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AMANITA MUSCARIA MUSHROOM, commonly known as fly agaric—one of the hundreds of different mushroom species found on the forest floor along the coast of Northern California.

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COVER PHOTO:
WRITER AIMEE LYN BROWN
walks atop a fallen redwood in Northern California.

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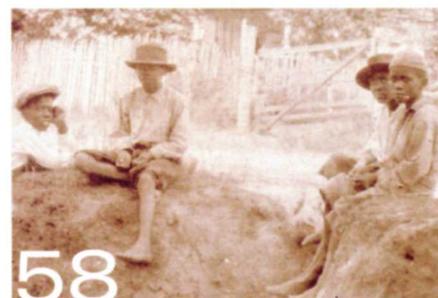
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The Great Outdoors

Nearly 150 years ago, the armies led by Lt. Gen. Ulysses S. Grant and Confederate Gen. Robert E. Lee met for the first time on land that is now dotted with homes and businesses in Orange County, Virginia. The Battle of the Wilderness is where Grant took command of the Union Army and began relentlessly pushing Lee's Confederate forces south. As Pulitzer-Prize-winning historian James McPherson has said, in some ways, it was a battle as significant as Gettysburg in determining the outcome of the Civil War.



Two years ago, Walmart proposed building a 140,000-square-foot superstore on this site where an estimated 180,000 Union and Confederate troops fought over three days, and where 28,000 were killed, injured, or went missing. After more than two years of opposition from NPCA and a coalition of other groups, including the Civil War Trust, National Trust for Historic Preservation, and the Friends of the Wilderness Battlefield, Walmart abandoned its plans. The company's decision on January 26, 2011, followed months of intense debate and a legal challenge led by the Wilderness Battlefield Coalition. (For the whole story, see the article on page 20).

The coalition's efforts to protect this battlefield is just one example of the ongoing work required to ensure that our national parks and monuments remain protected in perpetuity for the benefit of our children and our grandchildren. We cannot take their protections for granted. Ongoing protection requires constant vigilance and perseverance. It also requires a vision for the future.

In February, President Obama released a report entitled *America's Great Outdoors*, which recommends strengthening protections for our national parks and wilderness areas, identifying new opportunities to connect Americans to our shared heritage, and recognizing the role national parks play in protecting America's Great Outdoors.

As we approach the centennial of the National Park Service in 2016, the Obama Administration should embrace this opportunity to craft a robust national parks centennial agenda to ensure that these places that tell our nation's history and that preserve what remains of wild America are protected for their second century.

The National Park Service will celebrate its 95th year on August 25, 2011, just five years from its landmark celebration. Through the America's Great Outdoors initiative, we encourage the Administration to create an ambitious plan for advancing the national park idea. We will be looking to you over the coming months and years for your continued assistance to ensure that the Administration follows through on this noteworthy idea.

THOMAS C. KIERNAN

In Good Hands



GARY TARLETON/NPS

BARBARA CUMBERLAND treats a sandal worn by an American Indian at Mammoth Cave centuries ago.

Every fall, the 170 employees of the National Parks Conservation Association gather at a conference center tucked away in the woods of Shepherdstown, West Virginia, a few miles from Harpers Ferry. We look over the victories of the previous year, consider the challenges ahead, reconnect with colleagues we haven't seen in ages, and meet the newest coworkers to join our fold. And each time I'm reminded that I work with some pretty amazing people.

At our most recent gathering, our president, Tom Kiernan, asked us all to think about our own personal connection to the national parks, and how it translates to the work we do. He told us how his father had fought and died in Vietnam when Tom was only 7 years old, and how working at NPCA was his way of honoring his father's name, which is carved on the Vietnam Memorial. Mike Heaney, a native of Scotland, told us how proud he was to have become a U.S. citizen only weeks earlier—an event that turned our national parks into *his* national parks, at long last. And I stood up and told people how I'd just returned from the Harpers Ferry Conservation Center, where I interviewed conservators who preserve the thousands of artifacts in the agency's care. I told them how I'd seen a letter written by Robert E. Lee, and met the woman who had the nerve-wracking task of preserving it, and how I can't get over the fact that I actually get paid to do these things. And I was reminded, for the hundredth time, that the Park Service has some pretty amazing people, too. Turn to page 43 and meet a few of them.

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National Parks Conservation Association®
 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 appreciation of the natural and historic treasures found in the parks, educates readers about the need to preserve those resources, and illustrates how member contributions drive our organization's park-protection efforts. The magazine uses the power of imagery and language to forge a lasting bond between NPCA and its members, while inspiring new readers to join the cause.

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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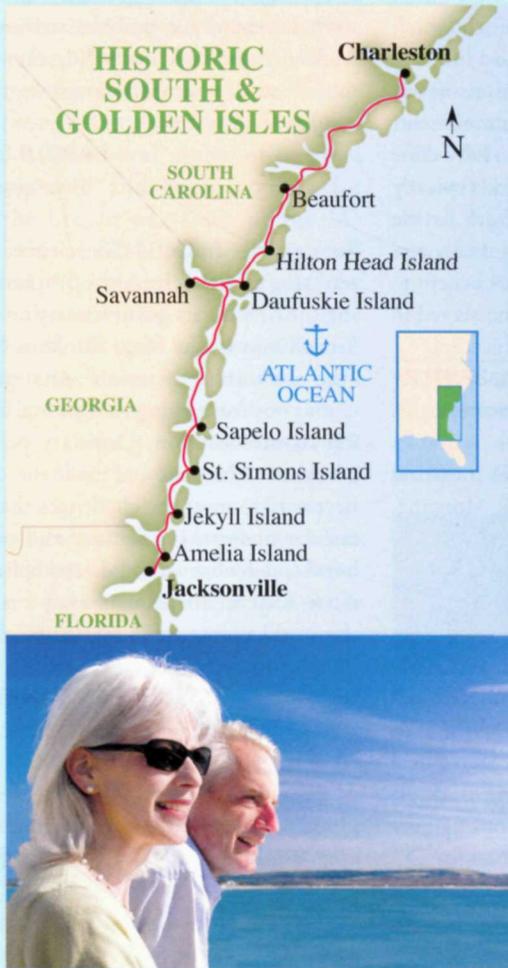
QUESTIONS?

If you have any questions about your membership, call Member Services at 800.628.7275. *National Parks* magazine is among a member's chief benefits. Of the \$25 membership dues, \$6 covers a one-year subscription to the magazine.

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WARTIME HEROES

Connecting the national parks with “conscientious objectors” (COs) sparked a cascade of submerged memories [“In Good Conscience,” Winter]. My father, Merl King, was serving at a Civilian Public Service camp at the time of my birth in 1945 at—I believe—Shenandoah National Park. Although our Mennonite community considered his service patriotic, we were in a clear minority. In earlier times, death, prison, and torture were the fate of some who refused military service on religious grounds, and as a child, I felt the stigma associated with being “unpatriotic.”

This article reminds us of the inherent conflict between military service and alternative service. I respect and appreciate those who are called to serve in our military; at the same time, I hold nonviolent principles. In these years without “the draft,” perhaps many people do not realize the agonizing choices individuals of conscience had to make during earlier wars. The article inspires me to move beyond oral family history and gather any facts I can about the service of those in my family, most of whom have passed on.

ELAINE MCKEE
Williams, AZ

My sincere thanks to you for publishing “In Good Conscience.” I was a CO during the Vietnam War and served my country as a science teacher in Appalachia. When I was

drafted, my normal life was disrupted and I was forced to give up a graduate school fellowship. But the experience led to a life-long career in science education. There are no veterans benefits and certainly few monuments and memorials to those of us who have done alternative service, and our work typically remains ignored or forgotten. Your article was long overdue in the national media and admirably records the tremendous benefit to our society provided by those who served in World War II as conscientious objectors.

MICHAEL BENTLEY
Knoxville, TN

My father was a Mennonite CO in World War II; he ended up in Missoula, Montana, as a smoke jumper. His experience as a CO who worked to preserve the beauty of our national parks had a powerful effect on me, one of his seven children.

With my dad’s encouragement, I became a fire fighter in the St. Joe National Forest in Idaho, fresh out of high school in 1967. I spent two summers on their “hot-shot crew” with 24 other young men. In 1970, with the Vietnam War looming over many young men my age, I applied for CO status, sharing my father’s beliefs. For me, one’s love for the Earth’s beauty and the inability to choose to kill another human being work quite well together. For this I thank my father, my faith, and my experiences working in our national parks.

STAN MILLER
Spokane, WA

High marks for Kevin Grange’s article about COs serving in national parks. After three fire seasons working for the U.S. Forest Service in the San Bernardino National Forest, I pursued community development work in a small Tanzanian village as a CO during the Vietnam War. The program was run by the American Friends Service Committee, which had CO service programs in Appalachia, East Germany, Guatemala, Haiti, India, and South Vietnam as well. All COs of every era are united

in opposition to killing, but most still wish to serve our country in peaceful activities. Their work offers the world a very different picture of the U.S. service member who refuses to kill but is still willing to serve.

HAROLD CONFER
Washington, DC

Your article “In Good Conscience” was interesting and timely; I just finished watching the Ken Burns documentary on WWII. I now know why Tom Brokaw called it “the greatest generation”—its greatness comes not from going to war, but from rising to the occasion. Ordinary people did what had to be done and made the sacrifices necessary to meet the challenges that such a massive undertaking demanded. I can’t help but wonder what we could accomplish today if we focused the same energy on solving the world’s most troubling issues. Can you imagine the possibilities?

JANE KOLIAS
Concord, NH

Thank you so much for your article “In Good Conscience.” It took courage and conviction to be a CO; your article makes this very clear.

My husband Asa Watkins (deceased) was a CO stationed at CPS12, where he worked on the Blue Ridge Parkway from June to October 1942. In October he was transferred to the Eastern State Hospital in Williamsburg, Virginia, to attend to the mentally ill. He found the treatment of the patients to be appalling. Because of him and other men, the facility’s conditions were brought to the attention of Virginia’s governor, and ultimately patient treatment became more humane.

LUELLA WATKINS
Morristown, NJ

MEMORY LANE

I just finished reading the article on Wrangell-St. Elias National Park [“Mountain Kingdom,” Winter] and

wanted to thank you. It brought back many memories of my visit there in June 1995: a flat tire on McCarthy Road, exploring the Kennecott Mine buildings, glacier hikes with St. Elias Alpine Guides. After several nights of sleeping on the ground and being vigilant for bears, the bed in our room at the Ma Johnson Hotel felt like a bed in a five-star hotel. My fondest memory of the trip was the terrifying yet thrilling ride in the hand-pull tram across the Kennecott River; there was no footbridge back then. What a great experience!

TANA M. FOWLER
Pueblo West, CO

As a former seasonal ranger at Salem Maritime National Historic Site, Massachusetts, I have enjoyed the magazine for a number of years. The winter issue was

exceptional. As a preteen, I read a book, called *The Secret of Turkeyfoot Mountain*, a story about two young “sang” hunters in south-central Pennsylvania, so the article on wild ginseng struck a real chord. And “The Wolverine Way” is a lyrical tribute to why wild things must be honored and preserved. It comes closest to giving voice to my inner feelings about our nation’s parks.

MARY GAUL
Concord, NH

CORRECTIONS:

The New River in West Virginia is not one of two rivers in the world that flows south to north, as stated in “New and Improved”

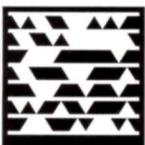
[p. 16]. In fact, many rivers follow such a path. The northern road (or Nabesna Road) does not go to McCarthy, as indicated in “Mountain Kingdom” [p. 42]—it ends at the Nabesna Gold Mine. And St. Elias Alpine Guides offer tours through Kennecott’s mill building; the Park Service does not [p. 48]. We misspelled the town of Kennicott on p. 42, and p. 44 should read Kluane National Park and Reserve.

Finally, “Raisin’ Expectations” [p. 14] states that the colonies won their independence from Britain in 1776. Although they declared their independence in 1776, the colonies did not win the Revolutionary War until 1783.

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THANKS TO A RECENT LAND TRANSFER, historic views at Fort Davis will remain unchanged.



SECURING THE FORT

A land transfer protects the view from Fort Davis National Historic Site

There are few places left in America where you can gaze out at a landscape that looks the same as it did in the 1800s. Fort Davis National Historic Site

in West Texas is one of them. Here, on the heels of the Civil War, African-American men—many recently emancipated slaves—joined the U.S. Army and capably served

their country by guarding the western frontier. “The transformation of these men from slave to soldier to citizen is one of the most important civil rights stories in our history,” says Suzanne Dixon, director of NPCA’s Texas Regional Office.

So when a scenic bluff that makes up the park’s historical western view fell into the hands of a private developer in 2007, NPCA joined with The Conservation Fund to take action. “If that land had been developed, Fort Davis never would have been the same, and part of our historic frontier heritage would have been lost,” Dixon says. “It was an economic issue, too. As one Jefferson Davis County judge said, ‘Scenery is our industry.’”

Fortunately, conservation buyer Roy Truitt entered the picture. In 2008, he purchased the land to prevent it from being developed, then resold that land to The Conservation Fund. Meanwhile, Sen. Kay Bailey Hutchison (R-TX) and Rep. Ciro Rodriguez (D-TX) introduced legislation to expand Fort Davis National Historic Site and secured federal dollars from the Land and Water Conservation Fund. In January 2011, The Conservation Fund transferred 49 acres to the Park Service. Friends of Fort Davis, Texas Parks and Wildlife Department, and the Texas congressional delegation were also key players.

“By saving the historic integrity of the fort, we helped preserve a significant part of American history,” Dixon says. “This is a clear triumph for Fort Davis, Texas, and the National Park System.”

—Amy Leinbach Marquis

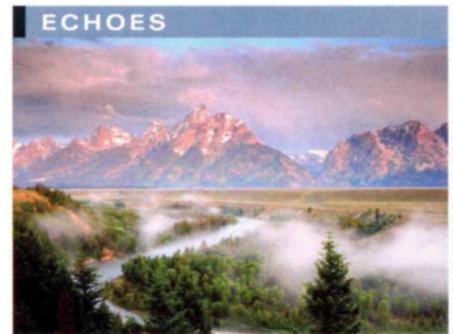
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PREHISTORIC BIRD species discovered in Alaska’s Denali National Park by Dr. Tony Fiorillo, a paleontologist and curator for the Museum of Nature and Science in Dallas, Texas. Fiorillo led digs in Denali from 2006 to 2010, when he and his team unearthed bird tracks dating back 70 million years. Many of the tracks were known to science, but two were slightly different from the rest. After careful analysis, the team realized they’d discovered two entirely new bird species, which they named *Magnavipes denaliensis* (to honor the native Koyukon Athabascan name for the region) and *Gruipeda vegrandiunis* (which translates to “tiny one”). The new findings support evidence that Alaska was once home to an impressive range of bird species. Because similar tracks have shown up across the United States and Asia, there’s a good chance that prehistoric birds used Alaska as a seasonal nesting ground, just as modern birds do today.

GRAND TETON'S PRONGHORN could soon use a wildlife overpass like this one, envisioned as part of an international design competition.



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[This is] absolutely the right decision—it's great news for anybody who cares about preserving Grand Teton.

Sharon Mader, program manager in NPCA's Grand Teton Field Office, quoted in the Jackson Hole News & Guide on an agreement to transfer 1,400 acres of state land within the park to the Interior Department, pending the approval of Wyoming's legislature and funding from Congress.

It's just not right that every inch of the preserve should be accessed by vehicles.

John Adornato, director of NPCA's Sun Coast Regional Office, quote in the Naples Daily News, on the Park Service's decision to open wilderness areas to off-road vehicles (ORVs) in the Big Cypress National Preserve in Florida. The management plan calls for 130 miles of ORV trails and other motorized vehicle routes along with new access points, which will shrink habitat for Florida panthers, spread invasive weeds, and may lead to further road development in the future.

Year after year, this program [to drive down damaging emissions] has been pushed back, behind other priorities—now is the time for action.

Stephanie Kodish, an attorney for NPCA's clean-air program, quoted in E&E News, in response to the EPA's failure to meet a legal deadline requiring air-pollution plans for all 50 states. Because the agency hasn't approved a single plan four years after the original deadline, coal-fired power plants continue to pose serious threats to the Grand Canyon, Mesa Verde, Mount Rainier, and Olympic. NPCA plans to sue the agency unless an enforceable deadline is agreed to immediately.

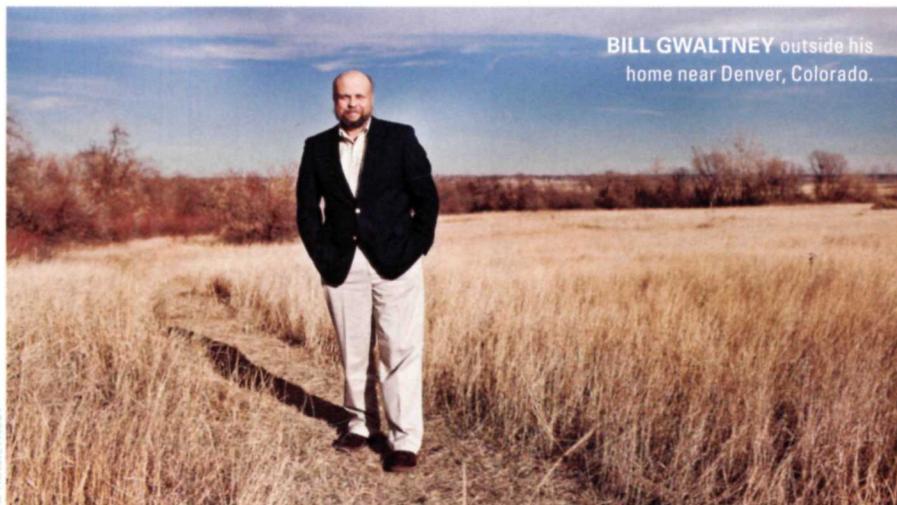
SAFE PASSAGE

Wyoming invests millions in wildlife overpasses to preserve Grand Teton pronghorn migration

Oil and gas wells have become a fixture in the landscape of western Wyoming in recent decades, bringing an influx of workers, home construction, increased truck traffic, and miles of paved roads. For more than 6,000 years, long before that oil and gas was discovered, a herd of pronghorn antelope had made their annual migration from Grand Teton National Park to wintering grounds 150 miles to the southeast. In spring and fall, the remaining band of 400 pronghorn is funneled through an obstacle course that has become nearly impossible to navigate. Every year drivers kill dozens of pronghorn on the roads, and those run-ins pose serious problems for those behind the wheel, too. Thankfully, the state has decided to give pronghorn a way around the problem—or to be more accurate, a way *over* it.

Wyoming's Department of Transportation is making a visionary move of investing \$9.7 million to construct wildlife overpasses at Trapper's Point and Daniel Junction, two bottlenecks in Sublette County that have proven particularly dangerous. The work is expected to be completed by September 2012. Over time, that would mean preventing the deaths of hundreds of pronghorn, which must leave the park each fall when heavy snowfall and freezing temperatures make it difficult for them to graze; they return to the park each spring to give birth to their calves. The overpasses should prove enormously effective for wildlife in the region, especially Teton's pronghorn, which can be pretty particular when faced with obstacles: The animals don't like to jump over fences, which have proliferated as enormous ranches are subdivided into smaller sites for homes; pronghorn also avoid wildlife underpasses, which tunnel beneath highways.

"We're seeing substantial progress along the Path of the Pronghorn, thanks to the science conducted by the Wildlife Conservation Society, land conservation by ranchers and land trusts, and NPCA's collaborative work with agencies like the National Park Service, the Forest Service, the National Elk Refuge, and the Bureau of Land Management," says Sharon Mader, program manager in NPCA's Grand Teton field office. "Meanwhile, more landowners are making their property more 'wildlife friendly' by establishing conservation easements that limit further development, and by altering fences to allow pronghorn to continue on their way. Oil and gas companies are helping, too, by minimizing their own traffic on Wyoming roads. And this innovative move from the state's department of transportation is another crucial step to protect the pronghorn that call Grand Teton home." —Scott Kirkwood



BILL GWALTNEY outside his home near Denver, Colorado.

Q&A

THE WAR THAT SHAPED AMERICA

Nearly 150 years after the Civil War, Bill Gwaltney explains why its lessons are still relevant today.

This April marks the 150th anniversary of the Civil War's first battle, at Fort Sumter in South Carolina. For the next four years, national park units across the country will host special events to commemorate the war that shaped America.

And no one on Earth is more excited about it than Bill Gwaltney.

As assistant regional director for workforce enhancement for the Park Service's Intermountain Region, Gwaltney's the guy responsible for building relationships with new partners and diverse communities, helping parks recruit and retain Park Service staff, and diversifying the workforce in park sites from Montana to the Mexican border. In nearly 30 years with the Park Service, he's done an impressive job of making those connections—and the Civil War plays a key part: "I can't think of anyone in the United States who doesn't have some connection to the American Civil War," he says.

Gwaltney's foray into wartime history didn't truly begin until the late 1980s, when he was working at Frederick Douglass

National Historic Site in Washington, D.C. It was around that time that he helped found Company "B" of the 54th Massachusetts Volunteer Infantry, a group of African-American Civil War re-enactors, interpreters, and amateur historians from the region.

Gwaltney also helped create "Old Stories, New Voices," a multicultural youth camp sponsored in part by the Park Service. And in 2008, he began working with the staff at Fort Union National Monument in New Mexico to help form a living-history volunteer group to depict the thousands of Hispanic soldiers from New Mexico who fought for the Union Army during the Civil War.

This winter, National Parks' associate editor Amy Leinbach Marquis talked with Gwaltney about the upcoming sesquicentennial and its relevance to Americans today.

Q: Why is the role of minorities so significant to interpreting the Civil War?

A: Minorities hoped that their participation in this conflict would help people see

them as Americans first, not as "hyphenated" Americans. No one could have said it better than Frederick Douglass, when he stated: "Once let the black man get upon his person the brass letters, 'U.S.,' let him get an eagle on his button, and a musket on his shoulder and bullets in his pocket, and there is no power on Earth or under the Earth that can deny that he has earned the right of citizenship in the United States." There are very few things I've committed to memory quite like that.

There is nothing more American than the Civil War. This was a conflict that involved everyone, and everyone had a stake in it, and I think everyone has a stake in its remembrance today. There were Hispanics and American Indians fighting both for the North and South. And today, when the First New Mexico Volunteer Infantry interprets those battles at Fort Union National Historic Site in New Mexico, they communicate all their commands and maneuvers in Spanish while the interpreter talks to the public in English. You get to see Union troops operating completely in Spanish, which is something that most people haven't seen since 1865.

Q: How do Civil War sites help to engage more diverse audiences in the national parks?

A: The Park Service has had 25 years to think more deeply about the Civil War since the 125th anniversary observances began back in 1986, so it's only natural that they've begun to tell more diverse stories to an increasingly diverse set of audiences. The great thing is, they didn't have to make them up. Those stories were there all along.

Civil War history is so wide and long and deep that it has the potential to engage everyone, regardless of how long their family has been in this country, or what their connection is to the battles or those outcomes—because we're all affected by the outcomes of the war. Even today, many important political issues involve civil rights and states' rights, and the ability to define oneself on personal, regional, and national levels, so this isn't just about black-powder muskets and wool uniforms—we're talking

about issues that still resonate strongly with people.

One of the interesting lessons from my work with the 54th Massachusetts Volunteer Infantry is illustrated by the first meeting the fledgling group held at the Frederick Douglass house on a balmy summer evening in D.C. in 1988. Civil War historian Brian Pohanka and I joined with veteran Civil War re-enactor Jack Thompson to recruit men to portray the famous 54th Massachusetts Regiment in the motion picture, *Glory*, and for interpretive programs for the National Park Service.

We were worried that nobody was going to show up, but suddenly there was one car, then another car, then another—and pretty soon the parking lot was full and we had at least 50 guys in the auditorium. We had planned a full program where we'd talk about the history of the war, then re-enactments, and then I would talk about the history of black soldiers in the Civil War. But as the meeting progressed, the noise level kept rising, and I had to ask people to quiet down because we had so much to cover. Then it got loud again, and I had to say it again. Finally, the third time, I said, "Okay, what's going on here?" None of these people had even known each other before the meeting. Then one of them said, "For so many years we've loved the history of the Civil War, but we never felt welcome in museums and national parks. Now we've found each other and we just can't shut up."

The National Park Service has to face the challenge of letting everyone know that they're welcome, that these are their national parks, and this is their history, and they need to feel good about connecting with the upcoming anniversary events and exploring these sites not just a couple times during the next four years, but for the rest of their lives.

Q: How does this history speak to you today?

A: Every one of those soldiers, from the North and South, was committed to a vision of a country that reflected their interests and passions. And we're still dealing

with that today: Who are we now? Who are we going to become? And how can we learn to get along together? There are tremendous lessons not only about sacrifice and heroism on both sides of the war, but there are lessons about forgiveness, about patriotism, and about what to keep and what to let go. There are so many lessons to be learned, that I don't think there's any one-size-fits-all message to them. There are so many threads that weave this tapestry we call the history of the Civil War, and there is something for everyone—but you have to look closely at the cloth.

Q: Every American has a connection to the Civil War, but not everyone has found it yet. How can more people start to realize that?

A: It doesn't take much—perhaps a little reading, a visit to a battlefield, some online genealogy, or one of the 150th Civil War observances. But be careful, once you're

hooked, there's no going back!

There are so many things that have changed American life and culture as a direct result of the Civil War. The national income tax was established to help pay for the war. Thanksgiving was established as a national holiday during the Civil War. The Civil War preceded our first presidential assassination. We made so many technological military advancements as a result of the Civil War, from aerial photography to hand grenades.

You have to know a little something in order to become more connected. And that's the trick—to get people to take that first step and visit a national park or go the Park Service website. It applies to everyone, no matter their age or interests.

Let's say, for example, that your interests aren't in military maneuvers or combat, but food. Well there are plenty of parks that can talk about the food of the Civil War, and the hardships created by things



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like the blockade in the South. Southern soldiers could rarely get coffee and had to make bread out of pea flour. Of course in the end, the most interesting stories are about the people. But you have to go to the parks to hear those stories. People could also take another look at Ken Burns's Civil War series, because there were some really smart things done in that film to help Americans connect with the Civil War.

Q: Can you talk about the idea of interpretation evolving beyond just battlefield tactics, and focusing more on the causes and consequences in all their complexities?

A: Absolutely. As critical as tactics are to understanding the military aspect of the war, in the end it's all about the people and their interests, motives, anxieties, fears, and hopes. What happened in the Civil War, in the end, happened not to regiments, companies, or brigades, so much as they happened to people, families, and communities.

As we talk about different groups of people who fought in this war, consider the soldiers in New Mexico who had only been part of the U.S. since 1847—not that many years before. And here they were, embroiled in this national contest between North and South. Then there were African-American soldiers, some of whom had been enslaved persons only weeks before but ran away to fight for their own freedom.

So you have these people whose expectations for citizenship and connection with the larger country is very much improved—and in many respects, those are dialogues that are still taking place: What can I expect in terms of being a citizen? I know that here in the West, people involved in the immigration debate often forget that many Hispanic Americans living in the United States have ancestors who arrived here 400 years ago. These people didn't just cross the border last week. So it's important to let everybody know that there is this connection—some of which is personal, some of which is physical, some of which is psychological.

Q: How important is it to protect the land in and around these historic places?

A: These are places where hundreds, thousands, sometimes tens of thousands of people died, so it's important to preserve the memory of the sacrifices they made. At the same time, the more science and technology and tools we have, the more these places reveal. Once you plow over a place, the information that seems to be constant fodder for Discovery Channel shows like *Civil War Chronicles* is lost. So we need to protect them not only as historic sites and places to honor those who died, but as places where information can still be retrieved.

I'm reminded of a story about an older couple that happened to be in a Civil War site when then-NPS chief historian Ed Bearss was leading an interpretive walk. When the walk was over, the couple asked where the wife's great-grandfather, a First Sergeant who was in such-and-such a regiment during such-and-such a company at this time, might have stood in the battle. Ed Bearss—with the kind of assuredness that only a Civil War history buff could muster—said, "If you walk with me, I'll show you. That regiment would have been right here, and your great-grandfather would have stood right here." The woman cried.

The Park Service, because of its attention to detail and focus on this kind of history, could actually show this woman where her ancestor stood during this particular battle. It's almost like a magic trick. But it's only because these places are protected that that's possible.

Q: What excites you personally about the upcoming anniversary?

A: I participated in interpretive programs focusing on the 125th anniversary of the Civil War in state and national parks across the country, so I'm very excited that—knock on wood—I am still young and healthy enough to be able to participate in interpretation that will shed light on the 150th anniversary as well.

In the last 25 years of my life, I've connected with so many Civil War historians, enthusiasts, authors, and interpreters, both in the Park Service and outside of it. Some of them have passed on, but most of them are still with us. It has become a large part of my personal life and has made me look back at my own family history: Turns out I had family serving both in the army and the navy during the 19th century. So it's been exciting to me on an amateur genealogical level. I've found myself in the National Archives, and the Library of Congress, and of course on the field as a re-enactor. My son's high school recently asked me to do a presentation about black troops in the Civil War. So it has become not just an interest, but a passion. It's something you just can't put down.

We're blessed to have a tremendous array of brilliant Civil War scholars—people who have made a life's work of studying the Civil War. So many of these people are living today, and it's a tremendous blessing to be able to talk to them about what they've learned and how they've learned it. And many of those people are connected—officially or unofficially—with the national parks. I think it's important to broaden the opportunity and encourage more people of all walks of life to step up and make American history part of their own path.

This anniversary isn't just a single opportunity—events are happening over the next four years. This is going to be a series of observations and interpretive opportunities that will be conducted largely by the Park Service itself. They'll be fun, but they'll also make you think: Much of the business of the war is unfinished.

So I encourage people to go to the Park Service website, get the Park Service handbook of events, and do what folks used to do years ago: plan their year, their vacations, and their summers to connect themselves, their kids, and their grandkids to this history that is so much a part of who we are today.

For more information about upcoming events, visit www.nps.gov/civilwar.

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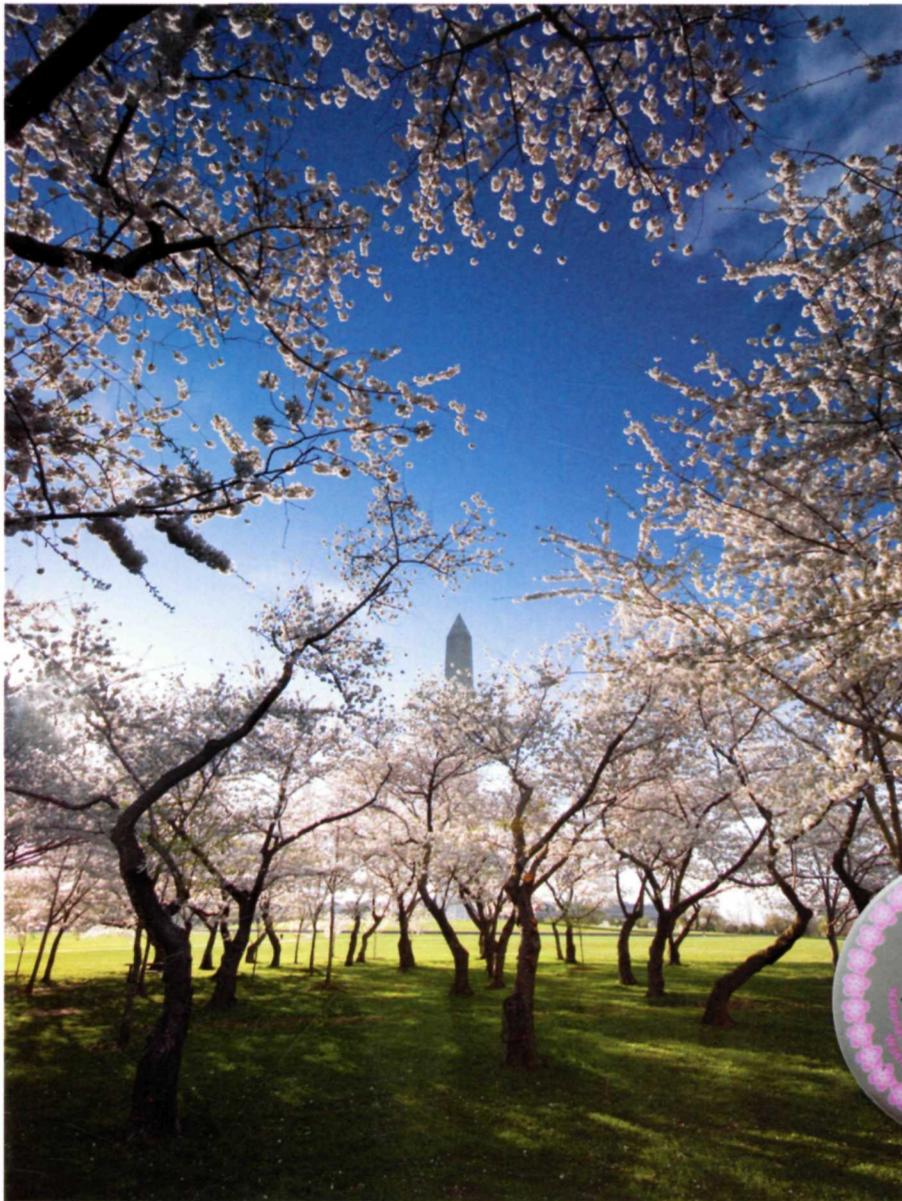


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A NEW PARK SERVICE MASCOT helps protect Washington, D.C.'s beloved cherry trees.

morial, for the two weeks when those clouds of blossoms seem to hover just overhead.

But years ago, park rangers started noticing there weren't as many blossoms as there used to be. And the thick gnarled trunks of older trees were now outnumbered by fragile trees that never quite reached maturity. The problem? People plucking the flowers, kids climbing the trees and scraping off fragments of bark with every clumsy step, and parents propping their children on low branches for photo-ops—sometimes snapping off limbs in the process.

"The Park Service's mission is inherently difficult in that we want to preserve forever, but at the same time we want to welcome people to experience our amazing natural and cultural resources—the cherry trees may represent one of the best examples of that challenge," says

John Kirkpatrick, a park ranger with the National Mall and Memorial

Parks. "Each year, the Cherry Blossom Festival brings 1 million people to our park in about two weeks.

And picking a blossom is the most natural thing in the world. Most people

think, 'Oh, it's just one flower,' but if you pick just one flower, you've done some damage—you've opened a wound, and that lets in viruses and insects. And if you climb a tree, you're damaging the living part of the tree, which lies just under the bark."

If it were just one person, the tree would probably do just fine, but add a million other visitors to the equation, and you've got a problem. Given the Park Service's budget woes and the simple arithmetic involved, rangers are wildly outnumbered during the two-week festival, and their duties include far more than policing cherry blossoms.



TREE HUGGERS

Washington D.C.'s tourists were loving its cherry trees to death, until a beaver showed them the way.

On February 14, 1912, more than 3,000 cherry trees left Yokohama, Japan, on board the S.S. *Awa Maru*, bound for Seattle. Shortly after the floating forest arrived in Washington State, workers carefully transferred the trees to insulated rail cars, which slowly made their way to

Washington, D.C. On March 26, this gift from the people of Japan arrived in our nation's capital. Every year since then, visitors have flocked to the city to see the cherry trees blossom each spring. This year, a million visitors are expected to descend on the Tidal Basin, in the shadow of the Jefferson Me-

Something had to change.

For years, rangers posted signs urging people not to pick the blossoms or climb on the trees, to little effect. Some rangers suggested more forceful language along with a liberal sprinkling of capital letters and exclamation points. But in the end, the park opted to go the other way. In 2006, Kirkpatrick introduced a friendly cartoon character called Paddles—a beaver armed only with a smile and a stop sign. Paddles made his debut on a trail guide, then progressed to a standing wooden cut-out. Finally, the agency purchased a costume and teamed Paddles with rangers and volunteers to carry his message on foot.

“The response was remarkable,” says Kirkpatrick. “The year before we introduced Paddles, it took me hours to walk from the FDR Memorial to the Washing-

ton Monument, because I’d have to stop every time I saw someone with a blossom in their hand. The very next year, all the rangers noticed that people weren’t picking the blossoms nearly as much. Soon, I had to go out of my way to find anyone with a blossom in their hand. It was a dramatic change.”

Of course, not all the rangers were thrilled with the idea of a character in a costume. Some thought the approach crept dangerously close to Disneyland, and many thought it was inconsistent with the dignity that should be afforded to Jefferson, Lincoln, and Washington. But Kirkpatrick’s colleagues came to recognize that it wasn’t a silly device designed to entertain—it was a tool designed to send an important message regarding the agency’s mission. And it was hard to argue with the results.

Some visitors have brought up more

scientific concerns—namely the selection of a beaver as a protector of trees, given their predilection for chopping them down. But Kirkpatrick points out that beavers’ activities generally improve environmental conditions—their dams help form wetlands that support other species. Sure, beavers harvest some trees for specific purposes, just like humans, but even beavers know that there are some trees you don’t touch.

As the cherry blossoms approach their 100th year in the nation’s capital, the message seems to be taking root. This year’s Cherry Blossom Festival begins at the end of March, and the park has already started signing up volunteers to escort Paddles around the Tidal Basin. And that’s good news for the gift that keeps on blossoming.

—Scott Kirkwood

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GASPING FOR AIR

Is air pollution pushing the Rockies to a point of no return?

On a cold, clear November day in Rocky Mountain National Park, Eric Richer snowshoes three miles out to a tidy array of solar panels, antennas, and weather instruments and gets to work.

"It's actually really hard to catch snow in a bucket," Richer says from behind a dark beard and sunglasses. As project manager of the Loch Vale Watershed Long-Term Monitoring Project (a collaboration among the U.S. Geological Survey, National Park Service, and Colorado State University), Richer trudges into the mountains every Tuesday—rain, snow, or shine—to take water samples and download data from high-tech snow collectors. A sensor inside the bucket records precipitation—about two inches in the last week here in Loch Vale, a valley carved by glaciers that still cling to towering granite walls on the Continental Divide.

But the pristine setting belies dramatic changes in the fragile alpine ecosystems the park was meant to protect. Precipitation collected here over the last 28 years have revealed

increased levels of nitrogen falling from polluted skies. Increasing traffic in the nearby Front Range—home to Denver and more than 4 million people—joins large-scale agriculture and coal-fired power plants in driving pollution high into the atmosphere, where it gradually drifts back down to Earth or falls with rain and snow. Last year, more than 1.1 million vehicles entered Rocky Mountain National Park, driving exhaust even deeper into the mountains. Studies have shown that pollution can also blow in from as far away as California.

Of course, nitrogen isn't always a bad thing. A naturally occurring element, it acts as fertilizer and helps plants grow. But this shower of pollutants is depositing 15 times the natural level of nitrogen in Rocky Mountain National Park—and that's damaging the region's ecology. Grasses are encroaching on wildflower meadows. The diversity of algae has declined, and some lakes are now dominated by just one or two species. Trees are becoming more vulnerable to disease

AIR POLLUTION AND CLIMATE

CHANGE could spur a dramatic ecological shift in Rocky Mountain National Park.

and pests.

"Fertilizing your garden is usually a good thing," Richer says. "But if you use too much fertilizer, you'll kill it."

Now another nitrogen source is threatening the park's alpine lakes and streams. Drought conditions in recent years meant that less nitrogen was falling from the sky; still, nitrogen levels continued to increase by almost 50 percent between 1999 and 2006 compared with the previous decade. The culprit? Melting glaciers. And it's not just happening in Colorado—scientists are seeing evidence in Glacier, Grand Teton, and Yellowstone National Parks too, and elsewhere in the world.

(cont'd on p. 18)

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"The fact that melting glaciers are pouring nitrogen into these systems is a surprise," says Jill Baron, who oversees the Loch Vale project as principal investigator with the U.S. Geological Survey at Colorado State University. This new source now complicates the park's existing nitrogen problem.

Scientists are still studying the glacier's role in Rocky Mountain National Park, and many questions remain about the exact source of the nitrogen, which could be from microbes released from thawing soils as the glacier shrinks, or from pollutants that have accumulated within the ice. But if excess nitrogen continues seeping into the landscape unabated, the Loch and other mountain lakes could become acidic—and that could prove lethal for aquatic life within a few decades.

"We're wallowing in our own mess," Baron says. "We've seen nitrogen's impacts in every corner of the ecosystems we've looked at."

The Colorado Department of Public Health and Environment is working with the Park Service and Environmental Protection Agency (EPA) to address a number of air-pollution problems in the Front Range. In addition to other impacts of nitrogen, haze now reduces visibility in the Rockies by as much as 80 percent, obscuring the mountain vistas that draw some 3 million visitors each year. Unhealthy levels of ozone in the park led to five health advisories last summer, and ozone also chokes off plants. Solutions to reducing ozone levels include retrofitting industrial facilities with pollution controls, expanding emissions inspections programs

to reduce vehicle pollution, and working with ranchers to reduce the amount of ammonia gas (a smelly nitrogen compound in manure) that's released into the atmosphere. Colorado's plans to shut down several coal-fired power plants and switch others to natural gas in the next decade would also reduce air pollution.

But even the best plans don't always come to fruition. In January, the EPA missed a key deadline to approve state plans that play a big role in improving air quality; the Regional Haze Program of the Clean Air Act is meant to reduce haze- and nitrogen-causing pollutants in scenic areas around the country. Colorado missed the deadline too, but might have an approved plan ready soon.

"We could reduce a substantial and dramatic amount of air pollution just by enforcing this law," says Stephanie Kodish, NPCA's clean air counsel. "But the Regional Haze Program has been pushed aside again and again." (NPCA and its partners intend to sue the EPA as a result.)

In the meantime, state and federal agencies continue to work toward reduced nitrogen levels in Rocky Mountain National Park. Last June, the Park Service and its partners released a contingency plan should current efforts fail to reach a key benchmark of 2.7 kilograms of nitrogen per hectare per year by 2012—about the same as spreading a six-pound bag of fertilizer over two football fields.

The ultimate goal is to reduce nitrogen levels to 1.5 kilograms—a 50 percent reduction—by 2032. While still well above

natural levels, that amount shouldn't cause ecological changes, according to park biologist Jim Cheatham.

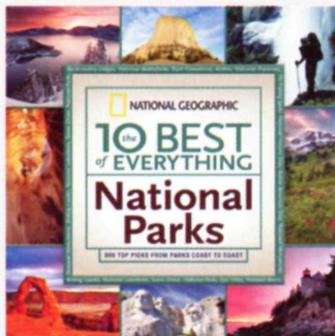
"Time will tell, come 2012, whether we've been aggressive enough," Cheatham says. "If not, we'll have to adjust, fully realizing that we will never reach natural levels again with so much human development adjacent to the park, in the state of Colorado, and throughout the nation."

Back in the snowy mountains, Richer punches through ice to collect water samples from a stream where nitrogen levels have increased by 40 percent since 2000. Although efforts to reduce nitrogen deposition could prevent acidification, other changes are likely to come with a changing climate. Rocky Mountain glaciers, for example, are predicted to disappear by 2030—and without glaciers to supply cold meltwater to lakes and streams, water temperatures will rise in summer months, after the snowmelt has occurred, and stress cold-loving fish like the mountain sucker.

Air pollution and climate change present a formidable challenge to the parks, their visitors, and the agencies working to mitigate air pollution. And even with the most stringent air-quality regulations, there's no guarantee that we'll return to the pristine skies of the past. But existing pollution rules, when enforced, have the potential to address all of these problems simultaneously, bringing Rocky Mountain one step closer to clearing the air for humans, plants, and wildlife alike.

—Nathan Rice

EYE-OPENER



National Geographic's **10 Best of Everything: National Parks** is the latest in the publisher's "10 Best" series devoted to travelers. The book includes 80 top-ten lists that highlight hundreds of parks and include topics you might expect, like best lodges, wildlife watching, backpacking, and winter sports. But there are also quite a few that might surprise you, like best urban escapes, culinary delights, and places to exchange vows. You'll even find the ten most accessible national parks, and the ten best books about national parks. Short sidebars sprinkled throughout include art classes offered in the parks, historic places of worship, and a primer on buying gear like footwear and binoculars. Every topic is covered in a few pages, which include plenty of photos, illustrations, and classic WPA posters to accompany the text. 478 pp., \$21.95.



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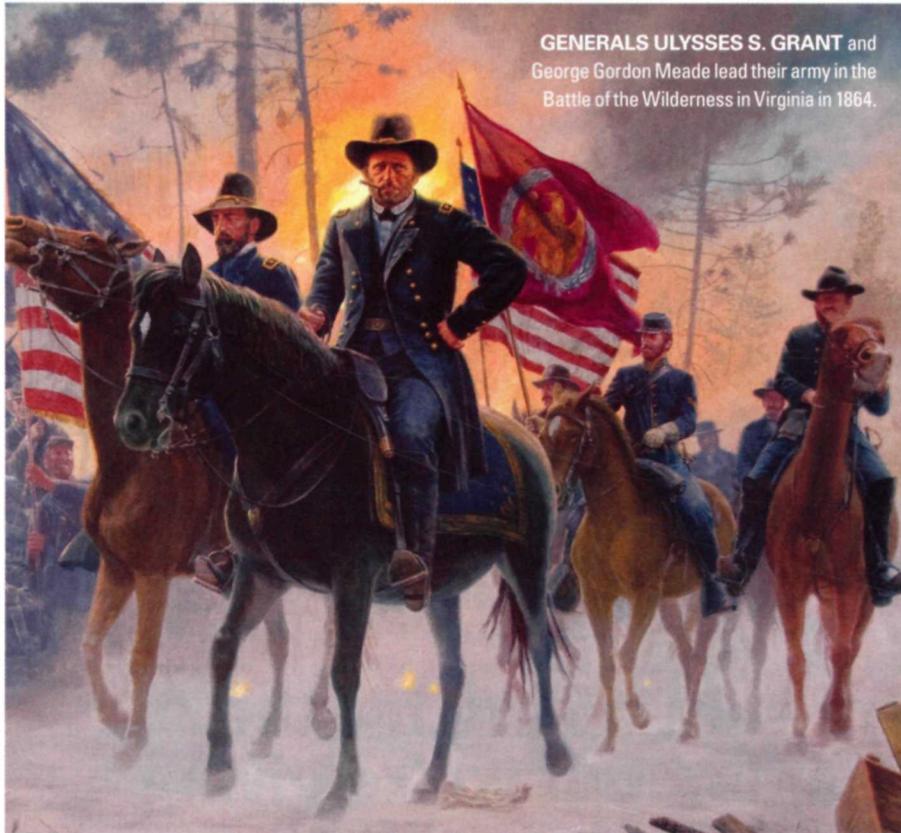
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WILDERNESS PRESERVED

Walmart withdraws plans for a Virginia superstore atop the nerve center of a key Civil War battle.

The year was 1864. Generals Ulysses S. Grant and Robert E. Lee were about to lock horns for the first time since the Civil War began. In a wooded area on the outskirts of Fredericksburg, Virginia, 120,000 men dressed in Union blue faced off against 60,000 dressed in Confederate gray. The Battle of the Wilderness, as it would be called, was the opening conflict in the Overland Campaign, which would eventually see Grant push Lee back toward Richmond, then Petersburg, and finally to his surrender at Appomattox Court House. Over the course of several days, more than 28,000 men were killed, wounded or captured in the Battle of the Wilderness.

In the immediate rear of the Union line, in one of the few clearings, the Army

of the Potomac had its headquarters—a tent city guarded by hundreds of cavalrymen and hundreds more artillerymen with 50 cannons. Across the road was a sprawling hospital complex with dozens of tents. Nearly 150 years later, word spread that county officials thought this historic plot of land might be the ideal place for... a Walmart?

In the summer of 2008, NPCA joined with the Civil War Trust, the National Trust for Historic Preservation, the Piedmont Environmental Council, Friends of Wilderness Battlefield, Preservation Virginia, and local residents to form the Wilderness Coalition, which rallied in opposition. The list of allies grew to include Virginia's then-governor, its speaker of

the house, its Department of Historic Resources, the National Park Service, and 250 Civil War experts who urged Walmart and the county to find a more suitable location.

But those pleas were ignored. In August 2009, the county's board of supervisors approved a special-use permit allowing Walmart to build a 140,000-square-foot store along with 100,000 square feet of additional retail space at the intersection of Routes 20 and 3. The site overlooks the Wilderness Battlefield unit of the Fredericksburg & Spotsylvania National Military Park, and although it's not owned by the Park Service, historians agree that it was part of the original battlefield.

In response, several coalition members sued to challenge the decision in September 2009. Pulitzer-Prize-winning historian James McPherson signed on as an expert witness. The law firm of Arnold & Porter offered the group its services, pro bono, eventually donating more than 5,000 hours of legal services to the cause. At issue was not only the historical importance of the site, but also the impact on traffic and the local economy. In the end, Bob Rosenbaum, the lead attorney, based the coalition's case primarily on the fact that the county had failed to consider the protection of historic resources in arriving at its decision. Finally, in January, on the second day of trial, Walmart officials announced they were nixing their controversial plans.

"Despite the significance of our national parks, the integrity of these and other historic treasures is often entrusted to local officials," says Rosenbaum. "This case demonstrates what can happen when that public trust isn't taken seriously."

Some would argue that given the nation's economic situation, now is not the time to argue against jobs. But it's a mistake to assume that economics always favors one side of the equation over the other.

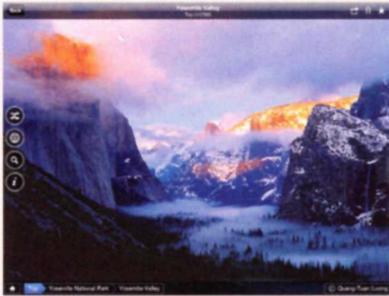
"National parks add enormous value to their communities in many ways," says Joy Oakes, senior director of NPCA's Mid-Atlantic Regional Office. "On average, every federal dollar invested in national

parcs returns four dollars in economic activity to the community."

Ultimately, Walmart's leaders may have realized that even if they had been fortunate enough to win the case in an Orange county courtroom, they were unlikely to win in the court of public opinion. The company has announced plans to find another site in Orange County, and has promised not to develop the battlefield land. But Civil War and park advocates want to see the land preserved forever, and they won't rest until a permanent solution is put in place. If that day comes, it could mean that this battle was the last battle for the Wilderness.

—Scott Kirkwood

EYE-OPENER



FOTOPEDIA'S NEW APP for the iPhone and iPad, "National Parks: Our Treasured Lands," features a stunning collection of images by photographer Quang-Tuan Luong—the first person to photograph each of America's 58 national parks with a large-format camera. Every photo includes a short caption, extensive information about the park, its location on Google Maps, and a link to the Park Service website. Other features allow users to share images on Twitter and Facebook, save photos as wallpaper, purchase prints, and designate favorites. And if the flick of a finger proves too exhausting for navigating all 3,000 photos, there's always the automatic slideshow setting. The app, which requires an internet connection, costs \$4.99, and is available at www.fotopedia.com/ios/national_parks.

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hold clues to life on other planets.



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Fourth Rock from the Sun

Can Lassen Volcanic National Park help NASA learn about life on Mars?

Five thirty-three a.m. Earth Time. From 92 million miles away, the sun sends a hazy pink light streaking through the atmosphere. Fumaroles hiss volcanic gases and steam at 322 degrees Fahrenheit. Mudpots rumble and thump. Acidic pools boil. California's Lassen Volcanic National Park can seem as alien as another planet. And it is exactly this out-of-this-world mystique that has led NASA scientists here in a search for clues to an age-old question:

Could there be life on Mars?

The fourth planet from the sun and the Earth's nearest neighbor, Mars has long sparked the human imagination. Its red glow, clearly visible with the naked eye, was an ominous omen of battle and disaster, leading the Romans to name it after their god of war. As early as the 1880s, telescopes revealed strange linear markings on its surface fueling speculation of alien civilizations, a fear played upon in the famous 1938 Orson

Welles radio broadcast "War of the Worlds." Close-up photographs taken by Mariner 4 in 1965 dispelled the myth of glittering Martian cities but began revealing a planet intriguing in its own right: ice caps at both its poles; the largest mountain in the solar system (Olympus Mons is nearly four times as high as Mount McKinley); a canyon system four miles deeper and six times longer than the Grand Canyon; sand dunes rivaling any in our National Park System.

Most intriguing, however, may be the "erosional" features—extinct riverbeds, streamlined islands, flashflood debris fields, and immense dry lakebeds—sculpted landforms that hint at a time, perhaps billions of years ago, when water flowed across the Martian landscape. That water, combined with the geothermal energy that once fired the many extinct volcanic and hydrothermal features documented, could have given the Red Planet two of the main ingredients required for life: water and warmth. The

prospect continues to fuel speculation that some form of life existed, or may still exist, on Mars.

But finding evidence of that life on a planet with twice the combined landmass of Earth, a toxic atmosphere, and an average temperature of -81° Fahrenheit, presents scientists with a serious challenge. To narrow the target, NASA has adopted a “follow the water” strategy: Where there is or once was water, there may be signs of life, if only you know where to look. Enter Lassen Volcanic National Park.

“We are following the water at Mount Lassen in environments that could well be very similar to what once existed on Mars,” says David Des Marais, principal investigator with the Ames Research Center of the NASA Astrobiology Institute. Set at the southern end of the Cascade chain, Lassen Volcanic is a park sculpted by violent volcanic activity dating back as far as 600,000 years and as recently as 1917. Even today the prodigious amount of precipitation that falls

atop the park’s high country percolates down to the still-hot molten rock that lies five to six miles beneath the park, then rises back to the surface as roaring fumaroles, gurgling mudpots, and boiling pools—a proving ground for life forms.

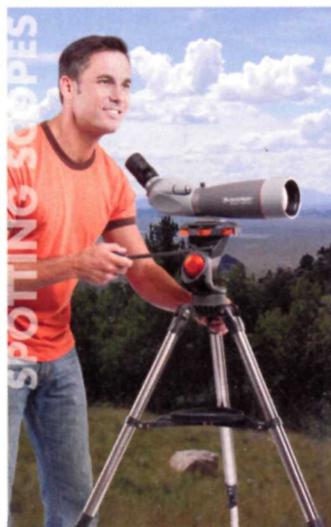
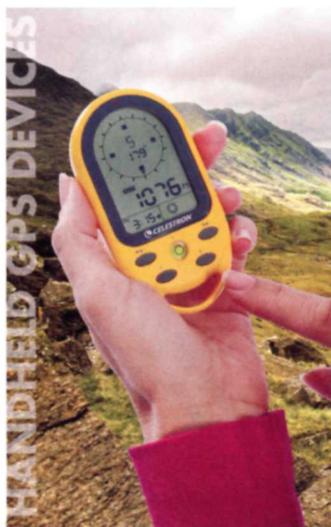
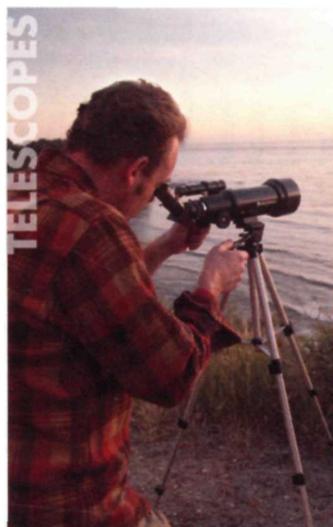
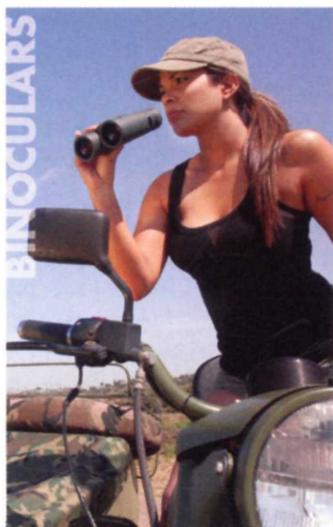
Beginning at Ridge Lake in the park’s higher elevations, Des Marais and his team, including a cadre of volunteers from the science class at nearby Red Bluff High School, take water samples from various elevations in the West Sulphur Creek watershed down to the popular Sulphur Works geothermal area. “At each site,” says Des Marais, “we record the water temperature, test the pH, and see how the composition of the water changes as it flows through the system.” Using an instrument called a “CheMin,” a version of which will be included on the 2012 Mars Science Laboratory mission, they also examine minerals on the spot to see how the water and the rocks are interacting in these extreme conditions. Other members of the team test for the presence of thermophilic

bacteria, which have been found surviving in water as hot as 175 degrees Fahrenheit and may be one of the earliest life forms on Earth—or any planet.

“If Mars was a volcanic landscape billions of years ago,” says Des Marais, “and if water was free flowing on the surface and coming up from below, these same processes that are occurring here at Lassen would have been taking place on Mars. Studying the interaction of this triad of geology, water, and life here at Mount Lassen gives us the best indication of where to look and what to look for on Mars.”

With just one field season of this “follow the water” strategy behind them, it is too early to know what clues to extraterrestrial life might be uncovered. But Des Marais says that the information collected at Mount Lassen will become part of a database shared by NASA scientists, inching us a little closer to answering the ancient question: Are we alone? **NP**

Jeff Rennie teaches literature at the Conserve School in Wisconsin’s North Woods.



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VANCE VRENDENBURG INSERTS A MICROCHIP into a yellow-legged frog, to help track frogs in Sequoia and Kings Canyon National Parks.



© ROBIN MOORE

A Leap of Faith

What will it take to save California's yellow-legged frog?

Clouds of mosquitoes assault Vance Vrendenburg's skin as he crouches beside a pond in California's Sixty Lake Basin. In this remote corner of King's Canyon National Park, the tiny bloodsuckers outnumber people by a million to one. Vrendenburg makes regular forays here to study yellow-legged frogs, which seem immune to the swarm, but their skin is actually under attack from another, much deadlier menace: chytridiomycosis, or chytrid, a fungus that has decimated frogs that were once as abundant as the mosquitoes.

For Vrendenburg, a biology professor at San Francisco State University, getting here

requires a 17-mile hike over three mountain passes that reach nearly 12,000 feet. "These are the most pristine areas we have," he says, "yet even here, frogs are disappearing. Now, when you look into these high-mountain lakes, you see no life, not even a tadpole."

This new disease began invading High Sierra lakes and streams in the 1960s or '70s. Now, Sixty Lake Basin, once home to the world's largest-known population of yellow-legged frogs, supports just 100 individuals. "There used to be so many frogs that when they started hopping away, it looked like the whole shore was moving," recalls Harold Werner, a wildlife ecologist

at Sequoia and Kings Canyon National Parks, about a site he observed in the early 1990s. Yet from Yosemite National Park to the hills above Los Angeles—the species' entire range—only 5,000 adults remain.

Chytrid has driven at least 200 of the planet's 6,700 amphibian species to extinction and threatens one-third of remaining frogs, toads, and salamanders. It's the worst case in recorded history of a single pathogen causing damage to vertebrates.

But for the Sierra's iconic frog, chytrid is just the most recent blow. In the late 1800s the population was weakened by non-native trout introduced to mountain lakes that previously contained no fish (settlers found the fishless waters strange and unnatural). The transplants wreaked havoc on the frogs, devouring tadpoles and interfering with their lake-to-lake migrations. When chytrid arrived, it found a compromised frog population that wasn't robust enough to resist the disease.

Now the race is on to save yellow-legged frogs before they disappear completely. Most efforts have focused on trout removal: Various agencies, including the Park Service, have used gill nets to remove fish from lakes and “electrofishers” to stun fish in streams, sending them to the surface where they’re netted and destroyed. NPCA has supported efforts to remove fish and has worked to educate the public about the need to restore fish-free habitat. In such waters, frog populations have increased up to 17 times—and bigger populations are better able to resist chytrid by improving the odds that a few individuals will have natural resistance to the disease.

Vredenburg, meanwhile, is pursuing a different avenue. After noticing that some frogs carry bacteria that are toxic to chytrid, he designed an experiment to see whether distributing those bacteria among the larger population might counteract the fungus. So he has been trekking into Sequoia and Kings Canyon’s backcountry,

capturing frogs and dipping them in a bacterial bath before releasing them. It’s too soon to tell whether the inoculations will prove effective—but if they do, the study has implications for amphibians worldwide and ultimately could protect hundreds, if not thousands, of species.

In some circles, Vredenburg’s bacterial bath is deemed invasive and manipulative. But “that level of intervention is not as serious as the consequences to biodiversity should this species go extinct,” says David Graber, the Park Service’s chief scientist for the Pacific West Region. He thinks that desperate times call for desperate measures: If invasive methods can save species from extinction, they’re worth pursuing, even within our national parks. For example, Sequoia and Kings Canyon propose to poison trout out of their waters—something that Wilderness Watch and some members of the public oppose. Yet electrofishing is tedious (one ten-year effort produced just 1.4 miles of fish-free

stream), and because the basins are interconnected, fish re-inhabit waters where others were removed. “We’re looking at 50 miles of stream we’d like to treat over the next 20 to 30 years, and there’s simply no way to do that without chemicals,” says Werner. “We’re pursuing short-term impact for long-term preservation.”

Should the yellow-legged frog disappear, the High Sierra would lose its keystone species. If it rebounds, other species will follow suit: birds, snakes, insects, and likely bats and small mammals. “A complex system has a lot of checks and balances in it, which support ecological diversity,” explains Werner.

Besides, says Vredenburg, if humans brought on the factors that are devastating yellow-legged frogs, we bear the burden of attempting a remedy. “These systems can bounce back,” he promises, “if we just give them the chance to do it.” **NP**

Freelance writer **Kelly Bastone** lives in Steamboat Springs, Colorado.

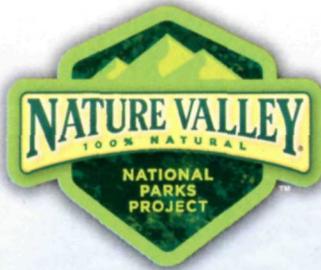


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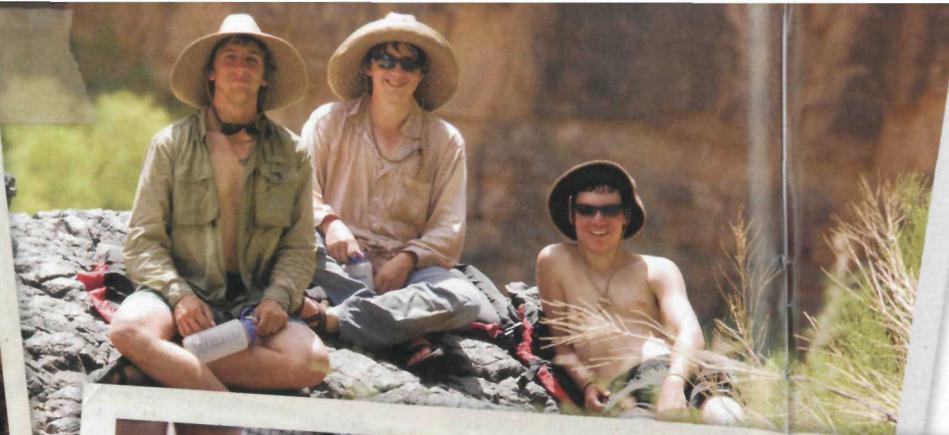
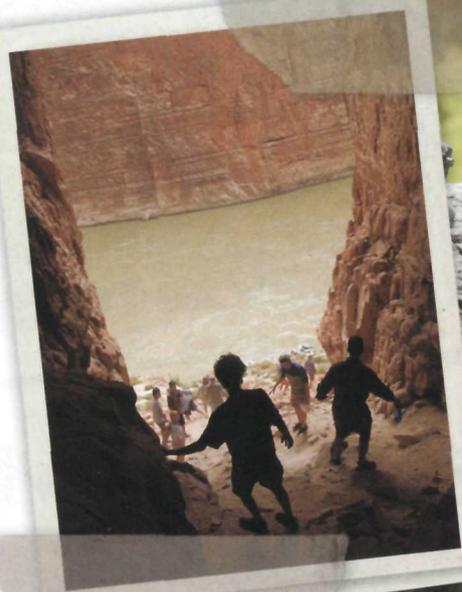
A CLASSROOM WITH A VIEW

By Michael Engelhard Photography by Kate Thompson

As students paddle through the **RAGING** rapids and **PLACID** pools of the Colorado River, they learn about the challenges facing the Grand Canyon, and a whole lot more → →



CODY AND FRIENDS swim in the turquoise waters of the Little Colorado River (previous page), one of many activities during their journey, which alternated between learning, adventure, teamwork, and plain old fun. **BELOW**, the author guides a raft through Granite Falls.



The Flagstaff-based program promotes stewardship for public lands and learning through participation in all aspects of a trip. Five guides, a student coordinator, and a U.S. Geological Survey (USGS) scientist act as mentors and instructors on this one.

To get a grip on the science and routines of a river trip, the youths are assigned to groups with daily rotating tasks: cook crew, dishes crew, toilet (or “groover”) crew, and science crew. Every evening, offshore from the camp beaches, the science crew sets baited and non-baited fish traps—treble-hoop nets with different mesh sizes. One type of bait, the artificial “stinky

once stood on the South Rim during a geology school project and decided he had to hike to the river or float it some day. Joshua W., part Hopi and the son of a former Grand Canyon outfitter, has wanted to visit some of the canyon’s powerful places since age 14. “Aly” H., a South Korean fireplug, joined because a judge suggested she’d better stay out of trouble, but also because she likes going on private river trips.

Many students get hooked on the river life and keep coming back for more, validating GCY’s mission: to inspire curiosity about a landscape and its natural communities. Program director Emma Wharton sees students as fires to be kindled rather than vessels to be filled. “A lot of the youths tend to think in terms of black and white,” she says. “We’re trying to get them to realize that science is complex and by learning to do it in place, see how it relates to the management of public lands.” Assisting the USGS and National Park Service (NPS)

nitely got me started on the idea of service,” she says. On this trip, she takes turns at the oars and ends up rowing Grapevine, a bouncy 8 on the Grand Canyon’s 1 to 10 scale of whitewater. A pre-med student interested in working for Doctors Without Borders, Sara seeks to reconcile social and environmental activism. She is so smitten with GCY that she considers working summers at the warehouse or, one of her dreams, even rowing the raft that carries group gear.

Students like Sara, Parker, and Parker’s twin brother Cody—who could be surfing his home beaches near Malibu instead of spending much of his summer on a working-and-learning vacation—seem like another endangered species. Their appetite for natural science and outdoors activities cannot be taken for granted. Visits to U.S. national parks steadily increased from the 1930s un-

Drifting downstream in the rafts, the guides get acquainted with students, whose interests and personalities quickly emerge.

cheese” for catfish, soon gains notoriety among the students.

The different setups serve to determine the most effective method for removing non-native fish. Past attempts by the Park Service to weed out unwanted species have largely failed.

After running a warm-up rapid at Badger Creek, the students are busy preparing lunch under leaden clouds that roil in typical monsoon season style. A rain shower later brings relief from three-digit temperatures. Drifting downstream in the rafts, the guides get acquainted with the students, whose interests and personalities quickly emerge. Their reasons for signing up are as diverse as their backgrounds. Matthew K., tall, blond, and politically astute,

with their research introduces these students to methods used in aquatic biology and stream ecology while showing them how different land-management agencies operate.

Long before they launched at Lees Ferry, these teenagers performed community service, two hours for each day to be spent on the river. (They also raised money to pay for part of their trip’s cost, and parents and GCY matched their amounts.) They volunteered in Flagstaff’s soup kitchen, at orphanages in Peru, or with the Arizona Desert Bighorn Sheep Society, building rainwater catchment basins. Sara H., a GCY alumna with a nose stud and thumb rings, repaired houses in New Orleans after Hurricane Katrina devastated the city. “GCY defi-

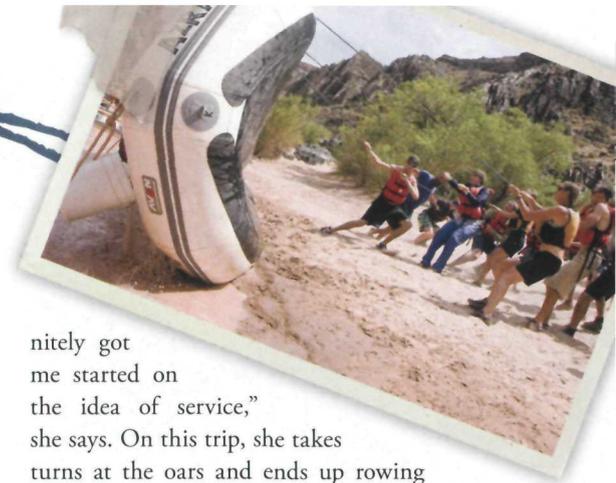
til 1987. Since then, visitation to these parks has been declining by a little more than 1 percent each year, possibly as the result of a more sedentary lifestyle. Youngsters in particular seem to suffer from “nature deficit disorder,” a term coined by Richard Louv, author of *Last Child in the Woods*. Louv links the absence of nature in children’s lives largely to our obsession with television, video games, the Internet, and iPods. He sees rising rates of obesity, attention disorders, and depression as consequences of this break between the young and nature. Many worry that declining use of our national parks might eventually lead to a society that is less concerned with conservation. The preeminent threat to places like the Grand Canyon—even

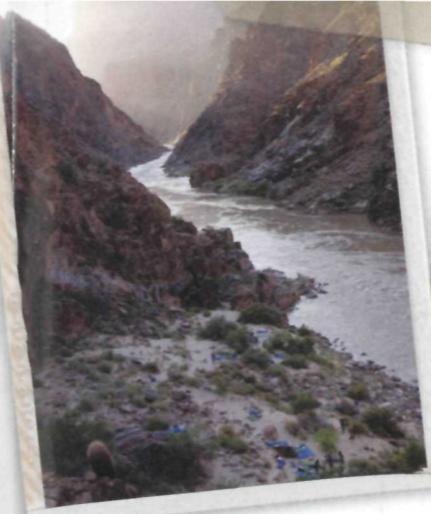


Stepping waist-deep into the “warmer” shallows of the Colorado River near the Grand Canyon’s Cathedral Wash, Parker P. gasps. Together with trip leader and river guide Sarah B., he pushes a seine net on poles through backwaters muddied by the Paria River’s sediment, which has colored the entire stream below Lees Ferry milk coffee-brown. The first sweep of this preferred habitat for juvenile fish yields one polka-dotted rainbow trout fingerling and two native speckled dace. Introduced into the frigid, bottle-green waters below Glen Canyon Dam for the pleasure of sport fishermen, trout have become a threat to fish native

to the Colorado River—humpback chubs, flannelmouth suckers, and bluehead suckers; they compete for food and prey on the young of these now rare or endangered species. The impact of trout has multiplied since they expanded their range downstream, but the reservoir’s clear, 47° F water also curbs the natives’ numbers and range. The Colorado pike minnow, razorback sucker, bonytail chub, and roundtail chub *do* look as eccentric as their names suggest but are no longer found in the Grand Canyon.

Together with nine other teenagers, Parker embarked on a weeklong “ed-venture” with Grand Canyon Youth (GCY), a nonprofit using one of the world’s biggest classrooms.





more serious than extinctions—is that future generations could lose touch with them or will consider them mere testing grounds for outdoor gear.

Pictured Rocks

Since 1996, Glen Canyon Dam has released three controlled floods to improve fish habitat by mimicking pre-dam conditions. Floods inundate the river's dry side channels and depressions, forming backwaters in which juvenile chubs and other native fish hatch, eat, and grow. The water is slightly warmer in these natural hatcheries, and the young fish are protected from strong currents, and that is indeed where the students catch most young specimens with the seine net.

Experimental releases from the sediment-trapping dam also replenish eroding beaches—habitat for numerous plant and animal species and the location of archaeological sites in the river corridor. Ideally, such releases are timed to coincide with the rains that flood tributaries like the Paria, whose sediment discharge they deposit throughout the main canyon. To help fine-tune the dam's flow regimen, Adopt a Beach—an ongoing service project organized by the Park Service—enlists GCY and commercial outfits to monitor assigned beaches, documenting changes through an ongoing photography project. By replicating photos taken after the last artificial flood in 2008, the students who scramble across baking boulders quickly understand that North Canyon's shoreline qualifies as a success: Compared with the 2008 shots, sediment has settled nicely between many rocks, and the sandy apron at the high waterline has grown. We snap a group photo on the restored beach and shove off, but only after many voices joined in a playful shout of GCY's slogan: "Yay, Science!"

Not everything is "serious science," however; our itinerary leaves ample time for play and contemplation, both of which help to create a relaxed learning environment. As an antidote to the stifling heat, our mob douses two baby-blue motorized pontoon boats—behemoths compared with our rafts—only to find that our bailing buckets are no match for the long-range squirt guns of their passengers.

At Redwall Cavern, a game of Ultimate Frisbee leaves the mud-daubed youths panting and a dust cloud hovering in the air. While we take in the view from the cavern's back, a moment of silence settles over the group. We stand still and listen to a rattle murmuring in the sunlight outside.

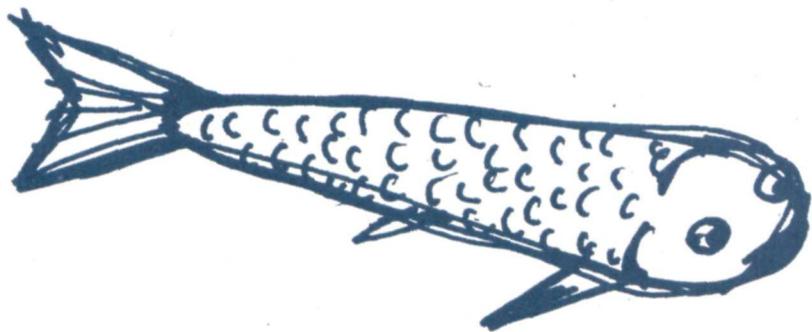
Learning to Fish

There is a physical dimension to learning, very much like play, which is typically ignored in indoor educational settings—but not on this trip. Laboring to the top of the Redwall limestone at Eminence Break, Matthew pauses on the trail. "Phew! I've got even more respect now for the ancient Puebloans." The fault line at Eminence Break marks a cross-canyon route to the North Rim by way of the Anasazi footbridge, whose remains we saw from the river, wedged into a chimney up high. Some students peel and sample tunas, the wine-dark fruits of the prickly pear that were an ingredient in the ancients' diet. On calm water stretches, they row rafts. One will take over the boatman's seat when his guide is washed out in a rollercoaster rapid. A few will swim rapids, voluntarily and involuntarily, learning when to breathe in (in a wave trough) and when not to (on a wave's crest).

Creature comforts and inconvenience are equally part of this educational package. At President Harding camp, students bathe in the eddy, and Sara takes scissors to Matt D.'s mop head—

OPPOSITE: PLAYING FRISBEE in Redwall Canyon. **ABOVE,** from left, camp in Lower Granite Gorge, a young female bighorn sheep, sunrise at Cardenas Camp, and a prickly pear.





BELOW, JOSH, a member of the Hopi tribe, watches scientist Amy Draught download data from a weather station, and takes a break along waterfall steps in the Little Colorado. **RIGHT:** Students learn how to set up a seine net (top) and Molly looks into the misty aftermath of a flash flood.

a strangely domestic scene. Just after dinner, we notice a haze near the South Rim. Then a storm gust whips spray from the water, headed straight for our beach. When it hits, a gigantic dust devil ravages camp. Students escape the pelting in the bow of the raft I've been captaining, where they tell stories of their worst injuries until the wind dies down and a gibbous moon paints Tatahatso Point ghostly white.

With the daily setting and retrieving of nets and the smell of stinky cheese bait wafting through camp, our conversations inevitably return to the subject of fish, specifically the humpback chub—the one endangered species remaining in the Colorado River. We learn from Parker's student presentation that the chub rarely thrives outside the Grand Canyon anymore; only six populations remain in the wild. The largest of these, numbering fewer than 10,000 individuals, now lives and spawns near the mouth of the Little Colorado.

Government scientists routinely catch and tag chubs to assess their habits and numbers. Beginning in 2009, they helicoptered young humpback chubs to Shinumo Creek 45 miles downstream, to establish another viable population and thereby hedge bets against the species' extinction through any localized, catastrophic event.

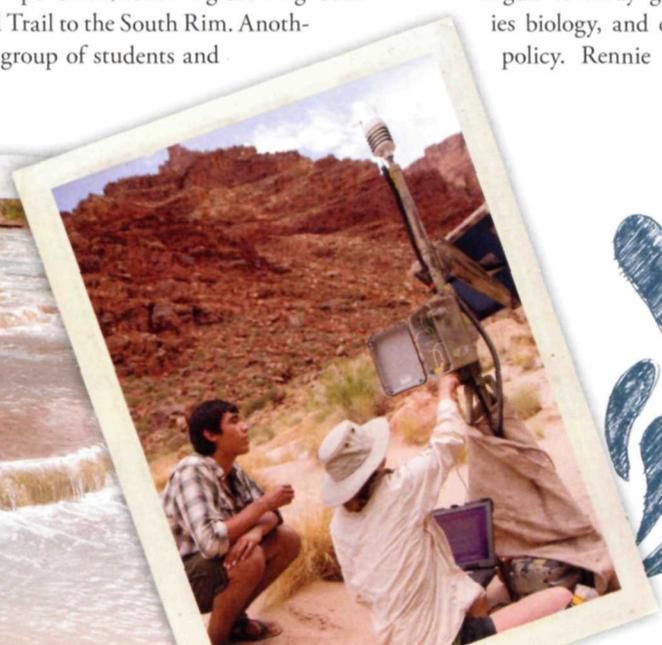
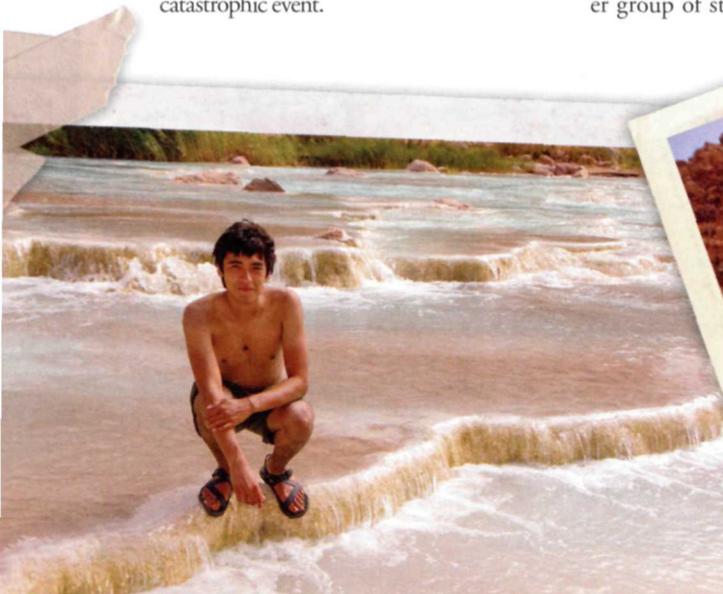
Not too surprisingly, when the science crew pulls the fish traps at a camp below the confluence, three humpback chubs squirm in the nets. Passing them through a hoop scanner, the students realize that two of the fish already carry radio-frequency tags like those often implanted in family pets. Handling the fish like china figurines, they measure the length of their bodies and their forked tails, which indicate age—but the untagged specimen refuses to be measured. In a spastic reflex, it leaps off the measuring board, flopping toward the river's edge in an effort to escape. A student grasps it and gently washes the sand from its gills and opalescent skin. After the students have finished recording the capture data, Sarah injects a chip the size of a rice grain into cartilage of the fish's belly with a sterilized syringe. The students then place their captives back in the river, where they resume their aquatic wanderings.

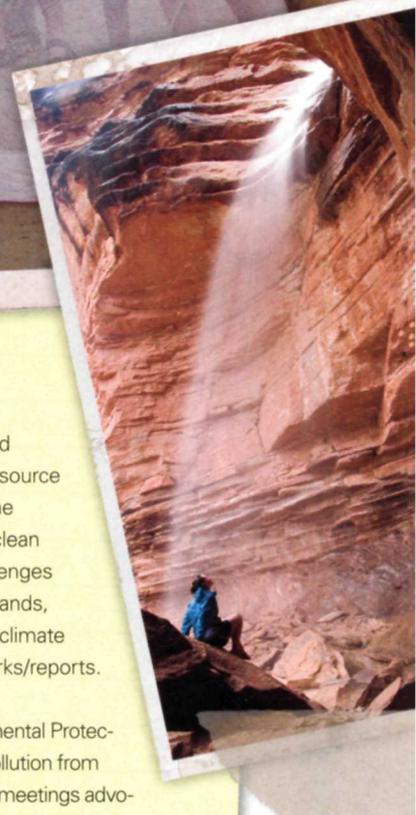
Lessons Learned

In the steady flow of days that constitutes river time, the students have reached the end of their journey. Tomorrow, before sunrise, they will climb out of Pipe Creek, following the Bright Angel Trail to the South Rim. Another group of students and

their coordinator will hike in for eight days in the lower Grand Canyon.

As dusk enfolds Cremation Camp, the gang circles up around a sacred datura plant to watch one of its moonflowers unfurl for the nocturnal affair with the sphinx moth, its pollinator. Tanned and a bit disheveled, the students review their time in the canyon: "Until now, I've never had an interest in geology," says Hayden. Matthew enjoyed getting to know people from different backgrounds: "You don't have to have electronics to have fun," says Matt D., who lost his ground tarp in the squall at President Harding, broke a fishing pole, and generally taxed the guides' patience with his short attention span. Parker is surprised how pristine the inner canyon felt, despite thousands of visitors per year. Asked what they will miss most, one of them decides it's the sound of the river. Asked how this trip might affect their future, another thinks he'll be more mindful, "trying to live with the Earth instead of against it." Some GCY alumni veer more concretely into new directions. Motivated by their Grand Canyon experience, former students have begun to study geology, fisheries biology, and environmental policy. Rennie W. wants to





become a stream ecologist like her dad. After traveling with disabled passengers on two GCY River Buddies trips, Paul P. has decided to go into engineering so he can develop outdoor equipment for people with special needs.

Regardless of the path they choose, and regardless of whether or not they will speak out in defense of wild places, none of these river runners will forget the days spent among red cliffs and thundering rapids, in the company of strangers, some of whom became friends. **NP**

Michael Engelhard works as a wilderness guide in the Grand Canyon and Alaska's Arctic. He is the author of *Where the Rain Children Sleep: A Sacred Geography of the Colorado Plateau*.

NPCA at Work

Last year, NPCA's Center for Park Research conducted a comprehensive report assessing some of the natural resource challenges facing the Grand Canyon, including many of the issues raised in this article. That report details threats to clean air, river flows, and archaeological sites and outlines challenges related to preserving natural sounds, mining on adjacent lands, relationships with American Indians, and the impacts of climate change. To read more, visit: www.npca.org/stateoftheparks/reports.html and click "Grand Canyon."

Since the report's release, NPCA has sued the Environmental Protection Agency to reduce haze across the canyon caused by pollution from nearby power plants, and our staff has spoken out at public meetings advocating for flows from Glen Canyon Dam that protect endangered species and other park values. Very soon—perhaps by the time this magazine is published—government proposals and environmental impact statements are expected on two issues: an overdue plan to regulate overflights of small planes and helicopters to reduce noise, and a comprehensive look at uranium mining on public lands adjacent to the park.

Want to help? Sign up to receive our electronic alerts, and we'll let you know when key decisions are on the table, so you can point our nation's leaders in the right direction: www.npca.org/join.

BY AIMEE LYN BROWN WITH PHOTOS BY JUSTIN BAILIE

ON THE ROAD

TAKE A DRIVE THROUGH
THE NATIONAL PARKS

OF
**OREGON
& CALIFORNIA**
AND

WITNESS A LAND
OF EXTREMES

In the southwestern corner of the Pacific Northwest, two national parks and a national monument sit within a stone's throw of one another. One holds the deepest lake in the United States, with water so blue it makes the sky look plain. One claims the tallest trees in the world, their limbs reaching higher than 370 feet. And one is nestled within a region considered to have one of the highest rates of biodiversity in the country, teeming with life from tiny bacteria to large predators, ancient endemic beetles to endangered bats.

Individually, they are Crater Lake National Park, Redwood National and State Parks, and Oregon Caves National Monument. Combined, they offer my work-weary mind a vacation—a chance to shut down my computer and seek out Roosevelt elk resting in prairie grass, stealth spotted owls darting past thick tree trunks, red-legged frogs hiding among forest duff. I load my gear into the van and catch the unmistakable scent of damp soil, wet rocks, and ocean salt.



EXCURSIONS



WRITER AIMEE LYN BROWN turns her camera on the photographer while wandering through a Redwood grove in Redwood National and State Parks.

Redwood National and State Parks, California

As I stand at the base of a downed tree in Humboldt Redwoods State Park, the top of my head falls a foot short of the trunk's midpoint. Prone on the ground, the tree stretches almost 300 feet from root wad to tip—nearly a football field in length—and this coastal redwood isn't even one of the giants of the Redwood National and State Parks (managed cooperatively by the National Park Service and California State Parks).

Populating a narrow strip of Pacific coastline between northern California and southwestern Oregon, coastal redwood trees grow from seeds smaller than that of a tomato to heights nearing 370 feet. They can live more than 2,000 years and have a 22-foot base diameter. Two hundred years ago these forests likely covered more than 2 million acres. However, after intensive logging from 1850 to 1970, only about 80,000 acres remain, and much of that is second-growth forest that was once logged but has been left to regrow.

The Park Service now protects about half of the total redwood forest. Nearly all of the remaining old growth—trees that have never been cut—is under federal or state protection.

I look for a route up the 10-inch-thick bark, which provided almost impermeable protection from insects, disease, and fire while the tree was standing. Gaining hold, I edge my feet carefully along the decaying wood. Inching up, following the curve, I make one big move and I'm on top of the trunk. I raise my arms and tilt my head back, searching out patches of sky amid the towering green crown that supports an entire ecosystem with a value to plants and wildlife that was largely unknown before the 1990s. Up there in the canopy, soil is being built from leaf litter and detritus. Hundreds of feet up, trees take root, ferns leaf out, and animals and birds—including the endangered marbled murrelet and the northern spotted owl—find refuge.

towering green crown that supports an entire ecosystem with a value to plants and wildlife that was largely unknown before the 1990s. Up there in the canopy, soil is being built from leaf litter and detritus. Hundreds of feet up, trees take root, ferns leaf out, and animals and birds—including the endangered marbled murrelet and the northern spotted owl—find refuge.

TOWERING TREES like those in Stout Grove (below) are what most visitors expect to find at Redwood National and State Parks, but Enderts Beach, along the park's coast (bottom left), offers an entirely different landscape.



Reports on the development and growth of living matter in the Redwoods show that there is more living matter per square foot here than anywhere else sampled on the globe. Life is not just in the forestlands, however. The contiguous parklands include vast expanses of prairie, waterways, woodlands, and seashore; park boundaries actually extend offshore into the Pacific Ocean about a quarter of a mile.

Leaving the trees, I drive past open prairies where herds of Roosevelt elk forage on tall grass. I make my way to Enderts Beach outside Crescent City, California. An overlook provides opportunities for whale watching and observations of other marine life including harbor seals, sea lions, and a host of seabirds. At low tide I clamber onto a jagged black outcropping within the intertidal zone. Chilling fog creeps up the cliffs and heads inland toward the coastal range. Zipping my raincoat to my chin, I inhale once more, a big salty breath. Then I turn north toward shadow and mystery.

Oregon Caves National Monument, Oregon

The lights go out, plunging us into complete darkness. What remains is an unearthly quiet punctuated by small breathing noises and the occasional whisper of water dripping into small pools. The blackness affects my balance

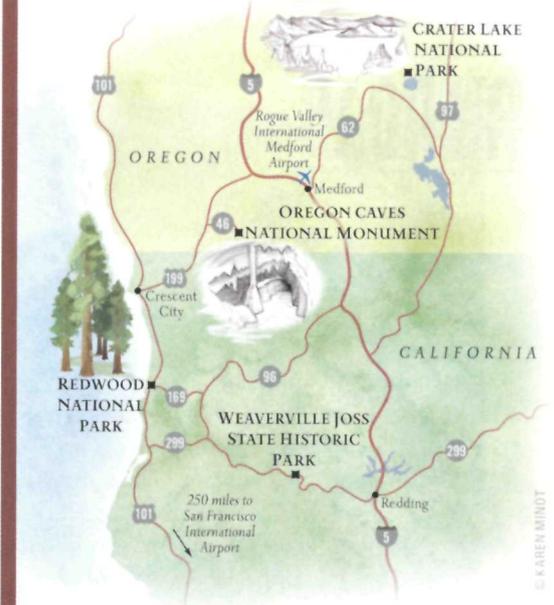
Chilling fog creeps up the cliffs and heads inland toward the coastal range. Zipping my raincoat to my chin, I inhale once more, a big salty breath.

and I reach out with one hand, looking for someone or something to hold on to.

"We literally see people, families, getting closer, drawing nearer to one another," says George Deems Herring, chief of interpretation at Oregon Caves. "There is a special dynamic that is inherent to a cave. It is a landscape that serves to form and strengthen bonds within families and sometimes strangers. You're going down into a dark hole and seeing things. There's an eerie beauty here

that exists nowhere else in our normal human experience."

Oregon Caves National Monument is tucked into the Klamath-Siskiyou Mountains, 4,000 feet above sea level. Created by naturally acidic rainwater and snowmelt draining through the soil that forms a carbonic acid solution and eats away at the marble and limestone bedrock, it is one of the few marble caves in the world, and it offers the unique opportunity to see both chemistry and geology in real time.



TRAVEL ESSENTIALS

Scenic coastal and mountain roads, driving tours within the parks, and a lack of major metropolitan centers result in a trip tailored to the automobile. But GPS tends to lead people down the wrong roads, so make sure to consult park websites and up-to-date printed maps for directions. To start in the Redwood National and State Parks, fly into San Francisco International Airport about 325 miles south before starting your journey north. If you'd rather travel in the opposite direction, use the Rogue Valley International-Medford Airport in Oregon, then drive east on Highway 62 toward Crater Lake.

Crater Lake Lodge has 71 rooms and fine dining in a historic setting. Lodging is also available at the Mazama Village Motor Inn (www.craterlakelodges.com/mazama-village-motor-inn-805.html) and two campgrounds offer tent camping as well (www.nps.gov/crla/index.htm).

At Oregon Caves National Monument, lodging and dining are available at the Chateau (www.nps.gov/orca/playourvisit/lodging.htm), a National Historic Landmark and a Park Service "Great Lodge" that combines the beauty of the landscape with area history and architecture. Campgrounds are available just outside the monument (www.nps.gov/orca/playourvisit/camping.htm).

Other than several lovely campsites (www.nps.gov/redw/playourvisit/campgrounds.htm), there are no lodging or dining facilities in the Redwoods, but the park corridor is located close to several charming coastal communities. One of my favorite stops in the southern portion of the park is Café Mokka and Finnish Country Sauna and Tubs in Arcata, California (cafemokkaarcata.com), where you can enjoy high-quality coffees, hot soup, and a soak in traditional wooden tubs.

Minerals transported in the carbonic acid solution and deposited elsewhere in the cave can develop into new rocks and formations. These slow-growing “speleotherms” can look like sharp, pointed teeth guarding portions of the cave as they hang from the ceiling as stalactites or protrude up from the floor as stalagmites. Combined with the dampness, darkness, and cool temperatures (the cave stays a relatively constant 44 degrees Fahrenheit year-round), speleotherms heighten the feeling of foreboding that permeates much of the cave.

I follow a tour group back toward the entrance, stopping to look at the bones of a long-dead grizzly bear and listen to stories of ancient saber-toothed tigers that stalked this area. We climb out of the tunnel toward daylight, and I notice that indeed many people are walking closely together, holding hands. The air tastes sweet and dry.

In contrast to the drab grays, browns, yellows, and whites of the cave, the trail network that surrounds the park is strikingly green. Port Orford cedar, Douglas fir, and Manzanita grow thick and lush. Black-tailed deer crowd the trail before bounding up the steep hillside. The area is known for its high rate of biodiversity, and it may be that the region’s size is the key to the success of the plants (about 3,800 different species) and animals (about 50,000 different species).

I wander the trails, soaking up the vivid greens and warm browns of the forest. The sky above is bright blue through the clouds, prompting me to continue north toward one of the bluest places in the world.



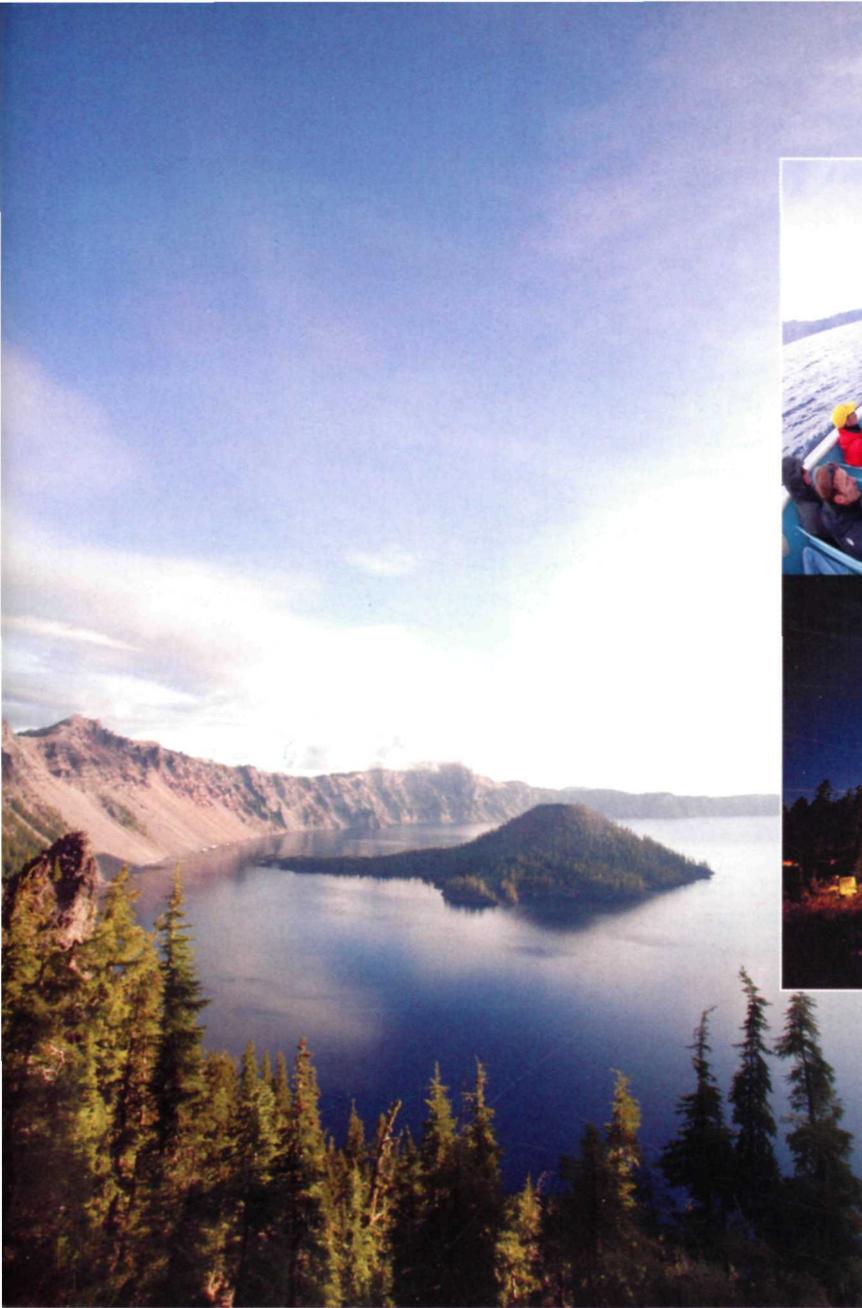
SIDE TRIP Weaverville Joss House, California

Above the door, a sign written in Chinese characters reads, “The Temple of the Forest Beneath the Clouds.” This is the Weaverville Joss House, the oldest Chinese temple in California and a California State Park located about two-and-a-half hours inland from Redwood National and State Parks. In 1874, Chinese immigrants built the current structure after fire destroyed two earlier buildings. Today the temple retains the 1874 construction and design, and it continues to be used by those who practice Taoism, a belief system that promotes simplicity and thoughtfulness.

The discovery of gold in California in the mid-1800s prompted thousands of Chinese to immigrate to the region with dreams of wealth. While many found success as gold miners, others pursued more entrepreneurial opportunities that bolstered the local community and economy during the 1860s and 1870s. The boon of gold did not last, however, and by the 1930s the Chinese population living in Weaverville had declined to 16. In an effort to keep the temple from falling into disrepair, the Joss House was entered into the California State Park System in 1956.

The Joss House is open Thursday through Sunday from 10:00 a.m. to 5:00 p.m. For more information, visit www.parks.ca.gov/?page_id=457.





IF AN UNDERGROUND TOUR at Oregon Caves National Monument (opposite page) leaves you craving fresh air and blue skies, head to Crater Lake for a boat tour (left and top), then enjoy some down time at the cozy park lodge (above).

Crater Lake National Park, Oregon

A half-day's drive from Oregon Caves, Crater Lake National Park sits on the edge of the Cascade Mountain range in southern Oregon, creating part of the transition zone between Oregon's arid dry east side and its wetter, mossier west side. Rangers at the park talk about the inspiring qualities of the lake. For hundreds of years, they say, the lake has provided fodder for humanity's scientific and creative minds.

Crater Lake wasn't always a lake. Approximately 7,700 years ago, Mount Mazama underwent a violent volcanic eruption that was followed by the inward collapse of the upper portion of the 12,000-foot mountain. The collapse formed a giant caldera, which eventually filled with rain and snow water to form Crater Lake—the deepest lake in the nation, and also one of the clearest.

The eruption was likely one of North America's most turbulent volcanic events of the last 640,000 years, a period

of great volcanic activity along the Pacific Rim. Subsequent smaller eruptions at Mount Mazama created Wizard Island, a small cinder cone that protrudes from the lake. The area is now considered dormant, but the park is covered in reminders of its fiery past.

I'm normally in constant motion, but at Crater Lake I'm drawn to stillness. Scientists have measured the depth of the lake to almost 1,950 feet—deep enough to stack six Statues of Liberty on top of each other from base to torch tip. The water's clarity allows visibility down to 120 feet on average. From my spot on the rim, it's like looking into a liquid sky.

The lake's sapphire color is a result of the water's clarity, purity, depth, and how sunlight interacts with those factors. Water molecules absorb longer wavelengths of light (light that we see as red, oranges, yellows, greens) and reflect and scatter shorter wavelengths of light (the blues, indigos, and purples). The purity of the lake, coupled with its depth,

ON THE ROAD

creates an environment primed to enhance this scattering. The results are shades of blue rarely seen in nature.

An alpine wind and gathering clouds prompt me to give up my perch. The 90 miles of hiking trails in the park offer warmth through motion, and on my walk I hope to see an American pika, a small mammal related to a rabbit, with teacup-like ears. Pikas live in cool to cold climates and have long inhabited the high, rocky slopes of the park—but this could be changing. Park rangers and scientists are studying the impact of climate change on the population in the hope of protecting the species from declines in suitable habitat.

I look for pikas on the sides of the trails and up the rocky slopes, but my attention is pulled again and again to the larger view of giant redwoods stretching into the sky as if they would touch the sun. My mind wanders back over the landscapes I've visited to reflections of giant

cumulus clouds in Crater Lake's deep waters and the earthy scent of wet limestone exhaled from the depths of Oregon Caves. These parklands, and their quiet offerings, have reminded me of a greater, messier, more beautiful world than the one on the computer screen. It's a world in which the meeting of science and mystery results not in conflict but in wonder—and I'm happy to be part of it. **NP**

ON THE WEB

CAN'T WAIT TO VISIT

the Redwoods in person? Watch a short, moving video to experience these giants and learn the language of their ancient forests. Visit www.npca.org/magazine/redwoods.

Aimee Lyn Brown is a freelance writer in Oregon. She spent her childhood in the Pacific Northwest, and made her first trip to Crater Lake National Park before she could walk.



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African Gem Cutter Makes \$2,689,000 Mistake...Will You?

This story breaks my heart every time. Allegedly, just two years after the discovery of tanzanite in 1967, a Maasai tribesman knocked on the door of a gem cutter's office in Nairobi. The Maasai had brought along an enormous chunk of tanzanite and he was looking to sell. His asking price? Fifty dollars. But the gem cutter was suspicious and assumed that a stone so large could only be glass. The cutter told the tribesman, no thanks, and sent him on his way. Huge mistake. It turns out that the gem was genuine and would have easily dwarfed the world's largest cut tanzanite at the time. Based on common pricing, that "chunk" could have been worth close to \$3,000,000!

The tanzanite gem cutter missed his chance to hit the jeweler's jackpot...and make history. Would you have made the same mistake then? Will you make it today?

In the decades since its discovery, tanzanite has become one of the world's most coveted gemstones. Found in only one remote place on Earth (in Tanzania's Merelani Hills, in the shadow of Mount Kilimanjaro), the precious purple stone is 1,000 times rarer than diamonds. Luxury retailers have been quick to sound the alarm, warning that supplies of tanzanite will not last forever. And in this case, they're right. Once the last purple gem is pulled from the Earth, that's it. No more tanzanite. Most believe that we only have a few years supply left, which is why it's so amazing for us to offer this incredible price break. Some retailers along Fifth Avenue are more than happy to charge you outrageous prices for this rarity. Not Stauer. Staying true to our contrarian nature, we've decided to *lower the price of one of the world's rarest and most popular gemstones.*

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Objects

OF

Affection

YOU SEE THEIR WORK in visitor centers scattered across the nation—18th-century paintings by our nation's early masters, mahogany desks where historic speeches were penned, early photographs of abolitionists, and authentic uniforms from Civil War soldiers. Meet the talented people who preserve the age-old artifacts that tell America's stories.

By Scott Kirkwood | Portraits by David Deal | Artifacts photographed by Gary Tarleton, National Park Service



A few miles west of Harpers Ferry National Historical Park, just off a service road that winds past several fast-food restaurants, an auto-parts store, and a church, you'll find a nondescript, low-slung building where a handful of talented people preserve hundreds of artifacts that bring history to life in our national parks. Workers at the Harpers Ferry Conservation Center in Charles Town, West Virginia, mend and preserve historic flags, chairs, desks, paintings, photographs, and every other physical manifestation of our nation's history that you can imagine. With more than 120 million items spread out across its 394 properties, the Park Service's holdings are second only to the Smithsonian's, which include a whopping 137 million. This is the workbench where these iconic objects are preserved for years to come. Turn the page and meet a few of the people who do the painstaking, time-consuming work that few of us ever see.

Objects of Affection



"A lot of the tools you see on CSI are exactly the same tools that we use—only we analyze varnishes and pigment samples instead of blood."

Theresa Voellinger

Paper/Photograph
Conservator

Theresa Voellinger had plans to work as a printmaker and painter, but when she completed her undergraduate degree at Binghamton University in New York, she struggled to plot out a career. Life as an artist wasn't ideal, and graphic design didn't work out, but she soon heard about the field of art conservation, and the combination of art and science intrigued her. Three years of graduate school at Buffalo State College gave her the skills she needed to be a paper and photography conservator, and a fellowship at the Balboa Art Conservation Center in San Diego set her on a course. Then she discovered the Park Service.

"I didn't realize the vast amount of museum collections in the National Park Service—a lot of people don't," she says. "People see the parks for their natural beauty, and they go into the visitor center, and they don't realize how many more artifacts we have beyond the few objects we put on exhibit. Once I looked into a career here, I became fascinated with the opportunity to work with so many fabulous collections that a lot of people don't realize exist, like the collections at Teddy Roosevelt's home at Sagamore Hill, all the Native American objects, and letters from Civil War soldiers." Voellinger even admits to getting so caught up in the work that she sometimes finds herself reading the decades-old journals, then remembering she's got a job to do.

There aren't any instruction manuals for how to treat an 18th-century portrait, a hundred-year-old photograph, or a letter from Robert E. Lee. And there are no second chances. "As a conservator, you're a little bit of a forensic scientist," she says. "Every treatment is its own life; you have to learn



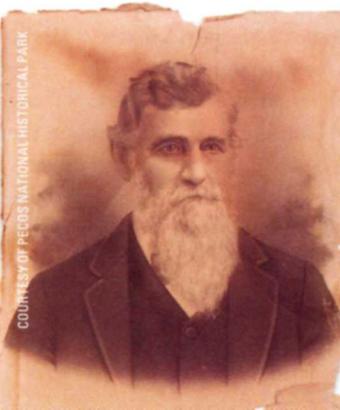
COURTESY OF ARLINGTON HOUSE, ROBERT E. LEE MEMORIAL, ARH06123

A LETTER FROM Robert E. Lee, along with a lock of hair and a pocket knife he used during the Civil War, all being treated for the Robert E. Lee Memorial, Arlington House, Virginia.

as much as you can before you take any action, then watch the results every step of the way. I love the analytical side—the problem solving, figuring out how to treat a document or a painting without doing any damage to it."

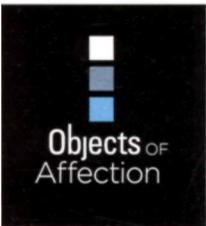
Voellinger spends about half the year on the road, visiting the parks to review their collections in person, suggesting better storage options, and estimating the cost and types of treatment required of artifacts in different collections.

"My visit to Kalaupapa in Hawaii affected me the most," she says. "The park has a powerful collection that's just starting to come together to tell the story of the Native Hawaiian culture and the presence of people with Hansen's disease, or leprosy. Many of the materials were created by the people themselves, because their eyesight was failing or they'd lost part of their fingers. I remember looking at a collection of white tools and wondering about them, until an interpreter at the park told me that a man had painted a wall of his garage black and painted all of his tools white, so he could see them against the dark background. The stories behind the objects say so much about the people who lived there."



COURTESY OF PELOS NATIONAL HISTORICAL PARK

A PORTRAIT OF John E. Briney, Corporal, Company G of the 3rd Regiment, U.S. Cavalry, who fought the Confederate troops from Texas at Apache Canyon, and the Battle of Glorieta Pass, New Mexico, in March 1862.



AN OAK CHAIR AND MAHOGANY-CASED VICTROLA, both from Weir Farm National Historic Site in Wilton, Connecticut, a site that commemorates J. Alden Weir and other American impressionist painters.



Larry Bowers

Wood Conservator

Many people who work in museum conservation have years of schooling and several degrees, but Larry Bowers entered the field as an accomplished violin maker. Since joining the Park Service in 1984, he's learned everything he needs to know through apprenticeships at Harpers Ferry Center, ongoing training courses with the Smithsonian, and years of simply learning by doing.

Because of the size of the objects he's often working on, and the costs associated with transporting furniture and maintaining humidity and temperature levels, the work often requires traveling to sites. That means leaving the wood shop behind and transporting as many tools as possible to the parks. Bowers spent much of October working on wooden artifacts in the main house at Weir Farm National Historic Site in Connecticut, a site that commemorates J. Alden Weir and other American impressionist painters from the turn of the 19th century. The Park Service acquired the house in October 1990 and hopes to open the artist studios to the public in late 2011; the house itself won't be open for some time yet.

"We're always striking a balance between conservation and restoration," says Bowers, "but the ideal is to maintain the integrity of the piece. For furniture, that means we don't strip the finish, because it's integral to its historical value. We also try to do whatever we can in a manner that can be reversed in the future, should some new technique or reason be required to return it to the state it was in before we touched it."

That means layers of linseed oil and cigar smoke are removed, but the original finish is never touched. Holes are filled with epoxy, and the tone of the wood is matched. Cracks are stabilized, so no further damage comes to the object. Missing table legs might be replaced, but they're clearly labeled as new materials so future historians won't mistake them as original. Special water-soluble glue made of horse and cattle hooves is used so that any work can be reversed.

Much of Bowers' time is consumed with the painstaking work of cleaning up years of detritus that has accumulated on a piece, which means he goes through a lot of cotton swabs. But it's worth it.

"I really enjoy working with wood, and I get to handle a lot of artifacts that really are meaningful," he says. "Years ago, I was working on the propeller from the very first Wright Brothers airplane. More recently, I was in Atlanta surveying Martin Luther King Jr.'s artifacts in the King Center, which is owned by the family, and I saw some of the items that were with Dr. King when he was assassinated: his traveling case with his notebook, his shaving kit with the shaving cream he used that day, bits of his hair... that's a very moving, emotional thing. I've worked on White House furniture, Robert E. Lee's field desk, and smaller items like a relic from an old mine in the West. All of it gives us a sense of history and a chance to touch a lot of what represents America."

"We're always striking a balance between conservation and restoration, but the ideal is to maintain the integrity of the piece."





Objects of
Affection



"It's a privilege to see how Edison's workers operated."

David Arnold

Inorganic Objects
Conservator

David Arnold was 41 when he returned to college to complete schooling that he'd postponed while he served his country in Vietnam. After receiving his M.S. from the Winterthur/University of Delaware Program in Art Conservation in 1994, he went on to work at the Colonial Williamsburg Foundation in Virginia and did a stint at the Society for Preservation of New England Antiquities. Finally, the Harpers Ferry Center hired him to work on historic military arms of the Fuller Gun Collection, which includes almost every type of shoulder arm ever used by the U.S. military, from Civil War rifles to guns from World War I. That collection is now on exhibit at Chickamauga & Chattanooga National Military Park. Arnold later worked on even more guns at Springfield Armory in Massachusetts before returning to the Harpers Ferry Center.

Arnold has worked primarily on metal objects, including the Anacapa Island Lighthouse at Channel Islands National Park, commercial fishing equipment at Apostle Islands National Lakeshore, mining equipment at Keweenaw National Historical Park, and printing presses for Weir Farm National Historic Site. He also worked on a Congreve rocket from Fort McHenry National Monument and Historic Shrine that was used during the War of 1812, and still wonders if it generated the "rockets' red glare" that inspired Francis Scott Key's anthem.

"I haven't been here long enough to describe my 'typical' work," he says, "but when I first came, I worked on some equipment from Edison's lab—a prototype for a record changer made in the first quarter of the 20th century—and as I was cleaning up the piece, [I realized] that it shows us how Edison's technicians worked. Rather than using computer software to work in three dimensions, they just started throwing stuff together, moving things around, tightening bolts. If it didn't work out, they'd rework the mechanics, engineer it into something marketable, then scale it down to a smaller size.

"Anytime you get to treat important historic artifacts, it's a reward in itself," he says. "It's a privilege to discover how Edison's workers operated—we get closer to these objects than anybody, and sometimes we learn things we can then share with curators and collection managers to help tell their stories. The satisfaction we get in completing the treatment of an object must be like the satisfaction that framing carpenters get: They start the week with nothing, then they create a platform, and in three days it's starting to look like a building; by the time they walk away, they can see what they've created.

"I realize that opportunities for working in museum laboratories are limited. I made a good choice when changing careers, and it's paid off many times over."



LEFT: A double-barrel muzzle-loading shotgun, manufactured by Crescent Firearms Co. circa 1850, that belonged to Hale Tharp, the first European settler to arrive in the area now known as Sequoia National Park, California.

ABOVE: A rifle from Fort McHenry in Baltimore, similar to those used in the War of 1812.

"I was in a quilting group when the Conservation Center called us about a flag in need of repair—they were looking for people who could just sit and sew."

A COAT WORN BY BRIGADIER GENERAL SAMUEL RYAN CURTIS during the Battle of Pea Ridge, Arkansas, March 1862. General Curtis was in command of the Union Army of the Southwest.

A CHAIR USED TO ILLUSTRATE PERIOD FURNISHINGS in Union General Gouverneur Warren's Headquarters, from Fredericksburg & Spotsylvania National Military Park, Virginia.



COURTESY OF LITTLE BIGHORN BATTLEFIELD NATIONAL MONUMENT

Deby Bellman

Textile Conservator

Deby Bellman began working at the Conservation Center in 1987, and she spoke to *National Parks* magazine a week before retiring, in December 2010. She'd spent 23 years working on "everything that's got a thread in it," as she says, including, in recent weeks, a Navajo rug from Death Valley, a folding Civil War camp stool from Fredericksburg & Spotsylvania National Military Park, and flags—lots of flags.

Large items, like those flags, aren't generally sewn back together; instead Bellman adds a matching layer of cloth behind them to give the illusion that the piece is complete when viewed from a distance, without doing any harm to the original. But smaller, more intricate pieces may require hours of time spent hand stitching, so that each thread matches perfectly, meshing the cloth's pattern in the sections being re-joined.

"I've always loved sewing and knitting, always liked to do things with my hands," says Bellman. "Years ago, I was in a quilting group when the Conservation Center called us about a flag in need of repair—they were looking for people who could just sit and sew. And I ended up with a job. I didn't have any specific schooling like some of the other conservators here—most of my learning has

been on the job, under the guidance of a textile conservator who taught me what she knew.

"When I was younger, I sewed household items, and I even made my wedding gown, because it was cheaper than buying one," she says. "Now, because so many things are easily available, no one really sews anymore—people just go out and buy their clothes—but when I was growing up we didn't have the money to go out and buy clothes. Of course, I've gotten to the point where I stopped making clothes; when you sew all day at work, you don't want to go home and do even more."

Among the things she'll miss in her retirement is the variety of items that came across her expansive sewing table.

"I love that the work is always different—you never know what's coming in next. This is the first time I remember ever having an Indian rug in the lab. I remember working on George Washington's camp tent from the Revolutionary War, and that was a pleasure, because of the history behind it all.

"When you're working with your hands and doing something that has a clear result at the end of the day, it's rewarding... to accomplish something and see an actual change, and look back at the fabric from a little camp chair that was ripped in half and to be able to say, 'After all that work, it looks pretty good.'"





“Objects like this are difficult to work on, because they’re so brittle and fragile — it’s actually more like basketry than a textile.”



COURTESY OF ROCK CREEK PARK

Barbara Cumberland

Organic Objects
Conservator

Barbara Cumberland began working at the Conservation Center as a college intern while getting a master’s degree in museum science from Texas Tech University. Until then, she had no idea that she might end up in conservation. But when the internship came to an end, she was offered a full-time job in 1988. She’s been with the Park Service ever since.

Cumberland is part of the objects conservation lab staff, working with a potpourri of composite objects that include metal and wood, leather, and even taxidermy animals from Rock Creek Park in Washington, D.C. She’s worked on cannons from Fort Caroline National Memorial in Florida and other military objects, like leather cartridge boxes, scabbards, and holsters, which means she’s a jack of all trades but also a master of some.

“Mammoth Cave is creating an exhibit that will open in the summer of 2011, so we’ve been working on a number of different kinds of objects, including a fiber sandal from the cave, which American Indians used as shelter,” she says. The item’s catalog card identifies the piece as pre-1650, but it could be as much as 900 to 1,000 years old. “Objects like this are difficult to work on, because they’re so brittle and fragile,” says Cumberland. “This work is actually more like basketry than working with textiles.

“I’ve always been interested in museums and historic objects—old things,” she says, “so I like getting my hands on a variety of different items, whether it’s the leather seat of a carriage with horsehair stuffing or a brittle silk fan from Ulysses S. Grant National Historic Site.” Or, every once in a while, even a bald eagle. **NP**

Scott Kirkwood is editor in chief of *National Parks* magazine.



TAXIDERMY WOODPECKER and bald eagle, from Rock Creek Park, Washington, D.C.



© SONIA RODY/COLAGENE

Lessons in the Tallgrass

A teacher guides high school students into the wilderness and learns a few valuable lessons herself.

In an hour, I'll be in charge of 23 teenagers. Technically, I am already in charge of them, but they are all soundly sleeping in their tents, so I am stealing a moment for myself. The sun has just climbed over the hill behind me and warms my back; meadowlarks sing and, best of all, I am watching the slow amble of a buffalo on a distant ridge.

Now, moments later, I watch as these

young adventurers begin to stumble out of their tents; I watch as they take in the morning's beauty. The wind is rippling the tall grass all across the prairie hills; blue sky is wispy with cirrus clouds. It's not long before I hear conversations and laughter. We have not showered in three days. For some, these were the first nights they ever required flashlights. Girls, used to suburban conveniences, tie up their dirty hair and cheerfully greet me

as we gather around a camp stove for juice and cereal. We are far from the comforts of home, but already we have begun to feel settled in this wild environment and with each other. We are in class, but this feels nothing like school. After breakfast, we will spend an hour with readings and journals and discussion before a lengthy hike in Badlands National Park, South Dakota. Tonight, we will move to greener hills and sleep beneath tall pines. For nine more days after this, we will hike, bike, and kayak in the open air. Each day, we'll investigate themes of brokenness and restoration as we discuss the works of writers as diverse as Black Elk, Annie Dillard, Kathleen Norris, John O'Sullivan, and Wim Rietkerk. At the end, we will return home to St. Louis, grateful for our days spent in the wild.

For most of my adult life, I have been a teacher. I have wanted to do it well, so I attend conferences, read books, try new teaching strategies, worry about the kids who tune out. Always I am asking myself how to better

motivate, challenge, and inspire my students. Strangely, the best answers to these questions have come, like a gift unexpected, from an unconventional place: summer school in our national parks.

The drive is long, and yes, I miss my family when I am gone. Granted, it's a lot of days to be supervising students without a break, and unlike school, we don't send them home at the end of the day. Instead, after supper, we watch stars together, stoke the fire, tell our stories and appreciate theirs. We are the adults, so we set the curfews, make the rules, tell them the next day's schedule, but somehow here, I am more their friend and less their teacher. Perhaps it is because this night sky has overwhelmed all of us; who cannot be amazed? As our conversation lulls, coyotes howl in the distance. Which one of us is not grateful to be listening? During the lesson tomorrow, I will be their teacher, but I will also be a student learning as much as they do while together we question, ponder, and wonder.

The Gift of Time

Here, in the Buffalo Gap National Grassland just outside Badlands National Park, nature gives us the gift of time. No bells push us through a tightly scheduled day. No after-school sports practices, no private lessons, no outside demands: we have nowhere else to be, and this makes us focus, makes us slow down. Sarah can look—really look—at the pastel yellow cactus flower as she avoids

each other: Instead of using their earbuds to retreat into their own private listening libraries, they sing songs out loud. Instead of composing text messages, they speak their thoughts face to face. In this they learn again the value of intonations, body language, smiles—features that have begun to wane in their new world of digital communication. As the week progresses, I hear their conversations lengthening. When Jeremy became my student two years ago, he rarely spoke in class. But here I notice in particular his chattiness around the campfire, and comment.

"Yeah. I don't talk this much at home," he admits.

"Is more talking a good thing?" I ask him.

He nods. He makes sheepish eye contact with me, and then smiles.

The Gift of Fear

This wide-open land also gives us, strangely, the gift of fear. My students spend their "normal" lives in climate-controlled buildings. Here, the sun beats down on us, and we must constantly remind them to drink enough water; there is real danger if they do not. On our walk today, numerous rattlesnake holes near our path make me wonder what it would take for a startled snake to emerge. The tightrope-narrow ridges we walk on the erosive Badlands heights are precarious. Buffalo can charge. This immeasurable space with sky in every direction makes us feel small and a bit helpless. We are not safe here, and the magnitude of this

monitoring our weather on the Internet, and warns him of a bad storm that is looming.

"Can I sleep in the van tonight?" he asks.

We are reluctant to say yes; we avoid answering, saying only vaguely that we'll consider it if necessary.

Rain pelts us for an hour between 2 and 3 A.M. Thunder is horrifically loud; lightning is shockingly bright. None of the teachers are sleeping. Worried about their safety, I have been listening in case someone needs help. I hear no crying or yelling. There is nervousness, but no one seems in particular trouble. A few, apparently, have even slept through the storm.

In the morning, I wonder in particular about Michael, as the vans have remained locked and empty all night. He is exhilarated, happy.

"Like winning a game," he says to me when I hint at last night's anxiety. "We conquered." The pride in his voice is unmistakable.

Nature daunts them with its power, but it also gifts them with self-confidence and humble gratitude. Although it is a weighty lesson, is it such a bad thing if these kids have recognized, in small part, their fragility?

One Final Gift

Finally, this wilderness classroom reminds me that good education is always about teaching kids and rarely about teaching subject matter. I could fill their minds with facts for them to regurgitate on a standardized test, but does this make them ready

In this they learn again the value of intonations, body language, smiles—features that have begun to wane in their new world of digital communication.

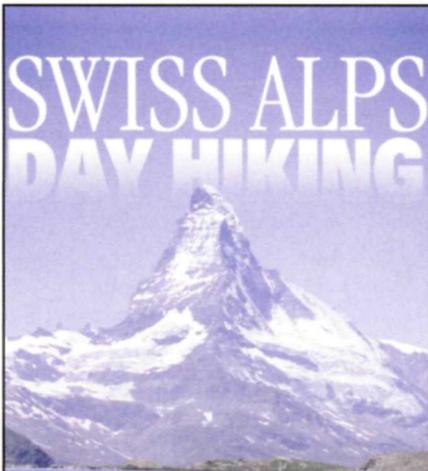
its thorns. Sean can ask a question about an earlier discussion that has nagged him since the morning. Erin, who has left her best friends at home, can braid a classmate's hair and begin to form a new friendship. This is a pace of life unfamiliar to them. Normally, at home, they'd try to fill this space by playing video games, shopping, or checking Facebook. Here they seem more human with

dire realization reminds me of my place in the universe.

One evening, rainclouds gather, and the sky looks ominous. Michael, a big football player (and a first-time camper) approaches the teachers. He is used to showing his brawn, but he is clearly uncomfortable. He has found a cell-phone signal and has called home. His mother, 900 miles away, is

for the adult world? I want to send out creative and confident thinkers with the ability to solve problems. I want students who know their own mind because they have been asked to reflect and reason and decide rather than memorize. Here, we read, but there is no quiz. Here, they write, but I am not checking for comma splices. Here, we discuss, but they are not taking notes for the

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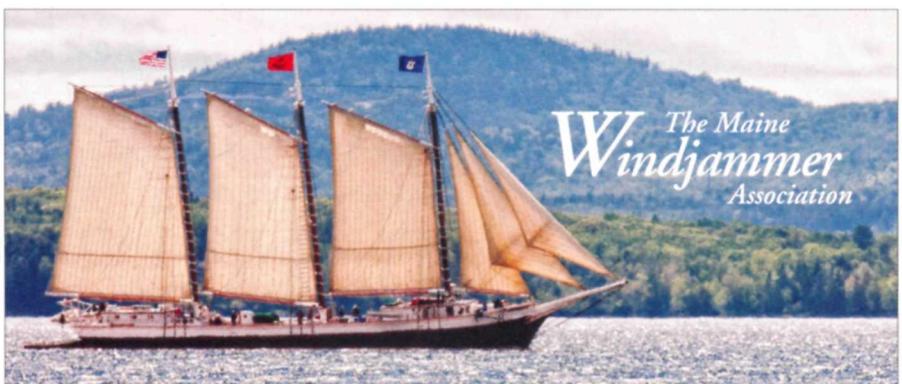
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CHILDREN SIT ON THE BANKS of the Cane River near the Melrose Plantation in Louisiana, circa 1925.

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When Cotton Was King

Cane River Creole National Historical Park tells the story of life on a Louisiana plantation.

Deep in the South, in the northwest part of Louisiana, two plantations called Oakland and Magnolia tell the story of cotton and the people whose lives revolved around it—the men and women who picked it, the wealthy landowners who profited from it, and the land and the waterways where Creole culture emerged nearly three centuries ago.

“Today, when we drive our cars along

the highway with farmland on either side, we see a nearly empty landscape with nothing but heavy machinery, but one hundred and fifty years ago, those fields were filled with people,” says Nathan Hatfield, an interpreter at Cane River Creole National Historical Park in Natchitoches, Louisiana. “Back then, rivers were the transportation routes—the highways of the eighteenth and much of the nineteenth century—and the

combination of the Cane River and its fertile soil are what led people to settle here.”

The Spanish were the first Europeans to explore the region, but the French were the first to claim it as their own, in 1714; soon after, they brought African slaves to the area. In the years to come, both countries would lay claim to the region at different times, and their influences would mingle along with African influences to form a unique culture that would come to be called Creole. In 1803, the United States took over the land as a part of the Louisiana Purchase, adding a dash of spice to a nation that would one day be called a mixing bowl.

“America tends to put people in categories like black or white, but Creole isn’t a racial identity—it’s a cultural identity,” says Hatfield. “During the colonial period the term was used to designate people of Spanish or French descent born in Louisiana. But as those people interacted with each other and with the slave population, that definition expanded to include

Creoles of color or mixed race. Many of the Creoles of color were descended from slaves and went on to acquire wealth and become slave-owners themselves. Today, not all Creoles share the same skin color, but they do share language, food, music, and architecture.

Regardless of the color of their skin, people here soon found their lives revolved around the fertile land in the region, which was first used to plant tobacco and indigo, the main ingredient in a blue dye used for military uniforms and other clothing. Soon, cotton took over, and at the end of the 18th century, the invention of the cotton gin made the plant even more profitable for the next 100 years. Today, rows of soybeans and corn dominate the landscape.

At their peak, the plantations at Oakland and Magnolia were less like big farms and more like small cities. Before the Civil War, Oakland had about 150 enslaved workers, and Magnolia about 250. Within that community, not everyone was picking cotton or doing domestic work—some slaves worked as blacksmiths and carpenters as well.

Telling the story of slavery in the South requires a deft touch, and the challenge is made even more difficult by the fact that few slaves wrote about their experiences, as their owners worked hard to keep them illiterate. The Park Service distinguishes between field slaves and house slaves, and notes differences in the ways the French and Spanish treated their captives—here, slaves were baptized in the Catholic religion, which meant they were viewed through a different prism, and children lived with their parents rather than being separated at an early age. But cultural differences notwithstanding, slavery was still slavery: “When you’re interpreting Louisiana slavery,” says Hatfield, “it’s not better and it’s not worse—it’s just different.”

When cotton prices soared, plantation owners were extremely well off and able to travel widely and dabble in other pursuits; the owner of Magnolia raised thoroughbred horses for a time. But the Civil War changed that. In 1864, during

the Red River campaign, Confederates ordered farmers to burn their cotton to prevent the Union from sending it to mills in the Northeast. And when Union soldiers passed back through the region after their defeat, they burned homes and other buildings, completing the decimation.

In the early 20th century, more hard times came to the region when the boll weevil arrived and devastated the cotton crop. Black slaves, who became sharecroppers after the war, soon suspected they would never own their land, and started to leave the region—a movement that continued with the Great Depression. As the price of cotton continued to fall, plantation owners tried to find creative ways to make money, raising livestock and turning old buildings into a recreational fishing camp at the Oakland plantation. Workers headed to big cities like Memphis or St. Louis, or moved to industrial centers in Chicago and Detroit. Plantation life essentially ended by the 1950s.

Today, Oakland and Magnolia still

contain the presence of people who lived on the land, and the Park Service engages locals to tell their stories as well. This fall, the Association for the Preservation of Historic Natchitoches held its annual fall tour of homes, featuring descendants of some plantation families dressed in period garb. “These activities really take what could just become a historical museum, and put the people back in the story,” says Julie Ernstein, assistant professor of anthropology at nearby Northwestern State University. “You can meet a Metoyer family member who grew up in the overseer’s house or talk to James Helaire, the descendant of a sharecropper. So you’re not only speaking with a park interpreter who is incredibly knowledgeable, but local people who actually lived here. It takes a certain amount of openness to surrender that story to people, and say, ‘This is your day—there’s room at the table for everyone.’” NP

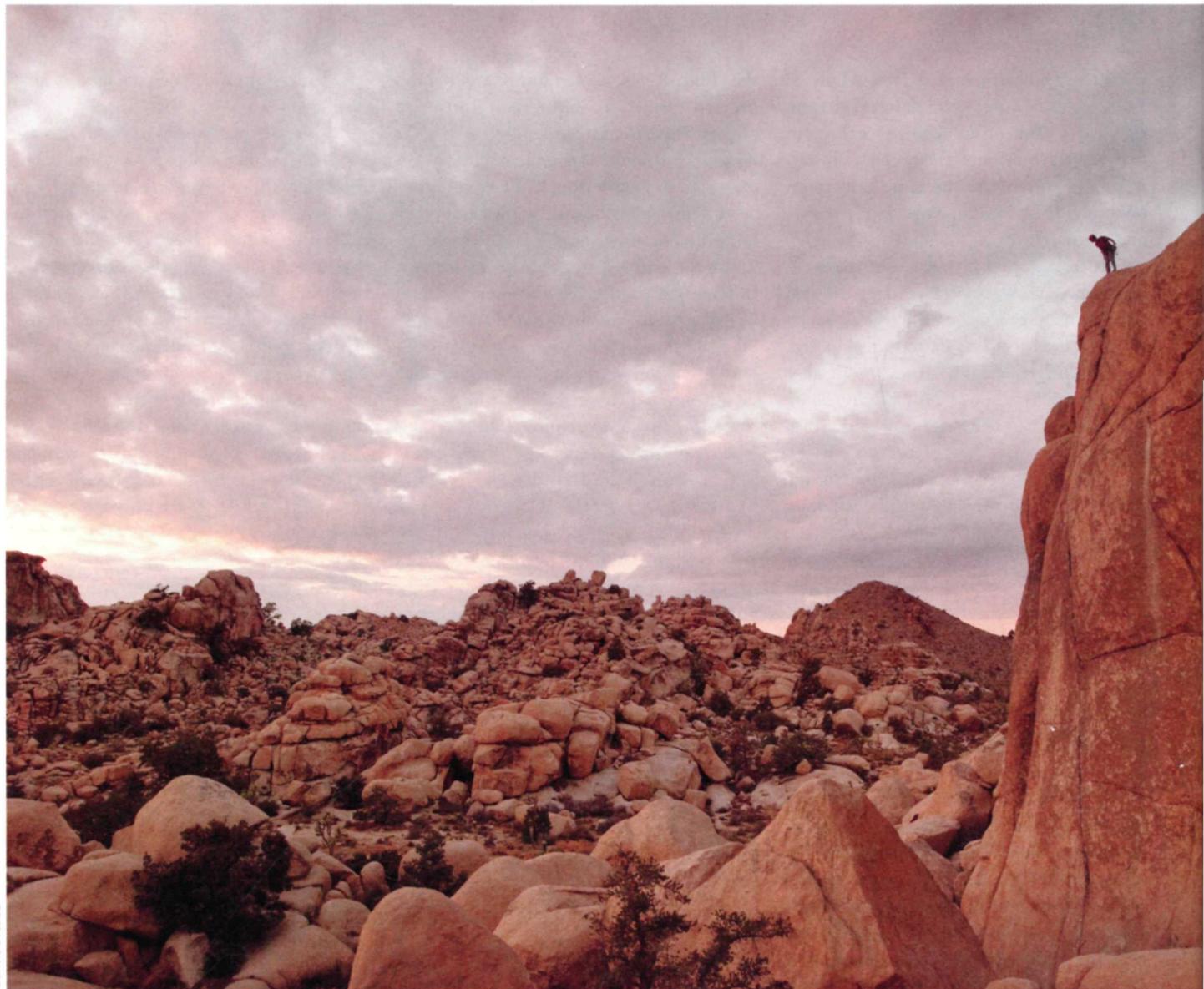
Scott Kirkwood is editor in chief of *National Parks* magazine.



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JOSHUA TREE NATIONAL PARK

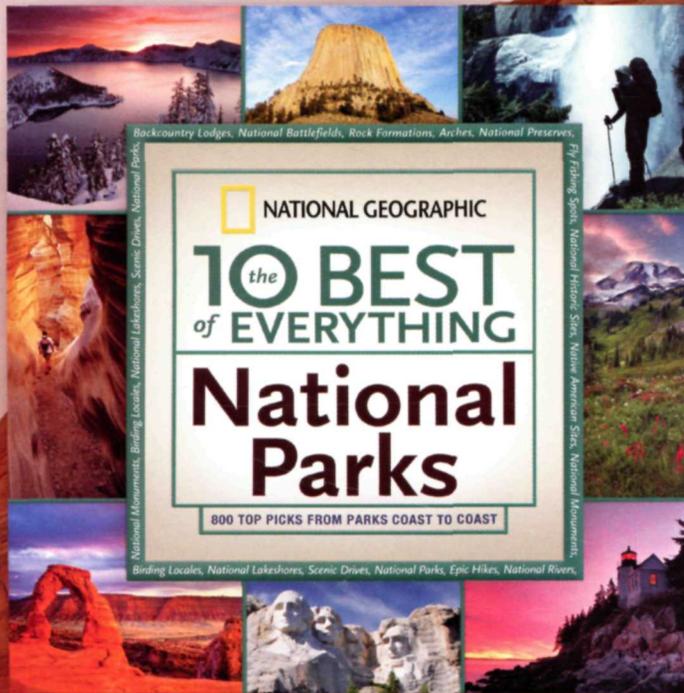
California

This image was shot on the first day of my first visit to Joshua Tree. I had come to the park to document the story of two wildly passionate climbers—Brenton Reagan and Jessica Baker—who, while seeking refuge from hard times, had found love and a kind of spiritual sanctuary in the park. Here, Brenton peers over a granite face that he had just scaled at sunset. The climb, called Hot Rocks, is a very steep, technical route rated 5.11c—a rating that scares away all but the very strongest of climbers. The seemingly endless piles of boulders, the expanse of sky, the soft light, and the body language of the small figure came together to communicate a feeling of wonder and exploration, as well as the very real feeling of relief following a terrifyingly exposed climb.

Although we were less than a mile from the road, the silence, the vastness, and the oddity of such a unique landscape filled me with a feeling of freedom and the heightened sense that I seek in the backcountry. I can think of no better place to find clarity and challenge one's self than the wide open desert and the steep graceful lines of Joshua Tree. For a short slideshow featuring more images of Brenton and Jessica at Joshua Tree, visit www.npca.org/magazine/joshuatree.

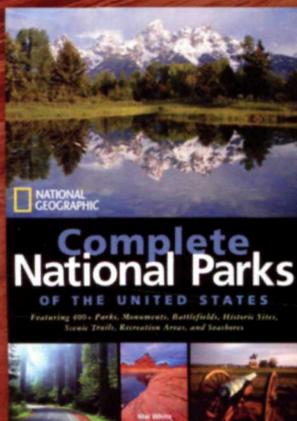
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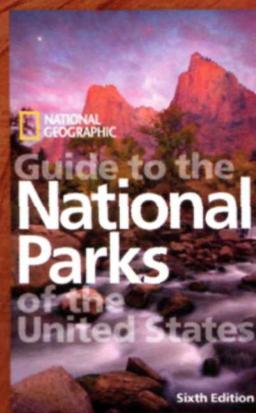


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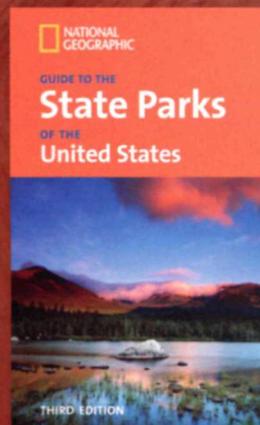
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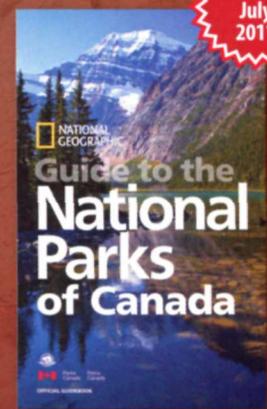
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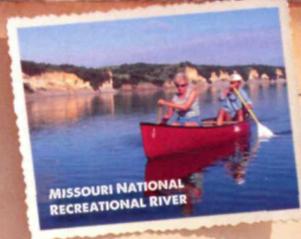


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