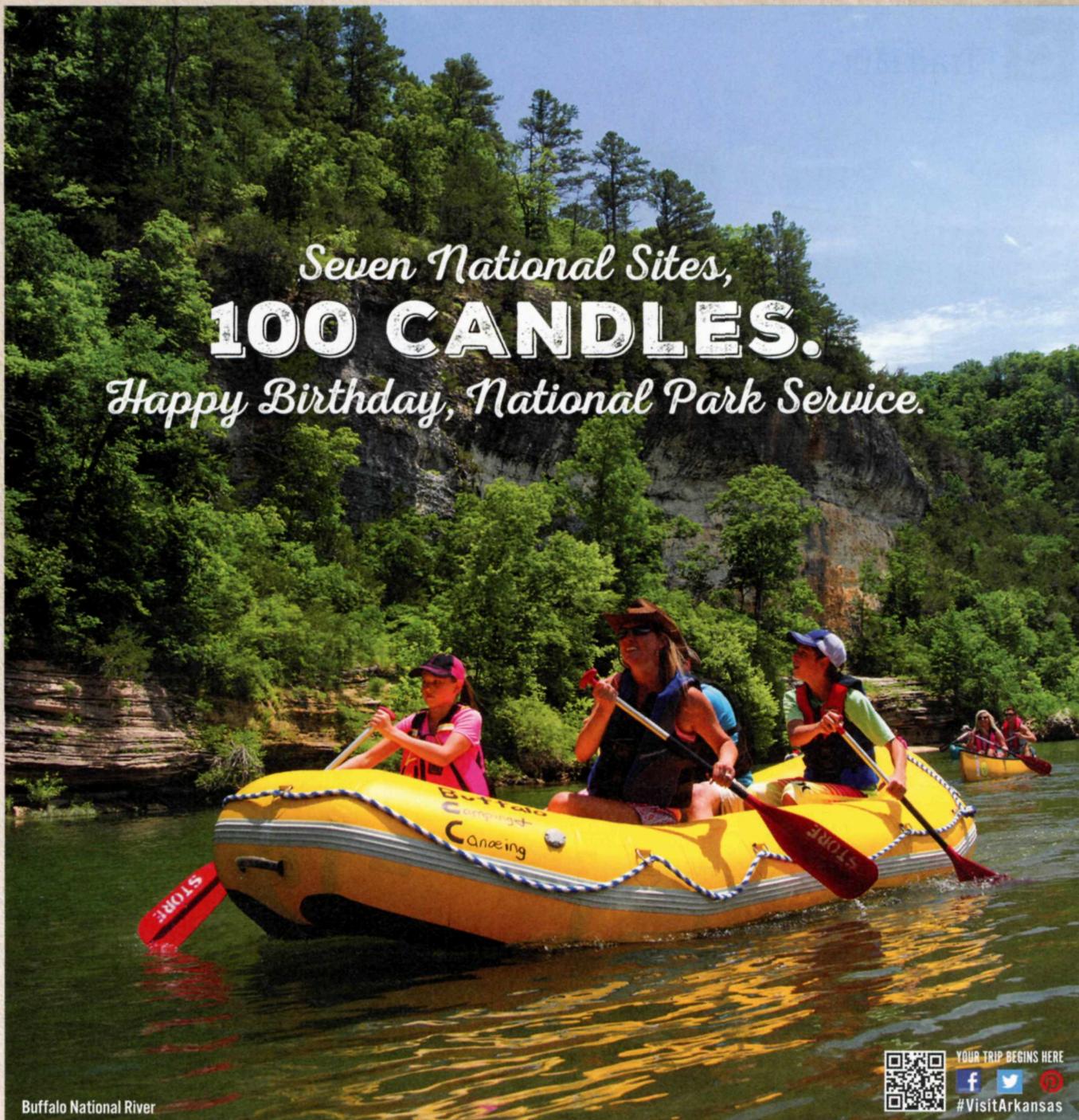
Tennessee Cove and dozens of other seascapes appear in Killion’s most recent book, *California’s Wild Edge: The Coast in Prints, Poetry, and History*. The book brings together Killion’s wood- and linoleum-block prints, his writings on the cultural history of the coast, and the work of California writers, including Pulitzer prize-winning poet Gary Snyder, who collaborated with Killion on the project.

The printmaker and poet first met in the 1970s. Snyder, now 85, was a hero to Killion, who attended a memorable 1972 reading at University of California, Santa Cruz, which ended with a giant clap of thunder and a power outage. In 1975, Killion took one of the 100 hand-printed editions of his first book to Snyder’s home in the Sierra foothills.

Twenty years later, the pair began their first significant collaboration, a handmade book about the High Sierra. At first sight, the Sierra prints “stole my heart,” Snyder wrote. “He had caught the streams and mountains as they are: visionary and earthy; icy, aloof, and dangerous; but an inspiring teacher when approached the right way.”

Killion said the force behind his landscape art is topophilia—an intense love of place. “I am very visual, and my favorite

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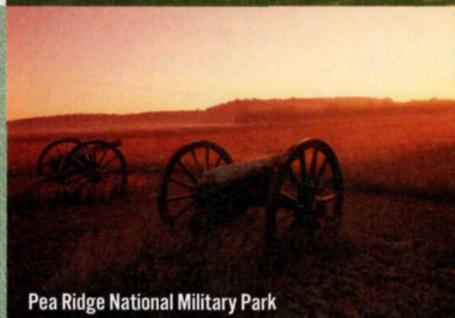
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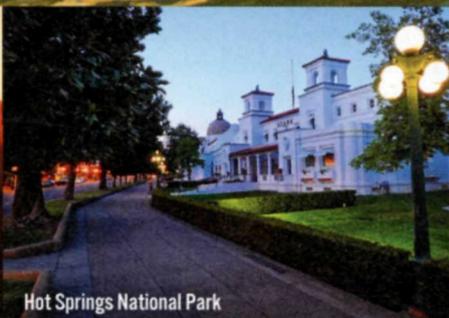
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Twin Lodgepole Pines, 2011.

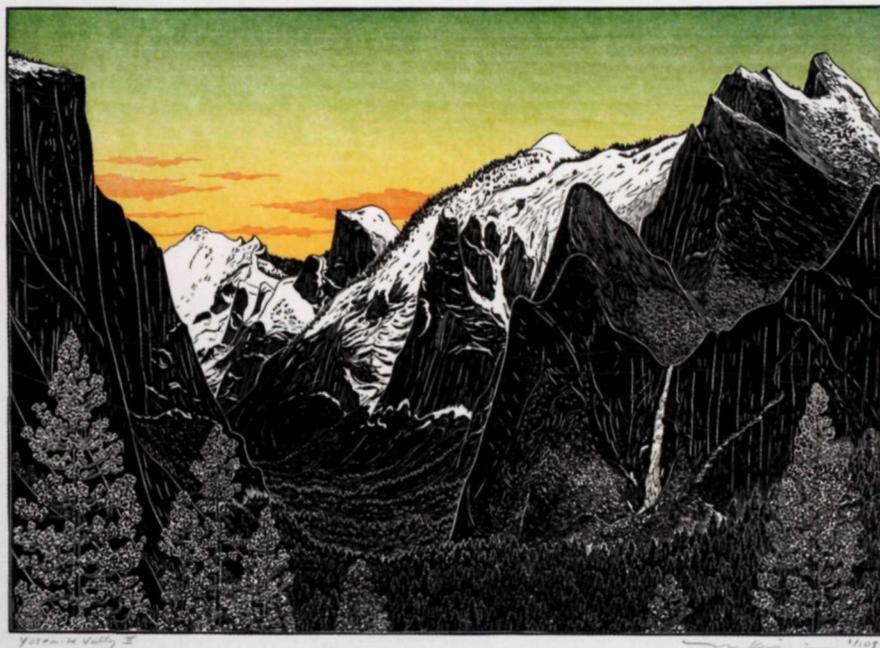


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form of beauty, other than human, is the landscape of western North America, with its wide spaces, open grasslands, and mixed forests," he said.

Killion's interest in art was sparked at a young age, when his mother took him to an East Asian art exhibit at San Francisco's de Young Museum. He recalls being fascinated with the mountains and rivers he saw on the scrolls, which reminded him of his own world on the side of Mount Tamalpais, the 2,571-foot peak across the Golden Gate from San Francisco. Soon after, his parents gave him a book of prints by Hokusai, the Japanese printmaker best known for his series of images of Mount Fuji. "I thought, 'Wow, I want to make art that looks like that, in my landscape,'" Killion said.

He began making prints in high school; in college, he took letterpress



© TOM KILLION

Yosemite Valley II, 2007.

printing classes and produced his first book, a compilation of Hokusai-inspired images of Mount Tam, as locals call it.

After graduation, Killion traveled throughout Europe and Africa, and then attended Stanford University, where he completed a doctorate in African history. He later taught African history at Bowdoin College in Maine, and studied in Eritrea as a Fulbright scholar. Over time, however, he started to wonder why he was so focused on a place not his own. "California really is my homeland, of many generations," he said. In 1995, he returned to teach African and California history at San Francisco State University.

All along, Killion had been creating limited-edition books of his prints, which captured scenes from his adventures in California and abroad. When Malcolm Margolin, the head of Heyday press, first encountered Killion's hand-printed High Sierra book in 2000, he was smitten. "It was the most beautiful thing I'd ever seen," he said.

Margolin went on to publish *The High Sierra of California*, the collaboration with Snyder, which includes Killion's interpretation of iconic Yosemite

scenery, the wilderness backcountry of Sequoia and Kings Canyon National Parks, and the region's junipers, streams, and granite peaks. "I just love the forms in the Sierras," Killion said. "Each tree and plant and even the rocks—they all have this individuality because it's such a harsh landscape and you don't have a whole big forest in a lot of places." Running alongside the images are excerpts from Snyder's backpacking journals and writings by naturalist John Muir.

The book raised Killion's profile, allowing him to retire from teaching to focus on his art. He and Snyder followed up with a book about Mount Tam and the 2015 collaboration about the coast. With each project, Killion has immersed himself more deeply in writing about the region's history; *California's Wild Edge* includes chapters on early exploration by the Spanish turn-of-the-century horseback travelers and poet Robinson Jeffers. "I finally found a way to put history and printmaking together," Killion said.

For more than three decades, Santa Cruz was Killion's home base, but in 2003, he returned to Marin County with his wife and two children. His newfound



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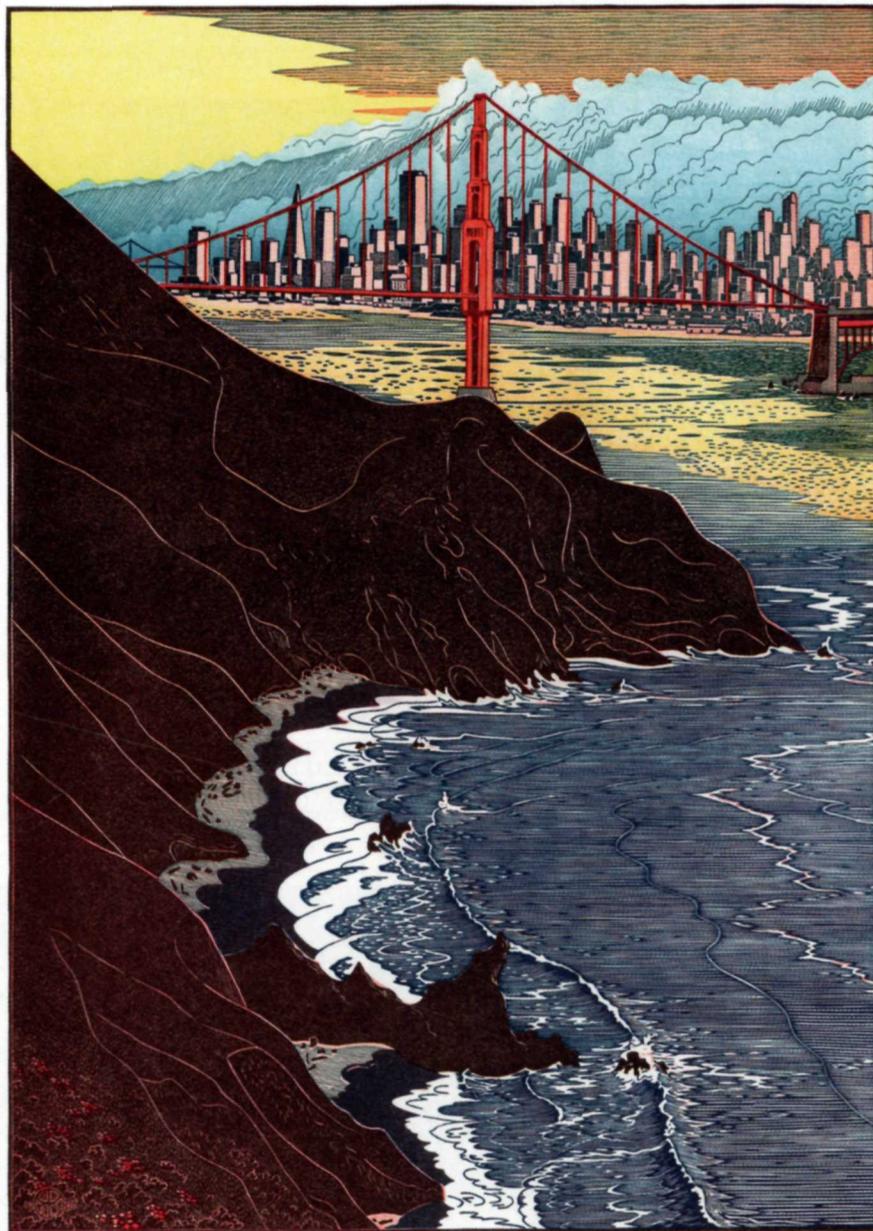


proximity to stretches of undeveloped coastland led to a series of artworks; when he learned that Snyder had also been influenced by the time he spent on this part of the coast, the book took shape. Snyder, a former merchant marine, encouraged Killion to think of the coast as seen from the sea—which led Killion to go deep into seafaring literature, such as Richard Henry Dana's *Two Years Before the Mast*, which describes California through a watery lens.

Snyder also inspired one of Killion's best-known prints. In 2007, the two went on a trip for writers and artists into Sequoia National Park's Miter Basin. One day, Snyder and Killion hiked to Siberian Outpost, a barren stretch of land dotted with rocks and pines. On their way back, they noticed two lodgepole pines growing side by side, their roots intertwined. Snyder told Killion about a Japanese Noh play in which a devoted older couple becomes a pair of pine trees. Killion later headed back to the spot with a camp chair to sketch the intricacies of the foliage.

In his small shingled studio—crowded with printing blocks, sketches for future projects, a small press, worktables, and carving tools—Killion quickly found the lodgepole print and pulled it out. The golden sheen of the trunks comes from the resinous pitch that the high-elevation trees produce to protect themselves. In the summer “they glow, especially at sunset,” he said. “Just like candles.” The print will likely become part of Killion's current project, a book on California treescapes.

Most of the book will feature new prints, which will take him back into the mountains and along the coast to sketch. In an artist's statement, he wrote about his “love for the natural world, the bones of the land, the skin and fur of the plants and trees.” This wild creature is his first and deepest love. “That's why I make my art,” he said. “It's the beauty of the real



Golden Gate Sunset
Golden Gate Sunset, 1997.

© TOM KILLION

world that I'm entranced with.”

Both those things—the tangible wilderness and representations of it—are critically important, in Margolin's view. He recalled a talk and slideshow Killion gave at Yosemite's Ahwahnee Hotel. When the printmaker came to an image of Half Dome, he stopped. “This is ridiculous,” he said. “I'm showing you an image of Half Dome, and it's right out there.”

But it's not ridiculous or redundant, Margolin said. “Beauty leads us to knowledge and understanding and to a relationship with the world. If anything is going to save us, it's not science; it's beauty, it's art.” he said. “I think it's the love of beauty that has created the National Park System. And I think that Tom Killion is a part of that lineage.”

—CAMERON WALKER

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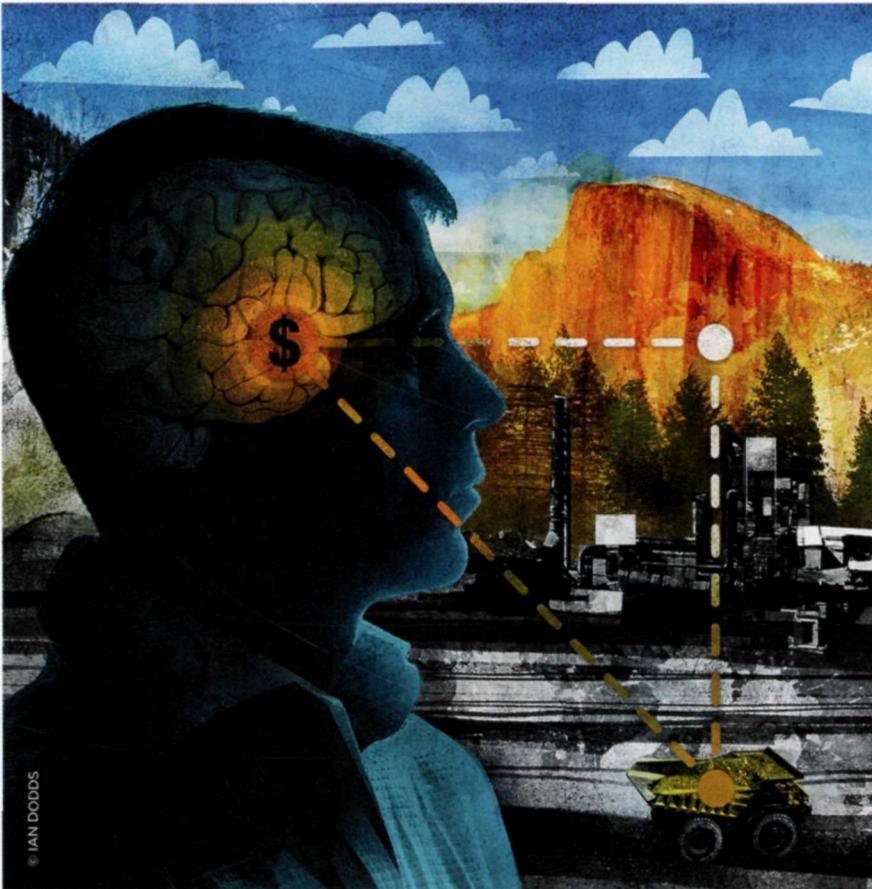
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A Penny For Your Thoughts

Do pretty pictures inspire people to donate? Research shows photos of park threats may raise money faster.

PICTURE YOUR FAVORITE VISTA from a national park. If you're a Yosemite fan, it might be the view of Half Dome's granite. Or maybe your pick is the dependable glory of Old Faithful, the orange-colored glow of Delicate Arch at sunset, or the reflection of Mount Rainier in Mirror Lake. Now imagine photos like these arriving in your mailbox along with a pre-addressed envelope for your donation. What makes you choose between writing a check and tossing the whole thing in the recycling bin?

In recent years, environmental scientists and economists have tried to figure out exactly this: how we decide how much we're willing to pay to protect wilderness. And with natural areas under threat from both climate change and development, the question is more important than ever. But determining what influences our decisions when it comes to supporting conservation can be tricky. Is it the memory of peering over the Grand Canyon's South Rim for the first time that makes us want to contribute to national parks? Or is it actually the fear of losing pristine landscapes that drives us to donate?

Previously, researchers have conducted surveys to try to understand how people value these hard-to-quantify aspects of wilderness. But to get a more precise answer, scientists have now turned to the wilderness within: our brains.

At Stanford University, Nik Sawe, an environmental neuroeconomist, and psychologist and neuroscientist Brian Knutson are using functional magnetic resonance imaging (fMRI) to map the brain's activity as people decide how much they're willing to pay to protect nature. As part of a recent study, 20 people lay inside an MRI scanner and looked at series of images of national parks and California state parks while researchers captured brain scans.

First, subjects looked at a picture of a park with its name. Next, they saw that picture with a second image of a proposed use of a portion of park land—either something destructive like mining or more innocuous like hosting a children's nature camp—superimposed on it. Finally, participants were

asked whether they would contribute a specific amount of money to help prevent this use. Along with hourly payment for the study, all participants were given \$24 that they could choose to donate.

Each participant saw more than 70 sets of park images, potential threats, and donation requests. Researchers explained that one of these donation decisions would be binding, meaning that any money that people decided to donate on that trial would be given to either the National Park Foundation or the California State Parks Foundation.

While the specific threats were hypothetical, an actual budget crisis in California was rocking state parks when Sawe and Knutson began designing the study in 2012. The state talked about closing 70 of 278 state parks, and legislators debated privatizing several others. (A year later, the federal government shutdown led to a 16-day closure of national parks.) Many of the scenarios the researchers set up for each park were based in reality, too. Before the experiment, the conservation group Environment California had identified more than 185 gold mining claims within 10 miles of Yosemite National Park that it said could lead to heavy metal contamination inside the park.

In their study, which appeared in

Reactions to park threats may play a bigger role in triggering donations than the “warm glow of altruism.”

the November 15 issue of the journal *NeuroImage*, the researchers reported that looking at images of the parks activated a region of people’s brains associated with rewarding experiences, from eating fine food to enjoying financial success, called the nucleus accumbens. And the more iconic a park was—Yosemite, for example—the more activity this region experienced.

What was surprising, though, was that the positive feelings associated with the parks weren’t what seemed to tip people toward donating.

Many studies on philanthropy, Sawe said, show that the motivation for contributing to a cause seems to come from feeling good about giving. But the Stanford researchers found that participants’ reactions to park threats may play a bigger role in triggering donations than the “warm glow of altruism.” The anterior insula, a region of the brain associated with negative emotions including disgust and outrage, was more active when participants saw proposed uses that were destructive to the park landscape. What’s more, activity in the anterior

insula was significantly stronger in people who possessed pro-environmental attitudes, and this activity actually predicted donation. The more active the anterior insula was, the more likely people were to donate.

In short, people’s negative reaction to the threat of mining or oil extraction eclipsed even the positive feelings they had for the parks in motivating them to act. “It turns out people, and their brains, respond both to the good and the bad—and the bad really matters,” Knutson said.

Knutson said that scientists used to think of emotions as pesky things that interfered with research about how people make choices. But they’ve since found that they play a huge role in decision-making. Making people aware of potentially destructive forces could help those interested in preserving parks rally more support, he said.

Sawe now wants to work with conservation groups to see if brain activity can predict which national environmental campaigns are likely to meet their funding goals, and to look at how proximity to a threatened area affects people’s responses to different campaigns. “We need to make it easier for people to make the right decisions,” he said, “for the environment and ourselves.” NP

CAMERON WALKER is a writer based in California.

PARKS = HEALTH

Born with a brittle bone disability, researcher Nik Sawe feels connected to national parks because they were his personal litmus test as a child. “Whenever I was able to go out into nature, to Yosemite or Yellowstone, it took on a special significance because it was a sign that I was in really good health,” he said.



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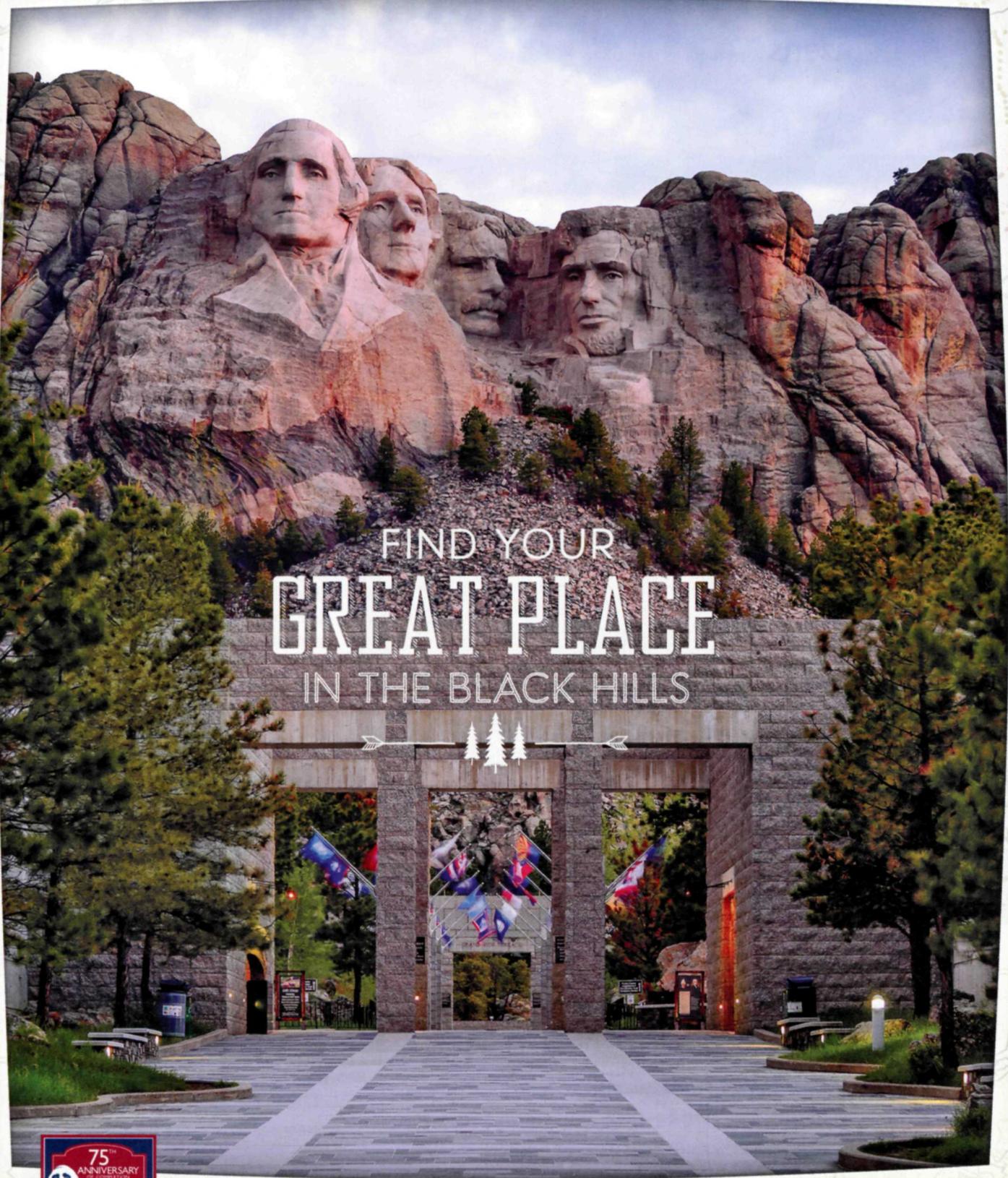
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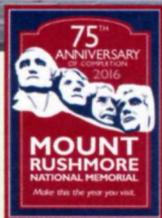
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SHENANDOAH NATIONAL PARK OFFICIALS estimate that 95 percent of the park's eastern hemlocks have been lost to a pest that came from Asia. Dead hemlocks rarely fall and become known as "gray ghosts."

What followed has been an epic battle between one of Shenandoah's oldest and tallest residents and one of its newest and tiniest. And as in the David and Goliath parable, Shenandoah's giants are not winning. With little resistance from the trees and few natural enemies, the aphid-like insects have eaten their way through the park, feeding on the sap of the hemlock until the needles desiccate and fall off. Because the hemlock rarely falls when it dies, the victims of the infestation are known as "gray ghosts," somber reminders of what was lost. Today, park officials estimate that 95 percent of Shenandoah's hemlocks have succumbed to the adelgid.

To preserve Shenandoah's remaining hemlocks, a handful of park employees inject insecticide into the soil around each individual tree—a time-consuming process that must be repeated every seven years and is not sustainable in the long run. So the park has called for some outside help. *Laricobius osakensis* is a small brown beetle that feeds exclusively on the adelgid in its native habitat in Japan, keeping the population of the hemlock foe in check. Letting the beetle loose in Shenandoah might seem like a perfect solution to the problem, but introducing an exotic critter is no small matter in a park that is already beleaguered by hundreds of invasive species, from kudzu vine to European starlings.

Shenandoah officials passed on the idea of using other predatory beetles to control the adelgid because they thought the risks would outweigh the potential benefits. But scientists at Virginia Tech have conducted research showing that *L. osakensis* is unlikely to wreak havoc on the park's ecosystem. Those findings, and the fact that the beetle is a prey-specific predator whose life cycle

Saving Goliath

Can a tiny beetle rescue Shenandoah's mighty hemlocks?

MORE THAN 20 YEARS AGO, A VISITOR FROM ASIA showed up in Shenandoah National Park. The new arrival was small and unassuming. In fact, if it weren't for little white tufts visible on eastern hemlock needles, you'd have been hard-pressed to notice the newcomer. Then, the hemlock woolly adelgid got busy doing what it does best: literally sucking the life out of some of the park's most majestic trees.

is synchronized with that of the adelgid, convinced park biologists to give it a try.

“Some refer to it as playing God to a certain extent, so we had a lot of deliberate dialogue here in the park,” said Jim Schaberl, the park’s chief of natural and cultural resources. “We didn’t want to bring in something and then unintentionally cause harm.”

The hemlock woolly adelgid, which was first documented on the East Coast near Richmond, Virginia, in 1951, most likely caught a ride on nursery trees shipped from Japan. Since then, it has colonized much of the tree’s range from Georgia to Maine, including several national parks. Will Blozan, the president of the Eastern Native Tree Society, documented old-growth hemlocks in Great Smoky Mountains National Park a decade ago. Now, virtually all those hemlocks, including some 160-foot-tall giants, are dead. Located closer to the epicenter of the infestation, Shenandoah had even less time to react. The adelgid was first detected there around 1990, and in just a few years, it had torn through the entire park.

Nicknamed “the redwood of the East,” the eastern hemlock is a towering conifer prized for its ornamental value. Its bark was widely used for tanning leather, but the relatively poor quality of the wood limits its use to roofing, boxes, or paper pulp. Within Shenandoah’s ecosystem,

“Some refer to it as playing God to a certain extent, so we had a lot of deliberate dialogue here in the park.”

though, the hemlock is irreplaceable. Migratory warblers favor it for their nests, and it provides valuable shade to residents of the park’s streams such as brook trout, which need cool water.

“That’s why we fight so hard to retain some level of those hemlocks out there,” said park biologist Rolf Gubler, who’s also a forest pest manager.

The insecticide Shenandoah staff have been applying is similar in chemical structure to nicotine. It’s effective, but introducing the beetle is an appealing option because it would diminish the need for chemicals, and if the population takes hold, it would be more efficient than repeatedly treating infested trees one by one.

Until a decade ago, nobody even knew of *L. osakensis*’ existence. The hemlock woolly adelgid wasn’t a problem in Japan, so nobody there was looking for a solution. It was only after the pest triggered an epidemic in the United States that researchers here teamed up with their Japanese counterparts to survey the adelgid’s native territory. After the predatory beetle was identified in 2005, it was shipped to the United

States, where scientists studied its biology and assessed the risk of releasing it into the wild to control the adelgid.

The first releases occurred in the region in 2012, and last November, Shenandoah biologists set 500 beetles free in a hemlock grove in the southern section of the park. The trees were suitable because they were contiguous, had never been treated with insecticide, and were relatively healthy while supporting enough adelgids to feed the predators. The beetles are difficult to raise in captivity, so scientists carefully select locations where they can potentially save the most trees. The hope is that they will reproduce in a natural environment and later, can be harvested and dispatched elsewhere.

The future of the eastern hemlock is still uncertain. The predatory beetles alone can’t stop the adelgid infestation until they develop large and sustainable populations, but the combined use of insecticide and the pests’ natural predators could give the trees breathing space until they develop some natural resistance. There is hope in the tree’s history. Several thousand years ago, hemlock pollen virtually disappeared from the fossil record when the East Coast experienced a prolonged period of drought. The hemlock later returned in numbers.

“They’ll be back,” Blozan said. “It’s a really patient tree.” **NP**

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

THE LATEST SCOURGE

The adelgid (attacking a hemlock at left) has company. The emerald ash borer, another tree killer from Asia, has been moving swiftly through Shenandoah. To protect ash trees from further infestation, park authorities have restricted the use of firewood gathered or bought outside the park.



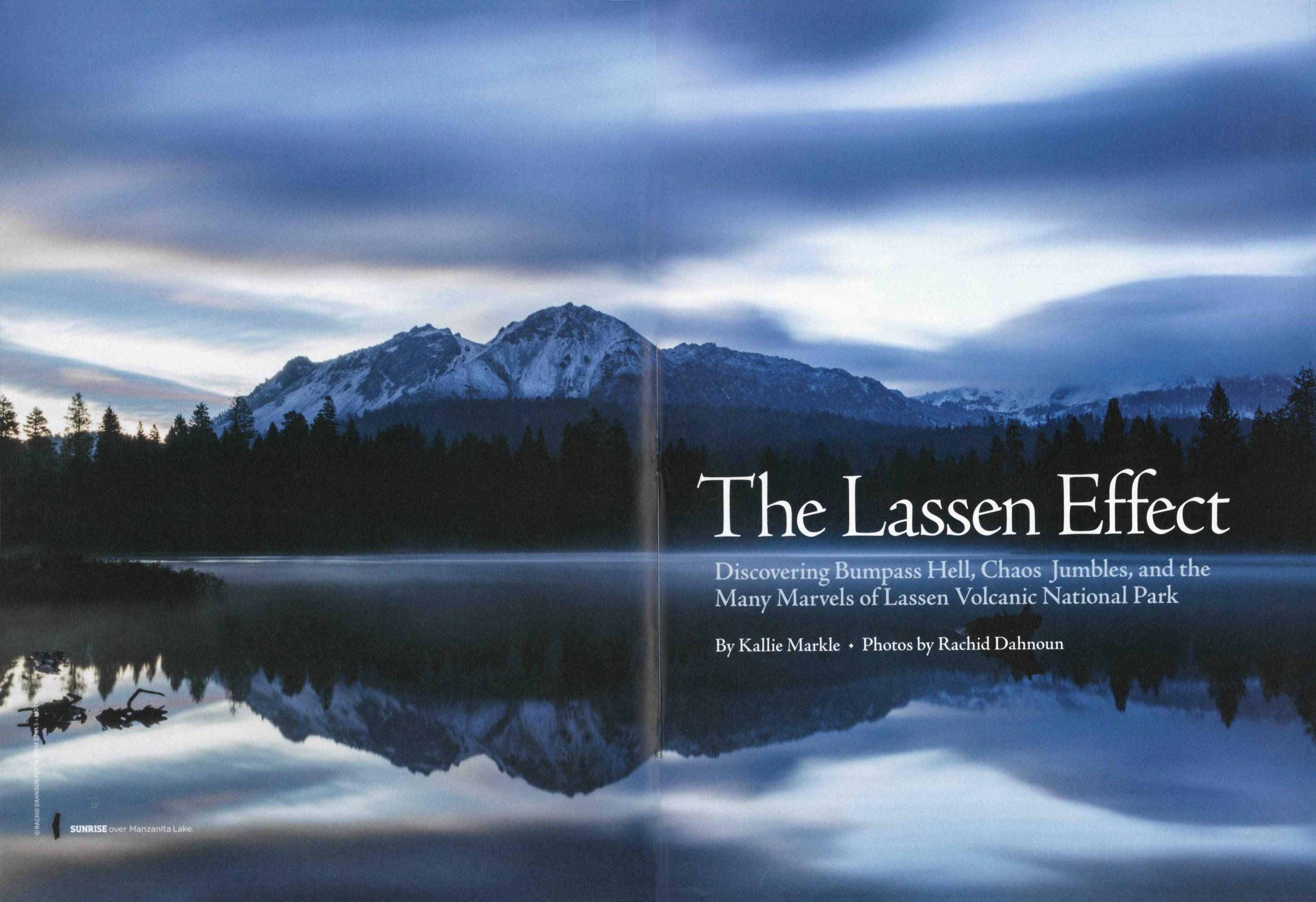
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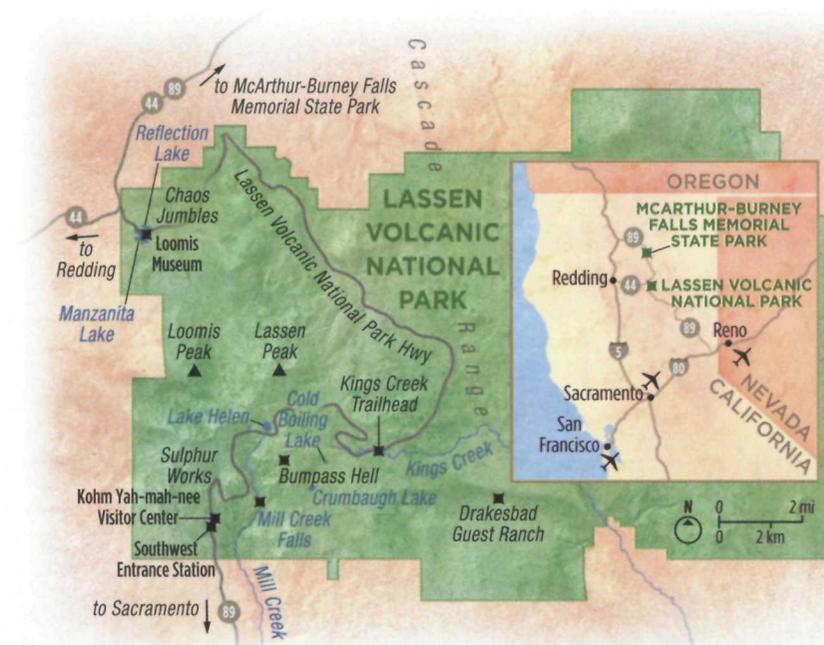
The Lassen Effect

Discovering Bumpass Hell, Chaos Jumbles, and the
Many Marvels of Lassen Volcanic National Park

By Kallie Markle • Photos by Rachid Dahnoun



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© KAREN MINOT

HIKERS LINGER

at the summit of Lassen Peak (left). Below: A man checks his altimeter watch near the summit, which is 10,457 feet high.



neatly over tree roots, wove smartly around rocks, bounded over gullies, and, I'd like to imagine, shocked and awed chipmunks, frozen in mid-scurry.

I was running, and no one was chasing me ... I was trotting up hills, and I was smiling. This, I realized, was The Lassen Effect: Exploration creates fissures in our crusts, allowing forces to surface—sometimes unexpectedly—and change our shape and perspectives.

I try not to run, if at all possible. I'd love to say that I'm signed up for every 10K in the state and my weekend doesn't start until I get a few miles in my Nikes, but in all honesty, running has always ranked near dental treatments for me. Yet here I was, in Lassen Volcanic National Park, trying to figure out how to cover a lot of ground in a short period, and I couldn't shake the nagging idea that I should run. Naturally, I fought it. "Sacrilege!" I argued to myself. "I should be strolling meditatively through this natural wonderland." I imagined the ghost of John Muir nodding in solemn approval.

"So then walk there, and run back," my intrepid other self responded.

I'd reached one of those steep slopes where regular trail rules didn't quite apply: Walking down slowly could have led to a messy fall, but giving in to gravity and galloping down would allow for safe passage. Counterintuitively, I sped up and ran down the slope, and then when the ground rose, I zipped up the incline and kept running, even after the initial momentum wore off. I hopped

schedules didn't line up with mine, so I took most of my trips alone, which made it easier to convince myself to run and seemed appropriate for Lassen's uncrowded, contemplative atmosphere.

Take the first trail I was on when I quit fighting and started, well, flighting: The Mill Creek Falls trailhead is visible from the park's main parking area, isn't strenuous (yours truly was running on it, after all), and offers views of mountains, a canyon, and of course, Mill Creek Falls itself. Though it was a beautiful summer Saturday, I saw more deer than humans and almost literally ran into a doe and her fawns grazing along the creek. (Apparently, learning to trail run also means learning to brake suddenly for nonplussed wildlife.)

The trail took me past a hillside covered in blooming mule's ears rattling so gently in the breeze, it sounded like they were purring. It wound along East Sulphur Creek, bowing and climbing through a red fir forest dotted with chipmunks. Later that day, a guided walk at Lily Pond Trail alternated between fairy tale forest landscapes—complete with the promised pond and Reflection Lake—and arrestingly barren swaths of land locked in the moment they were swept over by a rock avalanche.

I had started that first trip with doubts. I wanted to be one of Lassen's ardent advocates, but deep down I wondered: Was there a reason Lassen didn't attract crowds or boast icon status? How had I gone for 7 years without visiting my backyard park, and why wasn't I able to scare up a companion? Was the park, perhaps, just nice but not actually awe-inspiring? By the end of the day, however, after I'd encountered cascading waterfalls, walked through a moonscape known as Chaos Jumbles, and discovered my own ability to run wild, my dubiousness was gone.

Lassen doesn't always sneak up on its fans like this—there are some famous aspects of this otherwise little-known park. It's one of the last sanctuaries of natural darkness in the country, drawing thousands to its Dark Sky Festival every August. It's also home

MOST PEOPLE don't just stumble upon Lassen Volcanic National Park. Tucked away in far northeastern California, the 106,372-acre park is a three-hour drive from the nearest major airport, and its two main entrances are 45 and 50 miles off the nearest interstate. Like some of the more famous parks in the West, Lassen offers sweeping grandeur and hydrothermal marvels, but it has only a fraction of the visitors and traffic, and none of the luxury hotels or bustling food courts that can be distracting for great outdoors purists. Its isolation and the no-frills set-up have engendered a fierce loyalty among its fans, who share a desire to keep their beautifully placid park exactly that.

I live down the hill in Redding, close enough to the park to take day trips there, a geographical bonus I had never managed to exploit. Then last summer, I decided to cash in on my proximity and chip away at the long list of park attractions. After hours of toggling between the park's website, recorded hotline, and a map I picked up in town, I had a list of things I didn't want to miss and knew I could manage in a handful of day trips. My friends'



The earth hisses and spits like an incensed housecat, burbles and blubbers comically, and steams enigmatically.

TRAVEL ESSENTIALS

Packing for Lassen varies by season. Most of the park is blanketed by snow from November to April (or longer), and the trail to Lassen Peak is a snowshoe-only adventure well into the spring and sometimes, into summer. During the off-season the safest bet is to bring your own snacks—amenities are scarce. Once it warms up (and also during holiday weekends in the winter), the cafe at the Kohm Yah-mah-nee Visitor Center offers local craft brews, ice cream, and semi-hearty fare that's easy to pack. As for gear, your ambition is your only limit: Paddleboards, fly rods, sleds, and more can all be put to good use around Lassen. If you want to stay a while, accommodations include camping cabins, seven campgrounds, and the rustic Drakesbad Guest Ranch. The backcountry is all natural—there are no services or facilities—so take everything you need with you. The major airports closest to the park are in Sacramento, 165 miles away, and Reno, 180 miles away.

aroma to the sci-fi spectacle around my feet. Bumpass Hell is largely devoid of plant life; magma sits six miles below the surface, and at various points, the earth hisses and spits like an incensed housecat, burbles and blubbers comically, and steams enigmatically. It felt like the masterminds of Disney had built a set using rubber molds and dry ice for theatrical effect. Large patches of chartreuse and saffron earth, disrupted by shockingly bright pools of ice blue, enhanced the sense of the unreal, but the occasional waves of sulfur fumes and the sight of the Cascade Range along the horizon always tugged me back to reality.

© RACHID DAHNOUN FOR TANDEM STILLS + MOTION

to more than 40 volcanoes. Every major type in the world is represented, including large shield volcanoes, like Hawaii's Mauna Loa, and composite volcanoes, like Vesuvius and Mount St. Helens. Cinder cones (which resemble anthills) and plug domes (wherein thick, sticky lava cools and builds up the mountain, layer by layer, eventually plugging its own hole) are also scattered throughout the park. Lassen Peak is one of the largest plug dome volcanoes in the world, and its most recent violent eruptions from 1914 to 1917, photographed by B.F. Loomis, captured the attention of the nation. Lassen was designated a national park in 1916, and

BUMPASS HELL TRAIL boardwalk snakes over a landscape of steaming fumaroles and boiling pools.

its Loomis Museum tells the tale of Loomis' race to get the shot before escaping the ensuing devastation.

On a microbial level, Lassen's hot springs are under close scrutiny by virologists and astrobiologists because of recently discovered bacteria and high-heat-loving microorganisms called extremophiles. How these life forms thrive in such intense conditions may offer insight into what types of life we might find on other planets. In colder sections of the park, the watermelon algae in Lassen's snowpack—named for their pink hue and sweet fragrance—are able to produce bright pigments called carotenoids, which protect them from solar radiation. Researchers are interested in how the algae's defensive compounds could be used to

treat certain illnesses and cancers.

The park has its banner tourist attractions, of course, and after my warm-up round, I was ready to see what else it offered. The most accessible was the Sulphur Works, which surround the park highway just beyond the Kohm Yah-mah-nee Visitor Center. A 180-degree bubbling mudpot, five feet across, gurgled away next to the sidewalk, while fumaroles across the road pumped steam into the breeze, as if someone was about to make a dramatic entrance. Farther into the park, the Bumpass Hell Trail boardwalk snakes over a curiously colored landscape of more steaming fumaroles and boiling pools. It smelled eggy, and not the freshly scrambled type, but my attention was quickly diverted from the

I tried to keep to my plan, but running back was tricky. Bumpass Hell is one of the more popular hikes, in part because its views of the southeast mountains are incredible. When I wasn't yielding to families and hikers, I was stopping in my tracks to take yet another picture of the peaks and folds spread out around me.

I had clearly come at the right time of year: June and July in Lassen are gorgeous. While the valley below bakes in triple-digit temperatures, Lassen maintains the feeling of spring, especially with its flowering lupine stretching all the way up to the subalpine reaches. Everything is blooming, there are still splashes of snow on the peaks, and the sun and mountain breezes play a mischievous game of "see how many times she'll put on and take off her sweater in a single hike."



THE VIEW of Painted Dunes and Fantastic Lava Beds from the top of Cinder Cone Volcano.

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After a morning going to Bumpass Hell and back, I lunched at the Lassen Cafe, enjoying a beer with my view from the patio, and decided I could use a lesson about all this blooming and beauty. I joined ranger Kathy Carlise on one of Lassen's guided wildflower walks, where she explained the secret to the success of the park's most prevalent flower: "The narrow lupine sends a message: 'Wanted! Burly bee with a mountaineering spirit!'" A buzzy chutzpah was especially necessary last year when California's drought robbed Lassen of its usual winter, triggered an early, dry spring, and shortened the flowers' lifespan. But Carlise didn't let

the lack of snowpack dispirit us. "With climate change and flowers," she said, "there will always be winners and losers." We focused on the winners—red pride of the mountain, cheerful ranger buttons, princess pine, and bog orchids—around a bucolic stretch of Hat Creek.

I returned to the park the next day, this time with my friend, Sarah, and we channeled our inner burly bees as we chased the lupine and whitebark pine up to Lassen Peak. The elevation gain starts immediately and doesn't let up, rising 1,957 feet in only 2.4 miles. The namesake trail provides the highest vantage point in the park and draws climbers for daytime and full-moon hikes. When timed

SIDE TRIP

If you haven't had your fill of mountain scenery, head north 40 miles to McArthur-Burney Falls Memorial State Park, where the towering waterfall wows visitors year-round. One hundred million gallons of water flow daily from underground springs, dropping 129 feet into a large pool. The city of Redding is an hour's drive down the hill. With mountains on three sides and two lakes, plus an interstate and a river cutting right through town, Redding is an outdoor recreation hub. It also boasts the Sundial Bridge, a cantilevered, glass-decked pedestrian bridge over the Sacramento River with a stunning white gnomon pointing skyward at a 42-degree angle. The bridge links loops of the Sacramento River National Recreation Trail, which takes visitors along the river to the tops of bluffs, to Shasta Lake, and to Redding's other engineering marvel: Shasta Dam.



LASSEN IS one of the last sanctuaries of natural darkness in the country. Here, stargazing at Lake Helen.

with the sunrise, night hikes offer a spectacular show while slashing your risk of sunburn, as shade on the trail peters out early on. Despite my recent spate of hiking and trail running, I still felt like a novice, so we stuck with a more conventional, mid-morning hike. As we switched our way up the steep mountain, Lake Helen lingered below; it's a deep, vibrant blue and a near-perfect oval, like a strangely placed swimming pool in the basin of volcanoes.

Sarah is a botanist, though her expertise wasn't particularly useful: We were hilariously short on plants to appraise along the mostly barren trail. But her companionship was a nice change after my last few solo visits, and two hours and roughly 132 water breaks later, we reached the top. There, a ranger was relating the volcano's history, closing his lecture with the tale of the man known only as Ishi. The last surviving member of the Yahi, a group of Native Americans systematically wiped out by gold rush settlers, Ishi was starved out of his native home in the foothills of Lassen Peak and taken to live, and be studied, at the University of California, San Francisco. "Ishi returned to

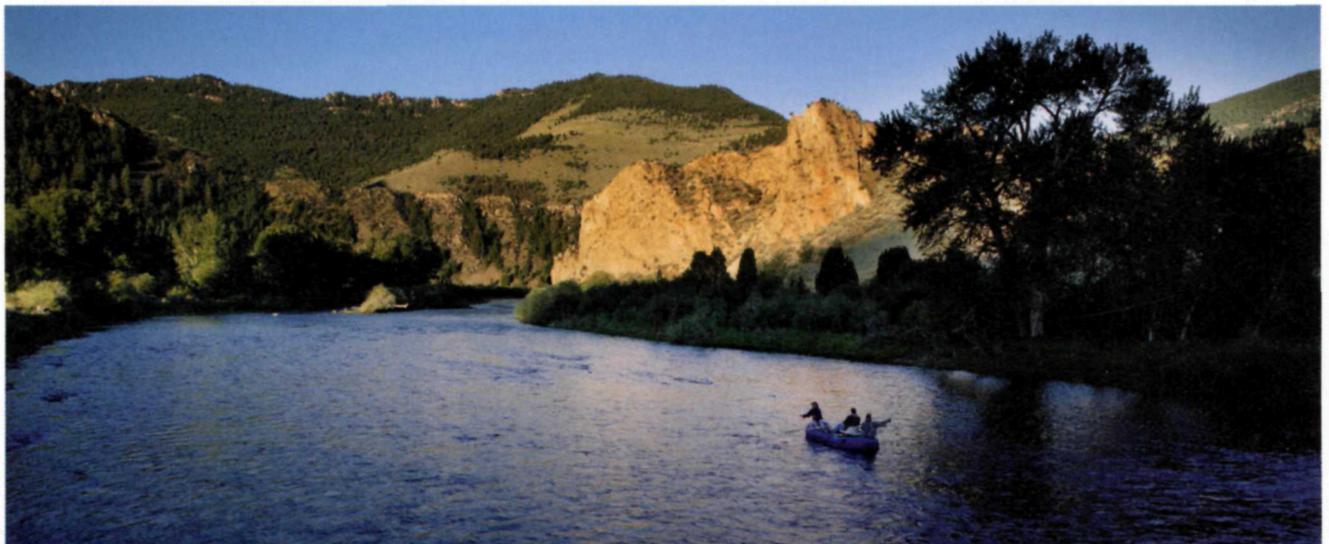
I scanned the landscape to the horizon, took a few deep breaths, and started back down.

the mountain one last time," the ranger explained, "and just after he left it forever, it erupted." Hearing the story of the peak, told atop the peak, was stirring. I scanned the landscape to the horizon, considered the beauty and intensity of it all, took a few deep breaths, and started back down.

On my last weekend in Lassen, I headed to Kings Creek Meadow, eventually ending up on a trail that wound through the woods to Cold Boiling Lake. Even after seeing the peculiarities at Bumpass Hell and the Sulphur Works, it was a head-scratcher to observe perfectly cool water boiling away at the edge of the woods (the result, it turns out, of carbon dioxide escaping from inside the earth). Curious about what other thermaltechnics lay ahead, I walked on toward Crumbaugh Lake. The trail was only lightly worn, unmarked enough that I could squint and pretend that I, newly minted trail runner, was confidently forging a new path through sun-dappled wood.

When the trees gave way to a looking-glass lake rimmed by mountains and a brilliant green meadow with white wildflowers flung like so much powdered sugar, I couldn't help myself: I ran toward it.

KALLIE MARKLE is a writer living in far northern California. **RACHID DAHNOUN** is an outdoor adventure photographer whose work has been featured in *National Geographic*, *Travel and Leisure*, *The New York Times*, and many other publications.



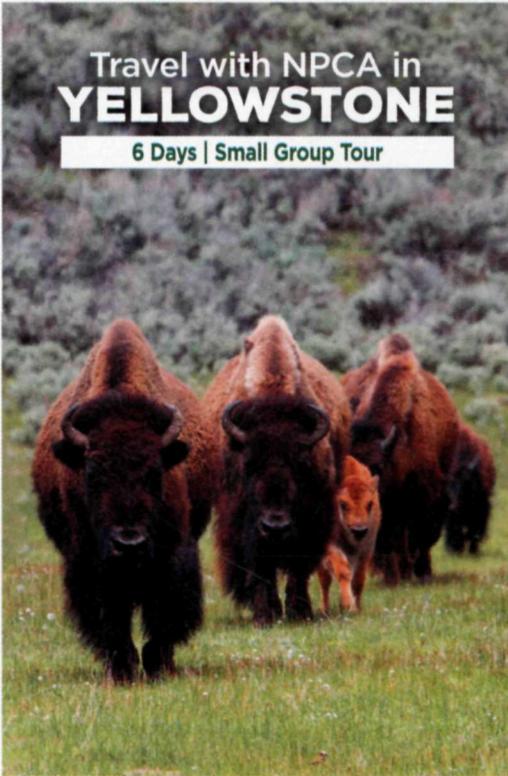
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A decade after the emergence of white-nose syndrome, bats in national parks and around the country continue to die. Can researchers save them before it's too late? BY DORIAN FOX

THE TROUBLE WITH BATS

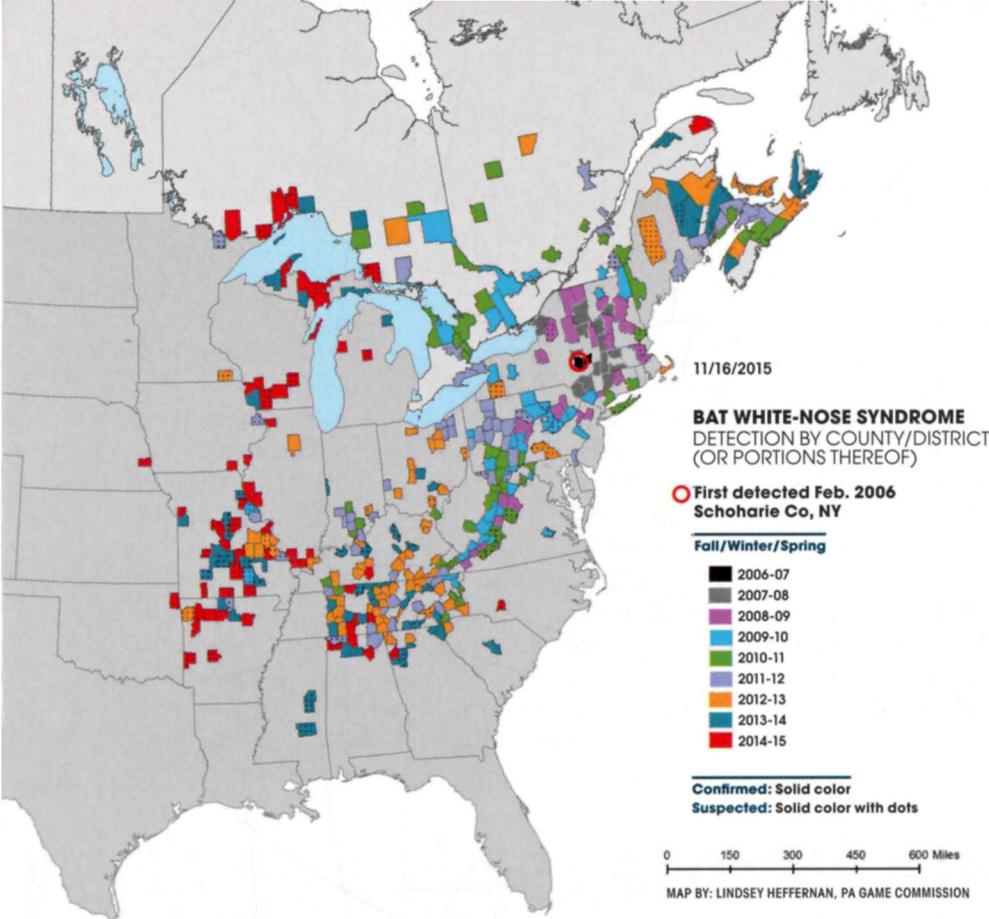
We're driving along the northern curve of Acadia's Park Loop Road, a mile from the Maine coast, under a canopy of maples and aspens just past peak color—riotous reds and yellows—when the pinging begins. First a faint *bleep*, *bleep*. Then louder.

"There," says Bruce Connery, the park's wildlife biologist. "You hear it?"

The antenna mounted on the van's roof has picked up a signal. We're close. Connery pulls over and a staff member, Chris Heilakka, gets out with a handheld, three-wand antenna and points it toward the hillside, swiveling his wrist. More bleeps. We start up the grade, stumbling over birch logs and lichen-slick stones to

reach a bedrock outcropping, a cluster of granite boulders formed by the pressure of ancient glaciers.

It's late October, the end of mating season for bats. We're tracking a female eastern small-footed bat, one of the *Myotis* ("mouse-eared") species hit hardest by white-nose syndrome, or WNS, the devastating fungal disease that's killed an estimated 6 million bats in the United States and Canada over the last decade. Two weeks earlier, this bat flew into a giant net, big enough to stretch between football goalposts. It was erected by a team from the Biodiversity Research Institute, a Portland-based ecological nonprofit that's been working with Acadia National Park staff to study bats since 2009. After affixing a pea-sized transmitter to her body, the team released the bat, as they've done with around 100 others. By following them, the research-



FOR MILLIONS OF BATS AFFLICTED WITH WHITE-NOSE SYNDROME SINCE ITS APPEARANCE IN NORTH AMERICA IN 2006, WAKING FROM HIBERNATION HAS MEANT DEATH.

ers are learning about how bats use the park: where they roost, spend winters, and raise their pups. Such work is now part of a nationwide effort to survey bats, which, in affected areas, are still dying. Conservationists hope the collected data will create a fuller picture of the disease's impact and pathology, leading scientists toward ways of slowing its spread, or even a cure.

Heilakka aims at a fissure; the bleeps intensify. Bingo. Nestled deep in the rocks, our bat is asleep, the transmitter's four-inch antenna curled around her like a tiny steel tail. I ask about extracting her. Connery shakes his head. It's so late in the season, she could be hibernating. And for millions of bats afflicted with white-nose syndrome since its appearance in North America in 2006, waking from hibernation has meant death.

Connery knows this firsthand. He remembers occasionally finding dehydrated, starved bats strewn on the snow, after the disease swept into Maine six years ago. In winter of 2011, he started getting reports of bats crawling around outside or day flying, and by the following winter mortality rates in the park had clearly spiked. "I found dying or dead bats in a few dozen areas of the park and on adjacent lands," he said. Summer mist-net catches had plummeted, too, and many of the captured bats had scars on their wings from the fungus, a white fuzz that invades soft tissues.

By then, scientists had figured out that the cold-loving fungus, *Pseudogymnoascus destructans*, targets bats during hibernation, when their immune systems are repressed. Body

THE PENNSYLVANIA GAME COMMISSION

has documented the spread of white-nose syndrome since its discovery in upstate New York a decade ago. The fungus has now been confirmed in 30 states and 11 national parks.

temperatures of wintering bats can drop to as low as 53 degrees Fahrenheit, and since they often huddle in large groups, the disease can spread quickly, wiping out entire colonies. But the fungus, though deadly, doesn't kill bats directly. Rather, it stresses them and speeds their metabolism, so they awaken and burn precious fat reserves. Desperate for energy, the bats leave hibernacula to forage outside, where, facing harsh conditions and meager food sources, many die of starvation or exhaustion.

Scientists think the fungus arrived in the United States from Europe, after crossing the Atlantic on the clothing and gear of spelunkers or other recreational cavers. (European bats are genetically resistant to white-nose syndrome, having likely coevolved with the fungus over centuries.) Since the disease's discovery in upstate New York, its spread has been constant but erratic, making it tough to predict and study. "In 2009 and 2010, white-nose started spreading in places nobody expected," Connery explained. "It was moving 300 miles in a jump, and it was like, how did that happen?"

Color-coded maps from the Pennsylvania Game Commission (above) bear this out: from its origin point near Albany, white-nose syndrome blooms in all directions, sometimes leaping over half a state or across a great lake in a single year. Rogue

outbreaks appear like errant pixels. Now confirmed in 30 states and 11 national parks, the fungus has been detected as far as Nebraska, and its westward sprawl shows no signs of stopping.

Across New England, the toll has been huge. Once robust populations of little brown bats have fallen by as much as 90 percent, and the northern long-eared bat is now federally listed as threatened. In response, conservation groups have petitioned for these species, along with the already rare eastern small-footed bat, to be given endangered status. The future of these aerial hunters can look even grimmer in light of additional threats including pollutants, habitat loss driven by construction and gas drilling, and wind turbines, which are particularly deadly to migratory bats.

“In Maine right now it’s not good,” said David Yates, mammal program director at Biodiversity Research Institute and a lead researcher on the Acadia team. “I spent 11 nights mist-netting in Maine, and I caught five bats the whole time. Pre-white-nose, I would usually catch 20 to 50 bats a night. It’s awful.”

In other parts of the country, especially regions with caves, tunnels, or abandoned mines, dead bats around a single large hibernaculum can number in the thousands. The WNS crisis has prompted a cooperative effort by ecology groups, university-backed researchers, and government agencies to better understand the fungus and take measures to curb its spread and potential transmission by humans. At Delaware Water Gap National Recreation Area and Great Smoky Mountains National Park, for example, all caves have been closed to the public since 2009. In Mammoth Cave National Park in Kentucky, stricter decontamination procedures are in place for visitors and cavers, serving as a model for other bat havens like Carlsbad Caverns in New Mexico, where the fungus has yet to strike. In many forests, new regulations ban commercial cutting in areas where maternity colonies (groups of female bats raising pups communally) are thought to exist. “The Park Service is taking a multi-pronged approach to manage WNS,” said Margaret Wild, the agency’s chief veterinarian. “Individual parks are monitoring

THE LITTLE BROWN BAT is one of the species most affected by white-nose syndrome. Some populations of the insectivore bat have fallen by as much as 90 percent.



© MICHAEL DURHAM



BATS INFECTED with white-nose syndrome. The fungus can spread quickly in large bat colonies, which can lose thousands of bats to the disease.

bats, educating visitors on the importance of bats and how they can prevent the spread of the disease, and putting up gates to protect bats in mines or caves.”

HE THINKS THE SLUGGISH NATIONAL RESPONSE IS THE RESULT OF A PUBLIC RELATIONS PROBLEM.

This year the National Park Service committed \$3 million to WNS-related projects, and the U.S. Fish and Wildlife Service has pledged \$2.5 million.

In Acadia, such grants have been critical, allowing for more mist-netting hours and the purchase of acoustic monitors to capture high-frequency bat calls, which are recorded nightly and fed through software that can identify species by their unique sounds. This equipment, used also to record songs of birds and whales, has vastly improved the staff’s understanding of feeding hotspots and population dips in the park.

Although the recent funding is encouraging, even millions

can quickly disappear in the midst of an epidemic (the Park Service alone has 43 ongoing bat projects, across 40 parks). Many bat advocates think that the government’s reaction to the WNS crisis has been too measured, and far too slow.

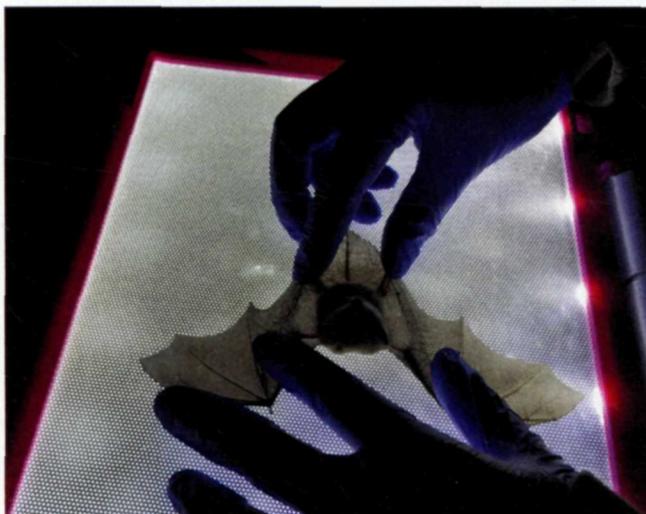
“Abundant, non-game species? There’s no money for that,” Yates said. He thinks the sluggish national response is the result of a public relations problem: Bats are widely feared and misunderstood. They seize our imaginations in haunted houses, comic books, and films, but they don’t exactly tug people’s heartstrings. “It’s not a polar bear,” he said. “It’s not a charismatic animal that brings that emotion.”

The irony is that bats may do more for ecosystems and economies than photogenic, high-profile predators like cheetahs and polar bears ever could. Along with pollinating plants and dispersing seeds, bats consume hundreds of tons of insects. According to a 2011 study published in the journal *Science*, the natural pest-control bats provide saves the U.S. agricultural

industry up to \$53 billion each year. “Since they eat thousands of insects every night, if you take that out of the picture, then suddenly something’s changing,” Connery said. “You may not sense it right away, but there’s got to be a ripple effect there.” As bat numbers dwindle, farmers may be forced to use more pesticides, upping our intake of these chemicals.

Spruce budworm, an insect scourge of northeastern forests eaten largely by bats, could decimate Maine’s timber industry. Fewer bats could also result in less obvious environmental effects such as a higher prevalence of disease-carrying mosquitoes or the loss of rare cave-dwelling organisms that depend on nutrients in bat guano.

So far, the Acadia team has not detected major ecological shifts due to bat losses; the park’s natural systems appear stable. But its research has yielded other discoveries. Most surprising is that many of the park’s bats, previously thought to migrate



A RESEARCHER at Acadia checks an eastern small-footed bat for signs of damage caused by WNS.

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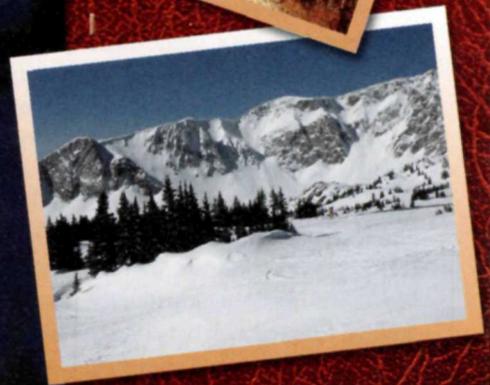
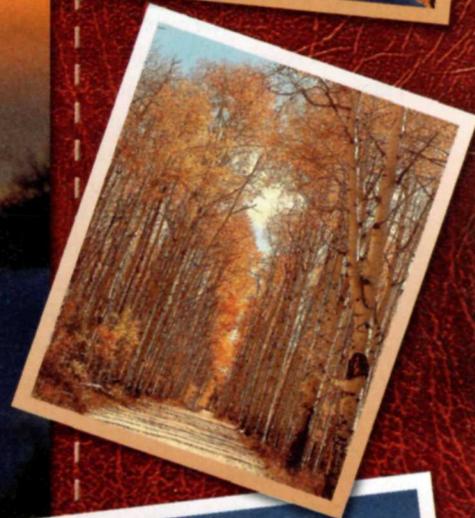
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inland during the winter, probably don't. Acadia includes 47,000 acres of protected marshland, spruce-fir and hardwood forests, glacially sculpted mountains, cobble beaches, and 45 miles of broken-stone carriage roads. But the park lacks one feature scientists assumed was essential for hibernating bats: caves. In recent years, the Biodiversity Research Institute team has used airplanes equipped with receivers to locate marked bats from the air. At first, the plan was to pursue the bats to their distant winter hideaways. Instead, they found themselves circling Mount Desert Island. "We were going to follow them on their migration path," Yates said. "But they never left."

Some bats, it seems, spend winters in niches in the park's rocky scree and talus slopes, hibernating alone or in small groups. Tim Divoll, a former Acadia researcher now doing bat work at Indiana State University's Center for Bat Research, Outreach, and Conservation, said this behavior might actually help bats avoid infection. "If bats in Acadia are truly roosting by themselves in those slopes, it probably wouldn't be a good place for the fungus to grow," he said. While losses in the park have already been great, this could improve the chances of Acadia's bat populations rebounding. Since the fungus is most destructive to large colonies in caves, bats that have adapted to wintering in tiny, "non-traditional" hibernacula may have a better shot at staying healthy, mating, and recovering their species.

Though he is focusing on the Indiana bat, one of the country's most endangered *Myotis* species, Divoll sees mild signs of hope. The leap from detection of the fungus to major declines in summer populations took a full year longer in Indiana than in Acadia, for example, which may suggest the contagion is encountering resistance, either from bat antibodies or other environmental factors like weather patterns or topography. "Each year the disease's footprint grows, but it seems to grow slower," he said. He notes that in warmer climates, afflicted bats appear to have lower mortality rates. Despite the odds, some bats are actually surviving, he said.

Some conservationists are developing new tools for fighting, or even curing, white-nose syndrome. For several years, researchers at Georgia State University have worked with the U.S. Forest Service to develop a treatment for WNS. Common soil-dwelling bacteria found to delay ripening of bananas were turned on the fungus, with promising results. In May 2015, successfully treated bats were released into the wild in Kentucky and Missouri. Encouraging research is also under way at the University of California, Santa Cruz, where scientists have isolated antifungal bacteria found naturally on the skin of bats and applied them to sick bats in a concentrated spray. Though not ready for large-scale deployment in caves, these tactics eventually may allow more infected bats to survive winters and fight off the fungus on their own, as their body temperatures rise.

DeeAnn Reeder, a biology professor at Bucknell University who is at the forefront of WNS research, believes the key to cracking the disease may lie in genes of bats that have survived. "The remnant populations appear to be stabilizing," she said. "It's possible they were the lucky ones, but I don't think that's the case.



BATS FLYING near Carlsbad Caverns in New Mexico. The park has enforced new policies and procedures for visitors because of white-nose syndrome, which has not yet reached the caves there.

They've likely seen exposure to WNS, but have survived and are persisting. So what makes them special?" Her team has theorized that these bats may respond less aggressively to infection, helping them conserve winter energy. "We suspect the surviving bats have behavioral and physiological differences in how they deal with hibernation," she said. But even as understanding of WNS deepens, Reeder emphasizes responsible damage control over trying to conquer nature. "You can't eliminate a pathogen like WNS. The goal is to manage and mitigate the disease."

When it comes to Acadia's bats, Connery is cautiously optimistic. "I think we've made good strides," he said. "In general, we've been able to take some preventive, precautionary steps that are giving the bats a chance." One such step has been postponing cutting or forestry projects in bat-rich areas during the summer months. Protecting the park's bats is especially critical now, he said, because he's also seen evidence that populations could be stabilizing: While mist-net yields in summer 2015 were still pitifully low, virtually none of the captured bats showed scarring or other signs of the disease. "We're seeing individuals without exposure to WNS. It's encouraging," he said. The remaining bats could be successfully avoiding the disease, or they could be genetically and behaviorally resistant to the fungus—as Reeder's research may suggest—or both.

In 2016, the biggest challenge will be to protect bats roosting in trees and park structures as maintenance crews ready Acadia

for the 100th anniversary of both the park and the Park Service this summer. The centennial celebration could boost the park's 2 million-plus annual visitors to even higher numbers, and Connery said striking a balance between accommodating crowds and bat conservation may prove tricky. Renovations on the park's 50-year-old visitor center were delayed earlier this year, for instance, when bats were found roosting in the building's cedar shingles. Meanwhile, as public awareness of white-nose syndrome grows, he and his staff hope more people will see bats for what they are: fascinating, highly evolved creatures that provide invaluable natural services and represent an apex of biodiversity. One in five mammals on the planet is a bat.

And the nocturnal world of bats also offers a strange beauty, according to Yates, who used to research songbirds and loons. "Bats are the birds of the night," he said. "Just like when we wake up in the morning and the birds are singing and it's loud and the forest is alive." Each night, just beyond the range of our perception, a mysterious, ultrasonic chorus fills the sky. "They're singing and they're calling and they're echolocating," he said. "But we just can't hear them."

DORIAN FOX is a writer and freelance editor whose essays, stories, and articles have appeared in various literary journals and other publications. He lives in Boston and teaches writing at Grub Street.

NPCA@WORK

Are endangered bats in Arkansas facing an additional threat ... from pigs? Or more precisely, are bats that are already battling white-nose syndrome now further jeopardized by the waste of 6,500 pigs housed in two industrial swine production barns built along Big Creek, a major tributary of the Buffalo National River? The pig farm operators say they safely dispose of millions of gallons of hog waste. But that waste is stored in two one-acre lagoons, then sprayed onto fields with very little topsoil and an underlayer of porous karst, a landscape including soluble rock, caves, sinkholes, and springs. NPCA and its allies are not convinced that is an environmentally sound practice, and neither is Van Brahana, a retired University of Arkansas professor who conducted a dye-tracing study to see just where groundwater goes. He found that some of the dye he injected in a former well on private property near the concentrated animal feeding operations, or CAFOs (as the barns are called), traveled five miles downstream to a cave that's a hibernaculum for gray bats, one of three endangered bat species in the area. Though more research is necessary to find out if polluted water could harm bats, the new information has bolstered conservationists' belief that contaminated water could seep into the area's karst and end up in underground streams, the river, and caves in the national park site. NPCA has asked the U.S. Department of Agriculture and the Small Business Administration to complete a full-fledged environmental impact statement. Advocates also hope that the state of Arkansas will look at Park Service data that show a change in the water quality at Big Creek. "The Buffalo is America's first national river," said Emily Jones, NPCA's senior program manager for the Southeast Region. "We have to make sure that the river and the bats that inhabit this unique ecosystem are protected."

—RM



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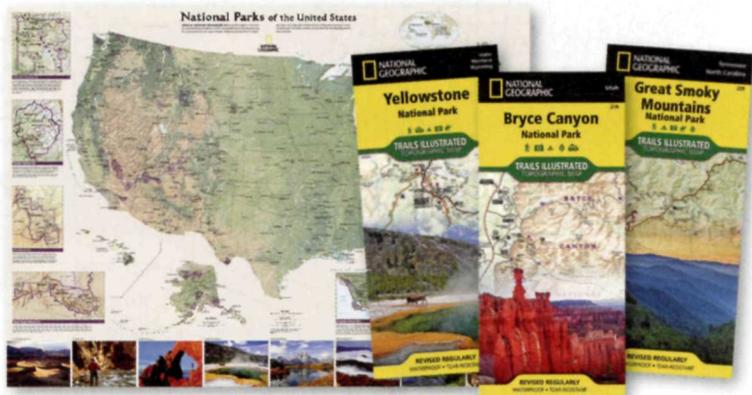
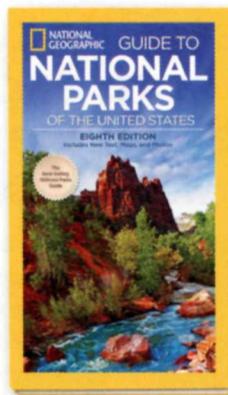
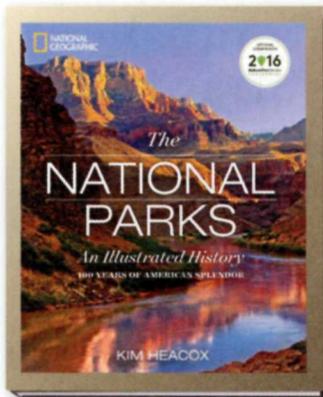
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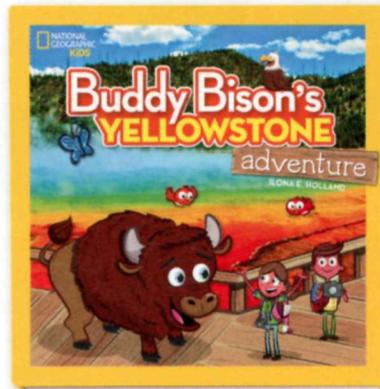
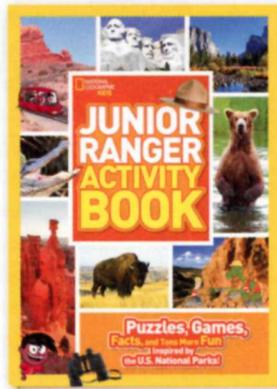
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THEN

Out with unchecked looting and feeding the bears. In with prescribed fire and zero waste. What a difference 100 years make. As the National Park Service celebrates its centennial, Kate Siber explores how this bold experiment in conservation has evolved over the century.

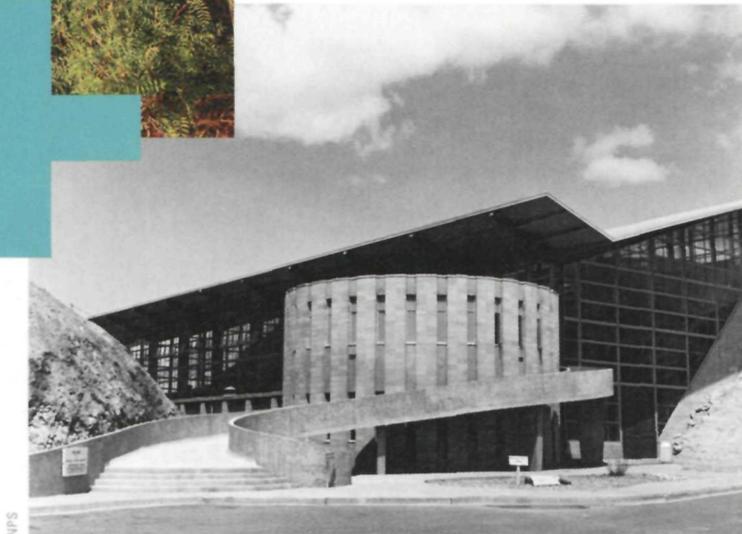
NOW



NOW MESA VERDE NATIONAL PARK in Colorado opened its new visitor and research center in 2013.



THEN QUARRY VISITOR CENTER, a Mission 66 project at Dinosaur National Monument, was completed in 1958.

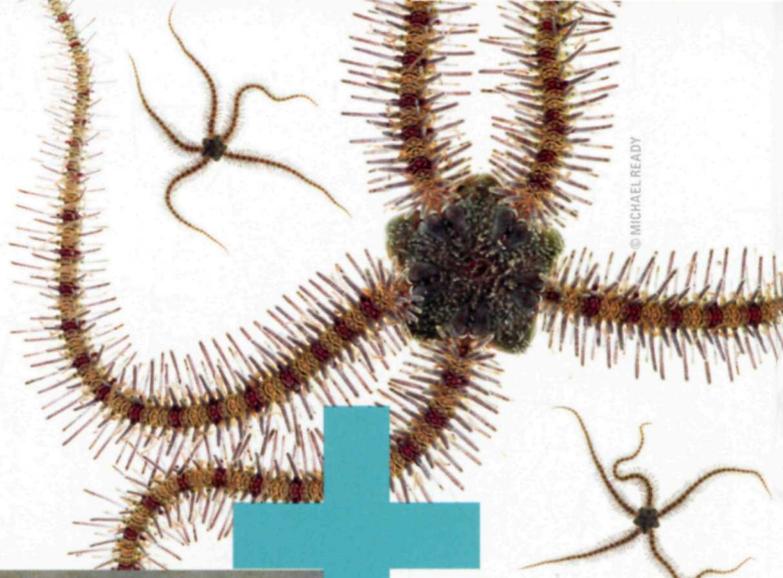


THE VISITOR CENTER GROWS UP

THEN If you visited a national park in the late 19th or early 20th century, you wouldn't have found a well-ordered visitor center; more likely, you would have trudged through a museum clogged with dusty artifacts and taxidermied animals. "The concept was more like what you would see at a natural history museum," said Ray Todd, director of the Denver Service Center, the central design and construction office for the National Park Service. After World War II, visitors flocked to the parks and staff scrambled to keep up with their needs and questions. In response to the influx, in the mid-1950s, the Park Service initiated Mission 66, a decade-long, billion-dollar program that vastly improved buildings and gave birth to a shiny new idea: the visitor center. These new buildings offered visitors one-stop shops to get oriented, plan trips, buy supplies, and learn about the park's resources. Gone was the modest, rustic architecture of the 1930s. Park sites such as Grand Canyon, Dinosaur, and Death Valley embraced a new mid-century modern design aesthetic that reflected the Park Service's growing international reputation.

NOW In recent years, as Mission 66 visitor centers have been renovated or replaced, the Park Service has reassessed the need again. "There's been a real focus on making visitor centers more sustainable and accessible—not only physically but programmatically," Todd said. The newly renovated 16,000-square-foot White House visitor center, for example, has tactile exhibits for blind visitors and closed-captioned videos for the deaf. Exhibits feature efficient lighting, and bathroom facilities have low-flow fixtures. In addition, visitor centers are no longer plopped down right next to the main attractions. Now, architects site them more inconspicuously to blend in with the environment. "In all the work that we do, we try to be sensitive to the resources of the park and to embody our responsibility to be good stewards," Todd said. "It becomes part of the story we tell."

NOW A BANDED BRITTLE STAR
photographed by Michael Ready, who
was an artist-in-residence at Cabrillo
National Monument in 2015.



© MICHAEL READY



THEN PAINTER
THOMAS MORAN'S
"The Grand Canyon
of the Yellowstone,"
1872.

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ART IN THE PARKS

THEN In a letter published in the *New York Daily Commercial Advertiser* in the early 1830s, artist George Catlin advocated for "a nation's park, containing man and beast, in all the wild and freshness of their nature's beauty," effectively becoming the first person to coin the national park idea. Other artists followed in his footsteps, many instinctively understanding that to be loved and protected, natural wonders had to be known. In the 19th century, the grand landscape paintings of artists such as Albert Bierstadt and Thomas Moran helped popularize Western wonders, and in the 20th century, photographs by Ansel Adams and others helped people see these wild landscapes as uniquely American attractions that rivaled the treasures of Europe.

NOW Between 50 and 60 national park sites welcome artists-in-residence every year, from painters and sculptors to videographers and textile artists. And around the country, park employees host a range of art programs, organizing exhibitions or bringing in students and community members to participate in art projects. "We don't think of it instantly, but art is a way of recreating and using the resource," said Linda Cook, superintendent at Weir Farm National Historic Site, the only national park devoted to American painting. "There's no question that being in nature and large open spaces is inspiring for the artist in all of us. That's a fundamental human response."

POACHERS, VANDALS, THIEVES, AND HOOLIGANS

THEN When Yellowstone was founded, in 1872, Congress didn't appropriate funds to pay the superintendent, protect the resources, or develop tourist lodging. The result was a free-for-all. For more than five years, visitors shot elk and deer and fished the streams to oblivion. Captain William Ludlow, the leader of an 1875 scientific expedition to Yellowstone, wrote that people were "prowling about with shovel and ax, chopping and hacking and prying up great pieces of the most ornamental work they could find." In 1883, after a series of Yellowstone superintendents failed to stop the chaos, the secretary of the Interior requested that the military take over. They succeeded in slowing the poaching and vandalism in Yellowstone as well as Yosemite and Sequoia.

NOW Today, cases of poaching and vandalism are much rarer, but they still exist in different forms. Poachers filch ferns and mushrooms from parks in the Pacific Northwest, old and rare cacti from

the Southwest, ginseng plants in the mountainous Southeast, and burls from redwood trees in California. And vandals frequently deface historic structures and objects, such as Civil War cannons. Fortunately, the Park Service now has a nationwide law-enforcement arm to combat such problems, and the worst crimes make headlines. Last fall, the host of a hunting show, *The Syndicate*, and several other hunters were charged with poaching dozens of big-game animals, including grizzlies, caribou, and Dall sheep, in Noatak National Preserve. In 2014, a self-described artist defaced rocks at Crater Lake, Death Valley, Zion, and Canyonlands and was quickly caught after she posted her "artwork" online. "One of the elements of social media is people feel much more free—and sometimes that's not to their benefit," said Charles Cuvelier, chief of law enforcement, security, and emergency services for the Park Service. "I don't think people appreciate the fact that public display of their actions can get them in trouble."

THEN U.S. ARMY OFFICERS in Yellowstone around 1894 posing with buffalo heads taken from a poacher.



NPS, YELLOWSTONE NATIONAL PARK



© AP PHOTO/J. SCOTT APPLEWHITE

NOW A PARK POLICE OFFICER standing guard after a vandal splattered green paint on the Lincoln Memorial on the National Mall in 2013.



NOW

A FIREFIGHTER monitors a back-burning operation intended to help contain the so-called Rough Fire of 2015, which burned more than 150,000 acres in and around Sequoia and Kings Canyon National Parks.

© MAX WHITTAKER

GOING UP IN FLAMES

THEN In August 1910, a dry summer and vicious winds fueled wildfires that burned 3 million acres of forest in Washington, Idaho, and Montana. The fire burned so hot it created tornado-like winds, pulling trees up from their roots and turning them into exploding firecrackers. Whole communities were incinerated, 86 people perished, and soot darkened the skies as far as New York. “It would have been just terrifying to be in that situation,” said Tina Boehle, fire communication and education specialist for the Park Service Division of Fire and Aviation, “and it lived on in the psyche of Westerners.” The nascent Forest Service, largely founded to facilitate logging, adopted a policy of fire suppression—“it was put it out fast, put it out small so it couldn’t get large,” said Boehle, and the Park Service followed that lead. But even as early as the 1920s, some leaders in the agency started to question the policy. In Sequoia National Park, the understory grew so thick it obscured the great trees, and one superintendent even experimented with prescribed fire, flouting the guidelines. Meanwhile, scientists were discovering that fire is a critical element in ecosystem health. Ultimately, the policy changed and park administrators were permitted to manage fires in a more nuanced way, even allowing them to burn when appropriate. In 1958, the

first approved prescribed fire burned in Everglades National Park.

NOW Even though federal agencies changed their fire management policies, decades of suppression dramatically altered the composition of the nation’s forests. “You can see a direct correlation with past fire suppression and current conditions,” said Tom Ribe, author of *Inferno by Committee: A History of the Cerro Grande (Los Alamos) Fire, America’s Worst Prescribed Fire Disaster*. Many forests are overgrown with small trees, making it easier for them to ignite and to burn hotter and longer when they do. As the climate shifts and Western droughts persist, the challenge of wildfire has intensified, but modern firefighters have advantages their predecessors couldn’t have imagined. Though they still use shovels, axes, and Pulaskis, they have a range of additional tools including mapping applications, satellite technology, helicopters, and, more recently, drones with infrared technology, which can scout an understory fire, augmenting efforts on the ground. In addition, the use of prescribed fire has grown dramatically: Over the last decade, 155 park sites have completed at least one controlled burn.

THEN

A WOMEN'S Park Service uniform, unveiled in 1970, featured culottes, a tunic, and go-go boots.



NPS HPC/CECIL W. STOURGHTON

CHANGING FACES

THEN The Park Service has always been a product of its time, reflecting the mores—and prejudices—of the country it serves. In the early days, being a ranger was considered a man's job, and park staff were largely white men with only a few exceptions. In 1918, "Rangerette" Helene Wilson checked in cars at Mount Rainier National Park, and Clare Marie Hodges acted as a ranger in Yosemite (though that title was reserved for men). In the 1960s, more women trained to be rangers, but they were still discouraged from fighting fire, enforcing the law, and discussing topics such as war. It wasn't until 1978 that female Park Service employees were allowed to ditch their stewardess-like skirted uniforms—complete with go-go boots—and to wear the traditional ranger uniform, badge, and iconic hat. Non-white employees and visitors faced their own set of challenges: Buffalo soldiers acted as some of the first park rangers in Sequoia and Yosemite but otherwise, very few African Americans joined Park Service ranks in the agency's early days. Some Native American groups were displaced when lands were settled and later turned into parks, and in Yellowstone, they were even treated like props to be photographed for the entertainment of visitors. In the Southeast, during the Jim Crow era, many parks maintained segregated campgrounds and picnic areas. "Who was the Park Service created for?" asked Sangita Chari, program manager for the Park Service's Office of Relevancy, Diversity and Inclusion. "It was really the post-war generation of white, middle-class families looking for a place to vacation. That was who felt welcome, who was targeted, and who came."

NOW For years, many within the Park Service have strived to include more women and minorities, but the effort has accelerated recently with agency-wide efforts to hire and retain minorities, tell the stories of

NOW

YOUNG PEOPLE participating in a kayaking program at Gateway National Recreation Area.



© MICHAEL FALCINI/NPCA

a much wider range of Americans, and welcome visitors who better reflect the changing demographics of the country. In 2013, the Park Service established the Office of Relevancy, Diversity, and Inclusion to help shape these efforts, which include developing recruitment strategies, offering webinars, and founding resource groups for Native Americans, African Americans, Latinos, and LGBTQ employees. Women now make up about 37 percent of the Park Service workforce, but minority representation in both employment and visitorship still lags. "Society around us is talking about these issues like we've never talked about them before, and I think it's influencing the Park Service," Chari said. "This is all just getting a place in the organization, and it's making a difference. Our potential is so exciting."

NOW A BALD EAGLE catching fish. In the 20th century, the idea that ecosystems are always changing became a guiding principle for conservationists.



BEAUTY OF THE BEASTS

THEN National parks were not established for the wildlife, but it didn't take long for park leaders to realize that some animals could be crowd pleasers. Guided by a then-current ethos about "good" and "bad" animals, early park administrators engaged in some management practices that are surprising by today's standards. In Yellowstone, for example, they fed hay and other food to popular species, killed predators, and poured non-native fish into streams for the delight of sport fishermen, a practice that persisted well into the 20th century. (To be fair, the U.S. Cavalry, which administered Yellowstone before the Park Service, also worked to protect animals and is credited with preventing the park's bison from going extinct.) But over time, new Park Service leaders began questioning and changing earlier tactics, and an ethic of stewardship rooted in ecological thinking began to take hold. By the middle of the century, thanks to a groundswell of scientific study, the agency started managing wildlife with the intention of preserving "naturalness." But what is natural? The question has inspired fiery—and productive—debate for decades and helped usher in a new era in conservation. This alternate outlook birthed important legislation including the Wilderness Act and the Endangered Species Act and has led to large-scale

restoration efforts such as the reintroduction of bald eagles, peregrine falcons, wolves, grayling, and other imperiled species.

NOW By the late 20th century, long-term studies had helped scientists understand that ecosystems are much more dynamic than previously thought. The widespread belief in the balance of nature started to give way to acceptance of the idea that ecosystems are always changing. The shift has spurred biologists and wildlife managers to conceive of conservation much more broadly. Now, in national parks, it's not a matter of simply increasing or decreasing the number of animals such as elk in a given region but allowing the population to fluctuate naturally across both space and time. And in the face of climate change, it's not a matter of conserving islands of natural areas, but whole landscapes that transcend political boundaries. "I believe that we have a responsibility to manage our lands closely with a wide range of partners to provide the time and spatial scales necessary for wildlife to continue to evolve," said Glenn Plumb, chief wildlife biologist for the Park Service. "And as long as we can do that, then we will preserve them into the future, unimpaired."



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THEN A VINTAGE POSTCARD

of bears eating from a garbage wagon in Yellowstone.

TRASH TALK

THEN In the early days of the national parks, visitors may not have had disposable plastic, but they had plenty to throw away. And all that refuse went straight into dumps conveniently located not far from the main attractions. In some places, such as Yosemite, the dumps proved to be attractions in themselves as bears came to feast. Rangers even set up artificial feeding areas and bleachers so visitors could get a better view. By the 1940s, biologists realized the practice was bad for bears—and humans—and discontinued it. In Yosemite Valley, staff are still working to clean up historic trash dumps.

NOW Many remote national parks still struggle with what to do with trash. In Yosemite, for example, 1,400 tons of trash are trucked out of the park to nearby Mariposa every year. It's a laborious practice, but it could be worse: Staff and the park concessionaire have made extraordinary strides in reducing waste. In 1975, they started recycling across the park and now recycle more than 30 materials. In 2011, they installed water-refilling stations to cut down on single-use plastic water bottles. More than 90 percent of the dishes at dining facilities are compostable, and they currently collect 6,000 gallons of vegetable oil waste annually to be reused as biodiesel. And this year, Yosemite, along with Denali and Grand Teton, teamed up with Subaru and NPCA on a program to drastically reduce their refuse using zero-waste practices developed by the automaker.



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5 THINGS THAT NO LONGER HAPPEN IN THE PARKS

Firefalls. Yosemite rangers used to stoke a bonfire all day, then, in the evening, shovel the embers over a cliff, creating a spectacular glowing waterfall. The practice ended in 1968, when the Park Service decided to ditch the entertainment and let the natural beauty speak for itself.

Missile Launchers. In 1963, the United States built missile launchers and other buildings in the remote reaches of Everglades National Park, a mere 160 miles from Cuba. Today, the Nike Hercules Missile Site HM-69 still stands and visitors can tour the launch area.

Logging for the War Effort. In the 1940s, Olympic National Park was under intense pressure to allow loggers to cut down spruce to construct airplanes for the war effort. Eventually, park administrators allowed cutting in a corridor purchased by the federal government for a scenic parkway but not yet officially incorporated into the park—but the old-growth stands already in the park were spared.

High-Altitude Dumping. Mountaineers started to flock to Denali in the late 1950s. On their multi-day hikes up the mountain, they deposited human waste, well, anywhere. Mountaineers now use a can to carry number twos to specially marked disposal crevasses, but decades-old waste remains frozen on the slopes.

Dynamiting Ruins. After Mesa Verde was discovered by Euro-Americans in the 1880s, but before it was established as a park, hard-rock miners from the mountains streamed in, using the tools of their trade—axes, picks, and dynamite—to blow holes in the ruins and retrieve artifacts.

FORWARD TO THE PAST

THEN There was a time when the Park Service's version of American history focused almost entirely on what famous white men did. In recent years, however, as methods in the field have evolved, historians at the agency have endeavored not only to tell the stories of previously overlooked groups but to move beyond dates and dry facts to include narratives and individual perspectives. Civil War battlefields are a prime example. In 1933, the Park Service inherited the battlefields and set up visitor centers that cataloged the movements of the armies. But those military details didn't tell a complete story or place the war in a greater historical context. "We felt like we were missing a lot by not talking about why they were fighting in the first place," said Robert Sutton, the former chief historian for the Park Service. "And it was important to broaden the story to be more holistic and hopefully provide more of interest to a wider audience."

NOW Many Civil War battlefields, such as Gettysburg National Military Park, have developed much more nuanced exhibitions and programs. Gettysburg's new visitor center, which opened in 2008, better explains slavery as a major cause of the war and includes not only the relevant military movements but the perspectives of the common soldier, civilians, and farmers. "If you came in 2007, you came into this building and it was just a room full of stuff—guns by the hundreds, swords, rifles, bayonets, the detritus of battle," said Christopher Gwinn, supervisory park ranger in interpretation and education. "The new museum is designed to tell you a story, so when you walk into the galleries, you're walking through the American Civil War." Visitors can still climb Little Round Top and visit Soldiers' National Cemetery, but they can also learn about what happened after the battle, the cleanup effort, and how we remember veterans today.

THEN A SECTION of the cyclorama at Gettysburg National Military Park. This version of the painting, by artist Paul Philippoteaux, was completed in 1884.



©NANCY HOYT BELCHER/ALAMY STOCK PHOTO



© CALIFORNIA HISTORICAL SOCIETY COLLECTION

THEN
A **YOSEMITE** stage coach, circa 1900.

NOW
Biking on an old carriage road in Acadia National Park.

© ECOPHOTOGRAPHY.COM/ALAMY STOCK PHOTO



GETTING THERE IS HALF THE BATTLE

THEN In the late 19th and early 20th centuries, just getting to a national park was an adventure that required braving brain-jostling, multi-day train rides into undeveloped expanses of the country. To get to Acadia, the Northeast's first national park, visitors traveled up the Maine Coast on a railroad, took a spur to Hancock Point, ferried across Frenchman Bay to Bar Harbor, and finally boarded carriages. From the beginning, visitor access was a primary concern for park proponents. They knew that for protected lands to thrive, they must have champions. Great road-building and trail-building efforts took place in many parks, resulting in robust networks that visitors still use today.

NOW In the 1950s, the rise of the automobile allowed average middle-class families to access the parks for the first time, and they visited in unprecedented numbers. Now, so many cars pour into some parks, such as Zion and Yosemite, that buses shuttle people around to cut down on traffic. Meanwhile, other ways of accessing the parks have evolved. In Acadia, old carriage roads that John D. Rockefeller established starting in 1913 fell into disuse after his death, but they were rehabilitated in the 1990s and now are popular with horseback riders, cyclists, walkers, and joggers.

KATE SIBER is a freelance journalist based in Durango, Colorado.

HISTORIC TRAVEL DESTINATIONS



Stoneman Bridge in morning light at Yosemite National Park
Courtesy Sarah Fields Photography

You work hard all year. Spring is finally here and that means it's time to unwind a little and plan for your next big adventure. Why not grab your loved ones, load up the car, and head out to one—if not all—of these exquisite American destinations?

WATFORD CITY, NORTH DAKOTA

The Badlands Are Just the Beginning of the Adventure

The New York Times has placed Theodore Roosevelt National Park fifth on its list of the "Top 52 places to visit in 2016."

With miles of rugged badlands and rolling grasslands dotted with majestic wildlife, the North Unit of the park sits just 12 miles south of Watford City, a small-town getaway with big city amenities.

The gateway to internationally acclaimed adventure, Watford City residents have enjoyed the natural beauty of the area for decades. Surrounded by the Yellowstone River, Lake Sakakawea, the Missouri River and the Little Missouri River, the area prides itself on being home to 500,000 acres of beautiful public land for exploring and miles of shoreline for boating and fishing.

With all that wide-open space to enjoy, Watford City is poised to accommodate all types of adventurers. With more than 700



A Bison in Theodore Roosevelt National Park
Courtesy Diane Kay Photography

available and newly constructed hotel rooms, a variety of cabins and campgrounds, unique shopping, diverse dining and newly built, construction-free highways to get you there, you can enjoy a vacation that's as rugged or as relaxing as you like!

Muddy your bike tires on the Maah Daah Hey Trail. Put some miles on your hiking boots in the pristine Theodore Roosevelt National Park. Make a splash kayaking the Little Missouri Rivers's historic waters. Ready to unwind? Kick back with fine dining, cocktail bars, and rooms available at stunning new hotels. Your Adventure Awaits on the New Frontier. To learn more, visit visitwatfordcity.com.



Diane Kay Photography

Your Adventure Awaits on the New Frontier

Muddy your bike tires on the Maah Daah Hey Trail. Put some miles on you hiking boots in the pristine Theodore Roosevelt National Park. Make a splash kayaking the Little Missouri River's historic waters. Ready to unwind? Kick back with fine dining, cocktail bars and rooms in one of our stunning new hotels.

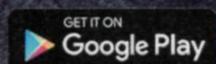
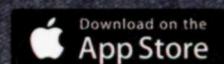
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NORTH DAKOTA



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The Williston area is a great place to celebrate 100 years of the National Park Service! Visit Fort Union Trading Post National Historic Site and scenic Theodore Roosevelt National Park – North Unit. Williston also offers new hotels, restaurants and shops, plus world-class golf and North Dakota's largest indoor rec center. Contact us today for a free visitors' guide!

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- August 6-7- Indian Arts Showcase
- September 3-5 - Living History Weekend

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Fort Union Trading Post National Historic Site
 Courtesy Jesse Nelson

WILLISTON, NORTH DAKOTA

Rich With Legendary Vistas and Living History

Imagine watching a blacksmith or a fur trader preparing a beaver hide when suddenly—BOOM! A musket fires nearby. This kind of experience is just one of many reasons to celebrate 100 years of the National Park Service in Williston, North Dakota.

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

Near Fort Union, visitors enjoy re-enactments at Fort Buford State Historic Site, remembered as the place where Sitting Bull surrendered his rifle in 1881. A mile away, the Missouri-Yellowstone Confluence Interpretive Center offers the same magnificent views enjoyed by the Corps of Discovery. East of Williston at Lewis and Clark State Park, visitors walk interpretive trails showing what the famous explorers saw.

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

Williston also offers new hotels, restaurants and shops, plus world-class golf and North Dakota's largest indoor rec center.



Medora Musical in Medora, North Dakota
 Courtesy Scott Eisenbeisz

MEDORA, NORTH DAKOTA

A Gateway to Breathtaking Scenery

The historic town of Medora is the gateway to Theodore Roosevelt National Park and boasts a world-class golf course, a one of kind musical and so much more.

Recently chosen as the number 5 place to visit in 2016 by *The New York Times*, Theodore Roosevelt National Park covers more than 70,000 acres of breathtaking scenery in the North Dakota Badlands. Experience its scenery and wildlife by car, foot or horseback.

The Medora Musical is a professionally produced, high energy, western-style musical show that runs all summer long. There's no other show quite like it!

A round of golf at Bully Pulpit is the perfect way to round out your visit. Ranked one of America's 100 Greatest Public Courses, it's worthy of the praise.

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Theodore Roosevelt National Park covers 110 square miles of breathtaking North Dakota Badlands, teeming with wildlife and adventure.

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North Dakota
LEGENDARY

Wind Canyon, Theodore Roosevelt National Park - South Unit

— Josh Duhamel —

UNREHEARSED

As the driving force in establishing our national park system, we can all thank President Theodore Roosevelt for this place. His love of conservation continues to be passed down to generations – from North Dakota native Josh Duhamel to his son, Axl – and you to your family. Discover the inspiring beauty during this year's 100th anniversary of national parks. Visit us online to discover Josh's favorites and start your own Badlands celebration.

LegendaryND.com



A wild horse in Theodore Roosevelt National Park
 Courtesy Russell Hons

CLAIM YOUR ADVENTURE IN NORTH DAKOTA

An Unforgotten Panoramic View

Theodore Roosevelt's time in North Dakota inspired many things, including the National Park Service and the park in the Badlands that bears his name. Today, you can follow in his footsteps and find Legendary adventures in Theodore Roosevelt National Park.

Roosevelt's journey included boat thieves, cattle drives and big game, and outdoor enthusiasts can still find adventures that await them within the park today.

Families can explore the visitor centers at Painted Canyon on I-94 or the South Unit park entrance adjacent to the Maltese Cross Cabin in Medora. The park offers up a 36-mile loop drive winding its way through wind-carved buttes, past herds of bison and wild horses, prairie dog towns and scenic vistas.

The adventure seekers can explore the epic Maah Daah Hey Trail which weaves a 146-mile, single-track trail connecting the

North and South units of the park. This nationally recognized mountain biking and hiking trail passes by the remote Elkhorn Ranch, the former site of Roosevelt's working ranch. Outdoor enthusiasts can marvel in the scenic wonders on the trail and relax by a campfire under a canopy of flickering stars.

Head up to the North Unit located south of Watford City and enjoy a scenic 14-mile drive through deep canyons and onto the grasslands for a panoramic view of the Little Missouri River.

Theodore Roosevelt made a path in North Dakota that won't soon be forgotten. Now it is time to claim your North Dakota adventure.



Theodore Roosevelt National Park—South Unit
 Courtesy Chuck Haney



Front porch of the Sebastopol House Historic Site
 Courtesy City of Seguin

SEBASTOPOL HOUSE HISTORIC SITE

A Concrete Paradigm of American Craftsmanship

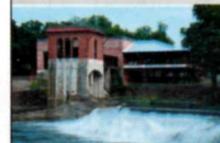
Listed on the National Register of Historic Places, Sebastopol House, now a museum open to the public, is one of the best-preserved "limecrete" structures in America and rests in one of the oldest towns in Texas founded by Texas Rangers. Built in Greek Revival style by highly skilled slaves, it boasts a mystery dungeon and a secret water-cooling system. Also on exhibit is Wilson Pottery, rare artifacts from one of the first businesses in Texas owned by freed slaves. Open Thursday through Sunday, 9 a.m. to 4 p.m. To learn more, go to visitseguin.com.

HISTORIC SEGUIN



Seguin, TX, was founded by Texas Rangers in 1838. It boasts one of the finest "limecrete" structures in America, **Sebastopol House Historic Site**, a restored pre-Civil War mansion turned museum filled with mystery and history. Free tours, Thu-Sun, 9-4.

See more historic buildings at **Heritage Village**, including an exceptional Victorian doll house built for a child adopted from the "orphan train."



Stop in at the historic **Seguin Power Plant** on the banks of the Guadalupe River, now a destination restaurant.

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The St. Augustine Lighthouse
 Courtesy St. Augustine, Ponte Vedra & The Beaches



Dayton Aviation Heritage National Historic Park
 Courtesy Bev Rose

ST. AUGUSTINE & PONTE VEDRA

Where History Is Not the Same Old Story

First discovered in 1513 by Spanish explorer Juan Ponce de Leon, this sought-after stretch of oceanfront has since earned the title of Florida's Historic Coast. And today—more than 500 years later—it's definitely still worth exploring, because your stay is destined to be as vibrant as the area's past.

You can storm a coquina castle that doubles as a national monument—known to English and Spanish speakers alike as Castillo de San Marcos. Walk in the footsteps of legends in the "Golf Capital of the World"—Ponte Vedra Beach. Set out for St. George Street as a conquistador of fine dining, shopping and nightlife. Trek to the top of the St. Augustine Lighthouse where you'll marvel at Matanzas Bay from 164 feet above.

Surrounding each and every landmark, you'll find enchanting tales of triumph. But surrounding the beaches, you'll find nothing but nature. No towering buildings blocking the sun while you're playing in the sand. Only 42 miles of wide coastline surrounded solely by natural beauty. It's a stretch of the shore known as the Nation's Oldest Port—which is now in the process of being designated as a National Heritage Area.

All around—from the shop-lined brick streets to the wide, white-sand beaches—awaits 500 years of history. To learn more, visit floridashistoriccoast.com.

COME TO DAYTON

An Aviation Mecca

Dayton—the birthplace of aviation and so much more—was home to the Wright Brothers. In Dayton, the Wrights invented and built their airplanes and really learned to fly. Come experience the sites of the Dayton Aviation Heritage National Historical Park and learn all about the Wrights and the birth of manned, powered flight! There are more than 16 amazing aviation sites all within close proximity to one another. Visit just seven of them and we'll "air-mail" you a Wilbear Wright Aviator teddy bear.

The fourth building of the FREE National Museum of the U.S. Air Force opens June 8, 2016! Don't miss Dayton—within a day's drive of more than 60 percent of the U.S. population. To learn more, visit daytoncvb.com.

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DAYTON NATIONAL PARK SITES



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Dayton Aviation Heritage National Historical Park



Dayton Aviation Heritage National Historical Park

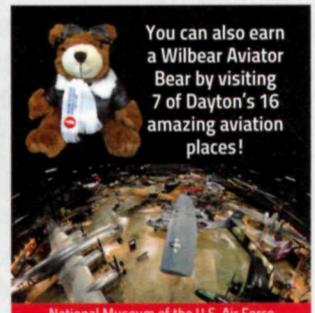
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ALICE PAUL in 1920 celebrating the ratification of the 19th Amendment, which guarantees all American women the right to vote.

An Audacious Fight

Force-feeding and imprisonment could not stop suffragist Alice Paul's march forward.

HORSE-DRAWN FLOATS, TRUMPETERS, BANNERS, and thousands of marchers. Everything was ready for the woman suffrage movement's biggest splash yet: a parade down Washington's Pennsylvania Avenue on the eve of Woodrow Wilson's 1913 inauguration. Then trouble started. The women found their route barred by scores of men, some visibly drunk. Soon, the hecklers were yelling at the suffragists, even shoving, hitting, and spitting at them while police stood idle or joined in the abuse. The nightmare ended only when the cavalry arrived to break up the crowd.

Alice Paul had orchestrated the parade to garner attention and breathe new energy into the suffrage movement. She was more successful than she expected: The violence against the marchers and the congressional hearings that followed ultimately magnified the event's impact.

This mistreatment by police "was probably the best thing that could

ever have happened to us," Paul wrote to a supporter shortly after the march, "as it aroused a great deal of public indignation and sympathy."

The women's suffrage struggle is a collective effort that spanned many decades, but the audacity and relentlessness of Alice Paul and her troops helped the movement get over the finish line and secure passage of the 19th Amendment, which gave women in all states the right to vote—although many African-American women remained effectively disenfranchised for several decades after that.

Breaking with the mainstream movement's more sedate tactics, Paul's suffragists confronted the establishment directly. Several years after the parade, they picketed the White House demanding that the president support the constitutional amendment. Their unprecedented demonstrations helped sway Wilson, whose reversal gave crucial momentum to the suffrage effort. Yet despite the achievements of Paul and her comrades—and the imprisonments, beatings, and hunger strikes they endured—none of them has become a household name.

That could change if the Sewall-Belmont House & Museum in Washington, D.C., which served as Paul's longtime residence and the headquarters of her organization, becomes a full-fledged national park site. Last summer, Maryland's Sen. Barbara Mikulski introduced a bill calling for the designation, and the National Park Service said in a recent study that the site—currently a museum affiliated with the agency—would fill gaps in the Park System's representation of the women's rights movement. It would also allow the budget-constrained

museum to reach greater numbers through extended visiting hours.

“What we hear more than anything when people come through is, ‘How come I didn’t learn this in school?’” said Page Harrington, the executive director of the Capitol Hill museum. “It really is left out.”

It was during a two-day convention in 1848 in Seneca Falls, New York, that suffrage activists enshrined their demand for the right to vote in a Declaration of Sentiments. But progress was slow. A suffrage amendment was soundly defeated in a Senate vote in 1887, and only a handful of states granted women the right to vote over the six decades that followed the 1848 convention.

Born in 1885 to a comfortable Quaker family in New Jersey, Paul did not seem predestined to challenge the status

The protest was met with a string of arrests and increasingly long sentences.

quo. It’s only when she left the country at the age of 22 that she found her true calling. While studying in England, she attended a speech by a leading suffrage advocate and later decided to participate in some of the activists’ most daring actions, undergoing weeks of jail time and force-feeding.

When she came back to the United States, Paul sought to invigorate the movement with more confrontational action but did so more as a strategist than a foot soldier. “She just didn’t enjoy being the center of attention, but she liked to control things behind the scenes,” said J.D. Zahniser, co-author of *Alice Paul: Claiming Power*.

Her willingness to hold the reigning Democratic Party accountable, even if that meant alienating Democratic supporters, was at odds with the more diplomatic approach of the National American Woman Suffrage Association. After enlisting the support of wealthy socialite Alva Vanderbilt Belmont and others, Paul established a separate National Woman’s Party in 1916.

In January 1917, Paul staged the controversial White House picket. This was a first in history, said Robert Cooney, author of *Winning the Vote: The Triumph of the American Woman Suffrage Movement*. For ten months, groups of women deployed banners urging Wilson to support the suffrage amendment. After the United States entered the Great War in April, the “silent sentinels” pointed out what they saw as Wilson’s hypocrisy in defending

democracy abroad while denying it to women at home.

The protest was met with a string of arrests and increasingly long sentences. At seven months, Paul’s was the longest. Suffering abusive incarceration conditions, she and fellow activists went on a hunger strike and underwent force-feeding, echoing Paul’s experience in England. Fearing the death of the prisoners, authorities relented and released all of them in November 1917.

Earlier that month, New York had become the largest Eastern state to grant women the right to vote, and a few weeks later Wilson finally threw his support behind a constitutional amendment. In 1919, Congress passed the amendment, and 36 states ratified it over the next 14 months. It was signed into law the next year.

After winning the vote, Paul and the National Woman’s Party set their sights on other legislative action, including the Equal Rights Amendment that was passed by Congress but never ratified. Paul, who never married or had children, remained an activist for the rest of her life but always considered her suffrage work the highlight of her career. She said as much a few months before her death in 1977, in a rare interview published in *The New York Times*.

“The most useful thing that I ever did,” she said, “was having a part in getting the vote for all the women.” **NP**

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



IN THE CARDS

Besides parades and pickets, Alice Paul’s suffragists used sophisticated lobbying tactics to advance their goals, keeping detailed information on congressional members’ voting records, hobbies, and relatives’ sentiment toward suffrage. The museum’s collections include about 3,000 voting cards.



That Was Then



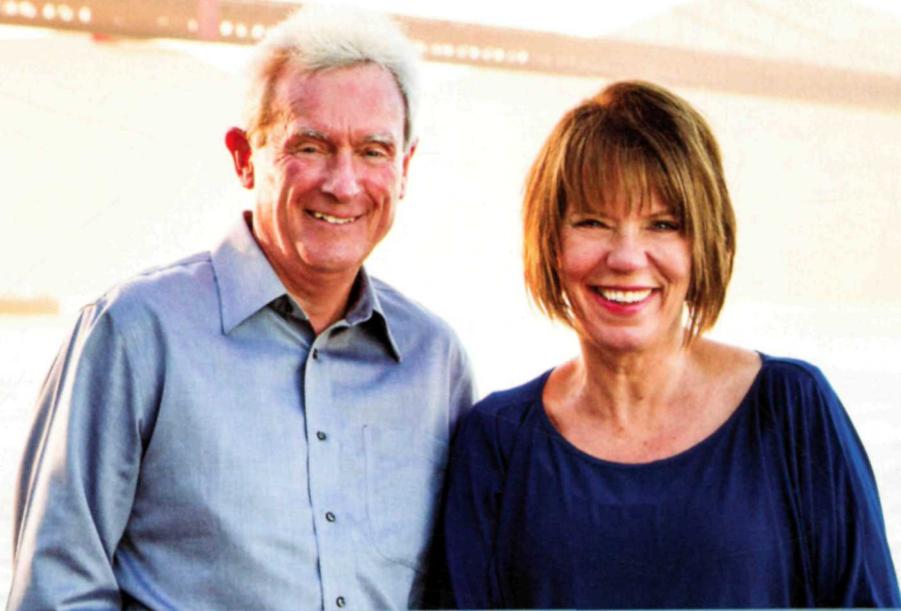
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Crissy Field, The Presidio, Golden Gate National Recreation Area, San Francisco, CA.
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