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SUMMER 2009
Vol.83 No.3

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JUNIPER BERRIES collect in a canyon at Hovenweep National Monument.
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COVER PHOTO: MESA VERDE'S Cliff Palace at dusk.
© GEORGE H.H. HUEY

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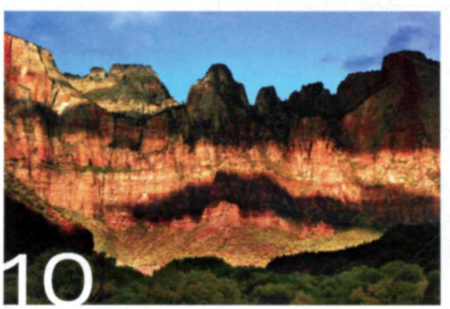
IN THE SUMMER OF 1943, Yosemite National Park offered a stunning backdrop for a young, budding photographer.



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Revisit a slideshow with the sounds of tree frogs, wolves, and bugling elk, accompanied by images from wildlife photographer Florian Shulz, at www.npca.org/magazine/sound.html. Then learn more about NPCA's efforts to manage sight-seeing flights over our national parks at www.npca.org/atma.

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A Worthy Investment

©IAN SHIVE

As you head out to the national parks and monuments this summer, you may notice more than a few improvements. Repairs might be under way at Mount Rainier, where storms damaged trails several years ago; a new visitor center at Dinosaur National Monument may be under construction, replacing the Quarry Visitor Center that has been closed for some time; and Independence tower at Independence National Historical Park could be getting much needed repairs. All of these projects and many others will be paid for by the $920 million set aside as part of the economic stimulus bill passed by Congress and signed by the President earlier this year. This much-needed reinvestment in our national parks will create jobs while restoring our national heritage.

Replacing the roof of a historic building, making a restroom accessible, or installing a new air-conditioning system may not sound exciting, but without these critical repairs many of our most precious artifacts could be lost forever and the experiences of visitors diminished.

Several years ago, books that belonged to Frederick Douglass, an abolitionist and trusted advisor to President Lincoln, had to be moved out of his historic home in Washington, D.C., because the heating and cooling system could not be counted on to keep moisture from destroying important papers. That repair was made with a one-time, $900,000 emergency appropriation. One park, one problem solved. The stimulus dollars allow the Park Service to tackle similar maintenance projects at national parks across the country.

These investments are welcome news and an important step toward restoring our national parks in time for the National Park Service centennial in 2016. More recently, President Obama proposed a budget for the next fiscal year that provides an additional and urgently needed increase of $135 million to operate and maintain our national parks, and $25 million for a pending program to match private philanthropy with federal funding.

To protect, enhance, and restore our national parks by 2016, there is a tremendous amount that remains to be accomplished. We need to reach out to a broader audience and strengthen the connection between a more diverse America and our park system; increase service-learning and engagement of people in the parks; add new units to the system that tell our American stories; purchase privately owned land within parks from willing sellers; clean-up the air quality in the parks; and ensure that parks and surrounding lands are protected from the most dramatic impacts of a changing climate.

Investments in national parks are expressions of faith in our future. In their simplest terms, they are the most significant natural, cultural, and historic places in America. They preserve some of our most stunning landscapes, and represent some of our most ingenious ideas and ideals.

Thank you for your continued support of the work that NPCA has been doing for more than 90 years. We encourage you to enjoy the parks this summer and help us to continue on the road to restoration for 2016.

Thomas C. Kiernan

The Sounds of Silence

© NATALIA BRATSLAVSKY/ISTOCKPHOTO

A Roosevelt elk in Olympic National Park, Washington.

Until recently, I'd never really given much thought to noise. After years of living in Washington, D.C., I've grown accustomed to the squealing brakes of city buses and the car horns of passing taxis. But when I heard that a man living near Olympic National Park was focusing his efforts on the importance of natural silence, it struck a chord. After reading a few pages of Gordon Hempton's book, *One Square Inch of Silence*, I was convinced he needed to write an article for the magazine.

A week after editing the piece, which appears on page 32, I spent a few days in Joshua Tree National Park, snapping photos in the cholla cactus garden, hiking through Hidden Valley, and watching lizards sun themselves near Barker Dam. But even though a camera and a water bottle were my only companions, I never felt truly alone. That's because Joshua Tree lies in the shadow of Los Angeles International Airport, a fact that you're reminded of every 20 or 30 minutes, when the sound of jet engines draws your eye to the heavens.

Of course, I'd been on one of those planes a few days earlier, so I'm not entirely innocent. But the experience opened my eyes, and my ears. For decades, Americans thought the best way to preserve a true outdoor experience was to draw boundaries on a map. But as our ability to move from Point A to Point B has expanded, and we've found clever ways to carry our manufactured world wherever we go, that may no longer do the trick. If we fail to recognize the value of natural silence and take action, we may soon forget what we're missing—the sound of a frog croaking, an elk bugling, and the wind whistling through the trees. Or the sound of absolutely nothing at all.

SCOTT KIRKWOOD
NPMAG@NPCA.ORG

National PARKS

EDITOR IN CHIEF: Scott Kirkwood
ASSOCIATE EDITOR: Amy Leinbach Marquis
PRODUCTION MANAGER/DESIGNER: Sarah Rutherford
SENIOR COORDINATOR FOR COMMUNICATIONS: Nicole Yin
FEATURES DESIGN CONSULTANT: Bates Creative Group

NATIONAL PARKS
1300 19th Street, N.W., Washington, DC 20036
202.223.6722; npmag@npca.org

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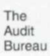

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Protecting Our National Parks for Future Generations®

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 national parks by identifying problems and generating support to resolve them.

WHAT WE STAND FOR
The mission of NPCA is to protect and enhance America's National Park System for present and future generations.

EDITORIAL MISSION
National Parks magazine fosters an apprecation 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.

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 Lines, our biweekly e-mail newsletter. Go to www.npca.org to sign up.

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MOUNTING EVIDENCE

Readers responded to our article on Mount St. Helens with memories from past visits, appreciation for the Forest Service's hard work, and an old article that appeared in our pages decades ago. A sampling...

I greatly enjoyed the article on Mount St. Helens in the Spring 2009 issue of *National Parks* ["From the Ashes"]. My personal interest in the volcano began when I was a graduate student in the Geography department at the University of Washington in the mid-1960s. A group of us decided that we should both climb it and explore its lava caves, which we did.

I was so impressed by this geologic marvel that I immediately thought it should be part of the National Park System, and put pen to paper to that effect. The resulting article (my first published piece) appeared in *National Parks* magazine in May 1968. After 40 years, perhaps the time is now right for the monument to pass from the hands of the Forest Service to the better-funded National Park Service.

PHILIP PRYDE
Professor Emeritus
San Diego State University
San Diego, CA

I, too, would like to see Mount St. Helens become a national park, but in spite of the various reasons I may have for criticizing the Forest Service, I cannot find fault with their management of Mount St. Helens.

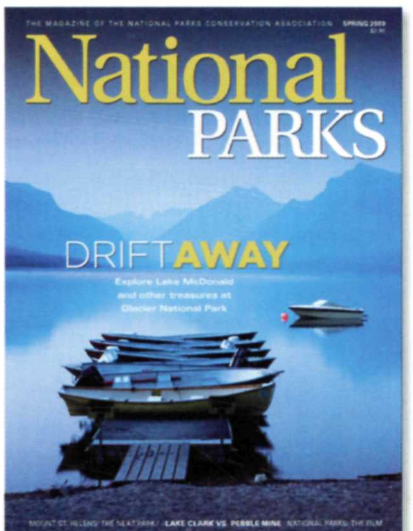
The Johnston Visitor Center is excellent, and the rangers offer informative talks. The agency has set aside space in the visitor center for a little gift and book shop. But the highlight of anyone's visit is the incredible film shown in the auditorium—it's absolutely breathtaking. This presentation is the best of any I have seen in all of the monuments and parks we have visited.

I hope more people will visit Mount St. Helens and experience a fascinating display of the constant activity of the planet we live on. It's worth it.

KAREN OSGOOD
via e-mail

Sean Smith, director of NPCA's Northwest regional office responds:

Unfortunately, the Johnston Ridge Observatory, which the reader praises, is only open five months out of the year; unlike Mount Rainier, there are no winter facilities open in the monument. Moreover, except for Ape Cave, the Forest Service has little or no interpretive presence outside Johnston Ridge. Put another way, although the car may look good, it's mainly because the Forest Service only runs it for a limited time and range; looking under the hood reveals limited maintenance and performance.



SEEING IS BELIEVING

Thank you for your timely article regarding snowmobile use in Yellowstone National Park ["A Hazy Shade of Winter," Winter]; I hadn't been aware of these details. In December 2008, I arrived at the park with an Elderhostel group and had uncertain thoughts about the use of snowmobiles. Wanting to be fair, I decided to see for myself what the discussion was about. Now I know.

Presentations and signs everywhere informed us about the stress animals undergo, particularly during the winter months. Yet, here was a mass of snowmobiles buzzing in and out of parking lots, 30 or more at a time lined up at a site. The snowmobile groups quickly moved past snowcoaches, then drove on to a different destination. The final straw, for me, was when friends returned from their snowmobile ride with a video of a bison stampede their group had caused, simply because the bison were blocking the road.

Why do we honor the use of recreational machines more than our heritage? Parks in other parts of the world completely close to tourism when doing so is required to protect wildlife. What is so important to us that we are willing to jeopardize the health and well-being of our wildlife?

SUSAN BUCKLEY
San Diego, CA

MELTING AWAY

I was born in Montana and spent most of my

childhood there. My father was a contractor who worked on many of the small motels, houses, and stores in Glacier National Park, and I was fortunate to spend some summers with him. We really saw Glacier as it was supposed to be seen. Your article ["Going to the Sun," Spring] was quite good and may very well capture the feeling of the park today, but as a child I saw many more glaciers. One of my favorite hikes was to Iceberg Lake—a simple journey, even for a child. I was fascinated by the lake and the glaciers behind it in the shape of a "U," and I could spend hours watching the glaciers breaking off, making icebergs in the lake. I also marveled at the mountain goats and bighorn sheep jumping from one rock to another, leaping yards at a time.

Twenty years ago, I was fortunate enough to drive along Going to the Sun Highway all the way across to Flathead Lake. We didn't spend much time hiking, but from the car, I could see that Glacier was losing its glaciers very rapidly, and I knew it wouldn't be long before a new name would be more appropriate.

It is truly a shame that man has caused this old ball of mud to warm up so much that this is happening all over the world. Thanks for bringing memories back for me.

JOHN HUMPHREY
Jackson Heights, NY

A GOOD PROBLEM TO HAVE

I've just now gotten to the winter issue of the *National Parks* magazine and found it delightful and fascinating in its variety and quality of interest-grabbing articles. I've been taking it apart to send articles to friends and have but just one complaint: The density of great stories complicates my task, since so often one of the selected pieces shares an obverse side with another! It's a complication I happily endure.

JEROME HOGANSON
Arlington, VA

CORRECTIONS:

A photograph on page 9 ["Echoes"] incorrectly identified a rock formation as part of Canyonlands National Park—the landmark is part of nearby Arches National Park. Abraham Lincoln passed away the morning after he was shot by John Wilkes Booth, not two days later, as written in "Setting the Stage," page 18. We regret the errors.

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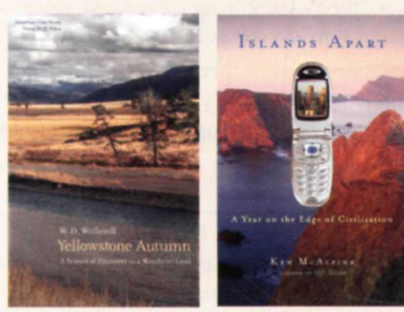
EYE-OPENERS



The authors of two new books immerse themselves in the park experience, and emerge with touching memories and poignant revelations.

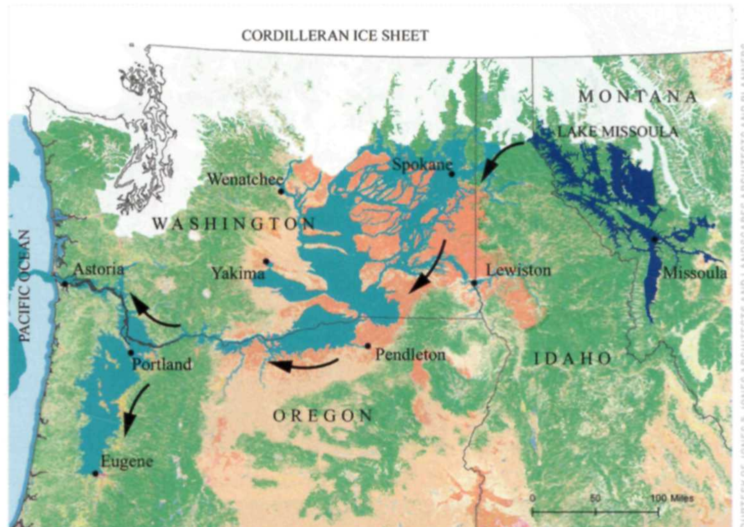
In **YELLOWSTONE AUTUMN: A SEASON OF DISCOVERY IN A WONDROUS LAND**, author W.E. Wetherell rings in his 55th birthday on a three-week, solo trip in Yellowstone. As he falls into a daily rhythm of wandering trails, casting his line, and lunching under aspen groves, his own story of marriage, fatherhood, and aging begins to merge with the fascinating history and geography of the park. Wetherell's soul-stirring prose is not simply a journey of self discovery—it's a tribute to the American experience, and the landcape that makes it possible. (University of Nebraska Press, $24.95, 166 pp.)

In **ISLANDS APART: A YEAR ON THE EDGE OF CIVILIZATION**, writer Ken McAlpine spends a week on each of the five islands composing Channel Islands, sites that most visitors wander for a few hours. In between those excursions, he explores California's mainland—visiting a war memorial in Santa Barbara, talking with the homeless in Beverly Hills, and meeting a 98-year-old Benedictine monk. Rather than escaping his life, McAlpine retreats to nature to shed light on his daily experiences, making for a modern-day take on Thoreau—one that's actually within reach for the rest of us. (Shambhala, $14.95, 272 pp., July 2009)

A MIGHTY FLOOD

Ages ago, a cataclysmic flood scoured the Northwest. Soon a national trail will tell the story.

Geology takes time. Mountain ranges rise millimeter by millimeter, tectonic plates shift imperceptibly, and rivers carve out canyons over centuries. But the chiseled features of the American Northwest don't always follow those rules. Geologists point to large boulders in the middle of farm pastures, mastodon fossils embedded in gravel, and dried river channels as evidence of cataclysmic floods that shaped the landscape of the American Northwest.



COURTESY OF JONES & JONES ARCHITECTS AND LANDSCAPES ARCHITECTS AND PLANNERS

More than 12,000 years ago, a glacial lake as big as Lake Erie and Lake Ontario occupied northwest Montana. As glaciers retreated, an ice dam melted, froze, and melted again and again over the course of hundreds of years, triggering a series of violent floods that would have impressed even Noah himself. When it was all over, a sprawling region covering modern-day Idaho, Montana, Oregon, and Washington had been carved out like a totem pole. In March, the Ice Age Floods Trail was established to illustrate how it all happened.

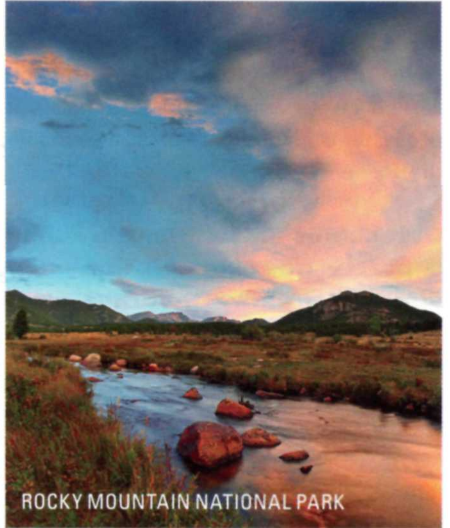
Most National Park Service Trails reflect our cultural history: Think Lewis & Clark, Selma to Montgomery, or the Trail of Tears. Ice Age Floods is the first trail devoted to a geological process, a process whose impact is still being felt: "When the flood waters raced across portions of eastern Washington, they scraped a lot of the soil away down to the basalt rock—and those areas can't be farmed to this day," says Keith Dunbar, a Park Service planner who has been closely involved in the trail's development. "A lot of that sediment ended up in Willamette Valley and enriched the soil, which is dozens of feet thick and incredibly rich land for farming." It's no surprise that's precisely where Oregon's pioneers settled; the valley remains a vital part of the region's agricultural heritage today.

Because the trail covers so much territory, it's designed to be driven, not hiked. Loops and shorter segments will branch off from the main route. The Park Service hopes to increase signage, interpretation, and visitor services by coordinating with federal, tribal, state and local agencies, visitor centers, museums, and other partners to connect the dots both literally and figuratively. Planning will soon be under way, and Dunbar expects the trail to become a reality gradually, over the next three to four years. Given the size and scope of the trail, the Park Service is looking to incorporate new interpretive tools including DVDs, cell-phone narration, and GPS devices, all to bring the Ice Age into the 21st century.

—Scott Kirkwood

AS THEY WERE MEANT TO BE

New legislation designates wilderness areas in several national parks.


ROCKY MOUNTAIN NATIONAL PARK

© TIM FITZHARRIS/MINDEN PICTURES

Some of America's most pristine landscapes lie within the borders of our national parks—but park borders alone can't guarantee that those landscapes will stay that way. Recognizing that, Congress passed a massive public lands bill in March that designated wilderness areas in six national parks—including Zion National Park in Utah and Rocky Mountain National Park in Colorado.

Wilderness, as defined by the Wilderness Act of 1964, is "an area where the earth and its community of life are untrammeled by man, where man himself is a visitor who does not remain..." That doesn't mean people can't continue to hike, camp, or even ride horses here. It just means that the area will receive the highest level of protection possible, and proposals that would leave behind evidence of mankind—like a new road, for example—are completely off the table.

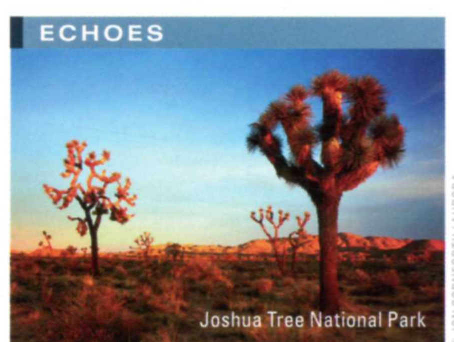
In most cases, visitors won't notice any change at all—"and that's the charm," says Steve Smith of The Wilderness Society. "They'll see a new sign or two, but otherwise, it will be the same spectacular natural experience they've always known."

Many of these regions have been managed unofficially as wilderness for a long time—but without a law on the books, there were no guarantees. "Sometimes proposals pop up for additional roads, or facilities, or even private development," Smith says. "This legislation puts those to rest once and for all."

And that's a big deal for parks that are recognized for their wilderness experience. "Whether you're hiking in Rocky Mountain's deep back country, going on a morning horseback ride, or just driving on Trail Ridge Road and never getting out of the car, what you see around you is wilderness," Smith says. "The towering peaks, the flower-strewn valleys, the long views without any disturbances or alterations—these things are why we go there, and now we can preserve them for all time." *–Amy Leinbach Marquis*

3 **NATIONAL PARK UNITS** authorized as a result of H.R. 146, a sweeping public lands bill that passed through Congress last spring. New additions include Paterson Great Falls National Historical Park in New Jersey, which will interpret historical, cultural, and natural resources in one of America's oldest industrial cities; River Raisin National Battlefield Park in Michigan, which will commemorate the fallen soldiers of one of the bloodiest battles in the War of 1812; and William Jefferson Clinton Birthplace Home National Historical Site in Arkansas, to honor America's 42nd president.

ECHOES


Joshua Tree National Park

© JON CORNFORTH/AURORA

What does it mean to have Joshua Tree National Park without Joshua trees? On a scientific level, an ecosystem out of balance. On an economic level, fewer recreational visits. On a spiritual level, it means our grandchildren will see a diminished world.

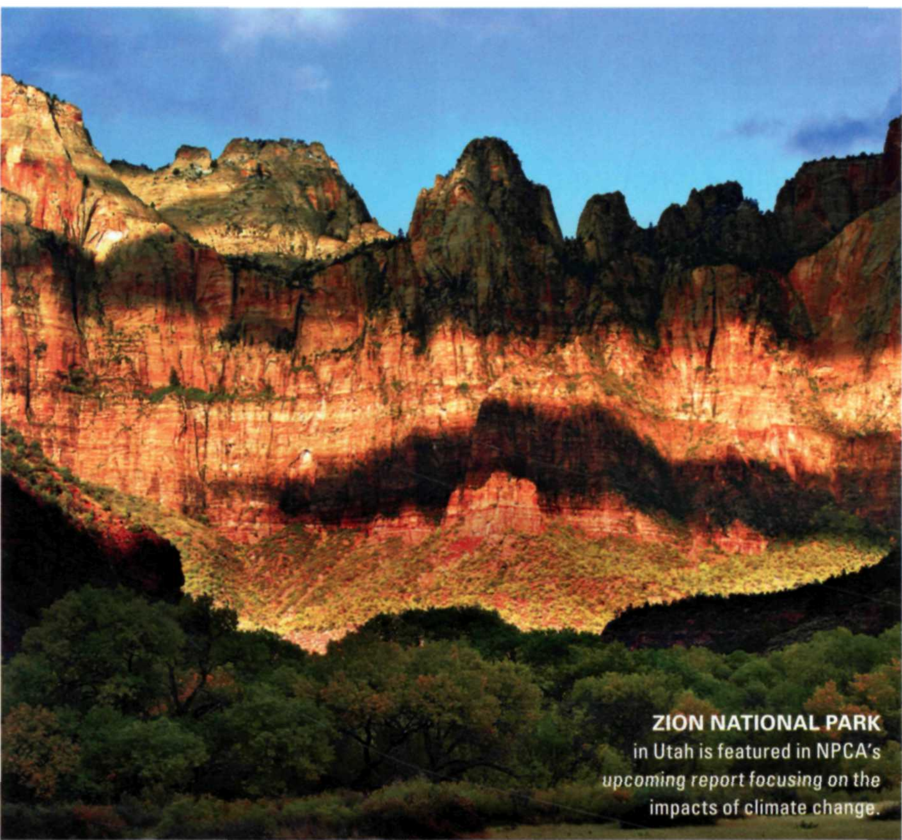
***MICHAEL CIPRA**, program manager in NPCA's California desert office, speaking at a congressional hearing held near the park, focusing on the potential impacts of climate change.*

It's like operating a power tool next to the Mona Lisa—you've got to be very careful.

***KAHLIL KETTERING**, program analyst in NPCA's SunCoast regional office, quoted in the* Miami Herald *in April, on plans to build two more nuclear reactors at Turkey Point, adjacent to Biscayne National Park, Florida. Beyond posing the typical risks associated with nuclear energy, reactors would siphon millions of gallons of fresh water into cooling towers each day, raising salinity levels in the park's waters, and threatening native species.*

If the parks are going to survive, they have to be relevant for everyone.

***RON SUNDERGILL**, director of NPCA's Pacific regional office, quoted in the* Santa Monica Daily Press *in March, regarding a program that has successfully introduced thousands of minority students to the Santa Monica Mountains National Recreation Area in southern California.*



ZION NATIONAL PARK in Utah is featured in NPCA's *upcoming report focusing on the* impacts of climate change.

© TIM FITZHARRIS/MINDEN PICTURES

Q&A

ON THE HORIZON

"Cap-and-trade" legislation is touted as a solution to global warming. What exactly does it mean?

There's no denying that Earth's climate is changing—the proof unfolds daily in the form of melting glaciers, raging wildfires, and an alarming number of species facing extinction. And it doesn't stop at park borders—it's threatening the very resources, wildlife, and historical icons we've worked so hard to protect for so long.

Thankfully, Congress is taking a serious look at new climate legislation that would cap greenhouse gas emissions and generate billions of federal dollars that could fund innovative technology and conservation projects to battle global warming's effects. National Parks' *Associate Editor Amy Leinbach Marquis sat down with Mark Wenzler, NPCA's director of clean air and climate programs, to get the details.*

Q: We've heard a lot about polar bears and Greenland's ice sheets, but talk a little about global warming's impacts on America's national parks.

A: From Glacier National Park in northern Montana to Florida's Everglades, everything is being impacted. Glaciers are disappearing, Joshua trees are threatened, coral reefs are dying, species are being driven toward extinction, insect pests are destroying forests from the Smokies to the Rockies. Our cultural resources are at risk, too—like Fort Massachusetts on Gulf Islands National Seashore in Mississippi, which could be wiped out as sea levels rise and storm surges increase. Farther inland, ancient Indian dwellings and artifacts are at risk from wildfires and flash floods.

This isn't just some future scenario—this is the stuff that's happening now. And these problems will only grow worse if we fail to act. So reducing greenhouse gases is absolutely essential to stave off irreparable damage—but it's not enough, because we could turn off every emission source in the world today and we'd still have enough carbon in the atmosphere to impair our ecosystems for another hundred years. So the sooner we act, the better off we'll be.

Q: It seems like cap and trade is a pretty popular solution—can you explain how it works?

A: Basically, industries are given a limit, or a "cap," on the amount of greenhouse gases they can emit, and each year that cap gets smaller. Industrial plants that emit less than the cap would be able to sell their leftover allowances to industries that exceed the cap. So, say you have a coal plant that decides to change over to natural gas, retrofit its plant, and all of a sudden it's emitting much less CO_2 and has this big chunk of emissions allowances. That coal plant can sell those allowances to another coal plant that doesn't want to bear the expense of retrofit. In other words, it's an affordable way to reduce emissions—and as long as these companies collectively stay under the established emissions cap, the process will drive the reductions to the industries that can most afford it.

At the outset of the cap-and-trade program, industries will be given mostly free permits to cover their existing emissions. But each year, a greater percentage of the permits must be purchased in an auction, creating an enormous stream of new federal revenue. We're talking hundreds of billions of dollars each year.

Q: That's a lot of money. Where will it all go?

A: Well, there is definitely a fight over it. Everyone has their hand out on Capitol Hill. But NPCA believes strongly that we should use these funds to prevent global warming and its impacts. It can't just be,

"We want new highways," or "Wouldn't it be nice if everybody got a break on their mortgage?" Global warming is an enormous problem, and it's going to cost a lot of money to fix it.

We need to invest in technology that helps speed the reduction of greenhouse gases—by generating clean energy, for example, especially since we're going to require all these plants to clean up. And we need to provide energy assistance to low-income U.S. consumers, because a cap-and-trade bill could cause energy prices to rise a bit in the short term as industry transitions to cleaner sources of energy.

NPCA's main interest is strengthening and protecting natural resources on which humans and wildlife depend. And that's where all of this really ties in to the national parks.

Q: How much of that revenue is needed to help the parks deal with climate change?

A: We don't know the exact amount, but we do know that things like land acquisition, habitat restoration, rebuilding coastal wetlands, and the like—applied throughout the public lands system—will require multi-billion-dollar investments over many years. The Lieberman-Warner cap-and-trade bill that ultimately failed to pass in the last Congress would have invested $7 billion a year in natural-resource protection. That $7 billion is a tiny sliver of the hundreds of billions of dollars that would be generated through the new cap-and-trade program. But even a sliver would help safeguard natural resources and wildlife from climate change.

And it's not just natural resources that need help. As sea levels rise and threaten historic forts, or as roads are being washed out by floods, our parks are going to need additional funds to help pay for prevention and repair.

Q: Even with that money, can we really protect natural resources and wildlife from climate change?

A: There's still much to learn about how climate change is altering our world, but

© STIRLING ELMENDORF

NPCA'S MARK WENZLER is optimistic about the prospects for cap-and-trade legislation addressing climate change in the coming years.

national parks are already helping to mitigate climate change's effects on wildlife. For example, in California's Redwood National Park, forests and streams are being restored after years of being devastated by logging—and that helps wildlife cope with stresses like wildfire and drought brought on by climate change. It also provides healthy salmon habitat and cleaner drinking water, both of which are vital to the surrounding communities.

In Everglades National Park, restoration of the natural water flow in the "river of grass" is helping the Florida panther and other endangered and threatened species. It also provides safe drinking water to Florida communities threatened by salt intrusion, and enhanced storm protection as climate change prompts more destructive hurricanes.

Throughout the National Park System, funds are needed to create wildlife migration corridors, restore the wetlands that protect coastal areas, reduce wildfire impacts, and build scientific understanding of how climate change affects natural systems and wildlife. These actions aren't necessarily cheap, but they are absolutely essential if we want to safeguard wildlife for our children and grandchildren.

Q: In these difficult economic times, how do we justify investing in natural resources?

A: History shows that investing in national parks and wildlands creates jobs and boosts rural economies across the country. A recent NPCA study found that national parks generate more than four dollars in value for every tax dollar invested; in many cases, the value is much greater. They support $13.3 billion of local, private sector activity and 267,000 private sector jobs. And they attract businesses and individuals to the area, creating more economic growth around parks than in other areas of the state. Investing cap-and-trade revenue to safeguard natural resources from climate change is a win-win situation for wildlife and for rural communities.

Q: Is there real support for this concept in Washington, D.C.?

A: Fortunately, yes. National parks have always had strong bipartisan support. After all, they belong to all Americans and reflect the great natural and cultural diversity of our nation. But we do need to help Congress see how parks are threatened by climate change, and how we can safeguard park wildlife with the right level of investment.

There has been some important groundwork in the past couple years. House chairmen like Norm Dicks, Nick Rahall, and Raul Grijalva are all strong supporters of protecting wildlife from climate change. And they're all heading up key committees in Congress. President Obama also supports this concept—his budget actually puts aside $130 million for natural resource protection. So we've got some powerful advocates to help us make the case to other members of Congress.

Q: Is everyone who wants to reduce greenhouse gas emissions pretty much on board with cap and trade, or are there competing solutions?

A: Well, cap and trade has its critics, so yes, there are competing ideas. Like "cap and dividend," for example. Its supporters agree that we need to cap greenhouse gas emissions and it's important to address

global warming, but they want to give all that revenue back to consumers.

It's legitimate to want to help people. As the economy transitions to clean energy, it's possible that energy prices will go up—and we should use cap-and-trade revenue to help consumers deal with that increase. But even if you fully compensated everyone in America for increased energy costs, there would still be hundreds of billions of dollars leftover to do the other things—to invest in clean energy, to protect natural resources. And that's what we want to ensure—that there's also adequate funding set aside to protect and restore the wildlife and natural habitats that are also being affected in a negative way.

Another competing plan is the carbon tax. It seems very simple: Tax emitters or energy consumers based on greenhouse gas emissions. The problem is it doesn't guarantee a specific level of greenhouse gas reduction—so it might help decrease greenhouse gases, or it might not. The second problem is industries would likely seek exemptions as they have done successfully in other areas within the tax code. This thought that taxes are simple and elegant and don't have loopholes, yet cap and trade is complicated and provides too many opportunities for industries to game the system, isn't very persuasive. Industry has worked the tax code to their benefit for decades and they will find a way to exempt themselves from carbon taxes.

Q: Say we get the funding. Is the technology there to move forward?

A: We can do a lot right now in the building and auto sectors, but we also need new technology to come online. Acid-rain legislation in the 1990s offers a promising example: When the bill was passed, the electric utility industry claimed there was no technology to reduce emissions and they would go bankrupt. But innovators quickly found cost-effective ways to reduce emissions by developing new technologies like pollution scrubbers and new catalysts that neutralize pollution. Those early innovators actually made money by cutting their own emissions and selling their excess pollution permits to competitors who were slow to innovate. In the end, the industry cut sulfur dioxide pollution by more than 50 percent—at less than a tenth of the cost predicted at the outset of the program. It's very likely we'll see the same kind of outcome resulting from the carbon cap—innovators will figure out ways to reduce CO_2 in cost-effective ways, and those early innovators will be handsomely rewarded by selling their technology and excess emission permits to others.

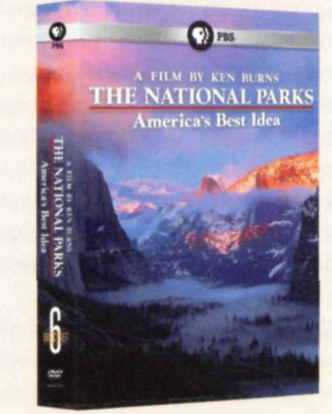
Q: So how do you get the public on board?

A: We have to reduce greenhouse-gas emissions—because if we don't bring emissions down and stabilize the climate, many of our national parks could be irreparably damaged. Most of the climate scientists believe that there's a certain tipping point in our ecosystem, and we're not there yet—we may have another decade to act. But if we don't reduce emissions significantly within this timeframe, and emissions reach a certain level, we're then at the point where all the glaciers melt, some of the ice caps melt, and we'll be faced with a level of impacts that are going to be very, very difficult to deal with.

People also tend to overlook the fact that natural resources are the economic backbone of many communities in America. Healthy ecosystems provide safe drinking water, bountiful fisheries, forest products, and so on. And outdoor recreation is huge for many of these rural communities near the parks. In terms of overall U.S. economy, these things really add up—and an economic boost is something that can benefit us all right now.

At the time this issue went to press, the House Energy and Commerce Committee had just passed the Waxman-Markey climate and energy bill. As written, the bill would initiate the country's first cap-and-trade program and set aside an average of about $1.9 billion for natural resources every year through 2030. The bill is expected to be on the House floor after the July recess; the Senate is moving at a slower pace, and may not cast votes until late summer or fall. For more on how you can help lower emissions and protect our national parks, visit www.doyourpartparks.org.

EYE-OPENER



KEN BURNS' 12-HOUR DOCUMENTARY, *The National Parks: America's Best Idea*, will air on PBS stations the last week of September.

In case you didn't read the interview with Ken Burns in the Spring issue of *National Parks*, here's the rundown: Filmed over the course of more than six years at some of nature's most spectacular locales from Acadia to Yosemite, the Everglades to Gates of the Arctic, the film tells the story of people from every conceivable background who devoted themselves to saving some precious portion of the land they loved, and in doing so reminded their fellow citizens of the full meaning of democracy.

If you pre-order a copy of the DVD or companion book by September 1 for receipt in October, you and NPCA can both benefit. Just visit www.kenburnsnationalparks.com and enter promotion code NPCA2 at check out, or call 617.300.2612 and mention NPCA. You'll receive a 15 percent discount on the book or DVD, or a package containing each of them along with the film's soundtrack. A percentage of the proceeds benefit NPCA's critical park-protection efforts. (DVD, 6 discs, $84.99; book 432 pp., $42.50; DVD, book, and soundtrack CD $127.50.)

823

VOLUNTEERS who put in a collective 113,680 hours of their time last year at Delaware Water Gap National Recreation Area in Pennsylvania and New Jersey. The park recently received the George B. Hartzog Jr. Award, establishing its volunteer program as the best in the Park Service. And it's clear why: Volunteer services were valued at more than $2 million, thanks to so many helping hands in so many needed places—like on archaeological digs, in the visitor center, and on up to 200 miles of trails. This summer, watch for a new fleet of volunteers on bikes, ready to assist visitors and respond to emergencies if needed.

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National Parks of the Virgin Islands
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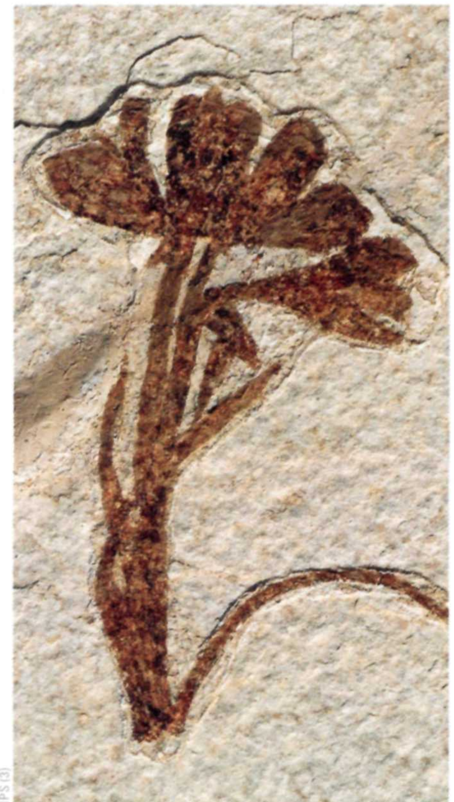

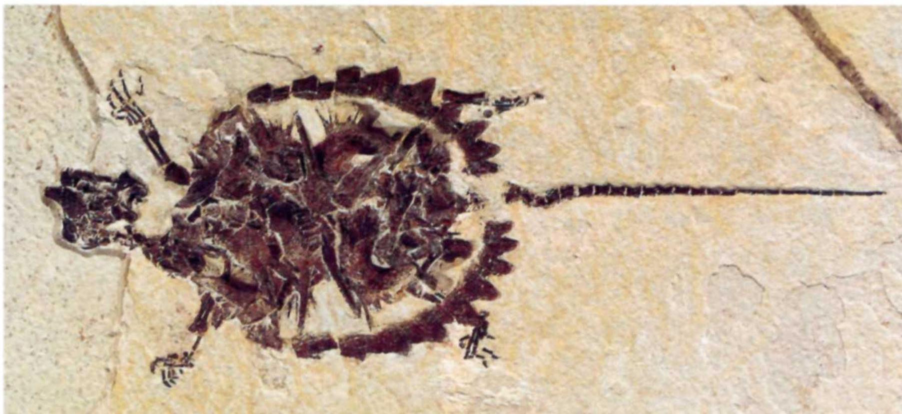

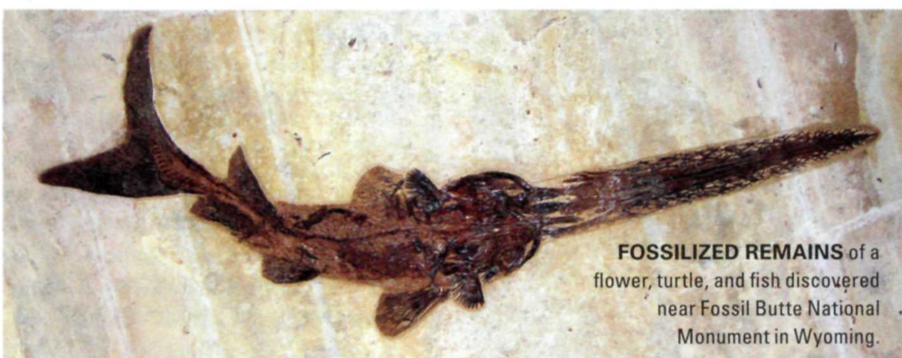

FOSSILIZED REMAINS of a flower, turtle, and fish discovered near Fossil Butte National Monument in Wyoming.

NPS (3)

REMAINS OF THE DAY

Crucial legislation preserves fossils on federal lands.

When visitors to Petrified Forest National Park consider pocketing a shard of petrified wood as a souvenir, a friendly ranger may ask them to consider what would happen if every visitor did the same thing. A nice bit of persuasive skills, but the premise is a little far-fetched, right? Actually, it's almost exactly what unfolded at a South Dakota park unit called Fossil Cycad National Monument. President Warren G. Harding established the site in 1922 to set aside petrified plant remains, but researchers and looters plundered the grounds, removing every fossil above the surface, and eliminating the sole reason for its existence. Fossil Cycad was removed from the Park System in 1957.

Defined as the remains of life captured in rock, fossils include the bones of a dinosaur, the teeth of a mammal, and even the impression of plant leaves or a footprint. Of course, it's always been illegal to remove fossils or any other natural material from a national park, but the penalty was rarely more than a slap on the wrist. As interest in these fragments of our natural history has increased over the last 50 years, the incentive to collect and trade fossils has risen exponentially. "When the famous *Tyrannosaurus rex* fossil, 'Sue' was sold for $8.5 million in 1997, people considered quitting their jobs to find their own million-dollar dinosaur," says Vincent Santucci, chief paleontologist for the Park Service. Meanwhile, the consequences for those caught red-handed haven't changed.

Until now. In March, the Paleontological Resources Preservation Act increased penalties for removing fossils from land managed by the federal government, including the Park Service, Forest Service, Fish & Wildlife Service, and Bureau of Land Management. First-time violations can be punished with fines up to $20,000 and up to two years in prison; subsequent violations will cost up to $100,000 and five years in prison. The hope is the new legislation will do for fossils what the Archaeological Resources Protection Act of 1979 did for Native American artifacts, which had been vanishing as demand skyrocketed.

But as Santucci is quick to point out, prison terms and pricy penalties aren't the only tools, or even the most effective ones. Visitor education has always been one of the best ways to remind people to protect park resources, which is why a key provision in the new legislation requires a public-awareness component. A Junior Paleontologist program will be fashioned after the popular Junior Ranger program, and the connection between national parks and fossils will be made even more clear to visitors at dozens of park units.

"You can watch a film like *Jurassic Park* in a theater or go to museums like the Smithsonian and see fossils that have been removed from the rock, polished, and reassembled, but national parks provide

opportunities for the public to see fossils in a natural state—essentially in the wild," says Santucci.

Because paleontology generally provides a child's first formal introduction to science, many six-year-olds can rattle off complicated words like pterodactyl and *stegosaurus*. But they're not the only ones learning from fossils—these prehistoric clues are still revealing new information about our planet. "Fossils provide the most direct evidence for us to understand the history of life, illustrating the impact of climate change and even the movement of continents," says Santucci. "These truly are nonrenewable resources—we're not making any more *T-rexs*. And we can't afford to lose them. In 25 years of working in paleontology, I've found that most of what is to be learned about the story of life is yet to be discovered—we've only scratched the surface." —*Scott Kirkwood*

EYE OPENERS

Tipping the scales at more than nine pounds each, **THE PRINCETON ENCYCLOPEDIA OF BIRDS** (656 pp., $35.00) and **THE PRINCETON ENCYCLOPEDIA OF MAMMALS** (936 pp., $45.00) are too beefy to take along on a hike, but the two paperback volumes published by Princeton University Press are packed with photos, illustrations, and lively text that comfortably bridges the gap between a child's reference tool and a doctoral thesis. Edited by Christopher Perrins, the first volume covers every known bird species (a whopping 9,845 winged creatures). Each listing details a species' plumage, voice, eggs, diet, and conservation status, while color-coded maps illustrate the bird's primary habitat. Short articles explain how homing pigeons navigate, efforts to teach whooping cranes to migrate, and the conservation of shorebirds, among others. The guide to mammals, edited by David MacDonald, covers all 5,096 known species, and includes information on social behavior, distribution, diet, habitat, breeding behavior, and longevity. You'll also learn how dolphins communicate, why lions roar, and how researchers use photography to identify marine mammals by their markings.

Photo: Matt Turley @ www.matthewturley.com

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PROTECTING THE PAST

Four new bills help the National Park Service tell America's story.

If you've ever wandered the grounds at Gettysburg, watched the sun rise over ancient Puebloan ruins, or gazed into the kitchen where Thomas Edison ate his meals, you understand the thrill that comes with touching the very places where history unfolded.

But those kinds of experiences require funding and infrastructure that the National Park Service doesn't always have. Fortunately, the Omnibus Public Land Management Act of 2009 became law in March, helping to boost the agency's ability to interpret history in a more comprehensive way. In some cases, Congress needs to appropriate even more funding to make it happen. But this legislation symbolizes a big step forward. A few victories:

Trail of Tears National Historic Trail

The Trail of Tears National Historic Trail in Tennessee, North Carolina, Georgia, and Alabama memorializes one of the darkest chapters in American history. In 1838, the U.S. government forced more than 16,000 Cherokee Indians from their homelands in Alabama, Georgia, North Carolina, and Tennessee, and marched them to what is now Oklahoma. The trip alone killed hundreds of Native Americans; thousands more died afterward.

But when the trail was designated as part of the Park Service's National Trail System in 1987, two major segments were missing: the Bell and Benge routes, where many of the Cherokees began their treks westward. And that meant a significant part of the story wasn't being shared with the public.

Thankfully, new legislation more than doubles the interpreted area, adding nearly 3,000 miles of new trails. It also includes 29 new immigration depots and other sites that have been discovered and documented through the National Park Service. During the next three to five years, visitors will see new interpretive signs, a memorial park on the Tennessee River, an interpretive center at Moccasin Bend, and a cultural center displaying Cherokee art at Ross' Landing.

"This legislation recognizes not just the glory of our country and the wonderful things we've done, but the mistakes we've made along the way," says Rep. Zach Wamp (R-TN), one of the congressional members who introduced the bill. "We need to remember those mistakes so we don't repeat them again, ever, in any way, shape, or form."

NEW LEGISLATION HELPS THE PARK SERVICE interpret the history of Native Americans, Buffalo Soldiers, American women, and a copper mine in Michigan.

Keweenaw National Historical Park

When Keweenaw National Historical Park in Michigan was designated as a national park unit in 1992, legislation required the park to rely on local communities and nonprofit partners for a good part of its funding. Sometimes, that made telling the story of America's booming copper industry a real challenge.

In the past, for example, Keweenaw partners had to raise $4 for every dollar offered in a federal grant. But that kind of fundraising can be hard to do in a region that hasn't boomed since its copper industry declined a century ago. Thankfully, this new legislation lowers that ratio to a much more reasonable one-to-one.

The new bill also authorizes the Park Service to buy historically important properties that it wasn't allowed to own in

the past. But it still needs the funding to purchase those sites—and to stabilize the Quincy Smelter, one of the world's most historically significant sites for the copper industry [see "Fighting Gravity," Spring 2009]. Requests have been submitted to Congress, and approved funding will likely be announced this fall.

Women's Rights National Historical Park

Women's rights in America have come a long way since 1917, when suffragettes were picketing in front of the White House for the right to vote. Now, an interpretive trail through New York will help document just how far the nation has come. Introduced by Rep. Louise Slaughter (D-NY) and then-Senator Hillary Rodham Clinton, the National Women's Rights History Project Act creates a drivable women's history trail, expands the national online database of women's history sites, and establishes a partnership network to fund relevant educational programs. The route was designed to allow access to many of the most prominent sites of the women's movement, including Seneca Falls and Waterloo at Women's Rights National Historical Park, where the first women's rights conventions were planned and held.

"So many people forget that it was just eighty-nine years ago that women were finally allowed to vote in this country," says Slaughter. "This important legislation provides Americans with the chance to learn more about the heroines who changed history and opened the doors of opportunity for future generations of women."

Fort Davis National Historic Site

Perhaps no park unit symbolizes the clash of suppression and newfound freedom, of brutal conquests and the budding American Dream, as Fort Davis National Historic Site in Texas. Here, the military successfully fought off Native Americans in the Indian Wars, securing new territory for American settlers heading west. But as one group was repressed, another was rising above a troubled past: Formerly enslaved African Americans—the Buffalo Soldiers—proved their dedication here by ably serving the U.S. Army on the Western Frontier.

If you stand on a certain bluff in the park, you can see the same landscape and historic structures that those soldiers saw in the late 1800s. But that landscape doesn't completely fall within park boundaries—so when it went up for sale, conservationists feared it might end up in the hands of a developer. Thankfully, NPCA helped get it into the hands of a sympathetic buyer, who's holding it until the Park Service has the money to purchase it. That may take a while—but the new legislation officially expands the park's border, which is a critical first step.

"The integrity of that view is as much a part of the park's historic fabric as anything else," says Suzanne Dixon, director of NPCA's Texas regional office. "There's not a gas station or a drive-through restaurant anywhere in sight. Going there is like going back in time—and now we can rest assured that that experience will never change." *—Amy Leinbach Marquis*

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A LITTLE BROWN BAT with white fungus around its nose—the sign of a deadly disease.

IN COLD BLOOD

A mysterious disease threatens to wipe out America's bats.

The killer crept in quietly while the victims were sleeping, all huddled together in little brown clumps in a cave in Albany, New York. First, a small, white ring of fungus appeared around the noses of several species, including *Myotis lucifugus*—commonly called little brown bats. Soon they became emaciated. And then, one by one, they began dying, their tiny winged carcasses piling up on the floor. What was once a safe and reliable shelter for thousands of bats quickly turned into an eerie grave.

More than 8,000 bats died in the Northeast in the winter of 2006. Since then, the mysterious disease—called white nose syndrome—has wiped out more than 500,000 bats. It has affected six different species—including several small populations in Delaware Water Gap National Recreation Area in Pennsylvania and New Jersey—and may spread as far south as Virginia. Since white nose syndrome may kill 80 to 100 percent of bats once it infects a cave, biologists are nervous about its proximity to the Southeast, which provides some of the world's best habitat for hundreds of thousands of bats, including endangered gray bats and big-eared bats.

But how can scientists manage a disease they know so little about? The white fungus offers some clues—it thrives in cold temperatures, for example—but some people don't believe it's the single cause of death, if it's causing the deaths at all. It may just be one of many contributing factors. So what, then, is the source of this silent killer? And how can it be stopped?

To find answers, the Park Service is engaged in research projects and establishing new management plans with help from leading scientists and other federal agencies. They've learned that bats are probably vectors of white nose syndrome, and humans might be, too, considering fungal spores might be capable of clinging to clothes and shoes. In response, rangers in Cumberland Gap National Historical Park in Kentucky, Tennessee, and Virginia, are monitoring visitors closely to make sure they're not wearing the same clothing and gear in one cave that they've recently worn in another.

Back at the Delaware Water Gap—the only national park to show signs of the disease—rangers took a more extreme measure by shutting caves to the public last spring. The U.S. Forest Service has closed thousands of caves in dozens of states. Rangers have even banned recreational spelunking as a precautionary measure as far west as Sequoia and Kings Canyon National Parks in California and as far south as the Great Smokies in Tennessee and North Carolina. "We can't stop an infected bat from flying here," says Dan Nolfi, a wildlife technician in the Smokies. "But closing caves to people is one way we might be able to help control the spread."

Whether you're fond or phobic of bats, it's hard to deny the benefits of having them around. One little brown bat can eat anywhere from 500 to 1,000 mosquitoes in a single hour; other bat species keep crop-eating beetles and moths under control. And there may be many other benefits we're not even aware of.

"We can't begin to say that we know everything about how bats affect ecosystems, and it would be irresponsible of us to think that we do," says Kevin Castle, a National Park Service wildlife veterinarian who's taking the lead on white nose syndrome for the agency. "That's just one of many reasons why we need to try to keep bats around." — *Amy Leinbach Marquis*

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By Amy Leinbach Marquis

SAGUARO CACTI HAVE EVOLVED to withstand harsh conditions in Organ Pipe Cactus National Monument, Arizona.

© JIM BRANDENBURG/MINDEN PICTURES

Desert Secrets

How do plants survive a blazing sun, summer heat, and constantly shifting landscapes?

Gaze out at any desert landscape, and you might overlook the scrappy, dry shrubs, or the crusty brown topsoil, or a few green leaves poking out from the top of a sand dune.

But look closer, and you'll realize that what may look like meager signs of life are actually evolution's shining stars: Plants that have adapted to some of the harshest conditions on Earth. From knowing when to shed leaves, slim down, change colors, or power off, desert plants are masters of survival. And thank goodness for that—because without roots, mosses, and lichens to hold the soil intact, our deserts would be lifeless dust bowls.

Consider the creosote bush, an unsung hero of this group. Scrubby and squat, the shrub dots southwestern landscapes like California's desert parks and, like most plants, disperses its seeds randomly. But as those seeds germinate and grow into adult creosotes, they compete with each other for resources, and the population thins gradually until only the most evenly-spaced plants remain standing. The result is an impressive, orderly landscape that gives each shrub plenty of room to maximize its resources year-round, as other plants flourish and fade with the seasons.

In Zion National Park in Utah, the Shivwits milk vetch, a perennial herb, reads the soil for moistire and waits it out underground when water is scarce.

In Arizona's Saguaro National Park, where rain falls reliably but only in winter and summer, desert lupine wildflowers grow a furry coating to slow moisture loss. Jojobas, whose seeds are used in everything from cosmetics to biodiesel fuel, turn their leaves inward to avoid a harsh sun. Ocotillo—tall, spindly plants with stunning red blooms—drop their leaves in dry conditions. And in daylight, the saguaro cactus actually "holds its breath" by closing off its stomata, which preserves water, while storing the sunlight's energy—an act that only a cactus could pull off.

Plants like rosemary mint sage and soaptree yucca in New Mexico's White Sands

National Monument face a different sort of challenge: shifting dune fields. Because the park sits atop an aquifer, plants are less likely to die of thirst than to get buried alive. Their secret? By growing fast, they keep their heads above the sand.

"It's amazing that they're able to survive in such a changing environment," says park biologist David Bustos. "The big dunes can shift up to 30 feet in a year, but as long as a few leaves make it to the top of the dune, the plant will keep growing."

But adaptations go only so far. Global climate change is shifting the nature of our deserts faster than plants can evolve, and that doesn't bode well for the desert mosses and lichens that keep desert soil from blowing away in a stiff wind.

For millions of years, these ground-dwelling stabilizers have relied on the ability to shut down and wait patiently for rain. In fact, they could lie dormant for hundreds of years and still crank back to life with a drizzle of water—if it weren't for the sun's ultra-violet rays.

"Once those UV rays get inside the cells, they literally bang around and smash things up like a pinball machine," says Jayne Belknap, a research ecologist with the U.S. Geological Survey in Moab, Utah. Such cellular damage can be lethal to an organism, but evolution has given mosses and lichens an edge: Pour water on a moss, and it will turn green in seconds, immediately going to work to undo the damage of the sun.

But here's the catch: When mosses and lichens get wet, they breathe out carbon—and if they dry up before they've had a chance to replace what's lost, they'll go into a carbon deficit, which can be fatal. Because hotter temperatures cause water to evaporate faster, the increase in sweltering summer days poses a serious threat.

"These species have to bank on rainstorms so big that they can stay wet long enough to replace their carbon stores in the heat," Belnap says. "But most storms in the desert produce less than five millimeters of rain, and five millimeters of rain on a really hot summer day doesn't stay around long."

Research by a group of New Mexico State University scientists might offer some hope. Using samples from plants that thrive on the dunes of White Sands National Monument, they've discovered special microbes in plant tissue, or "endophytes," that help plants overcome environmental stress. When endophytes from desert species were applied to temperate plants, like tomatoes, they were able to withstand drought and high temperatures. If scientists can learn to harness these microbes, they could help reduce the need for agricultural pesticides and help ensure plant survival in a changing climate.

It all goes to show that deserts have a lot to offer beyond open spaces. "The more time you spend in the desert," says Kristin Legg, Zion's chief of resource management, "the more you discover its secrets." **NP**

Amy Leinbach Marquis is associate editor of *National Parks* magazine.

By Jeff Rennicke

YELLOWSTONE'S BOREAL CHORUS FROG may be threatened by global warming.

© EVAN BARBOUR

A Chorus of Controversy

Yellowstone's boreal chorus frogs may be disappearing. Is global warming to blame?

Millions of visitors come to Yellowstone each year with one ear cupped for the faintest hint of a wolf howl. Others hope to catch the bugle call of rutting elk. But Chuck Peterson's ears are tuned to something else: a sound "like someone running their thumb across the teeth of a comb," says the Idaho State professor and co-author of *Amphibians & Reptiles of Yellowstone and Grand Teton National Parks.* It's the call of the boreal chorus frog—a creature at the center of a controversy over science, global warming, and the future of Yellowstone National Park.

Barely the size of your thumb (just 1 to 1½ inches long), the chorus frog seems an unlikely creature to divide the science community. One of only four amphibians in the park, they are, says Peterson, "very attractive frogs"—when you can find them. "They are frustratingly hard to spot," he says. "But the pouches on their necks are yellow and if the light is right, you can see a half dozen or more when they're calling."

Those mating calls begin as early as March in the lower elevations of the park and continue until June or early July at higher elevations. Researchers believe there may be a "chorus master" who initiates the calling—an invitation for others to join—and soon the chorus becomes a din. "You can hear it from a quarter-mile away," says Peterson, "and if you are close, like within a few feet, it can actually hurt your ears."

To Peterson, it is one of Yellowstone's signature sounds that too many visitors miss. But lately, it's like someone turned down the volume.

Therein lies the controversy. A recent paper in the *Proceedings of the National Academy of Sciences* is sounding what authors Dr. Elizabeth Hadly and Sarah McMenamin see as a clarion call over the loss of park wetlands due to global climate change—and such

losses could pose serious threats to Yellowstone's amphibians.

Between 2006 and 2008, McMenamin, a graduate student at Stanford University, haunted the shores of the small ponds speckling the floor of Yellowstone's Lamar Valley to document salamander diversity and the population genetics of amphibians. During the course of the field work, McMenamin compared her data with records from surveys done on the very same ponds in 1992 and 1993. The results, she says, were "startling."

"I began to see an enormous difference in both the number of ponds available and the number of species we were documenting," says McMenamin. Only 38 of the 49 locations contained any water at all. Only 21 were found to contain even one amphibian species. And 17 ponds known to host amphibian species in the early 1990s were apparently devoid of those species.

"It's frightening," says Hadly. "It's like these small ponds are just blinking off." Compared to 16 years ago, the paper states, the number of perpetually dry ponds in northern Yellowstone has quadrupled. Global warming—with its lowered precipitation rates, higher temperatures, and prolonged drought—could be to blame.

The study also claims that of the ponds that remain, the number supporting amphibians has declined significantly. Without ponds, amphibians have no place to breed, lay eggs, or develop—and that could explain why the park's boreal chorus frog population has dropped by a reported 75 percent.

But there's a bigger trend here, too. "Amphibians are an indicator species that could reveal further disturbances reverberating up the food chain in the future," McMenamin says. "Our results indicate that climatic warming already has disrupted one of the best-protected ecosystems on our planet."

Not so fast, says Peterson, the Idaho State professor. In a published response, he and Stephen Corn, a zoologist with the Northern Rocky Mountain Science Center, cite the small geographic area studied (less than 1 percent of the park), problems with sampling size and design, and the short duration of the study, calling any claim of an amphibian demise park-wide "unsupported."

"I'm not saying there isn't a problem here," says Peterson, who has been studying the park's amphibians since 1991. "But amphibian populations have been fluctuating for a long time, and at this point it's just unclear whether we're dealing with year-to-year variation or a long-term trend. More rigorous and careful research is needed."

None of the amphibian species in Yellowstone have been listed as threatened or endangered yet, but the park has established long-term monitoring sites and continues to fund further surveys. And in the middle of it all sits the tiny boreal chorus frog singing loud and clear, revealing secrets that we may need to know, but don't yet know how to hear. **NP**

Jeff Rennicke teaches literature at Conserve School in Wisconsin's North Woods

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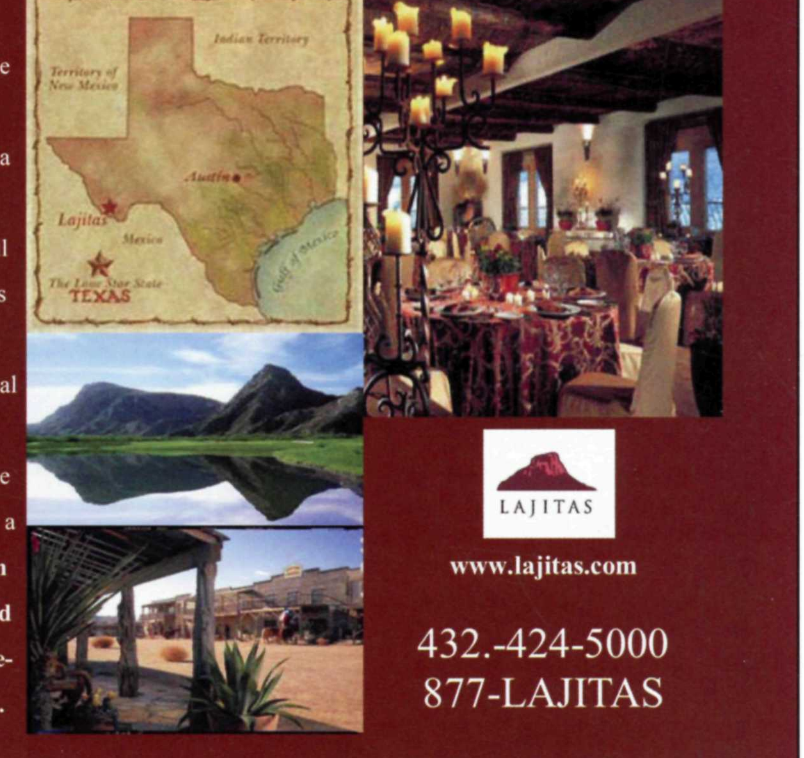
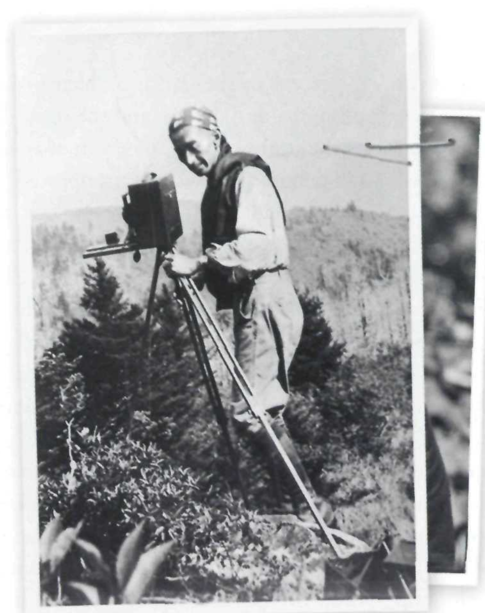
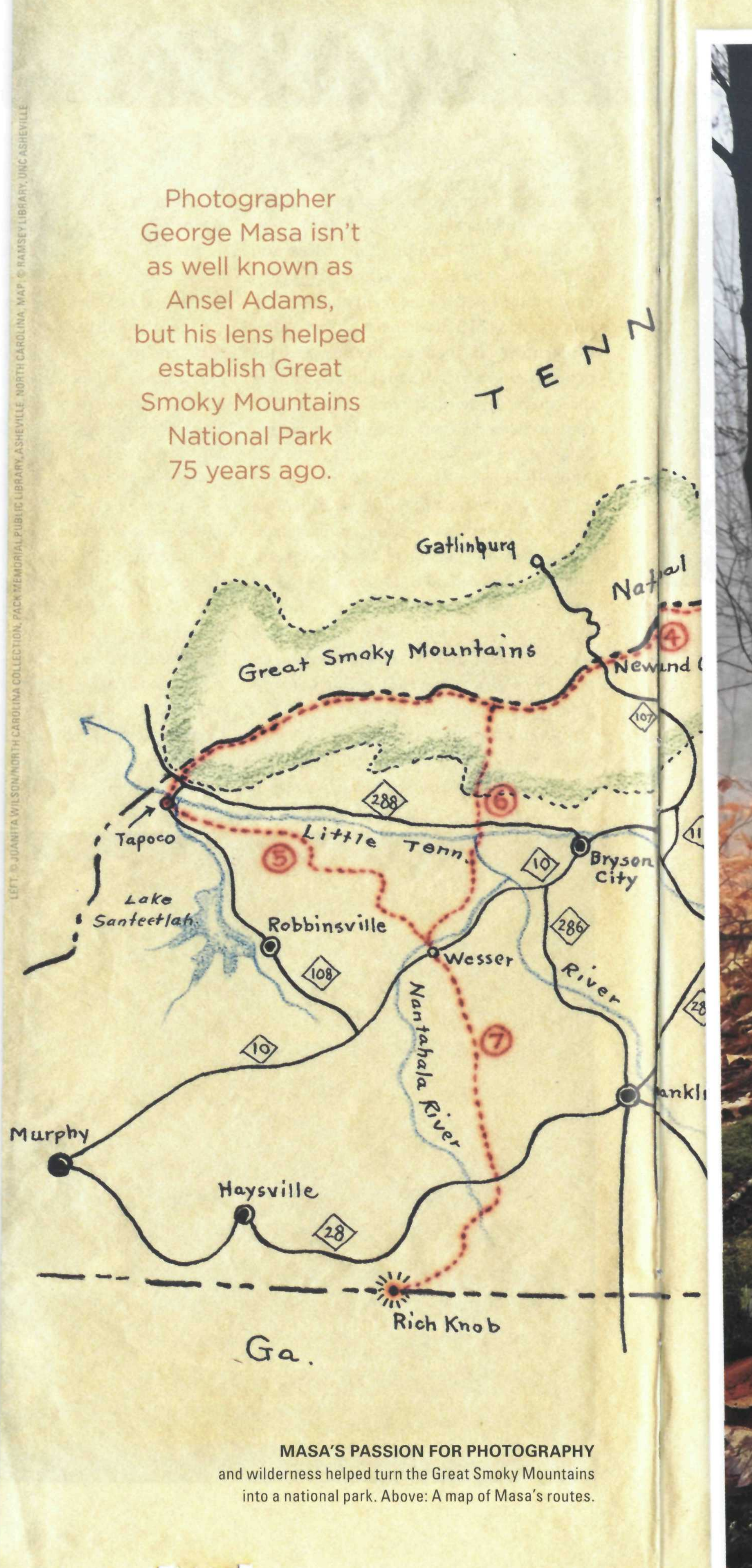




the view FROM ABOVE

BY MIKE THOMAS

ENSHROUDED by blue haze, a lone figure scans the horizon from his lofty plateau and waits. The breeze blows and the clouds drift, and he waits. The spruces sway and the sunshine beams, and he waits. He tugs at the red bandana on his head, hikes up rumpled khakis on his slight 100-pound frame. Before him is a heavy black large-format camera—a field-tested Deardorff, perhaps—with bellows on the side and a load of 8-by-10-inch sheet film. Perched atop a tripod, it is trained on vanishing old-growth forests (timber-industry skidders have razed great swaths) and the majesty of distant peaks. And, of course, those clouds, those infernal, fickle clouds. If only they'd drift a hair to the right, if only they'd veil the glaring light, he'd have it—the proverbial picture worth a thousand words. At least.



MASA'S PASSION FOR PHOTOGRAPHY and wilderness helped turn the Great Smoky Mountains into a national park. Above: A map of Masa's routes.

LEFT: © JUANITA WILSON/NORTH CAROLINA COLLECTION, PACK MEMORIAL PUBLIC LIBRARY, ASHEVILLE, NORTH CAROLINA; MAP: © RAMSEY LIBRARY, UNC ASHEVILLE

1916-2016 NATIONAL PARK SERVICE CENTENNIAL 16 VISIONARIES WHO SHAPED THE PARK EXPERIENCE

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©GEORGE MASA/ASHEVILLE ART MUSEUM COLLECTION

MASA MADE COUNTLESS FRIENDS working as a hotel valet in Asheville, North Carolina. But he also loved his time away from the crowds, photographing sites like Chimney Top (top right), now part of Great Smoky Mountains National Park.

LEFT: © HUNTER LIBRARY, WESTERN CAROLINA UNIVERSITY

Then, at last, it's here. The moment. And he's ready. He's always ready. Click! Click! And again and again, until the picture-postcard instant has passed. Pleased though far from satisfied, he gathers gear and scant rations (the bare minimum, as ever), grabs his odd-looking but surprisingly functional handlebar-and-bicycle-wheel contraption rigged with a distance-measuring odometer, and rolls off through rugged backcountry to make camp for the night. Or maybe he'll head home to Asheville, North Carolina, where he runs a popular photography studio. Tomorrow, come sunshine or showers, he'll awaken early and begin anew. He'll search for a perch and set up shop. He'll survey creation and imagine the shot. And then, once again, he'll wait. For as long as it takes.

This was George Masa, photographer, conservationist, and a key figure in the establishment of Great Smoky Mountains National Park 75 years ago this June. Born Masahara Iizuka in Japan, the man called the "Ansel Adams of the Southern Appalachian Mountains" was a perfectionist whose passion was matched only by his patience. Though his story has been told in print and on television in recent years, Masa remains something of an enigmatic figure. That may change with his inclusion in documentarian Ken Burns' upcoming PBS series, *The National Parks: America's Best Idea*, which premieres in September.

Paul Bonesteel, who wrote and directed a fine 2002 documentary of Masa's life called *The Mystery of George Masa*, gives some sense of the burdens Masa bore and the often trail-less terrain he traversed during the decade-and-a-half or so he roamed the wilderness. "If you've ever hiked three or four miles anywhere, you begin to realize how far it really is on foot," Bonesteel says. "Pack yourself up with a bunch of gear, let alone anything to sleep in or to eat, and you're maxed out pretty quickly. And those cameras weren't really designed with [traveling in mind. In later years,] people in the hiking club helped him carry things here and there. But I've been on some of these trails—I've been to some of the places where he took photographs, and it's just hard work."

In his youth, Masa is said to have studied mining engineering at Meige University in Tokyo and continued his engineering schooling at the University of Colorado. He then lived for a time in New Orleans before settling, at age 24, in the rather unlikely town of Asheville. "He was probably a little out of place—this tiny Asian man with broken English in a time when there wasn't much diversity here," says Steve Kemp, interpretive products and services director for Great Smoky Mountains National Park.

Nonetheless, Masa assimilated with astounding ease. During his residency in the area, which began in 1915, Asheville was (and remains) the site of George Vanderbilt's sprawling Biltmore Estate as well as a bustling hub for visiting VIPs. Although Masa was known for much of his time in town as a top-notch still shooter and an accomplished newsreel photographer, his first gig was as a valet at Asheville's tony Grove Park Inn. Funded by wealthy businessman Edwin Wiley Grove and opened in 1913, it still hosts visitors today. The high-class resort—run by Grove's son-

in-law, Fred L. Seely—was an idyllic refuge for such icons of politics and industry as Eleanor Roosevelt, John D. Rockefeller, Jr., Harvey Firestone, and Henry Ford. It also proved an ideal place for the outgoing and personable Masa. With Seely's help, the aspiring photographer kick-started his career by developing film for guests and capturing candids of them on and off the inn grounds. In performing these services and his valet duties, he formed numerous friendships and earned the goodwill of movers and shakers who would one day support his efforts to transform the wilds of western North Carolina from exploited woodland to protected park. When he left to start his own studio, Masa also documented much of Asheville itself—the buildings, the landscapes, and the people.

Aside from cataloging mountain peaks and the distances between them, Masa helped blaze North Carolina's portion of the 2,178-mile Appalachian Trail. He was often aided on photographic treks by members of the Carolina Appalachian Trail Club and the Carolina Mountain Club, his frequent hiking companions. Completed in 1937 (four years after Masa's death), the trail stretches through six national parks, eight national forests, and 14 states from Georgia to Maine. The park movement was a project—an obsession, really—that consumed most of Masa's days. And even though a national park would have been born without his involvement, those who've studied him say, the thousands of images he captured and dispersed to persons of influence went a long way toward facilitating the complex process. (He sent a book of shots to Mrs. Calvin Coolidge, whose husband green-lighted the park's formation in 1926.)

Considerable funds from Tennessee and North Carolina, as well as the federal government under Franklin Delano Roosevelt (another lodger of Grove Park Inn), helped immensely. So did a stunning $5 million donation from John D. Rockefeller, Jr., who, like many others, had met Masa during a stay at the inn. Ever the entrepreneur, Masa built a network of such contacts, including higher-ups in the National Park Service, and won them over with his unflagging dedication, generous nature, and artistic flair.

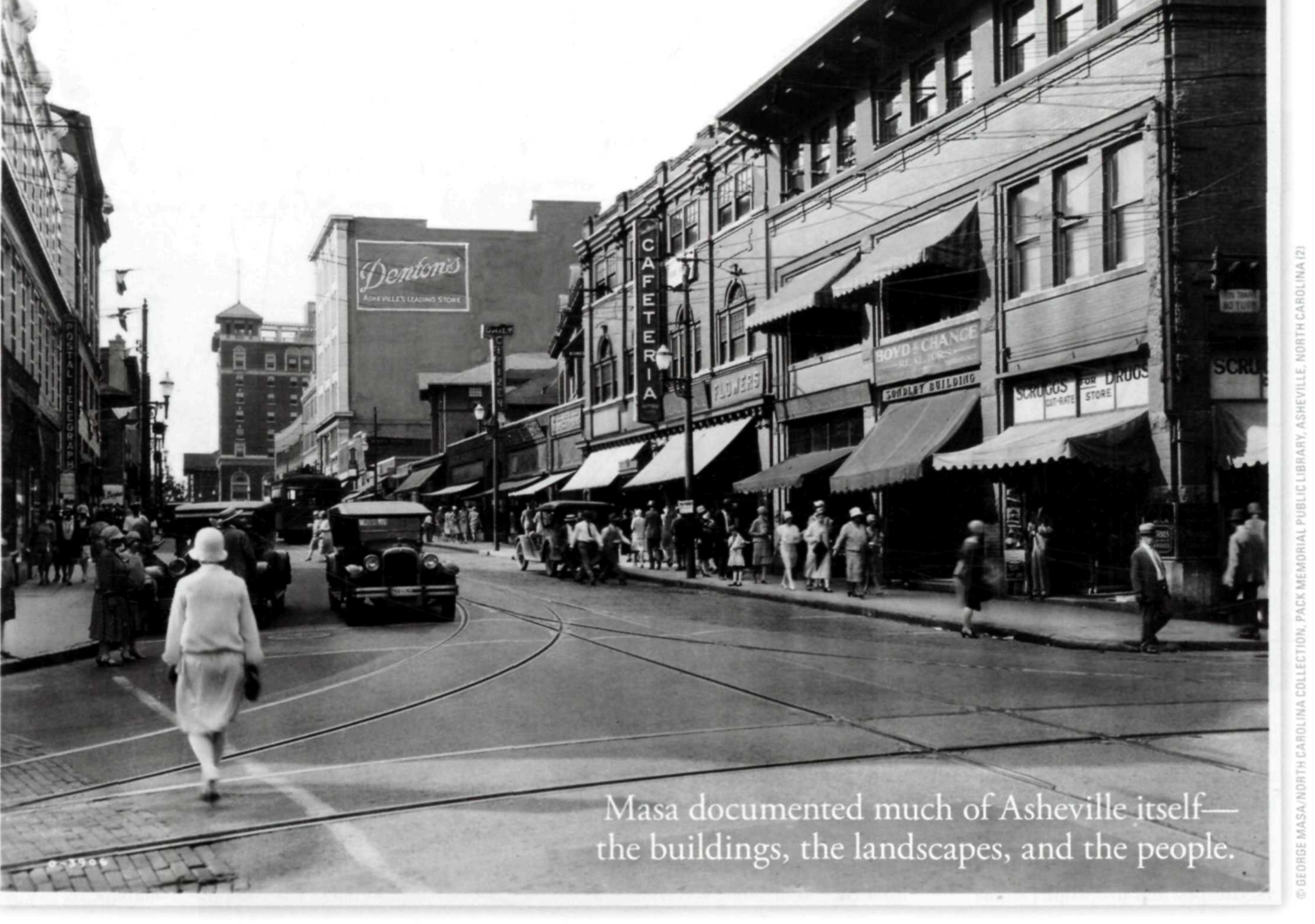
"Dear Sir," begins a letter from Rockefeller to Masa dated November 20, 1928. "Thank you for the two pho-

MASA HIKED THROUGH THE SMOKIES for days at a time, navigating technical terrain with a large-format camera and bulky gear strapped to his back.

"... through his skills as a photographer he sought for years to ... find new beauty for the eye in the dim distances."

— FROM MASA'S OBITUARY, *ASHEVILLE TIMES* FRONT PAGE

COURTESY OF GEORGE ELLISON



Masa documented much of Asheville itself—the buildings, the landscapes, and the people.

© GEORGE MASA/NORTH CAROLINA COLLECTION, PACK MEMORIAL PUBLIC LIBRARY, ASHEVILLE, NORTH CAROLINA (2)

IN ASHEVILLE, NORTH CAROLINA, Masa built up a network of artists, philanthropists, and even politicians who could help realize his dream of preserving the Smokies as a national park.

tographs which you took in front of the hotel at Asheville the other morning. If these photographs were meant to be complimentary, I accept them with appreciation. If they were sent to me to buy, kindly forward your bill to the above address."

Money, though, was not Masa's goal. Not in that case. Not always. As one friend remarked, he had "the talent and soul of an artist." Although he appears to have made a decent living early on, the majority of his modest profits were poured back into equipment and supplies. "The thing that I think was most singular about [Masa] was his strong sense of commitment to the creation of the Great Smoky Mountains National Park and the Appalachian Trail," says William A. Hart, Jr., a writer and regional historian whose essay on Masa appeared in *May We All Remember Well: A Journal of the History and Culture of Western North Carolina, Vol. 1.* "And it was a singular dedication that I think you see in few people, to the point that he actually sacrificed himself, he sacrificed his business."

Masa's solo endeavors had an impact, but his partnership with writer and expert outdoorsman Horace Kephart (whom he usually referred to as "Kep") was even more effective in spreading the gospel about God's country. Before they met in the late 1920s, Masa was well established as a photographic ace, and Kephart, in Bryson City, North Carolina, was the bestselling author of *Camping and Woodcraft* and *Our Southern Highlanders*—the latter a classic behind-the-scenes look at the Southern Appalachians and Great Smoky Mountains, published in 1913. Kephart, though, had a dark side. A binge drinker whose family life was in shambles, he sometimes spiraled into boozy oblivion. But his work, like Masa's, was impeccable. Not surprisingly, the marriage of Masa's photos and Kephart's prose was a perfect union. The men themselves bonded as well. Though their cultural and professional backgrounds were wholly dissimilar (Kephart was trained as a librarian), in many ways they were kindred spirits.

"Kephart was quite a linguist," says George Ellison, a Bryson City-based writer and historian. "He had traveled in Italy, had an interest in languages, and so dealing with someone who was not a native American would have been no problem for him. He probably welcomed it." The two shared a deeply rooted love of and almost spiritual connection to nature as well. In the Smokies, Ellison says, both men found "a place of refuge—a place they could get away from it all, these previous life histories." And their dispositions were apparently compatible as well. Ellison calls them "intense" and "self-starters, almost to an nth degree" that many might identify as "Type-A personalities—in a nice way."

Like many who knew Masa, Kephart was impressed with his friend's drive and amazed by his indefatigable acumen for exploration and map-making pursued as part of the park's three-member North Carolina nomen-

clature committee, which ensured the accuracy of maps and resolved conflicts over the duplication of landmark names. Kephart made this admiration known in a letter to the chairman of the Tennessee nomenclature committee, Paul Fink, writing of his astonishment that Masa "should have done all this exploring and photographing and mapping, on his own hook, without compensation but at much expense to himself, out of sheer loyalty to the park idea and a fine sense of scenic values. He deserves a monument."

And he'd get one, but not for decades. Kep's honor, rare for someone still living, would come first in the form of a 6,217-foot-high peak dubbed Mt. Kephart. But Kep dwelled in its shadow for only two years. In early April of 1931, Kephart died in a car accident that reportedly involved alcohol. Masa was crushed. "Kep is gone forever," he wrote to Fink. "His death, it shocked me to pieces. I never experience such feelings in my life. But we must keep going on what we have in our hands. And I like to carry out what Kep wanted."

To the best of his ability, he did just that by continuing work on both the Appalachian Trail and the park's creation. But the Great Depression was growing worse, and loans—personal and business—were increasingly scarce. Already shaky, Masa's financial situation hit rock bottom. Before long, so did his health. Tuberculosis and complications from influenza finally withered him on June 21, 1933. He was 51 and less than a year away from seeing his dream become reality. Great Smoky Mountains National Park was officially established on June 15, 1934.

"The queer blue haze that clings like a veil to the loftiest points in the Southern Appalachians struck his imagination," read Masa's obituary on the front page of the *Asheville Times*, "and through his skills as a photographer he sought for years to tear aside that veil and find new beauty for the eye in the dim distances."

Masa's mid-morning funeral service at Asheville's Riverside Cemetery, held two days after his death, was brief but well attended. His gravesite remained unmarked for nearly five years for lack of funds, and early efforts to have Masa and Kephart buried side-by-side in the Smokies failed. But a far grander reunion was in the offing. In late April 1961—more than three decades after Horace Kephart suggested a monument for Masa and years after the Carolina Mountain Club began efforts to memorialize its former leader—it finally happened. Situated at 5,685 feet, only a boulder's roll from Mt. Kephart, is Masa Knob. As in life, two forces of nature stand watch over lands they loved.

Although Masa's spirit has survived, most of his photographs and negatives have not. "At one point Masa believed he had over 2,500 images of the park," says Lynne Poirier-Wilson, curator of a recent Masa exhibit at the Asheville Art Museum. Most of the 40 images showcased were borrowed from the Pack Memorial Library in Asheville. "When he died, the business was sold, those images went to a new owner [Asheville photographer E.L. Fisher], and they were eventually just lost."

In his final days, Masa had been working on a pocket-size Smokies guidebook with local newspaperman George McCoy. There's no way of knowing whether that project would have sparked a turnaround in his business affairs, but it may well have boosted his professional profile. Unfortunately, he never had the chance to find out.

"Masa's death changed everything," Bonesteel says. "He was putting his name on things, and the guidebook had a lot of his heart and soul in it. I think if he'd lived another ten or 30 years, we not only would have a much bigger archive of his finer photographs, but he would have been perceived, even in his lifetime, as more of a fine artist. I would like to think he'd have merged into that Ansel Adams crowd, but who knows?" **NP**

Mike Thomas, a staff writer for the *Chicago Sun-Times*, has written for *Esquire*, Salon.com, and *Smithsonian*.

WRITER HORACE KEPHART (above), Masa's closest friend and colleague. After their deaths, two of the park's mountain peaks were named in their honor.

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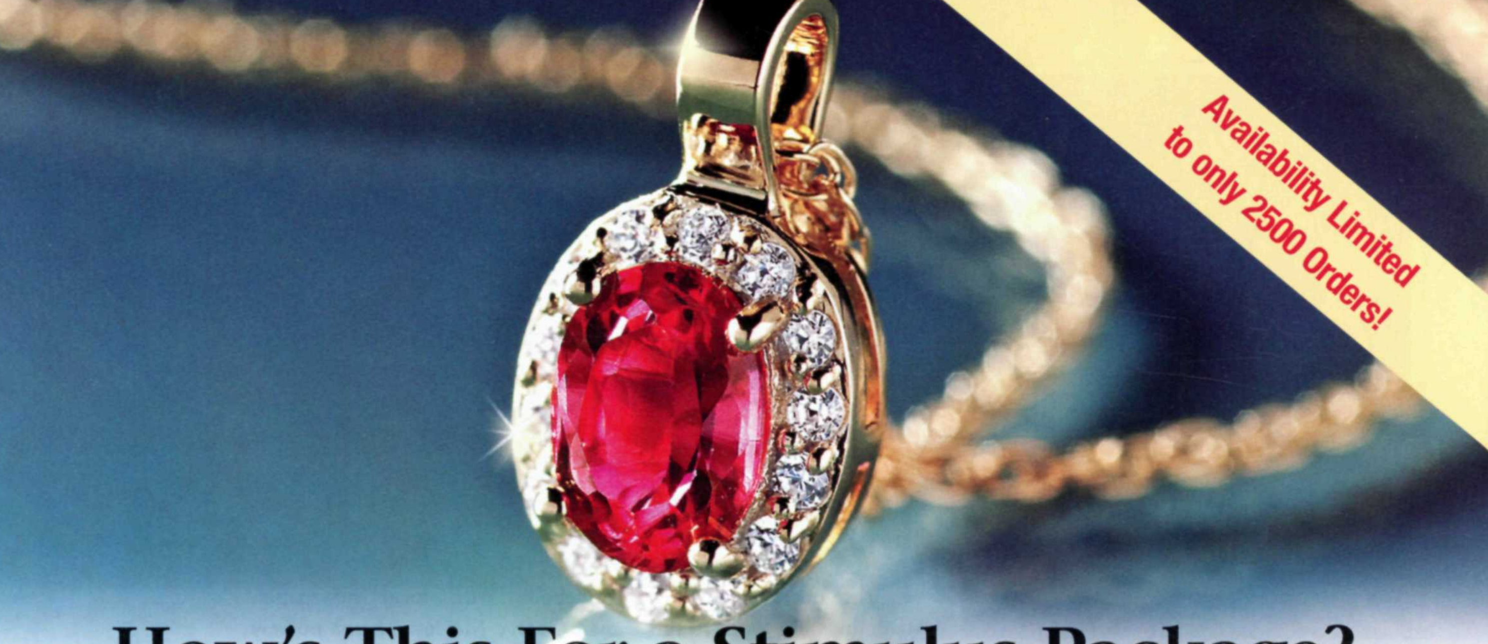

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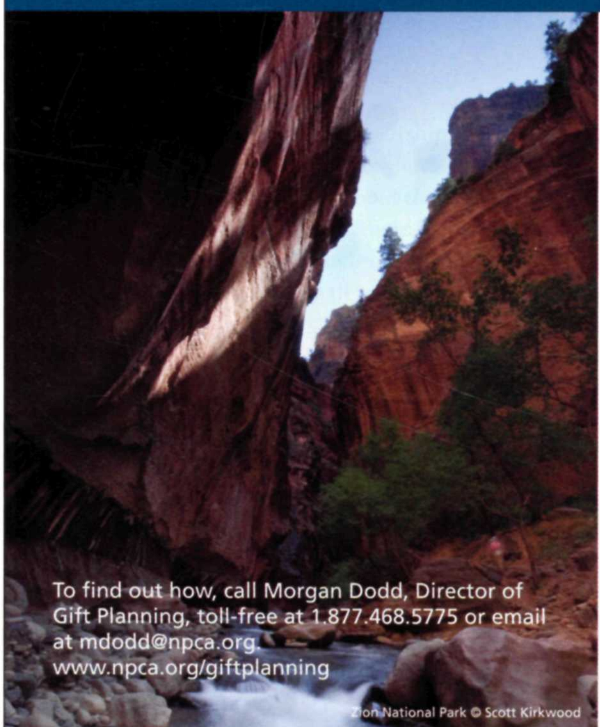

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BY GORDON HEMPTON
ILLUSTRATIONS BY JACQUI OAKLEY

*If Yosemite National Park signifies our country's most iconic natural landscape, then **Olympic National Park** may represent its quietest place—but for how much longer?*

True listening is worship. So said German philosopher Martin Heidegger. My own personal cathedral lies about three miles up the Hoh Valley trail in Olympic National Park, one of the few truly quiet places remaining in America. My quiet sanctuary is marked by a small reddish stone atop a chest-high, moss-covered log, which led me to call it One Square Inch of Silence. I'm headed there today, in uncertain early February weather, with my friend, Nick Parry, and his wife, Sally, so that they can experience what may be quiet's last stand and so that I can measure the impact of an apparent increase in jet traffic overhead.

THE Listener's YOSEMITE

In 1994 I made my home near Olympic National Park so that I could better pursue a career as a nature sound-recording artist. Since then, I've circled the globe, recording on every continent but Antarctica, seeking the pristine sounds of nature—only to find the planet's sacred soundtrack increasingly drowned out by the harsh mechanical sounds of man. Many have bemoaned the tragic loss of wondrous night skies to the creeping blur of light pollution. But right under our very ears, we've been losing a natural treasure every bit as spiritually uplifting. And losing it just as fast, if not faster. When I started recording in my home state of Washington 25 years ago, I soon hiked to nearly two dozen locations where I could reliably record the unspoiled sounds of nature—wild trout breaking the surface of a mountain lake to feed on the evening hatch of insects or the clear ringing morning song of western meadowlarks from grass-covered hillsides—for at least 15 minutes without an intrusion like the brrrrr of a chain saw, the whine of an off-road vehicle, the crackle of power lines, or the roar of a jet passing overhead. That's become my gold standard: 15 minutes of natural silence. Sadly, the list of quiet havens in my home state has shrunk to three.

Nationwide, it's no better. By my extensive travels and sound safaris, I'd guess that about only a dozen places remain in our vast country where a quiet-seeker can reliably hear nature unencumbered by noise for a quarter-hour during daylight hours. Most people doubt me when I say this, and often mention a recent "quiet" experience. Surely those experiences are quieter than the person's normal city or suburban or even country environs, but they likely do not offer the total escape from modern noise, the total immersion in nature that grizzly tracker and author Doug Peacock calls "the closest way to really get in touch with… your innermost humanity—that's how we evolved, listening and smelling in ways that aren't imaginable today. We're the same species. The human mind, our intelligence, our consciousness, it all evolved from a habitat, whose remnants here in this country we call wilderness." Peacock told me this when I visited his Montana home as I toured America while writing my book. "We evolved from that, which is essentially a wilderness, a wild habitat, using our senses, and that which evolves doesn't persist without sustaining the conditions of its creation," he continued. "That's a giant argument for silence right there."

> *"My eyes soon focus on about a dozen Roosevelt elk, equally split between ewes and their young."*

Even our most spectacular national parks no longer deliver extended soothing doses of natural silence. The Park Service is charged with managing and preserving the natural soundscapes in our parks, but much more time and effort and expense have gone into battling the Federal Aviation Administration (FAA) over regulation of flight-seers who seek scenic beauty but overlook the noise shadow they cast below. More than 30 years after Congress passed The Grand Canyon National Park Enlargement Act, recognizing "natural quiet as a value or resource in its own right to be protected from significant adverse effect," some 90,000 sightseeing plane and helicopter overflights are still permitted each year above this national treasure. In 2000, the National Parks Air Tour Management Act charged the FAA and the Park Service with the task of working together to preserve these resources; the FAA has yet to complete a single air-tour plan. During daylight hours in Yosemite, commercial jet traffic is audible 50 percent of the time. I wonder what John Muir, the father of our National Park System, would say if he were to return to one of his favorite listening perches today. Here is what he wrote about Yosemite Falls nearly a century ago:

"This noble fall has by far the richest, as well as the most powerful voice of all the falls of the Valley, its tones vary from the sharp hiss and rustle of the wind in the glossy leaves of the live-oaks and the soft, sifting, hushing tones of the pines, to the loudest rush and roar of storm winds and thunder among the crags of the summit peaks. The low bass, booming reverberating tones, heard under favorable circumstances five or six miles away, are formed by the dashing and exploding of heavy masses mixed with air upon two projecting ledges on the face of the cliff, the one on which we are standing and another about 200 feet above it."

Today, a listener five or six miles away cannot escape the commotion of Yosemite Village, the most highly developed area of the park, with hotels, a post office, gas stations, bank services, a deli, an art gallery, and nighttime noise levels comparable to those in Manhattan. On my last visit, daybreak resounded with the thunder of dumpsters being emptied into garbage trucks. I'm not suggesting a ban on park visitors, but rather scaling back visitor support to the bare essentials and scheduling deliveries and garbage service in the early afternoon, when sound or noise is attenuated more than any other time of day or night.

Olympic National Park, however, is still a listener's Yosemite. Tucked away in the remote

northwest corner of the continental United States, it is often described as three parks in one, boasting glacier-capped mountains, temperate rainforest, and wilderness seashore. Unlike most national parks, it is not bisected by scenic highways, and air tours have barely taken wing due to the near constant cloud cover. Furthermore, only three FAA-approved flight paths are overhead. Here, attentive visitors encounter the greatest diversity of natural soundscapes and the longest duration of natural quiet in all of the 391 units managed by the National Park Service. Yet this endangered natural silence remains virtually unprotected. The park's sound-management budget isn't meager. It's nonexistent. Zero dollars.

Highway 101 winds through the knees of the Olympic Mountains that frame Lake Crescent, revealing picture-perfect views of the rising mist over the near mirror surface of the lake. To the south, we see snow-capped 4,534-foot Mount Storm King and pass through an inspiring gauntlet of some of the world's tallest living creatures—Douglas fir, western hemlock, and western red cedar—rising some 300 feet. Nick sits beside me. Behind us, Sally is reading *One Square Inch of Silence*, the book that John Grossmann and I have written about the importance of preserving sonically endangered treasures like Olympic National Park.

We turn off Highway 101 onto the snow-dusted Upper Hoh River Road and pass several gathering clusters of salmon and steelhead fishermen, dead-ending 18 miles later at the Hoh Visitor Center parking lot at 11:17 a.m. Ours is the third car in the lot. Anxious to smell the forest and listen, I swing the car door open, and even with the cooling car engine pinging away in the frosty air, the roar of a jet is clearly evident. Nick and Sally don't notice, and I say nothing. We shoulder our rucksacks and lace on hiking boots, then slip onto the river trail.

Like many who've joined me on this trail, Nick is slow to shed his everyday voice. Leading the way by a good 50 feet, he's apt to start a conversation without even turning around.

When he does pivot, I hold a finger to my lips. His wide-eyed look seems to ask: "Who are we disturbing?"

"Nick," cautions Sally. "You can't talk so loud—if we want to see any wildlife, we need to be quiet."

When we all stop to listen, the Hoh Valley thrums with a deep river tone speckled with the sonic consequences of the sun's rays piercing the forest canopy—the tinkling of melting snow and ice cascading branch to branch to the forest floor, which, away from the larger Douglas firs, has as much as a half-foot of snow from the recent and rare snowstorm. For now, there's not a bird or insect or any animal to be heard. Here, more than 300 yards from the rushing waters of the Hoh, I get a reading of 32 dBA on my sound level meter. Away from the river, at One Square Inch of Silence, I've seen the readings go as low as 26 dBA, which I learned, early in my cross-country sonic exploration of America, is equivalent to the ambient sound level of an unoccupied Benaroya Hall, Seattle's premier orchestral venue, built at a cost of $120 million.

Six decibels quieter may not seem like much of a reduction, but it is the difference between eating a whole pie or a quarter-slice for dessert. The decibel scale is a logarithmic scale. So that if one person is speaking at 60 dBA and a second person joins in at the same level, the two voices measured simultaneously would be 63 dBA, not 120 dBA. Just three decibels indicate a doubling of the sound level. To address individual perception of loudness is much more complicated; each of us registers sound "loudness" quite subjectively.

As we approach the trail marker for the first campsite, I spy something moving through the thick wildwood and snow-covered moss drapes. Evidently our silence has paid off. My eyes soon focus on about a dozen Roosevelt elk, equally split between ewes and their young. No males. Silently, I tap Sally on the shoulder. She freezes. Then I point. Nick is too far ahead for us to quietly clue him in. In fact, his footsteps alert the herd, which turns away, with only a few twig snaps. The ambience of the valley is as quiet as many recording studios, except today this moss-draped natural amphitheater is beautifully flocked with snow and seems to damp sound even more than usual.

"Wow, that was incredible," Sally says. "They hardly made a sound."

We meet up with Nick at a point where the trail disappears off an embankment at the river's edge. More damage from a recent deluge lies horizontal in the Hoh, a flood-felled Sitka spruce. I inspect this prize carefully, noting its flared, buttress-like root cavity, and I imagine this huge piece of driftwood ultimately being swept to the beach at Hoh Head many miles downriver. Spruce wood is prized by violin craftsmen because the wood vibrates particularly well. Along the wilderness coastline of Olympic Park, the longest uninterrupted coastline in the lower 48, such giants come to rest as nature's largest violins, played not by a human hand brandishing a bow but by nature itself. Pacific rollers crash onshore and send a wall of vibration into the noble wood. A tree this size will be large enough to walk inside and, as Muir would say, "bend an attentive ear." I may have to wait years for this tree to wash upon the beach, but when it does I'll hungrily step inside with my recording gear and add to one of my favorite niches in my sound library, my collection of more than 400 beach log sound portraits, all from Olympic National Park.

With each breath along the trail I can feel myself become quieter and more relaxed; my awareness is broadening, tuning, and I am more perceptive not only of my surroundings but myself. Though natural silence has become a luxury, it's really a necessity, as important as clean water and fresh air.

Shortly after 1 p.m. we arrive at a stilted Sitka spruce tree, which serves as a kind of gateway to One Square Inch of Silence. We stop for a simple lunch of trailmix and bananas. And listen. The silence is profound.

But not for long. A jet intrudes at 1:08, then another at 1:20, and again at 1:27, before we leave the trail and hike the remaining 100 yards to One Square Inch. We follow an elk path and then join the snowy footprints of an earlier silence-seeking pilgrim. Soon we've arrived at the log topped with the one-stone cairn to quiet. The setting never fails to inspire me. The forest reaches for the sky and lifts me. The moss bed is deep and comforting; today's rare snow adds another layer to nature's acoustic blanket. A stillness sweeps over us. Sally is drawn to tears. Nick lifts his arms around Sally, silently embracing her.

MEASURING THE IMPACT

Gordon Hempton has crisscrossed the country measuring natural and human-made sounds for years. Here's a sampling of the spectrum of noises he encountered in our national parks and beyond (in decibels):

Sound	Level
Insect wings humming	27 dBA
Rain patter on tent	30 dBA
Frog chorus *(distant)*	30 dBA
Locomotive *(17 miles distant)*	30 dBA
Elk eating	31 dBA
Jet overflight	44 dBA
Tourist car idling	48 dBA
Morning birdsongs	50 dBA
City traffic	74 dBA
Indianapolis Motor Speedway	124 dBA

> *Along the coastline of Olympic National Park, towering spruce come to rest as nature's largest violins, played by nature itself.*

At 1:41 p.m., nine minutes after the last overflight, another jet roars over the Hoh Valley. (Later, with the help of an Internet site called WebTrak, I identify it as a Northwest Orient Airlines Airbus A-330-200 bound for Tokyo-Narita International Airport.) Climbing with full thrust, it drags its cone of noise across our national treasure, sending my sound level meter to 54 dBA. It is by far the loudest sound in the forest, 22 dBA above today's base ambience, or more than a doubling seven times over of the voice of the forest.

Each passing jet actually shrinks the aural world of those on the ground in a quiet haven like One Square Inch of Silence. I learned this from bioacoustician Kurt Fristrup in the Fort Collins, Colorado, office of the Park Service's Nature Sounds Program.

"You're saying the noise impact of aircraft on the wilderness reduces a person's range of hearing?"

"Yes," Fristrup explained. "Our auditory horizon shrinks, and it's affecting the very frequencies that travel the farthest. And the same is true of snowmobile sound. Ironically the Park Service allows snowmobiles and boats to produce more sound than roadway vehicles—even though sound carries over snow and water better than anywhere else.

"It's just an artifact of history. I think in many areas, noise control in the United States has not been driven by the values of acoustic resources so much as by the cost of annoyance or by what's easily achievable by industry in terms of controlling it."

Indeed, though the FAA protests that it would be way too expensive to bend those jetways around the Hoh Valley to protect one of the quietest places in any national park, the truth is likely very different. Using an Air Transport Association figure of $66 per mile to fly the average commercial jet, and assuming no empty seats aboard that 243-seat Northwest aircraft, it would cost less than $1 per passenger to skirt One Square Inch and make that Seattle to Tokyo flight more sonically green.

During the hike out I hear another jet, then another, as the snow begins to fly hard. My thoughts go to the trees lining the path, each one a miracle. I should be discouraged after having my quietude stolen by the passing jets. But I'm not. Though I worry that today's children may be the last generation to experience natural silence before it becomes extinct, I'm not without hope. Back before the Environmental Protection Agency axed its Office of Noise Abatement and Control in the early days of the Reagan Administration, our very own government cared not only about noise but about the subtler inherent value of natural silence. The October 1979 issue of the *EPA Journal*, an issue entirely devoted to noise and the environment, included an essay on "Quiet as a National Resource" written by David Hales, who was then deputy assistant secretary for fish and wildlife and parks in the Department of Interior. I didn't come upon this essay until long after I'd established One Square Inch of Silence. But surely I must have channeled Hales, for consider what he wrote:

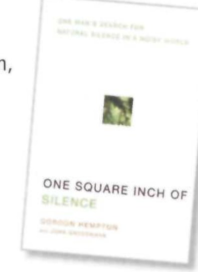
"A most appropriate, in fact, necessary role of the National Park Service in years to come will be the preservation of some special places which are not polluted by sound, just as we would not allow them to be polluted by dirty air or water. In these places, the artificial and unnecessary introduction of sound into a natural environment is more than just an irritation caused by what you can hear. It is, in essence, an act of robbery, a theft of those sounds which naturally belong in these environments, and which are part and parcel of the natural and cultural heritage of this Nation."

I also take encouragement from Muir's words to his wife, Louie, in July 1888: "The morning stars still sing together, and the world, not yet half made, becomes more beautiful every day."

Nor are the national parks yet half-made. Designated as unique and irreplaceable national treasures by the Organic Act of 1916, their innate natural soundscapes have been undervalued and impaired, as we have become impaired as listeners to the land. Let's commemorate the upcoming 100th anniversary of our national parks by making Olympic National Park—our nation's first national quiet sanctuary—off limits to all aircraft. This can be accomplished clearly and decisively with a 20-mile-radius no-flight zone around Mt. Dana, located in the heart of the park.

"Listen to what the white pine sayeth," Ralph Waldo Emerson wrote. He did not reveal what the white pine said, because words cannot speak it. Natural silence must be heard to be understood. As we cherish our remaining stands of old-growth forests, let us also preserve the few vestigial quiet havens in our national parks. **NP**

Gordon Hempton is an acoustic ecologist and Emmy award-winning sound recordist who lives in Joyce, Washington. *One Square Inch of Silence: One Man's Search for Natural Silence in a Noisy World* (Free Press/2009), written with co-author John Grossmann, retells his cross-country sound safari to preserve America's few remaining naturally quiet places. To learn more, visit www.onesquareinch.org.



TAKE ACTION

NPCA is working with its Congressional allies to clarify language in the National Parks Air Tour Management Act of 2000 this summer. Please call your Senators at 202.224.3121 and ask them to contact the Senate Aviation Subcommittee and support the Park Service's ability to protect natural sounds in our national parks. For more information visit www.npca.org/atma. Want a reminder of what's at stake? Visit www.npca.org/magazine/sound.html.

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CANYON DE CHELLY NATIONAL MONUMENT offers dramatic views of White House Ruin, where native people carved cities into stone more than a thousand years ago.

BY ANNE MINARD
PHOTOS BY GEORGE H.H. HUEY

CITIES OF STONE

Experience the Southwest's oldest cultures and landscapes.

One visit to the American Southwest is all it takes to convince you that no sky is as blue as the sky over sandstone. Few sights are as satisfying as a desert lit in muted rainbow colors, seen from high on a mountain. No skies are as dark and no stars twinkle as brightly as those seen from the rim of a secluded canyon. And no silence is as deep as the one that greets you when you've driven beyond the range of cities, into country where few people live, because conditions there are so extreme.

For thousands of years, several vibrant cultures—some long gone, some still thriving—have made their home in the Four Corners region, which extends outward from the juncture of Arizona, Colorado, New Mexico, and Utah. Today, visitors to this place are rewarded with soul-moving beauty and insight into little-known societies, past and present, that aren't found anywhere else in the world.

Driving a clockwise loop around the Four Corners, you can meet Navajo people, contemplate the remains of ancient homes and villages, and explore iconic red rock canyons and towering mountains with their forests either robust or startlingly charred from wildfire. In other words, you can immerse yourself in the fundamental elements of the desert Southwest, all in a few days' time. This is a remote road trip, but that's part of its beauty. Despite breathtaking, otherworldly landscapes, you'll never have to navigate a crowd.

A CONFLUENCE OF RIVERS and tributaries in the most unlikely desert landscapes has been drawing people to this region for thousands of years. Today, Navajo Indians who live in Canyon de Chelly offer tours and sell traditional jewelry *(right).*

Canyon de Chelly National Monument, Arizona

In Canyon de Chelly (pronounced de-SHAY) National Monument, three canyons channel snowmelt from the Chuska Mountains across Arizona's eastern border with New Mexico before merging near Chinle, a small city on the Navajo reservation. Hundreds of Navajos live and work within the park's boundaries. Some graze sheep and grow hot peppers, sweet tomatoes, and peaches; others operate or work for the 11 companies that lead driving tours into the canyon. But Navajos weren't the first to call this place home. The region's bottomlands—lush and fertile at the confluence of two canyons—have drawn people here for nearly 5,000 years.

Nearly every hike into Canyon de Chelly requires the service of a guide. The one exception: a quarter-mile trek to White House Ruin, a Puebloan neighborhood more than a thousand years old and cut into a natural alcove. The trail is steep but wide and well maintained. The hike offers a fair taste of the small canyon's stunning beauty, with its vibrant cottonwood trees and smooth, undulating sandstone. Some people stop to rest at the ruins and snap photos before heading back up. Nearby, Navajo vendors sit at shaded tables and sell handmade jewelry at reasonable prices, cash only.

But there's so much more to see, so budget extra time for a half-day or full-day guided excursion into the canyon. Most companies host tours by Jeep or truck; the visitor center keeps a well-maintained list of options. A few guides offer quieter experiences by horseback or on foot. See if a ranger at the visitor center can reach James Yazzie, a seventh-generation canyon resident who leads hikes (three hours minimum, $20 an hour) across washes, over a fence or two, past traditional round Navajo dwellings where his relatives live, and—for lunch—perhaps up into a shallow cave with spectacular views of the park.

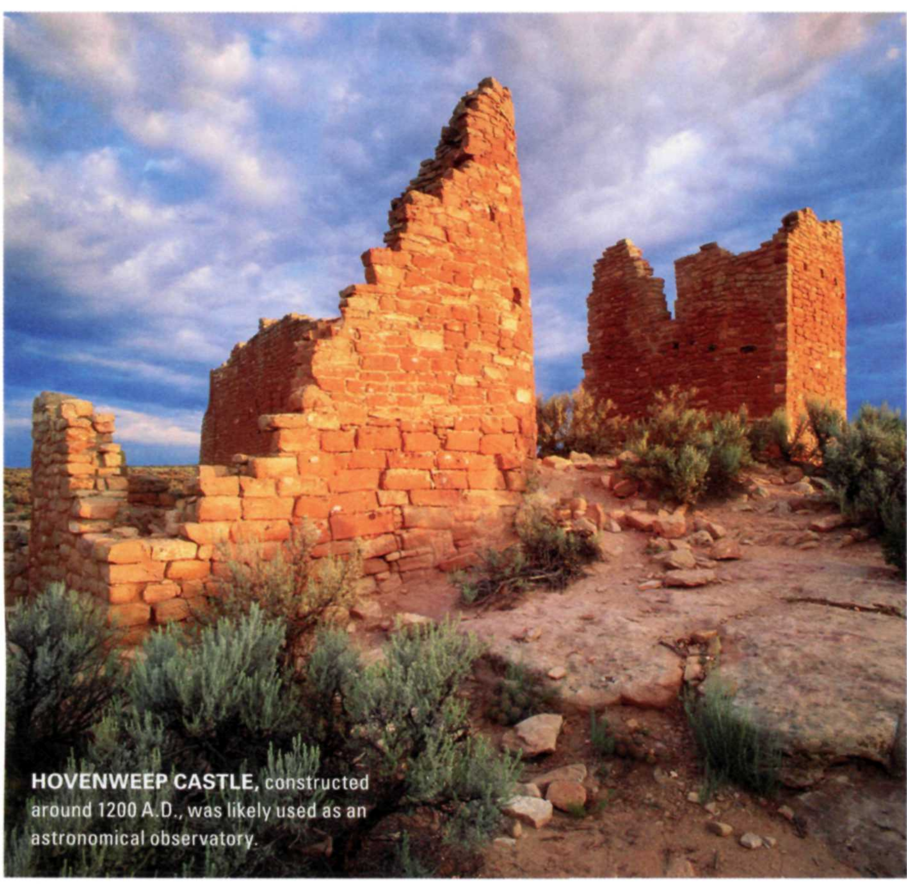
© KAREN MINOT

Hovenweep National Monument, Colorado and Utah

Like most centuries-old ghost towns, the dwellings at Hovenweep National Monument reveal a history that ebbed and flowed with the availability of water. Nearly all of its buildings are linked with seeps and springs.

Hovenweep's first trickle of people arrived around 700 A.D., when farmers in the region were beginning to grow corn and build pit houses (dug-out shelters) near their crops. Four hundred years later, a thriving population spilled out into villages around canyon heads containing water sources. The boom went bust just a few hundred years after that, when prolonged droughts drove people south into New Mexico and Arizona. Outlines of multi-room pueblos, leaning towers, tumbled piles of shaped stone, small cliff dwellings, pottery shards, and rock art remain as testaments to those bygone days.

Hovenweep is indeed an ancient ghost town—its name in the Ute/Paiute languages means "deserted valley"—and both coming and going from the park require an hour or more of driving through almost completely uninhabited desert landscapes. The park's main unit is a peaceful place, with a 1.5-mile rim trail leading out from the visitor center through a profoundly quiet desert landscape. The modest assemblage of ruins there includes the ancient leaning towers that look a bit like lighthouses, though some of them are square. The monument also includes four prehistoric Puebloan-era villages located at canyon entrances along the Utah-Colorado border. Rent a bicycle at the Single Track shop in Flagstaff (www.singletrackbikes.com) before you start your drive, and bring it along for long, flat rides through this sparsely inhabited landscape. The place is scorching in summer but bliss in the spring and fall.

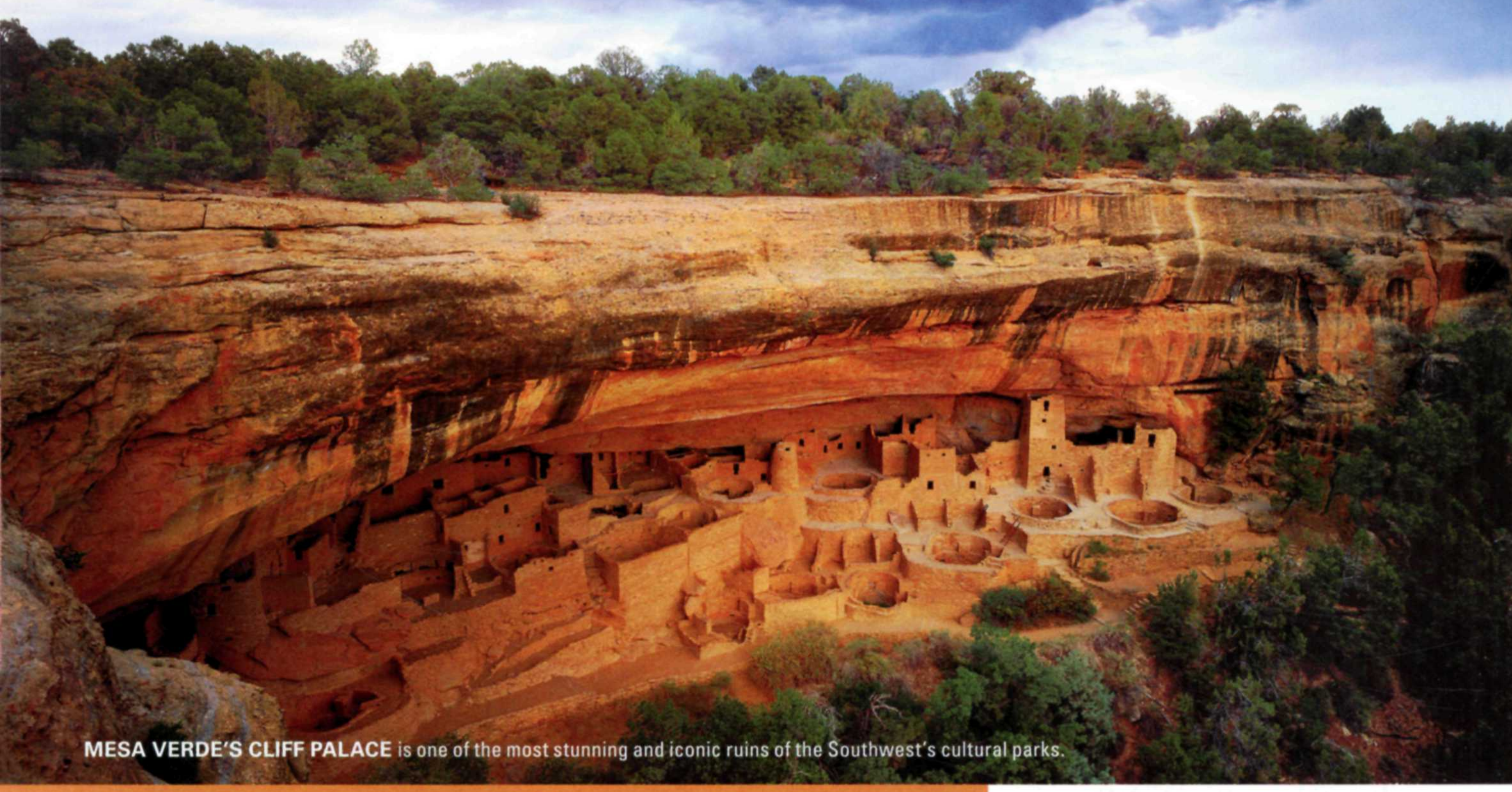


HOVENWEEP CASTLE, constructed around 1200 A.D., was likely used as an astronomical observatory.

Side Trip: Bluff, Utah

Bluff is an endearing little town in Utah that boasts a handful of galleries, restaurants, shops, and fairgrounds along Highway 191 under the 300-foot sandstone bluffs that give the place its name. Browse the Cow Canyon Trading Post (above), which features a cozy gallery and bookstore. While the adjoining café offers local fare like traditional Navajo lamb stew embellished with succulent garden veggies, it requires advanced reservations and only serves groups of 15 or more. But occasionally the owner is willing to squeeze in a few more diners, so it's worth a phone call just in case: 435.672.2208.

Recapture Lodge is a restful, friendly place to spend a night and offers the only wireless Internet access you're likely to find along the route. From Bluff, a number of companies guide river trips down the San Juan, which is regionally famous as a short but beautiful paddle. For more information, see www.bluffutah.org/recapturelodge. Before heading out, get your caffeine fix at Comb Ridge Coffee. The java is good, the ambiance comfy, and the used books are dirt cheap.



MESA VERDE'S CLIFF PALACE is one of the most stunning and iconic ruins of the Southwest's cultural parks.

Travel Essentials

This route starts and ends in Flagstaff, Arizona, for a total driving time of about 17 hours. Starting at Canyon de Chelly, you'll travel north to Hovenweep National Monument in Utah, east to Colorado's Mesa Verde National Park, and south to Chaco Culture National Historical Park in New Mexico. Not counting driving time, the smaller parks could be scoped out in as little as half a day—but chances are you'll want to linger.

Carry a detailed road map or atlas, because several of the parks are in remote areas. Convenience stores and even grocery stores are available along some parts of this route but are uncommon in others, so carry at least a gallon of water per person per day, especially in summer. Pack snacks, sunscreen, hats, sunglasses, cameras, a journal, sturdy shoes, cash, and extra layers for the evenings, which can get chilly. Don't rely on your cell phone; it won't work in most areas.

There are a variety of lodging options in and around the parks: Thunderbird Lodge at Canyon de Chelly; camping at Hovenweep; Far View Lodge or the Morefield Campground at Mesa Verde; and camping at Chaco Culture. For more information, contact Canyon de Chelly at www.nps.gov/cach or 928.674.5500; Hovenweep at www.nps.gov/hove or 970.562.4282; Mesa Verde at www.nps.gov/meve or 970.529.4465; and Chaco Culture at www.nps.gov/chcu or 505.786.7014.

Mesa Verde's Spruce Tree House is an architectural marvel that unfolds into a dynamic village.

Mesa Verde National Park, Colorado

The ancient cliff dwellings at Mesa Verde rest atop a "sky island," so reaching them requires an hour-long drive up a winding mountain road after passage through the entrance gate. Wildfires in 2000 and 2002 reduced much of the forest to charred and twisted sticks, and views without the foliage are stunning, if stark. The western pine forest at the top, however, makes a great summer respite from the penetrating heat of the surrounding deserts.

From the visitor center, a six-mile driving loop showcases the full range of ancient architectural styles, from the earliest pit houses to the most recent cliff dwellings. Access is easy—sites are either beside the road or a short walk away, and there are parking areas on both sides of the street.

A quarter-mile hike starting at the visitor center leads to a famous cliff dwelling called Spruce Tree House, which appears like a chiseled architectural marvel from the trail, then unfolds into a dynamic village up close. Visitors can wander its 114 rooms and courtyards and even descend a tiny ladder to an underground ceremonial kiva. The Far View site, a short drive away, contains nearly 50 villages dating from 900 to about 1300 A.D. Boulders and cliff faces at nearly all of the sites display petroglyphs, made by Native Puebloan artists who used rocks to peck or scratch into stone the likenesses of their own people, religious icons, and spontaneous artistic ideas.

Take your time meandering along Mesa Verde's various trails. Stop and contemplate the flora and fauna—the gambel oak, wild rose bushes, Utah juniper, ringtail cats, cottontail rabbits, and coyotes—that have long been the centerpieces of diets, medicines, rituals, and stories in so many Southwestern cultures.

Chaco Culture National Historical Park, New Mexico

Temperatures at Chaco Culture dip below freezing in winter and soar above 100 degrees in summer, but the park is open year-round. No matter which season you choose, aim to get there before anyone else does, preferably as the sun rises and with your camera in hand. To do that, you'll have to camp in the park; there are no hotels for miles. When you wake to a landscape glowing red in the morning sun, you'll be glad you decided to rough it.

The trail to Pueblo Bonito is less than a mile round trip, but you'll want to savor it slowly. The "great house"—one of several massive dwellings with hundreds of rooms—was once a hub for the Chacoan world, which reached into New Mexico's San Juan Basin and portions of Colorado, Arizona, and Utah.

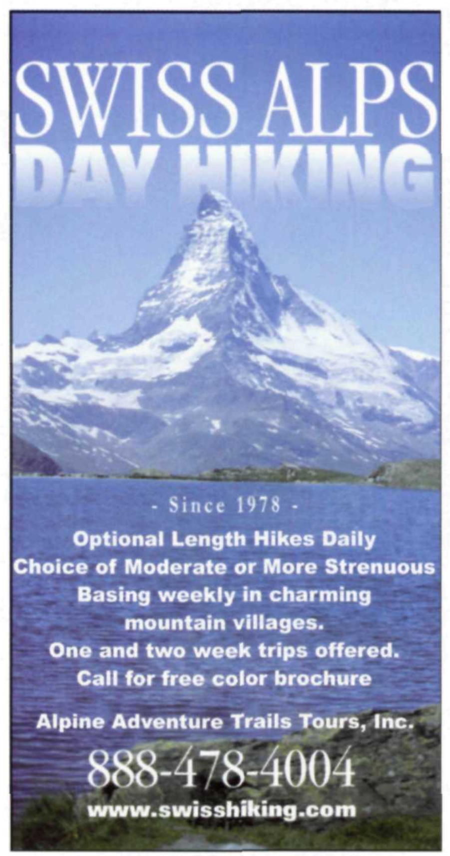
Signs at Pueblo Bonito read: "This is a sacred area. Enter with respect." But if you are lucky enough to be alone, you won't need this instruction—you'll already know the place is sacred. Peering through the high, rough-cut sandstone windows to mesmerizing blue skies, you will imagine the people who admired those same views nearly a thousand years ago. Step gingerly around the walls; your feet will crunch gravel that might include fallen bits of the Chacoans' careful masonry. Search your mind's ear for the sounds of their music; archaeologists have found flageolets, or long flutes, among the ruins, and suspect people also played drums.

Less-frequented sites are also easy to access if you're willing to hike a bit. Trails ranging from one to six miles will lead you there—simply fill out permits at self-pay stations throughout the park, and then be on your way. **NP**

MORNING FOG SETTLES on ancient kivas at Pueblo Bonito in Chaco Culture National Historical Park.

Anne Minard is a Ted Scripps Fellow in Environmental Journalism at the University of Colorado in Boulder.

A VISITOR EXPLORES the ruins at Chaco Culture National Historical Park.



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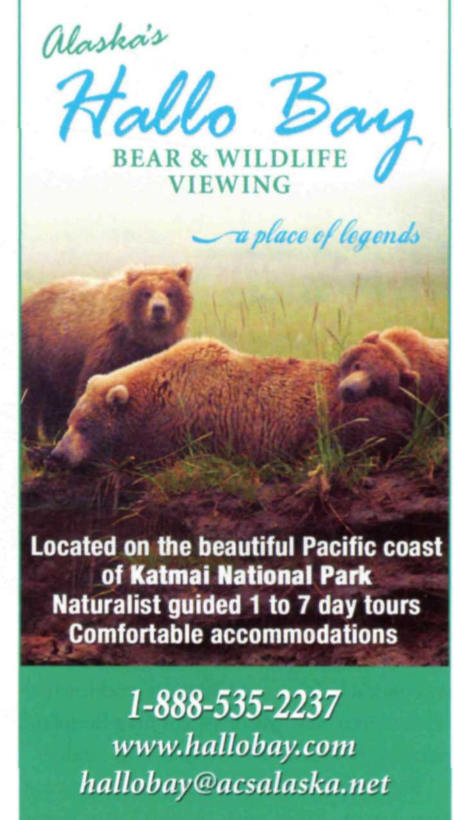

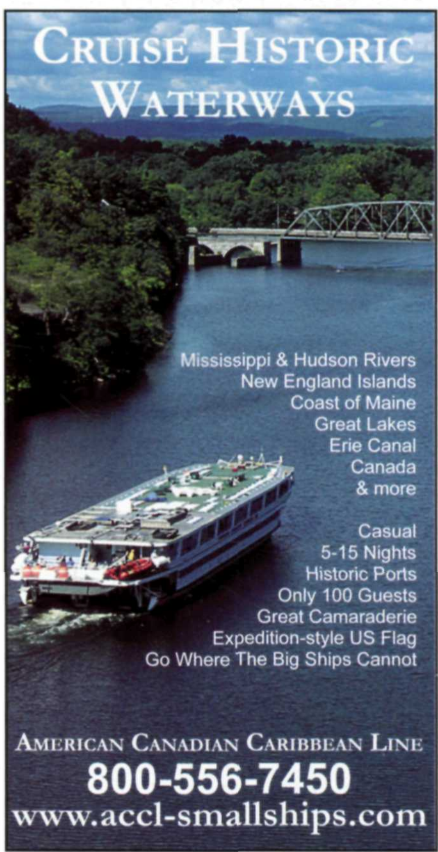

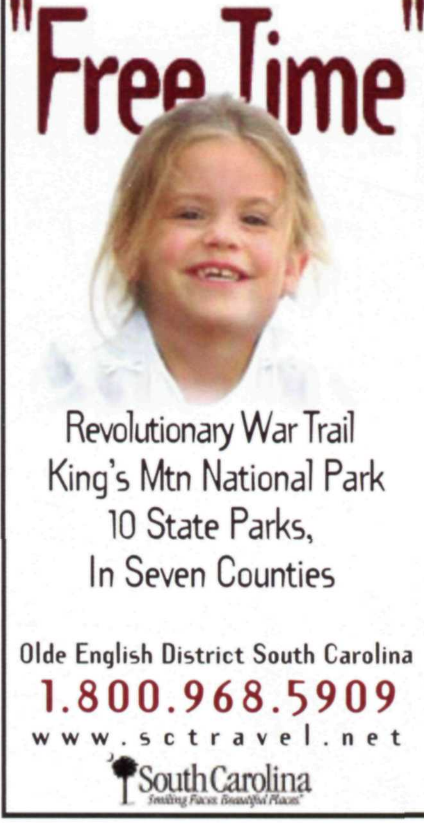

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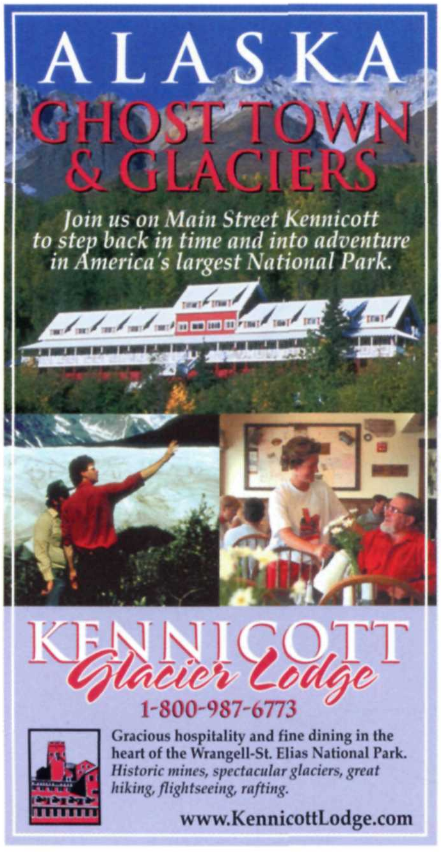

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By Eugene Sims

YOSEMITE FALLS in Yosemite National Park, California.

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Good Morning, Mr. Adams

In 1943, a young student encounters one of the legends of photography in the place that made him famous.

As a pretty green kid going on 17 years, I was probably overly enthusiastic and a little nervous about my first real big job. The year was 1943. World War II had been under way for a couple of years, and older boys at our high school were being encouraged to take summer jobs with the National Park and Forestry Service program due to the acute shortage of labor. High school seniors and young college men were being employed to clear trails, fight forest fires, or do blister rust control in our nation's forests and national parks. Luckily my high school chum, Dick, and I drew Yosemite National Park in California as our place of work. It was a summer I shall never forget.

We could hardly wait to begin the job. Because of a mix-up in our reporting dates, we arrived in Yosemite in mid-May, driving Dick's old Model A Ford down the long road from Oakland. We soon found out that we were about two weeks ahead of the other workers. The chief ranger was a little exasperated as we both reported to his office and stood nervously before him.

"The government has rules about this sort of thing," he said. "We can't put you on the payroll for another 15 days, but we can't really send you back home either. For now, we'll just make you both honorary cooks over at the mess hall so you can earn your keep, and we'll find you a bunk for the time being. Just stay out of trouble 'til we can put you on the payroll and ship you up to the forest camp at Crane Flat in a couple of weeks."

We were expected to wash dishes and wait tables at the main mess to pay for our meals and the tent cabin we occupied with two other men. Dick moaned about the lack of pay and the dishwashing, but I didn't care—the Yosemite Valley was beautiful. I would have time to photograph the scenery before moving up to the remote outpost at

Crane Flat some 15 miles away, near the outskirts of the park.

During the war, black-and-white film was hard to find. Color print and slide film was generally for professionals; amateur photographers like me only read about it in photo magazines. My father had given me an old second-hand Ansco bellows-type folding camera that had an uncanny appetite for 120-size roll film. The camera was a gift I received after completing a basic course in photography at the YMCA back home the previous year.

Photography quickly became my whole purpose in life. I wanted nothing more than to record and print my own pictures, and the Yosemite Valley offered unparalleled grandeur for an amateur photo bug like myself. I decided my leisure time would soon be totally given over to making as many photographs as my meager supply of film would allow. I didn't see Dick after he started dating a cute waitress who worked at the nearby Yosemite Lodge.

Yosemite in 1943 was quite a bit different from the Yosemite of today. To get around the valley, I rented a bicycle from the shop at the lodge for $4 a week. Because of the war, there were few tourists and even fewer automobiles. Many of the tent cabins at Camp Curry and the Yosemite Lodge stood empty throughout the summer, something unimaginable today. There were rumors that the government might even close some of the national parks for the duration of the war.

Even though each photo I shot was carefully planned and composed, I soon ran out of film before I'd captured every location on my list. I wasn't sure where I'd be able to buy film in a place like Yosemite, but I soon found out about Best's Studio, a photo and gift shop near the park post office.

I can still remember the racks and tables filled with postcards and other souvenirs, each item emblazoned with a Yosemite inscription of some sort. The walls held countless colored paintings and black-and-white photos mounted in frames or on cardboard. I entered the shop early one Saturday morning and found it nearly empty. A woman behind the counter asked if she could help me. I was delighted to find that she'd received a small shipment of film the previous day. She disappeared into a storage room and returned with a single roll of 120 film. My face must have reflected my disappointment.

As I launched into an explanation of my short time in the valley and my enormous list of locales in an attempt to persuade her to find one or two more rolls, I heard a man's voice from the other end of the counter ask, "What kind of camera do you have there, young fella?"

A woman behind the counter asked if she could help me. I was delighted to find that she'd received a small shipment of film the previous day.

I pulled my old Ansco from inside my coat and laid it on the counter. The man picked up the camera to closely examine its exterior, then opened the cover and extended the bellows while scrutinizing the camera's every detail.

"I can see you've got a pretty good camera with a fine Wolensak lens, a German camera made before the war," he said, pointing out the manufacture date on the back plate: 1936. Sweat broke out on my forehead—we were at war with Germany. Had I committed some sort of crime by purchasing a German camera? I imagined myself in jail for my crime, shot by a firing squad, or fired from my first real job for carrying a camera manufactured by the enemy, or at the very least sent home for the summer. But the man told me he had several German cameras himself, and they were among the best in the industry. What followed was a discourse on the pictures I had been shooting around the Yosemite Valley. Even though my efforts were strictly those of an amateur, the man listened very carefully.

He started talking about available subjects, best lighting periods, shadows, depth of field, and a host of other suggestions that were beyond my limited expertise. Some of the terms were new to me, and the man must have known this, because he stopped occasionally to explain in more detail.

At the end of the conversation, the man turned to the woman at the counter and said, "Honey, I think we can spare a couple more rolls of film for a fellow photography enthusiast, don't you?" She handed me two more rolls of film; the total was less than $2.

The man had plans to take some photos at Half Dome the next morning, from the meadow between Camp Curry and Mirror Lake. He asked me to come along. My heart jumped, and I tripped over myself accepting the invitation. "Meet me in front of the post office at 6 a.m. sharp," he said. "My name is Ansel Adams, what's yours?" he asked. (The name meant nothing to me until years later.)

I was awake most of the night, worrying I might not wake up on time. It was still very cold and dark when I rolled out of my sleeping bag, picked up my camera, and hurried off to the post office. Mr. Adams was waiting for me in his station wagon with the motor running. I still remember welcoming the warmth of the car's heater in the chilly morning air. But by the time we reached the meadow, the cold was beginning to reach in under my wool jacket. Mr. Adams started unpacking camera paraphernalia: First came a wooden tripod at least 5 feet long. Next he unloaded two rather large bags, each very heavy, and each handled with great care. He told me I could carry one of the bags, but cautioned that the contents were fragile and very expensive, so I was to be extremely careful.

Mr. Adams took off down the trail at something less than a sprint while I stumbled along behind. It was still fairly dark. We stopped several times while he surveyed the East Valley up to Half Dome. After 20

© EUGENE SIMS

WRITER AND PHOTOGRAPHER EUGENE SIMS captured this image of Yosemite's granite cliffs in the summer of 1943.

minutes or so, the sunlight began to edge over the tall peaks in the distance.

When we arrived at a spot that he found satisfactory, he asked me to bring the bag while he set up his tripod. I watched with focused attention as he unpacked every item from the heavy bags. First was a square wooden box that he fastened to the tripod—a camera case of some sort. He exercised absolute precision in setting up the entire assembly, adjusting here, leveling there, and gazing over the top of the box in the direction of Half Dome. Out of the next bag came a brass tube, which I later learned was a lens; it was bigger than my entire camera. All of this was interspersed with a lecture aimed in my general direction. Details about the differences between the lens and the human eye, and the challenge of getting the camera to see what the eye sees, or in some cases, what the eye cannot see. I nodded my head as if I understood.

He went on. "The camera can be made to pick up great details and fine resolution of a subject," he said, "but attention to light and shadow is absolutely essential if a photographer wants to control the final product."

By this time, I was completely confused. My picture taking had been limited to pointing the camera at the subject and snapping the picture. What was all this business of shadows, light, depth of field, composition, and now something Mr. Adams called "creative photography"? I watched as he continued setting up his 8 x 10 camera, which, he explained, could use either glass plates or sheet-film negatives. I stood there shivering, feeling so out of place with my little folding camera, Wolensak lens or not.

Mr. Adams muttered to himself, and seemed quite perturbed. "I've been trying to get this shot for years," he said. "Yesterday the clouds were perfect but the light was rotten. Today the light is excellent, but there are no clouds. All the parts must be there. If a part of the picture is missing, it's like trying to hear a full symphony with only half the instruments playing."

It wasn't until years later that I realized those few sessions had left such a profound impact on me.

This explanation made sense to me, and I began to understand what he was trying to do with the picture. We waited a few more minutes while the sun continued to rise over the dome. But he made no more exposures that morning. The camera, lens, and tripod were quickly disassembled and packed in the bags. We tramped down the trail to the car and were back at the office by 8 a.m. It was then that I realized I hadn't taken a single photo.

I met or talked with Mr. Adams several times over the next week. We made one more hike together, to Vernal and Nevada Falls. When the summer work period was over, Dick and I again returned to Yosemite Valley, and I called at Best's store only to find that Mr. Adams was on a photo assignment in Hollywood. I never saw him again.

I returned home in the late summer and finished high school before enlisting in the Navy and had little time to think about Ansel Adams and our brief encounter in Yosemite. It wasn't until years later that I realized those few sessions had left such a profound impact on me. I continued to pursue photography in my professional work as a space and missile engineer at sites like Holloman Air Force Base, Cape Canaveral, and Vandenberg Air Force Base and visited national parks and historic sites in the United States and other countries. Years later, I still try to spend a part of every summer taking photos in national parks like Crater Lake, Glacier, the Grand Canyon, and Yosemite. And I find the fundamentals of producing an excellent photograph, as taught during those brief meetings, come to mind every time I pick up a camera to compose yet another image. NP

Eugene Sims, 82, volunteers with the Utah Historical Society and teaches the writing of memoirs and autobiographies at a local senior center, stressing the importance of photography in storytelling.

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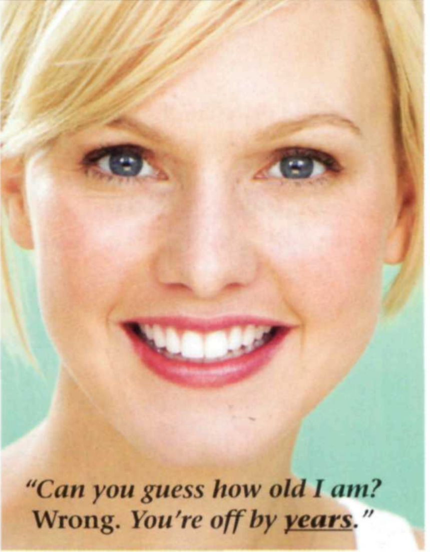

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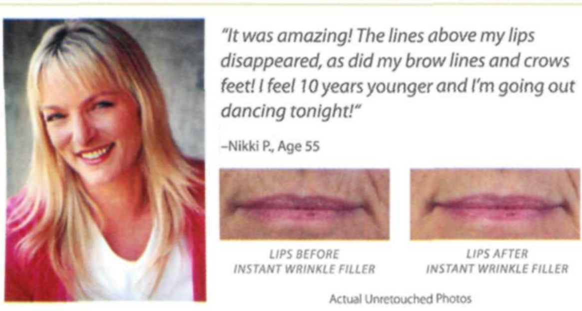

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DESPITE TENSIONS, American soldiers and British marines learned to live peacefully as neighbors.

The Standoff

A territorial dispute on Washington's San Juan Island revealed two countries' desperate need to keep the peace.

Just off the coast of Washington State, 200 tiny islands sprawl out like a constellation in the Strait of Juan de Fuca. Year after year, one in particular—San Juan Island—rises to the top of "America's Best Places to Live" lists, and it's no wonder why: The people are friendly. The scenery is breathtaking. And there's a local winery, a lavender farm, and whale watching by kayak.

It's the kind of place that people would have fought over back in the day. And 150 years ago, the United States and Great Britain were inches away from doing just that.

It started in 1846, when the authors of the Oregon Treaty drew a long, invisible line westward from the Rocky Mountains along the northernmost border of Oregon to establish the border between U.S. territory and British territory (now Canada). On land, the divide was clear—but where that line hit the Pacific Ocean, things got a little hazy.

But Americans and Brits lived side by side, and no one really seemed to mind. Until June 1859, when a pig owned by Britain's Hudson's Bay Company—a fur-trading monopoly—wandered into the garden of an American settler named Lyman Cutlar and began rooting up potatoes. Cutlar shot and killed the pig, then refused to reimburse the company for its loss.

Tempers flared. Great Britain threatened to arrest Cutlar, prompting a quick and aggressive response by U.S. Captain George Pickett (later of Civil War fame), who led in the American Army to protect their countryman. The British Royal Marines, led by Captain George Bazalgette, arrived quickly on their heels. The quarrel escalated into a standoff, with each side pointing guns at the other.

"It was a real crisis," says Mike Vouri, chief of interpretation at San Juan Island National Historical Park. "They could have started shooting at any moment."

Thankfully, it never went that far. Each side followed strict orders not to fire unless fired upon. But for the next three months, that tension remained, until U.S. Army Commander Winfield Scott and Vancouver Island Royal Governor James Douglas settled on joint occupation until a clearer boundary could be determined. Keeping the peace, after all, was essential for two coun-

tries that were hoping to avoid another conflict: In October, abolitionist John Brown staged an unsuccessful raid to liberate slaves at Harper's Ferry, pushing the nation closer to civil war; and England had just engaged in the second Opium War with China.

So the British set up camp at one end of the island, and Americans set up on the other—and incredibly, 12 peaceful years passed before anyone said much of the international border again. But that didn't mean life was easy.

"Frontier living was a hell of a lot of work," Vouri says. "The best way to keep soldiers happy was to keep them busy—so they gardened. They cleared woods. Some had carpenter skills that they put to use. But these guys were a long way from home and their loved ones, and that led to a lot of deep depression."

Times were especially hard for the American soldiers, who regularly went hungry and unpaid. The British Royal Marines were slightly better off, but faced other problems—like accidental drownings. "In those days, it wasn't considered healthy to immerse yourself in water, so most of these marines didn't know how to swim." They didn't even bathe, for that matter—which is why the park's historic collection features so many perfume bottles.

Eventually, the Brits and Americans began to find refuge in each other's company. They organized baseball games and attended the same churches. They celebrated each other's national holidays, like the Queen's birthday and the Fourth of July. Even Captains Pickett and Bazalgette formed a sturdy friendship. "In order to keep the peace," Vouri says, "they had to model it."

San Juan Island became so friendly, in fact, that it began to draw tourists. Thousands of people from Vancouver Island streamed in on passenger boats that offered rides to the British warships and the American camp, where tourists were free to wander the grounds and visit with the soldiers.

Life carried on like this until 1871, when a German Kaiser—an arbiter chosen by both sides—appointed a commission to settle the boundary dispute once and for all. They decided that Great Britain would own the islands to the west of the shipping channel, and the United States would own the islands to the east. That fall, British troops pulled out; in 1874, American troops followed suit.

And 150 years later, Americans are still gleaning lessons from how two countries established peace in a time of crisis.

"Are we a species that has to fight wars to exist?" Vouri asks. "Because wars impact our resources, and I don't think the world can afford that. If we want to preserve our planet and make life worth living for everyone who occupies it, we have to find peaceful ways to resolve conflict. We have to decide what kind of people we want to be. And that's what this park is all about." **NP**

Shane Farnor, NPCA's online advocacy manager, lives and works in Seattle, Washington.

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SUMMER 09

By Matthew Turley

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YELLOWSTONE NATIONAL PARK

Wyoming

Bison are beautiful, but they scare me. I cringe when I see people get out of their vehicles and walk over to wildlife to get a closer picture. I photographed this herd from my car, when I was driving through Yellowstone National Park on my way from Utah to New York. I had a U-Haul attached to the back of my pick-up truck, and a camera sitting in the front seat. The bison were pretty close to the road, and seemed not to notice or care much about the traffic nearby.

I grew up in Idaho Falls, Idaho, less than two hours from Yellowstone, and my family spent a lot of time in the park—so I've always felt a strong connection to the area. I was transitioning to a new life in Manhattan when I took this image, and it reminds me of the last familiar scene from the West before I continued on to the East Coast.

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But there was no mistake. And after returning home, I had 20 carats of these exquisite emeralds strung up in 14k gold and wrapped as a gift for my wife's birthday. That's when my trouble began. She loved it. Absolutely adored it. In fact, she rarely goes anywhere without the necklace and has basked in compliments from total strangers for months now.

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To make matters worse, my wife's become obsessed with emeralds. She can't stop sharing stories about how Cleopatra cherished the green gem above all others and how emeralds were worshiped by the Incas and Mayans and prized by Spanish conquistadors and Indian maharajahs. She's even buying into ancient beliefs that emeralds bring intelligence, well-being and good luck to anyone who wears them. I don't have the heart to tell her that I'm never going to find another deal this lucky.

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