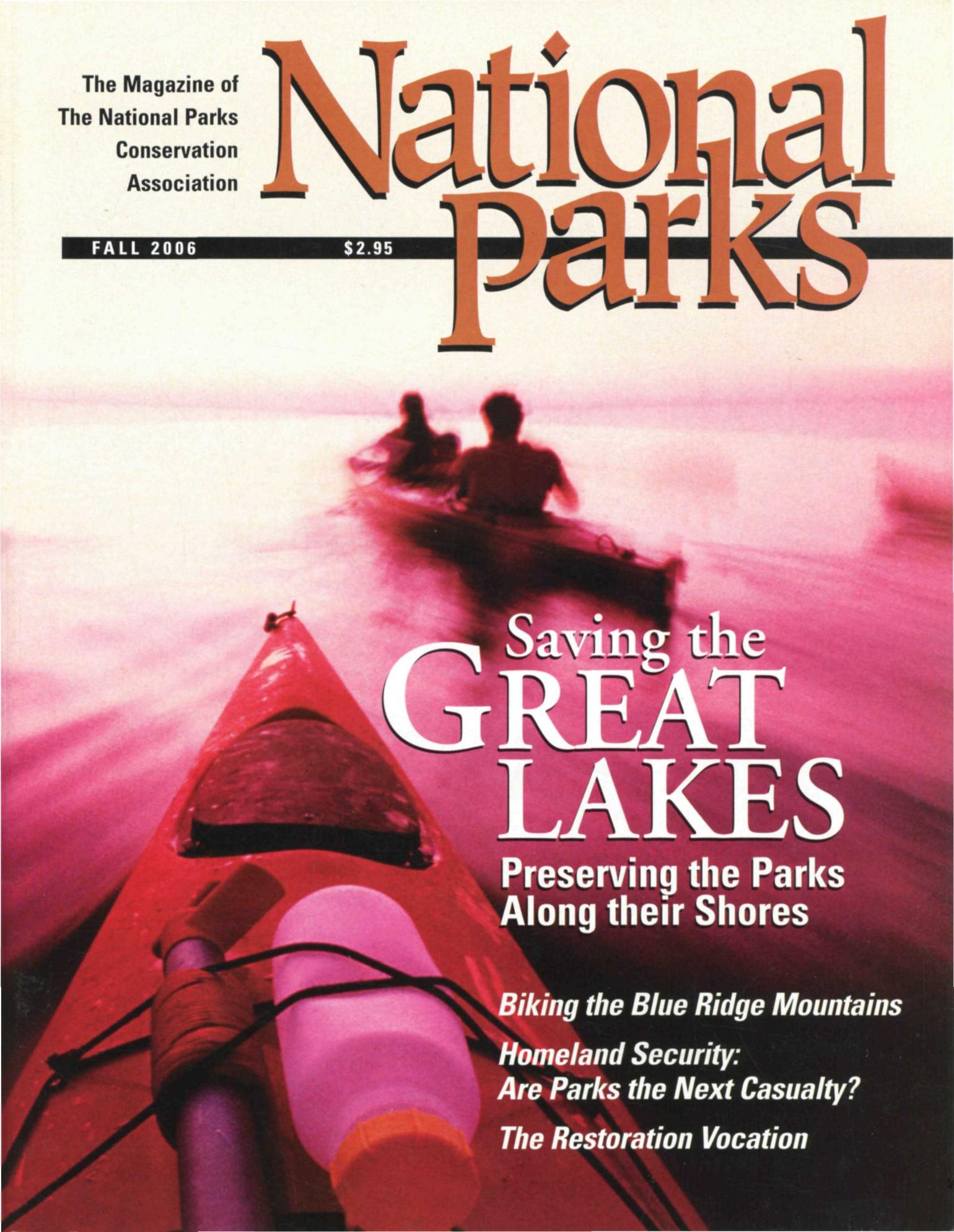


The Magazine of  
The National Parks  
Conservation  
Association

# National Parks

FALL 2006

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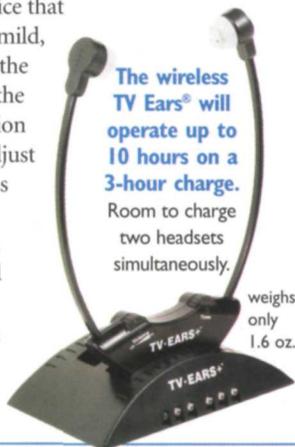
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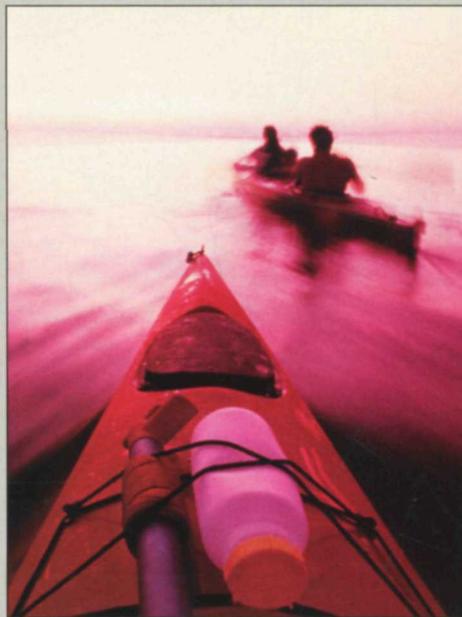
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*By Anne Minard*

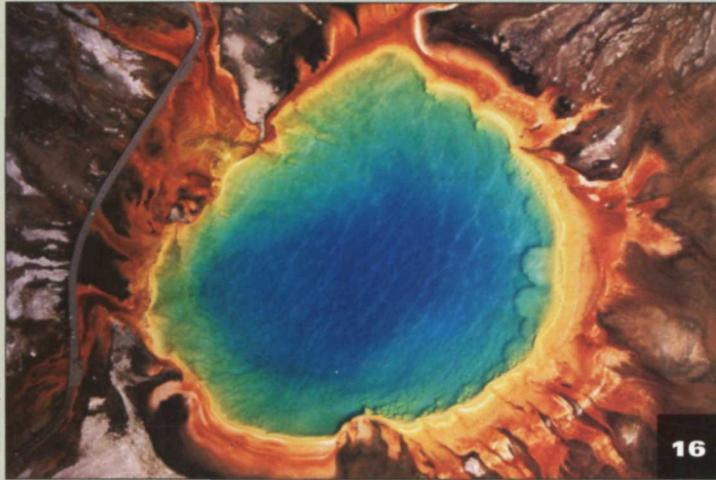


Kayakers paddle the waters surrounding Apostle Islands National Lakeshore,  
*by Layne Kennedy*



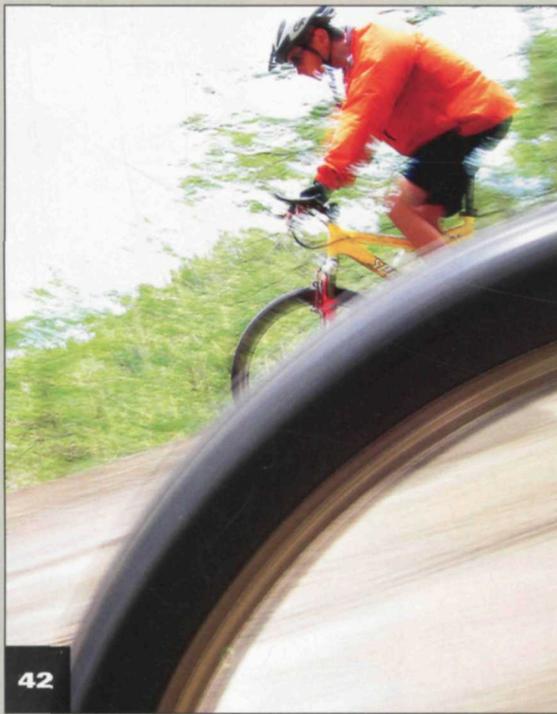
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## PRESIDENT'S OUTLOOK

# Celebrating Our Victories

What a difference a year makes. Last year at this time, we faced what seemed like an insurmountable challenge: Stopping the harmful rewrite of the National Park Service's management policies—the preservation blueprint that provides day-to-day guidance to park managers. Today, I am happy to tell you that with your help and the support of our allies in Congress we succeeded in stopping the rewrite and replacing it with a strong set of policies.

Last August, Paul Hoffman, a political appointee in the Department of the Interior drafted a proposal for new management policies. If his draft had prevailed, the national parks would have been subjected to irreversible harm from air, water, and noise pollution, droning overflights, and roaring off-road vehicles. Working with a diverse coalition of park advocates, NPCA convinced the Department of the Interior not to adopt Hoffman's draft.

As a result, the Park Service issued another draft last fall, which the agency followed with a series of meetings held around the country to encourage the public to comment. NPCA's friends, supporters, and members produced more than 50,000 comments opposing the Park Service's revised draft. At the same time, NPCA staff engaged political allies in both parties to register their concerns. Both the House and Senate National Parks Subcommittees held hearings on the subject, and a number of members urged the Park Service and the Department of the Interior to adhere to the existing policies rather than the new draft. The end result is a set of park management policies that ensures even stronger protection and enjoyment of the parks.

This tremendous victory on behalf of America's national parks, due in large part to your support and dedication and that of our allies, set the stage for progress in another dimension.

On August 25th, 2006, the 90th birthday of the Park Service, Interior Secretary Dirk Kempthorne announced a Centennial Challenge for the parks, a ten-year initiative to prepare the parks for their second hundred years. The Secretary has demonstrated his willingness to listen to our ideas on this. In fact, the Secretary's willingness to adopt strong management policies while proposing a ten-year initiative to restore the parks' faded glory, are signs that positive change is in the works.

As we approach the centennial of the National Park Service in 2016, we want a fully protected park system to be part of our legacy to future generations. As part of our birthday present to the Park Service, we launched a campaign of our own. Our All About Jack e-campaign is all about ensuring that we leave a lasting legacy for our children. Please take a moment to visit [www.npca.org/jack](http://www.npca.org/jack) to view our movie and share it with a friend. We thank you for your ongoing support of our work to protect the national parks.



KRISTA SCHLYER

Thomas C. Kiernan

## Transitions

As a New Englander, autumn has always been my favorite time of year. The temperatures are cool enough for a sweater or light jacket, the sunlight softens, and the mornings are cool and dark enough to sleep just a little bit longer on weekend mornings.



CHAD EVANS/WYATT

The fall, of course, is a transition season, and this year it marks a change at *National Parks* magazine. Over the past few years, I have maintained my role as Editor-in-Chief of the magazine even as I moved from being in charge of the magazine to broadening my responsibilities to encompass NPCA's entire Communications Department. In addition to the magazine, this department encompasses our media outreach, online communications, and developing and marketing our brand.

Over the last year, Scott Kirkwood has taken on more responsibility for the magazine, becoming not just the person who edits the material that appears in the magazine, but also the one who shapes and directs *National Parks* for the organization. Scott will be assuming the role of Editor of *National Parks* and will make his debut with the January issue. His inaugural issue will be timed to coincide with a redesign that he and the staff have been working on for the past few months.

I have been thrilled to be a member of the *National Parks* staff for my entire 15 years here. And, of course, I still will have a hand in the magazine but in a much smaller way and not in its day-to-day operation. I leave that in Scott's capable hands.

**Linda M. Rancourt**  
Editor-in-Chief

# National Parks

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**PRODUCTION MANAGER:** BRIGGS CUNNINGHAM  
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**National Parks Conservation Association®**  
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### WHO WE ARE

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

### WHAT WE DO

NPCA protects 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

The magazine is the only national publication focusing solely on national parks. *National Parks* creates an awareness of the need to protect and properly manage park resources, encourages an appreciation for the natural and historic treasures found in the parks, and informs and inspires individuals to help preserve them.

### 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](http://www.npca.org) to sign up.

### HOW TO DONATE

For more information on Partners for the Parks, contact our Membership Department, extension 213. For information about Trustees for the Parks, bequests, planned gifts, and matching gifts, call our Development Department, extension 145 or 146. You can also donate by shopping online at [www.npca.org](http://www.npca.org), where 5 percent of your purchases is donated to NPCA at no extra cost to you.

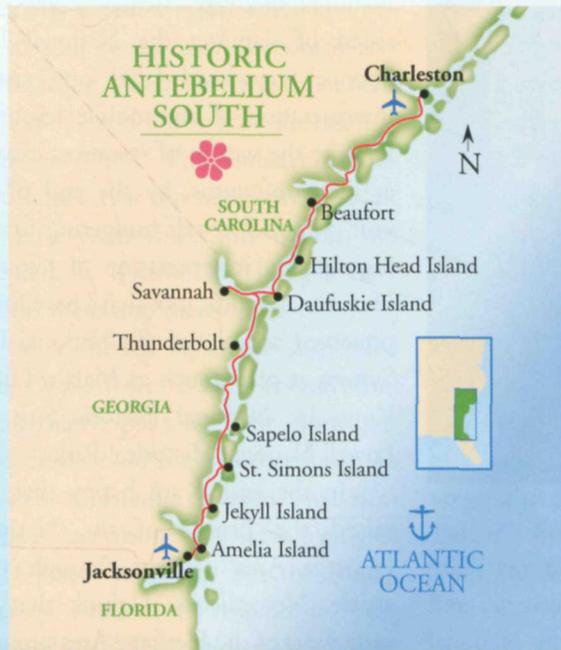
### QUESTIONS?

If you have any questions about your membership, call Member Services at 1-800-628-7275. *National Parks* magazine is among a member's chief benefits. Of the \$25 membership dues, \$6 covers a one-year subscription to the magazine.

### HOW TO REACH US

National Parks Conservation Association, 1300 19th Street, N.W., Suite 300, Washington, DC 20036; by phone: 1-800-NAT-PARK; by e-mail: [npca@npca.org](mailto:npca@npca.org); and [www.npca.org](http://www.npca.org).

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# Making Old Discoveries New Again

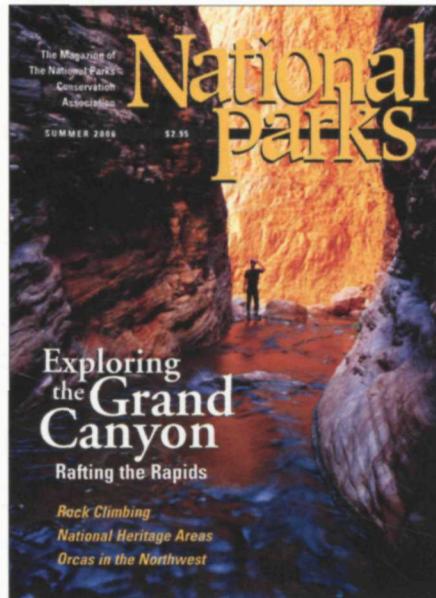
## Now You See Them...

I read the article "Out of Sight, Out of Mind," [Summer 2006] with great interest. It really hit home for me. The verification of wolverines in Yellowstone is of personal interest to me and really no great surprise. As a new ranger in my first Park Service job after graduating from college, in the fall of 1949, I was living at the Game Ranch and Stevens Creek outside Gardner Montana, in the northwest section of Yellowstone National Park. My job included patrolling the Reese Creek and Electric Peak area on horseback, primarily to look for evidence of elk poaching.

After reaching the apex of my ride and starting to head back down the trail, my horse became startled and started acting up, and I soon saw why. Crossing our path about 40 yards ahead was a moderately large brownish-black animal that I recognized to be a wolverine. I had never seen one in person, but was familiar with them through pictures, and I knew enough to rule out animals such as black bears, grizzly bears, and badgers.

I dutifully (and excitedly) reported this observation to my district ranger, assistant chief ranger, chief naturalist, and our wildlife manager. Each expressed marked skepticism in my report and indicated that my observation alone was not enough to disprove the widely held knowledge that there were no wolverines in the Yellowstone area. Unfortunately, I never had another chance to meet another of these wily creatures and get a photograph to prove my observation correct.

*Foster R. Freeman  
National Park Service (ret.)  
Ft. Collins, CO*



## Room for Improvement

I recently picked up my Summer 2006 issue of *National Parks* magazine, and came across your article on National Heritage Areas, "Forging an Identity." I was very surprised to find that this article treated the National Heritage Area concept so favorably, only mentioning in passing at the very end of the article the problems facing the National Heritage Area concept. I've visited close to half of the existing National Heritage Areas, and while I agree that the Heritage Area is a promising concept, in practice my experience has ranged from underwhelming to disappointment. Overall, I've found that the Heritage Areas suffer from a number of problems, including a confused identity, a lack of focus, and inconsistent standards.

At the heart of the problem is the simple fact that there is really no existing concept for what a Heritage Area is or should be. Another growing concern of mine has been the lack of uniform standards for preservation and interpretation. I recently visited the Motor Cities

National Heritage Area, and my general sense was that the hub sites of this National Heritage Area generally consisted of slapping the National Park Service arrowhead label on existing interpretation of automobile resources. Despite the wealth of resources existing at these museums, by the end of my visit, I found myself hungering for the high-quality interpretation of resources of national significance that I have found preserved at units of the National Park System at places such as Martin Luther King, Jr., National Historic Site and Lowell National Historical Park.

In the end, I am happy that you raised the profile of the National Heritage Area concept through your article. Nevertheless, I think that the early years of the Heritage Area program have exposed some serious flaws in the confused identity, lack of focus, and inconsistent interpretation currently found in the program, and that your article underplayed these flaws.

*John D. Georgis  
via e-mail*

## Second That Emotion

It began with nodding my head while reading Barbara Edmondson's letter to the editor in response to "The Thin Places" [Spring 2006]. She echoed my thoughts when I read the article, and tore the reflective pages from your spring issue to reread over the intervening weeks. Although I can't pin it down, I sense a subtle change in your copy in recent months—a growing breadth that prompts a deeper understanding of how our national park endeavors affect our core being. You provide a balance of knowledge with a refreshing, encourag-

ing mindfulness that causes us to both reach down into ourselves and reach out to share with others. Thank you for an increasingly richer reading experience.

*Patricia Kaspar  
San Mateo, CA*

### Playing Devil's Advocate

I read your coverage of the controversy surrounding Devils Tower with an ache in my heart ["Vertical Horizons," Summer 2006]. The Indian Nations have suffered far too much over the last 200-plus years since this nation was founded. It is time the Indians have what is theirs and theirs alone.

All climbing should be suspended from Devils Tower. If climbers can't find an alternative place for their sport, perhaps they should find another sport. To say it is infringing on their own freedoms is ludicrous. They have plenty of other places to climb, but the Indian Nations' freedom of religion is being "stepped on." The national monument is for everyone's enjoyment, but not at the expense of those who hold it sacred.

*Carole Taitt  
Perry, FL*

### Cover Up?

I certainly enjoyed your article about the discovery of the African American slave cemetery in New York, ["History Unearthed," Summer 2006]. But as a teacher of U.S. history, one statement bothered me: "The centrality of slavery in New York was not just overlooked but covered up—you couldn't ask for a more glaring example." In U.S. history classes I've never seen any attempt to cover up the truth that slavery existed in all of the colonies by either teacher or textbook. Due to climate and soil, those areas could not develop the plantation system that was the basis of Southern economy, but rather grew into the industrial region of the country. Over time, the northern colonies outlawed slavery one by one.

By the way, I also read the article about the dunesong ["Rhythms of the Desert"] and went to the website to hear it for myself. It was awesome. Thanks.

*Donna Britt  
via e-mail*

*For more letters in response to the Summer 2006 issue of National Parks, visit [www.npca.org/magazine](http://www.npca.org/magazine).*

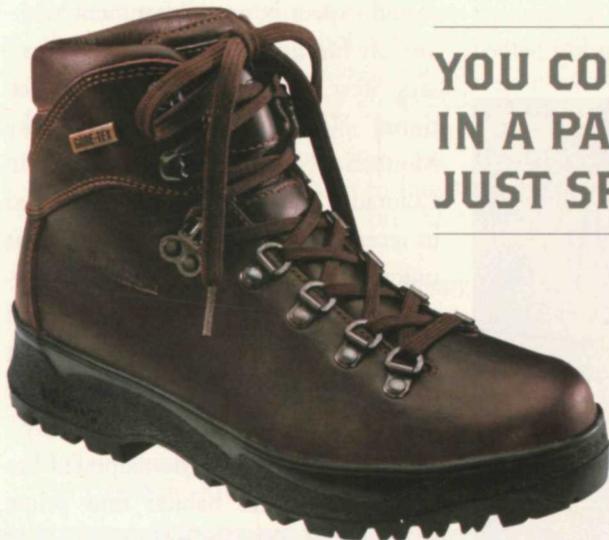
**Corrections:** A sidebar in the article "Vertical Horizons" [Summer 2006] featured a photo of Yosemite National Park rather than an image of Devils Tower. The National Parks Lodging Directory listed hotels under Glacier Bay National Park & Preserve that should have been listed under Glacier National Park. The corrected version is now posted online at [www.npca.org/lodges](http://www.npca.org/lodges).

## ONLINE CONNECTION

*What's New at NPCA.org*

NPCA's *Turning Point* report takes a look at air pollution in the parks. Conclusion: We're on the right path, but the battle is far from over. Turn to page 12 for more details, or download the full report at [www.npca.org/turningpoint](http://www.npca.org/turningpoint).

And check out NPCA's latest campaign that focuses on protecting parks for future generations. Grab your earphones, go to [www.npca.org/jack/movie](http://www.npca.org/jack/movie), lose yourself in the powerful movie, then pass it on to your family and friends.



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# ParkScope

## NEWS & NOTES

### Too Much of a Good Thing?

Visitors to Colorado's Rocky Mountain National Park can blindly point a camera in nearly any direction and capture a handful of elk in a picture-postcard image without the aid of a telephoto lens. The thousands of elk scattered across the mountainous terrain and the neighboring community of Estes Park certainly do their share for visitors' photo albums, but the health of individual animals is suffering, and the herd's numbers are taking a toll on native vegetation and other wildlife that simply can't compete.

The problem has been a long time coming. About 100 years ago, elk had

*Elk overpopulation in Rocky Mountain National Park is taking a toll on the ecosystem, and the results can't be ignored any longer.*

nearly vanished from the region, but in 1913 the species was reintroduced, largely for the sake of sport hunters. Wolves and grizzlies had already been eliminated from the region, and the creation of the park two years later quickly helped

reestablish a healthy population and then some. From 1943 to 1968, a culling program kept their numbers in check, but public outcry finally brought it to an end, leaving hunting on adjacent public lands the only way to slow the inevitable. Over the ensuing years, continued development in the region ate up prime elk habitat. The result? Today more than 4,000 elk live in and around the park, an area that's able to support about 2,500 ungulates by most accounts.

"This is the typical problem you would expect in an environment without any hunting or any large predators," says Steve Torbit, director of the National Wildlife Federation's Rocky Mountain Natural Resource Center in Colorado. "Elk numbers have exploded in recent years, and the problems aren't unique to Rocky Mountain—Yellowstone and Grand Teton have had some of the same issues. And we haven't had a severe winter since 1984, so elk simply aren't dying off naturally." Meanwhile, staggering development has turned prime elk habitat into prime acreage for million-dollar homes.

"Residents in the area really notice the elk on their lawns," says Mary Kay



GLENN RANDALL

More than 4,000 elk live in and around Rocky Mountain National Park.



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Watry, acting wildlife program manager at Rocky Mountain National Park in Colorado. “But Estes Park is a community based on tourism, so there are plenty of business owners who love the fact that the elk draw tourists.”

“One thing we noticed in our public outreach process is that the majority of people really seem to understand that something needed to be done,” says Kyle Patterson, another spokesperson for Rocky Mountain National Park. “But when it got time to decide *what* needed to be done, the suggestions were all over the board.”

As part of the scoping process, the park presented a 600-page document outlining the problems and potential solutions for public comment. Four primary solutions were presented, ranging from continuing current management practices to alternatives including birth control, reintroduction of wolves, and a cull conducted by government agencies.



THOMAS MANGELEN/SHUTTER PICTURES

**Elk in many western parks have thrived in the absence of predators.**

Birth control and wolf reintroduction would require a sizable investment of resources, and neither addresses short-term concerns, so the Park Service’s preferred approach emphasizes culling the herd. The work would most likely be performed by sharpshooters during evening hours to limit the impact to visitors. Fencing would be used to redistribute the elk and protect vegetation, and wolves might be introduced in latter stages of the comprehensive 20-year pro-

gram, estimated to cost as much as \$18 million.

Some factions have suggested a public hunt would serve the same purposes with a lower price tag. But it’s a solution that introduces its own set of obstacles, and one that may not improve matters at all. Hunting is illegal in national parks, so an act of Congress would be necessary to waive that rule, setting a troubling precedent for parks nationwide. And contrary to popular belief, the

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**National Parks Conservation Association**  
*Protecting Parks for Future Generations*

David Muench

time and cost associated with administering a hunt would be significant. Many hunters prefer to mount six-point bulls above their mantle rather than cows, which must be targeted for effective population control. Because chronic wasting disease affects many of the animals, strict and costly measures would need to be put in place to prevent hunters from taking diseased meat.

Although the culling of the herd seems the most direct and practical way to address the issue, many wildlife lovers have a hard time embracing any plan that involves killing animals.

“Unfortunately, we don’t have the luxury of managing the park for one species,” says Patterson. “We can’t just look out for the elk—those riparian communities with aspen and willow support strong biodiversity in other species, and we need to consider the songbirds and cavity nesters, the butterflies and other insects. Beaver are an

extremely important part of the equation, too, and they’re not coming back to the park because they simply can’t compete with the elk.”

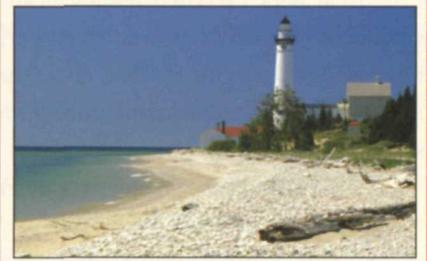
“Extensive damage to sensitive plant communities in the park is already well documented, and could soon lead to the loss of critical habitat if the elk population remains unchecked,” says Bill Knight, director of NPCA’s Center for the State of the Parks. “The long-term health of the herd itself ultimately depends on the health of the ecosystem.”

Clearly, there are no easy solutions, but the challenges go beyond park boundaries. The park can’t be managed as a “biological island.” Cooperation between the Park Service and several state and federal wildlife agencies is crucial. The only way elk and other wildlife will thrive is if the park is managed as one important link in the Rocky Mountain ecosystem.

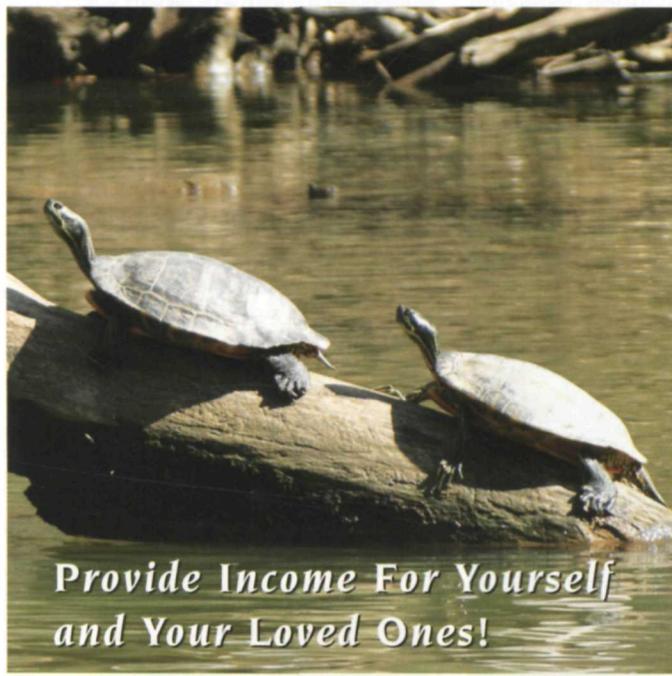
—Scott Kirkwood

## News in Brief

**Sleeping Bear Dunes, MI**—In August, the National Parks Travelers Club held its third annual meeting at Sleeping Bear Dunes National Lakeshore (below). The group’s founder, Michael Brown, is just one of 100 people bound by a shared passion for the natural beauty and historical significance of the National Park System. In 1986, Eastern National corporation introduced the park passport program, and since then thousands of park lovers have launched “short detours” to secure a stamp that proves they were there. Sound familiar? If so, learn more about the group by visiting [www.parkstamps.org](http://www.parkstamps.org).



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# Waiting to Inhale

*NPCA's Turning Point documents the threats that air pollution poses to our national parks.*

Imagine you've cashed in several vacation days, packed up the kids, and traveled hundreds of miles to Sequoia and Kings Canyon National Parks only to be greeted by a sign indicating it's not safe to hike because of air pollution. Last year, ozone levels in the California park exceeded federal health standards so many times that park rangers posted signs to that effect on more than 50 days, primarily during the summer months.

"Some visitors are taken aback when they walk in and see the advisory in effect," says Annie Esperanza, the park's air specialist. "If there's anything positive to be found, it's that it prompts plenty of

questions from visitors, so they're learning more about air pollution. And as the park's air quality becomes common knowledge, the people who come to the park are asking what they can do to help."

Unfortunately, conditions in our national parks are providing the biggest "teachable moment" imaginable. NPCA's new report, *Turning Point*, reveals that air pollution remains a system-wide problem. More than 150 of the 390 national park units in the National Park System are located in areas where air pollution exceeds federal standards. The national parks are now at a crossroads: Just as pollution reduction

programs implemented over the past two decades are starting to show modest improvements at some parks, new energy sources threaten to undo years of work. Among the most troubling developments are dozens of coal-fired powerplants that could cloud park skies for generations to come.

Air quality in Yellowstone and Grand Teton National Parks, now among the best in the nation, is threatened by thousands of new oil and gas wells and several coal-fired power plants proposed for the surrounding area. Joshua Tree National Park has recorded the highest ozone levels of any park, and global warming could eliminate more than 90 percent of the trees that give the park its name. Glacier National Park is virtually melting away for the same reasons—scientists predict its glaciers will vanish within 25 years. Parks and preserves in northern Alaska are collecting dangerous levels of airborne pollutants, which show up in the food chain and jeopardize the native Alaskan way of life.

In the East, the stunning vistas in the Appalachian parks—Great Smoky Mountains, Shenandoah, Blue Ridge Parkway—are marred by haze. Meanwhile, air pollution in the form of acid rain is literally eating away at our nation's heritage: On the National Mall, statues made of bronze and monuments carved from limestone and marble must be cleaned and repaired each year to keep from crumbling.

"Air pollution threatens the very essence of what Americans value most about our national parks, destroying habitat for plants and animals, endangering the health of park visitors and staff, damaging the symbols of our nation's heritage, and clouding once-majestic horizons in our national parks," says NPCA's Clean Air Director Mark Wenzler.



PAUL A. SODERBERG/CORBIS

The National Park Service has been monitoring air pollution's impacts on parks from Joshua Tree and Denali (above) to Shenandoah and Mammoth Cave.

NPCA's report offers several recommendations for cleaning the air in the national parks, including:

- Requiring all power plants to use the most effective technology to limit harmful pollution including mercury;
- Expanding programs to monitor and reduce air pollution in the parks;
- Enforcing existing laws that limit the amount of air pollution deposited in the parks;
- Addressing climate change by reducing carbon dioxide emissions; and
- Promoting clean, renewable domestic energy supplies and encouraging citizens to limit their contribution to air pollution.

The Park Service can only do so much to change conditions that arise outside its borders, but establishing how much external pollution makes its way into the parks and measuring the effect on visitors and wildlife will help inform

policy decisions that get at the source.

The Park Service can also provide a good example for sustainable energy and environmental responsibility. Sequoia and Kings Canyon has plans to introduce a transit system to the Giant Forest, one of the park's most popular areas. Esperanza says the park staff would love to obtain vehicles that run on alternative fuels, but the purchasing arm of the federal government doesn't yet allow for that option. For now, the Park Service is sticking to the tried and true conservation message that begins with a single person.

"We tell people to do everything they can in terms of reducing pollution—to carpool, bicycle, save energy, the litany of things we can all do without any major hardship," says Esperanza. "Beyond that, we hope they'll go out and spread the news to their friends and neighbors, to help them understand that

the things they do hundreds, even thousands of miles away have consequences in our national parks."

Of course, much of the work falls to legislators on the local, state, and federal level. This summer, Sens. Tom Carper (D-DE) and Lamar Alexander (R-TN) introduced the Clean Air Planning Act, which would place new controls on power plant emissions of mercury, nitrogen oxide, sulfur dioxide, and carbon dioxide, a significant improvement over the President's "Clear Skies" legislation.

"The way NPCA's report describes [the situation as] a turning point is really accurate," says Esperanza. "We can't afford to let conditions get any worse because some of the damage we're seeing could be irreversible. The time to act is now."

—Scott Kirkwood

*To read the full report and learn even more, visit [www.npca.org/turningpoint](http://www.npca.org/turningpoint).*

## NPCA Notes

**New York, NY**—NPCA is one of the primary sponsors of a new exhibit at the American Museum of Natural History focused on preserving wildlife corridors in the North American West. Stunning images from leading conservation photographers like Thomas Mangelsen and Florian Schulz (featured below) showcase gorgeous landscapes, the wildlife that use the landscapes on a vast scale, and human impact juxtaposed with conservation efforts led primarily by the Yellowstone to Yukon Conservation Initiative. The exhibit runs through January 15, 2007.



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# Walking in Their Footsteps

*Dinosaur prints in Denali National Park and Preserve reveal a prehistoric ecosystem.*

There are certain footprints you expect to see in Denali National Park and Preserve in Alaska, like those of wolves, bears, caribou, or the hiker who trekked the same trail earlier that morning.

Now you can add dinosaurs to the list.

Scientists had been looking for fossil remains for a few years, but snow and ice limited their search to the warm summer months, and the size and geography of the park made it difficult to look beyond paved areas. Finally, in June 2005, a geology class from University of Alaska Fairbanks stumbled upon a large footprint in Cantwell formation—a

layer of rock nearly 8,000 meters thick that was originally thought to have formed in the Tertiary period, after the mass extinction of dinosaurs. Studies of other imprints from prehistoric plants and fossilized pollen made it clear that this layer was, in fact, a single page in a potential encyclopedia of dinosaur fossils.

Soon after the first footprint was discovered, Dr. Anthony Fiorillo, curator of earth sciences at the Dallas Museum of Natural History, and others from the Park Service and University of Wyoming, discovered a second dinosaur print and bird tracks from the same age. Research intensified, and the resulting

findings began painting a picture of the Denali of old: theropods, bipedal meat-eaters that range from the size of a chicken to a towering *Tyrannosaurus rex*; hadrosaurs, duck-billed vegetarians from the ornithomimid group; and prehistoric wading birds that resembled modern-day members of the sandpiper family. Now the park contains nearly 50 sites with prehistoric prints.

But it's not the footprints alone that really excite scientists. It's the way the prints have provided a glimpse of a prehistoric ecosystem in action. Theropod and hadrosaur prints together hint at a predator-prey relationship. And the bird prints, accompanied by smaller, dimpled imprints, illustrate an ancient foraging ritual: The birds used their beaks to probe riverbeds, the earliest evidence of birds' feeding behavior from that period.

According to Phil Brease, a geologist at Denali National Park and Preserve, these discoveries unearthed the first evidence of dinosaur existence in interior Alaska. Previous finds had occurred only on the fringes, like the North Slope, and the Matanuska Valley in south central Alaska.

Most of the research within Denali National Park and Preserve has occurred in places that are relatively easy to get to, as the park can't afford the luxury of helicopter travel to more remote sites. Fiorillo, Brease, and others generally begin their search for new fossils by visiting sites with fossilized plants, hoping to find evidence of flora that existed in the same age as the dinosaurs.



TODD MARSHALL/MARSHALL'S ART

**An artist's rendering of *Edmontosaurus annectens*, which left behind some of the fossil imprints found in Denali National Park and Preserve, Alaska.**

To the untrained eye, the prints resemble a typical rock surface, jagged and irregular. But like experts tracking wolves or bears, fossil-hunters are adept at finding patterns in the rock, including the telltale claws of an early reptile. When they find a print, they measure it, photograph it from various angles, and eventually create a latex mold used to render a three-dimensional footprint in fiberglass. Intact prints offer clues about the animals' size, hinting at physical information as detailed as height and hip width. One area contains so many fossil footprints that Fiorillo describes it as a prehistoric "dinosaur dance floor."

Students and scientists itching to play a role in the research can sign up through the park's Murie Science and Learning Center, which offers natural science courses in the field. It's still a little early for the park to offer interpretive programs to the general public, but the fiberglass casts will soon be on display in the park's visitor center. Visitors will even

get to see one fossil up close: A fossilized footprint discovered on an isolated rock was poised to fall into Igloo Creek and might have proven too tempting to vandals, so it was removed to become part of a display in coming months.

For now, Brease plans to conduct more extensive lab analysis to narrow down the time range, and Fiorillo may look to publish the findings in scientific journals. And of course, the search for even more fossils will continue. Although the fossilized footprints are a big step, so to speak, they're only considered trace fossils—indirect evidence of an animal's presence—which means there's a good chance that actual fossilized bones are still out there somewhere, just waiting to be discovered.

—Amy Leinbach Marquis

*For photos of the discoveries and more information on Denali's Murie Science and Learning Center, visit [www.murieslc.org](http://www.murieslc.org).*

## NPCA Notes

NPCA is expanding its reach every day. In September, NPCA and recreation outfitter REI put hundreds of volunteers to work in the parks for National Public Lands Day. Park lovers engaged in trail maintenance, clean-up efforts, and restoration projects in parks such as Joshua Tree, Shenandoah, Valley Forge, and Yellowstone. This summer, NPCA also established a Southwest office to focus on parks in Arizona, Colorado, New Mexico, and Utah (including Arizona's Saguaro National Park, below). And a new field office in Stockton, California, complements NPCA's established offices near Golden Gate, Joshua Tree, and Yosemite.



TIM FITZHARRIS/MINDEN PICTURES

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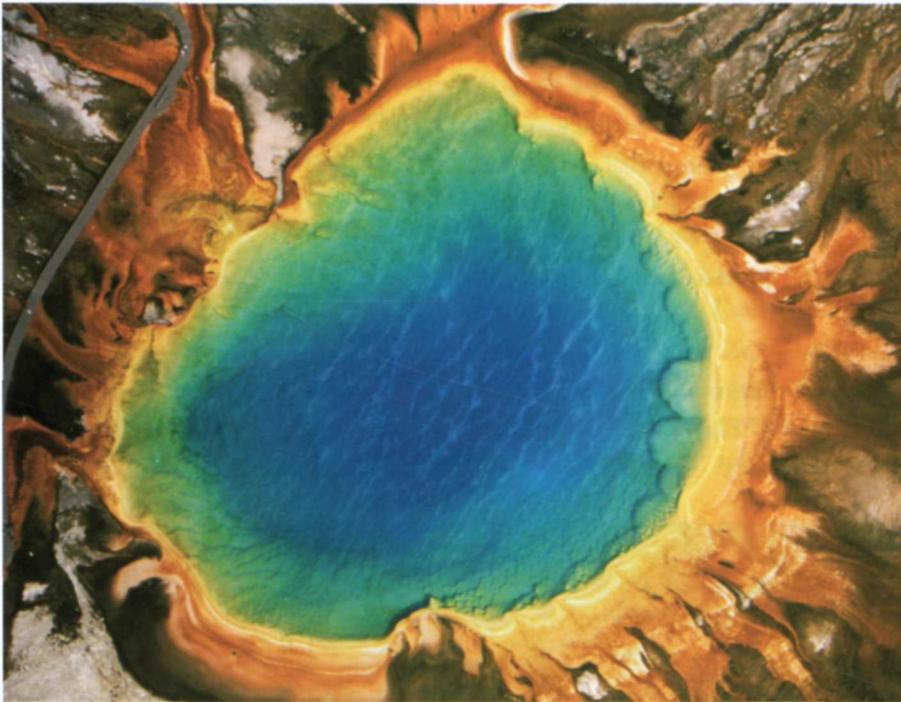
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# Getting Into Hot Water

Extraordinary microbes found in Yellowstone's thermal pools are helping to solve countless mysteries.

By Amy Leinbach Marquis



GABRIEL JECAN/CORBIS

**Grand Prismatic Spring in Yellowstone offers a glimpse of what Earth might have once looked like: scalding hot, and inhospitable to life as we know it.**

Yellowstone National Park is crawling with them. They're in the soil, in the river, in the air, clinging to the hooves of elk and backs of bears. They stick in your nostrils when you take in a deep breath and make a home on your skin as you hike past erupting geysers and steamy terraces. These tiny microorganisms, invisible to the unaided eye, are microbes—a range of bacteria, archaea, fungi, protists, and viruses. They're not unique to Yellowstone; in fact they're everywhere,

even in our own bodies, and allow life as we know it to function and thrive. Without them, we couldn't digest food, plants couldn't grow, and garbage wouldn't decay.

Some of the most extraordinary microbes, however, exist in Yellowstone. They're called extremeophiles, named for their ability to thrive in the most inhospitable environments on Earth—environments that remain intact in Yellowstone in the form of steaming geysers, bubbling mudpots, and scalding

thermal pools. And because of increased interest in these bizarre landscapes, scientists are beginning to uncover how these microbes could affect us—and help us—as humans.

It all started back in the fall of 1966, when Thomas D. Brock started dipping microscope slides into thermal pools. A sample from Mushroom Spring unearthed a particular microbe that he later named *Thermus aquaticus*—the first evidence to derail the longstanding theory that life couldn't exist in temperatures above 163 degrees F.

Brock stashed away his samples in the equivalent of a seed bank for microorganisms, and continued with his work. Decades later, scientists revisited Brock's stash while investigating the polymerase chain reaction (PCR)—a new method of copying genes and a crucial step in DNA analysis. Problem was, the enzymes broke down in the heat-intensive part of the process—that is until *Thermus aquaticus* entered back into the picture. Its heat-loving quality led scientists to extract an enzyme that remained stable at near-boiling temperatures, accelerating the process and ultimately making PCR more practical and affordable. Now, scientists can make billions of copies of a DNA sequence in just a few hours.

It was a discovery that revolutionized biology, and the human benefits are

far-reaching. Criminal investigators could now work quickly and easily with DNA evidence. One high-profile example: identifying those who died at the Pentagon and World Trade Centers on September 11, 2001. Doctors use the process regularly to diagnose and treat genetic diseases. The Park Service is using PCR to help identify and manage park wildlife. And researchers in Yellowstone use the process to learn more about other extremeophiles.

"The PCR process is lighting [scientists'] path as they move through these projects," says Susan Kelly, outreach and education coordinator from the Thermal Biology Institute at Montana State University. "It helps them better understand their research, which helps us better understand the park."

PCR is just one of dozens of applications that could come out of heat-loving microbes. One fascinating research project gives a whole new meaning to the term computer virus: By inserting magnetic material into empty virus "shells," computer technology companies are trying to create viral computer memory that duplicates with more accuracy than traditional computer chips. Scientists hope to treat breast cancer using a similar method: Viruses would be engineered to carry chemotherapy drugs and magnetic materials to diseased cells, allowing doctors to treat a patient and even track their progress through magnetic resonance imaging.

Another recent discovery revolves around plants that live near Yellowstone's hot springs, where flora typically can't exist. The secret lies in yet another microbe: a fungus that confers heat tolerance to the plants. If scientists can find a way to take this fungus and inoculate, say, wheat crops, farmers could produce



**Yellowstone's Great Fountain Geyser and the steaming terraces surrounding it are a haven for heat-loving microbes.**

ROGER HESMEYER/CORBIS

Yellowstone's microbial communities are also offering NASA scientists a glimpse of what an early Earth might have looked like—hot and generally inhospitable—much like other planets look today.

Yellowstone was, after all, originally established not because of grizzlies and elk, but because of its otherworldly thermal features. "[This geology] originally drew people to the park," Kelly says. "Now we're finally learning

about it. It took one researcher, and those who followed him, to stumble on it—to change many people's lives just by thinking a little deeper and looking for things in places that few people thought living things could possibly be." ❖

food in conditions where crops normally can't grow—in drought, hot climates, and even in times of global warming. Enzymes from other microbes could ferment plant cells into "gasohol," an alternative fuel source. Others break down the components of used tires, or gobble up chemicals in toxic environments like old mines and pulp mills.

about it. It took one researcher, and those who followed him, to stumble on it—to change many people's lives just by thinking a little deeper and looking for things in places that few people thought living things could possibly be." ❖

**Amy Leinbach Marquis** is assistant editor for *National Parks* magazine.

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# Slip Sliding Away

National parks in the East provide ideal habitat for cerulean warblers, but land-use decisions outside the parks—and outside the country—pose a serious challenge.

By Scott Kirkwood

As night falls on thousands of classical musical lovers spread across the lawn of the Blossom Music Center—the summer home of the Cleveland Symphony Orchestra—a few concertgoers are fortunate enough to hear the call of the cerulean warbler in between movements. The popular amphitheater is nestled in the middle of prime forest habitat within the confines of Cuyahoga National Park. But like one-third of the 33,000 acres within the park's legal boundary, it's private land not actually owned and operated by the Park Service. That poses a challenge for those trying to preserve habitat for a species making a rapid decline. Fortunately, classical music fans appreciate the natural setting, and the symphony does all it can to manage the property consistent with Park Service recommendations. But not everyone is so willing to go along with the plan.

Ceruleans and many other migratory birds divide their time between two continents, spending their summers in the United States and the remainder of the year in the South American mountains of Bolivia, Columbia, Peru, and Venezuela. Increased development in those nations, including coffee plantations, is fragmenting prime cerulean habitat. Meanwhile, a few hundred



*The cerulean warbler's numbers have declined 70 percent in recent decades.*

miles south of Cuyahoga National Park, coal mining just outside of the Big South Fork National River and Recreation Area is destroying forests and waterways in the region, home to the largest concentration of cerulean warblers on the continent.

There was a time when cerulean warblers were so plentiful that birders wouldn't have taken much notice of them flitting through the nation's eastern forests. But development and habitat

fragmentation in recent decades have driven the species' numbers down more than 70 percent since the 1960s. That staggering statistic and the bird's penchant for neck-craning locales atop the forest's canopy have made it a birder's holy grail.

In fact, biologists aren't even sure where to look for them anymore. Volunteers at Cuyahoga helped the park conduct a sampling in 2001, yielding enough detail to predict the presence

and absence of certain species, including the cerulean warbler. Park employees now use that knowledge when pointing birders toward prime habitat, and they consider several factors when deciding where to remove trees for new campgrounds, trails, and parking lots.

One thing that's clear is the bird's preference for mature deciduous forests throughout the Appalachians, from southeast Pennsylvania to West Virginia, eastern Kentucky and Tennessee's Cumberland Mountains. More than 70 percent of the breeding cerulean warblers live in the Cumberland Mountains, which has seen a resurgence in mining in recent years.

According to Ken Rosenberg, lead researcher for the Cerulean Atlas Project, the most serious threat, by far, within the breeding range of the cerulean warbler is

the practice of mountaintop removal mining. As much as 10 to 20 percent of the known cerulean population may be directly eliminated by proposed and permitted mountaintop mining alone. The impact has been felt by mussels, several threatened fish species, and six other migratory bird species in addition to the cerulean warbler. Voids left by underground mines are often flooded by inflows of surface water or groundwater, then collapse, releasing contaminated water into the watershed. The results have devastated water quality and biodiversity in the Big South Fork National River and Recreation Area in Kentucky and Tennessee. Surface mining, another popular method of extraction, destroys the steep slopes and mountain ridges favored by the birds and fragments large tracts of land that make up its ideal habi-

tat. Once the damage is done, it's nearly impossible to reforest the land in any reasonable amount of time.

NPCA, Audubon, and the Southern Environmental Law Center are petitioning the Office of Surface Mining to bring an end to the destruction and protect the surface waters of the Big South Fork. Several years ago, more than 20 advocacy organizations petitioned the Fish and Wildlife Service to list the cerulean warbler as threatened under the Endangered Species Act, and a ruling is expected in the coming months. Both of those proceedings certainly offer some promise for the cerulean warbler, but the question is: Will the remedy come soon enough? ❖

**Scott Kirkwood** is senior editor for *National Parks* magazine.



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FA 06

# Accidents Waiting to Happen

As federal subsidies encourage development on the fringes of national parks, the Park Service must devote shrinking resources to protect homes put in the path of danger.

By Roger Kennedy

**T**his summer, a fire in Glacier National Park and Blackfoot Tribal lands blackened more than 30,000 acres and required the services of 425 firefighters. A blaze begun by lightning in Yosemite National Park consumed nearly 700 acres. And the Magpie Fire in Yellowstone had eaten up about 1,300 acres at the time of this writing.

In midsummer, the National Inter-agency Fire Center elevated its “national preparedness” to its highest level. Nationwide, 500 state and federal firefighting crews and nearly 5,000 personnel

were committed to the effort, many of them in and around national parks, including Glacier, Grand Canyon, North Cascades, Joshua Tree, Sequoia and Kings Canyon, Voyageurs, Yellowstone, Yosemite, and Zion.

Fires in the sprawling national parklands of the West are nothing new. What’s new is the effect of these fires on areas where more and more people are choosing to live, drawn to developments sprouting up near parklands both for the beauty of the area as well as the quality of life that these communities promote.

The borders of national parks are

great places to live; who wouldn’t want the grandest imaginable estate tended by the nation’s taxpayers? But are the rest of us obligated to pay the price of building and then protecting homes on lands prone to fire?

Denver, Los Angeles, Phoenix, and the growing cities of southern Utah and northwestern Washington have crowded around national parks. The edges of Rocky Mountain National Park, the Santa Monica Mountains, Saguaro, Glacier, and Zion are increasingly hemmed in by development. What’s more, half the nation’s population growth has occurred in ten states, eight of which are also among the ten most fire-prone. Nevada, for example, has the highest percentage of its population exposed to wildfire, and the highest rate of population growth in the nation. Arizona, number two in growth, is number four in exposure. Utah and Colorado, vying for third place in growth from 1950-2000, were second and seventh in fire exposure, respectively. And within each of these states their most fire-prone counties were in nearly every case the most rapidly growing. In Colorado this summer, more new home construction was under way in the five tinder-box counties that burned during the great Hayman Fire in 2002 than anywhere



ROBIN LOZMAN/AP

July fires in Glacier County prompted the sheriff to call for the evacuation of local residents.

else in the state. Next door, a magnet for “amenity migrants” is Rocky Mountain National Park.

National parks lie at the end of a federal conveyor belt of subsidized migration, as more and more people build houses and towns at their boundaries. Promiscuous federal subsidies encourage people to situate themselves in places likely to burn. Those subsidies are made available with no regard to whether they facilitate building in dangerous places. We taxpayers underwrite mortgages insured by the federal government, and pay again to underwrite roads and power lines brought to the doorsteps of those homes. We pay for dams to generate that power, and pay yet again many hundreds of millions in direct developer assistance. Thus our taxes have accelerated a land rush into dangerous territory.

As more and more people are encouraged to move to the parks’ fringes, greater pressure is being placed on park personnel to manage these fires and even extinguish them. The expense of Park Service firefighting comes out of the Park Service budget. Park managers have learned that the necessary conservation work that they had previously planned simply can’t be done because their people are out fighting fires, as if it were all so unexpected, as if those taxpayer subsidies hadn’t made the problem even worse.

Moreover, the parks’ own management plans are being distorted by adjacent development, because parks must be managed differently when hundreds or thousands of residents move next door, all with a stake in every decision. Who’s to say what direction a fire should be “managed”? Should there be a prescribed burn? Amenity-seeking migrants who line their houses up against park boundaries certainly don’t think smoke



PAUL CHESLEV/NATIONAL GEOGRAPHIC/GETTY IMAGES

*White fir trees burn inside Sequoia and Kings Canyon National Parks in California.*

is an amenity, but prescribed burns are unquestionably valuable for the health of the ecosystems they now call home.

Most wild fires start on private land, not public land. But private property owners generally entrust their own safety and their home’s protection to public employees, including members of the Park Service, who are generally pulled from other duties. Thus in effect, the Park Service is required to subsidize risky real estate development while its effective budgets shrink.

Promiscuous development occasions death and pain not only among those settling in fire-prone places, but also among the brave men and women sent to rescue them. As temperatures rise and desertification proceeds apace, park managers observe newcomers putting up new buildings next door and wonder when this madness will stop.

There are no natural disasters where there are no people present. The greater the number of people harmed, the greater the disaster. Our nation must face up to the fact that regardless of the fire policy of the National Park Service, the implicit fire policy of the nation has been to continue to subsidize and en-

courage more and more people to put more and more buildings in the path of fire. This has to stop. When it does, park managers will no longer be asked to manage the unmanageable with inadequate money and insufficient staff. Inside parks, they may be able to protect visitors or keep them out of harm’s way. Outside parks, we should adopt the same policy: Protect those in harm’s way and rescue them when you can. But let’s stop subsidies that encourage development in risky places. Let’s insist that government agencies not only guide their expenditures to serve human safety but also inform the public of the relative safety of wherever they may choose to live, using historical data, which are available, but haven’t yet been shared with the public. If we take those simple steps, we can stop encouraging people to walk into danger that will almost certainly require their protection and rescue by a National Park Service that has many other things to do. ❖

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**Roger Kennedy**, Park Service director from 1993-1997, is the author of 11 books including *Wildfire and Americans*, published this summer.

National parks within the fragile

Great Lakes ecosystem face

serious environmental threats.

But there's still hope for this vital

resource, which provides recre-

ation and sustenance to millions.

# The Fourth Coast

Ryan Koepke has fished Lake Michigan for most of his life. He first dropped bait and hook into the Great Lake with his dad at the tender age of two.

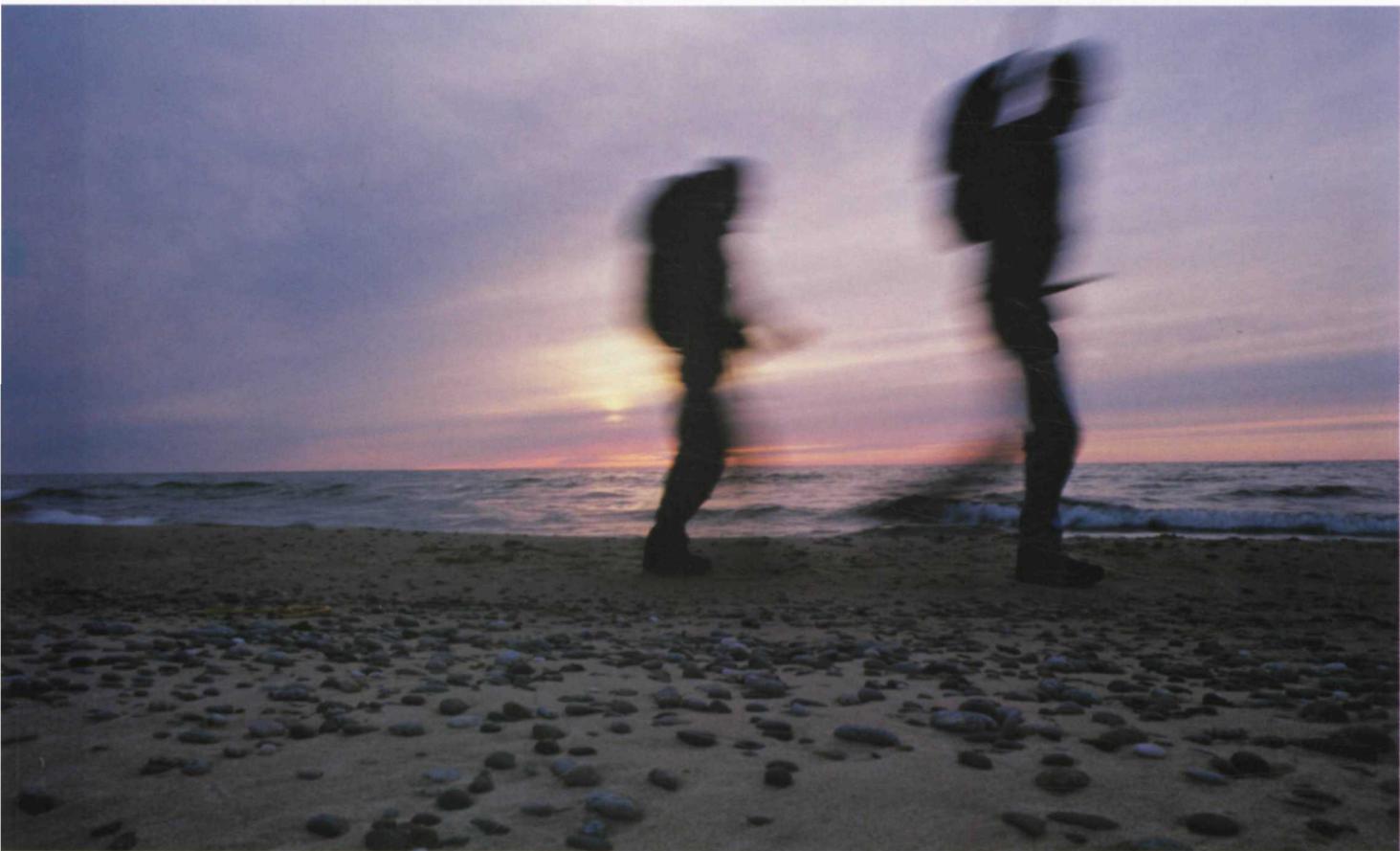
Today, he and his brother regularly take their young kids out fishing. "You get out there and it takes your breath away," he says of the vast beauty. He hopes his five-year-old daughter, Alexandria, will get to experience the same joy he did growing up as a child on the shores of Lake Michigan. But Koepke,

By Brian Lavendel

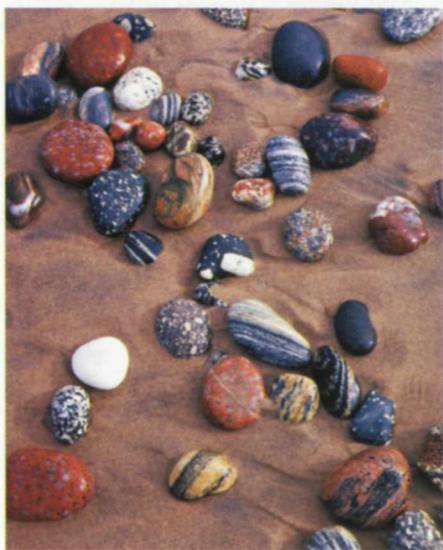


*A kayaker paddles by Sand Island in Apostle Islands National Lakeshore, Wisconsin.*

CRAIG BLACKLOCK/LARRY ULRICH STOCK



LAYNE KENNEDY



FRED HIRSCHMANN

***A father and son backpack to a remote campsite on Lake Superior (top). Colorful stones on Lake Superior's shore (above).***

who works in the visitor information center at Indiana Dunes National Lakeshore, is not certain that she'll always have that opportunity.

Now, the Great Lakes and the parks within the Great Lakes Basin face a combination of threats—from occasional sewage system overflows, to mercury contamination, to invasive exotic species, and more. These disturbances are harming ecosystems that have already suffered heavy blows. In the words of some scientists, we may be near a “tipping point” with the Great Lakes, in which a combination of ecological disturbances could send the natural system out of balance. Koepke hopes that won't be the case. But to head off such irreversible damage, he and other observers agree, will

take concerted effort.

This is not the first time the Great Lakes have faced serious threats. In the early 1900s steel mills, oil refineries, and chemical plants discharged enormous quantities of waste into these waters. One historian wrote that skies near Chicago and Gary, Indiana, “glowed red at night from iron oxide particles spewed by open-hearth ovens. Slag from blast furnaces was used to fill swampy land and extend the lakeshore, while coal tars from coke plants and acids from finishing mills coated the Grand Calumet River.”

At the same time, overfishing caused precipitous declines in fishery harvests. Intensive logging on the shorelines and along rivers and streams poured mountains of sediment and

debris into the lakes. Raw sewage sometimes found its way into the lakes, because of poor or nonexistent water treatment systems.

Today, the dangers facing the Great Lakes are less obvious, but perhaps no less threatening. Although industrial and sanitary wastes, fishing, and logging are more closely monitored and managed today thanks to legislation passed in the 1970s, the Great Lakes are still under duress. The 18 national park units within and around the Great Lakes face these same threats, to varying degrees, on the basis of their location within the Great Lakes Basin.

Along the southern shores of the Great Lakes, less than an hour's drive from downtown Chicago, lies Indiana Dunes National Lakeshore—15,000 acres of dunes, wetlands, woodlands, and beaches stretching along 25 miles of Lake Michigan's shoreline.

Last year, more than 2 million people visited the park—more than visited Glacier National Park in Montana—but sadly, day-trippers and out-of-town tourists can't always swim at the sandy beaches or eat the fish they catch from the shore.

"Our sewer systems are old," explains Wendy Smith, an educator at the Great Lakes Research and Education Center at Indiana Dunes. When heavy rain comes, the sewers



"can't accommodate all the storm water, so some of the mix goes straight into the waterways without being treated." That sometimes means park authorities must post signs advising visitors not to swim in Lake Michigan.

Anglers, too, must exercise caution before putting the day's catch on a dinner plate. Visitors are advised not to eat large fish. "There are a lot of fish in this region that you don't eat, period, because of the accumulation of toxic contaminants," reports Smith. Many fish species harbor unsafe levels of PCBs—a leftover from industries decades ago.

Fortunately, sewage and industrial waste are better controlled today, and

beach closings are less frequent. Meanwhile another dire threat has emerged: the introduction of alien fish, animal, and plant species. Researchers say at least 170 aquatic invasive species currently live in the Great Lakes Basin—and a new species is introduced on average once every eight months.

Lake Michigan has already been hit hard by invasives, according to Koepke, who warns that if the next looming threat—Asian carp, already discovered in the nearby Mississippi and Illinois

***Invasive zebra mussels (middle) and pollutants threaten a fishing economy that relies on the health of large-mouth bass (right).***



# The Fourth Coast



**A girl swims off the shore of Apostle Islands National Lakeshore, where park staff are struggling to restore the native ecosystem.**

Rivers—gets into the Great Lakes, it could portend the end of the fishery altogether. Like an underwater vacuum cleaner, the Asian carp can filter up to 18 liters of water per hour, removing vital life-giving plankton from the lakes every minute.

Other invasive species that have caused severe ecological disturbance include the fecund and ravenous zebra mussel, the adaptable and voracious round goby, and the parasitic, blood-sucking sea lamprey. These and other invaders alter the food chain and contribute to sharp declines of lake perch, lake trout, and other fish.

“Twenty-five years ago you could go out there and catch an entire bucket of perch,” recalls Koepke. Not today.

As zebra mussels filter lake water, water clarity increases and aquatic plants grow in number and size, causing problems for recreational boaters and swimmers, and even blocking water-intake pipes during storm events. Meanwhile invasive plant species threaten to out-compete rare and endangered native species. Such is the case in the northwest corner of the Great Lakes Basin, where Apostle Islands National Lakeshore—an archipelago of 21 emerald islands surrounded by the cold, deep waters of Lake Superior—faces green invaders.

The rugged, rocky shores here harbor old-growth forests, sandstone bluffs, sea caves, more than 100 bird species,

## A Campaign to Restore the Great Lakes

**T**he National Parks Conservation Association (NPCA) and National Wildlife Federation are leading a campaign to restore and protect the Great Lakes, a group of lakes that together hold one-fifth of the world’s fresh-water supply.

The National Great Lakes Restoration Campaign is alerting Congress to the urgency of the situation and seeking increased funding to protect and restore the Great Lakes. The Great Lakes not only supply drinking water to more than 35 million U.S. and Canadian residents, but also help support the economy through industry, fishing, recreation, and tourism. The Great Lakes states generate more than \$15 billion in spending just from outdoor activities such as hunting, fishing, and wildlife watching. For the people who live by this national treasure, the Great Lakes are crucial to economic health, recreation, clean water, clean air, and a way of life.

NPCA’s Center for the State of the Parks is conducting an assessment of Great Lakes park units to guide future restoration efforts. But the broad coalition is already working to end sewage and industrial waste dumping in the lakes and clean up 26 different sites laden with toxic contamination. To help restore the lakes’ ability to repair themselves and deal with future unknowns such as climate change, the plan calls for the preservation of one million acres of wetlands. The National Great Lakes Restoration Campaign is key to NPCA’s mission to protect and enhance our national parks for future generations. For more information about these restoration efforts, and details on taking action, visit [www.restorethelakes.org](http://www.restorethelakes.org).



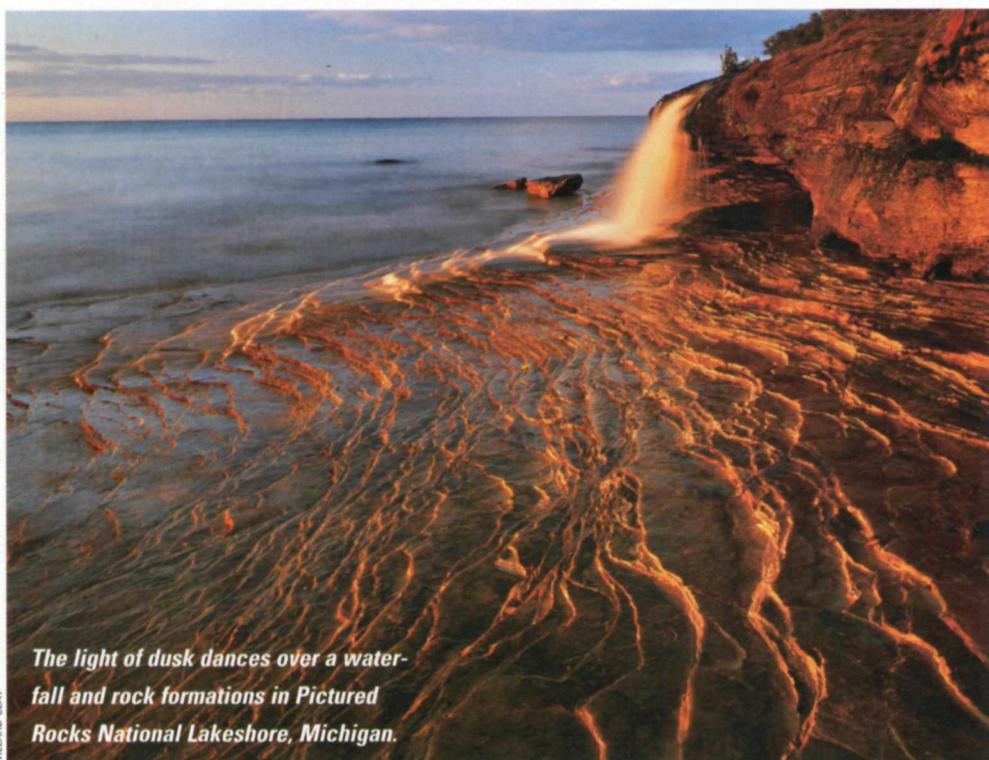
**The Great Lakes offer a variety of recreational opportunities, like fishing, kayaking, camping, and hiking.**

800 plant species, and 35 mammal species. But native plant species are threatened by invasives such as hawkweed and spotted knapweed—an invader that could “raise havoc” in the park’s sandy areas, according to Julie Van Stappen, a natural resources expert at Apostle Islands National Lakeshore.

At the Apostle Islands, ecologists have attempted to restore the native vegetation by propagating native plants and planting them in denuded or trampled areas. It’s an effective strategy but it’s time-consuming and expensive—a difficult combination in an era of tighter and tighter budgets. “Our staff is getting cut,” reports Van Stappen, and without staff, she says, she won’t be able to monitor the natural systems as well as she would like.

Yet another threat to this pristine park comes from above. The skies over Lake Superior drop contaminants such as mercury into these waters. Mercury, explains Van Stappen, forms from power plant combustion and the burning of waste. Like many toxic substances, mercury becomes more concentrated as it moves up the food chain, a process called bioaccumulation.

Van Stappen says the park’s inland lagoons have “extremely high” levels of mercury. Not surprisingly, park researchers testing blood samples from eagles and hair samples from otters have found high levels of mercury. Fish and other animals can take in mercury through direct contact from their environment and by consuming organisms that are already contaminated with the substance. The higher a creature is on the food chain, the greater the impact, whether that creature catches its prey with claws, talons, or a rod and reel.



*The light of dusk dances over a waterfall and rock formations in Pictured Rocks National Lakeshore, Michigan.*

WILLIARD CLAY

This combination of threats confronts an ecosystem that has already suffered heavy blows, some of which have affected the lakes for nearly a century, such as overfishing, urban and agricultural runoff, and toxic dumping.

In the past, the lakes had a better ability to cope with these disturbances. But the continued effects of these events combined with the loss of wetlands, the degradation of shorelines, and invasive species, have caused the Great Lakes to lose much of their ability to handle environmental stress.

It may not be long before water becomes a global priority and Americans begin to appreciate the value of the largest fresh-water system in the world. So researchers are calling on policymakers to improve shorelines and wetlands; limit existing sources of pollution; halt new exotic species from entering the lakes; and protect less-developed areas by

adopting sustainable land-use practices.

Legislation passed by the U.S. Senate in July would devote \$20 million to grant programs to restore fish and wildlife in the Great Lakes, reauthorizing legislation originally enacted in 1990 and then again in 1998. Sixty-five projects have been funded since then, focusing on habitat restoration, habitat assessments, and the impact of non-native species.

“We’ve inherited a lot of problems from the previous generation,” says Cameron Davis, executive director of the Alliance for the Great Lakes. “We owe it to the next generation not to hand those down and, in fact, to correct some of those problems today. The Great Lakes may face irreversible damage unless we act now.”

**Brian Lavendel** is an environmental writer who lives in Madison, Wisconsin.



*The Gambrill House in Monocacy National Battlefield Park is headquarters for the Historic Preservation Training Center.*

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P R E S E R V A T I O N

INSTINCT

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Dozens of Park Service employees repair the aging structures that tell our nation's history, using authentic restoration techniques from another era.

**D**eep in America's collective memory lie events that altered the course of history and carved the cultural landscape. And on the surface of the land sit the steadfast reminders of those events, like Thomas Farm in Monocacy National Battlefield, where, in July 1864, one of the Civil War's most decisive battles was waged on the quiet pastures of central Maryland. As the Confederacy pursued its last attempt to

take the war into the North, the Thomas family and their neighbors hid in the cellar, a violent clash of blue and gray thundering above their heads.

Across the country there are many such places and many such stories of war and oppression, courage and heroism. This is the story of a group of people who protect the living symbols that illustrate our nation's past, so that those buildings and canals and cannons can stand another 100 years and continue to

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By Krista Schlyer

# A PRESERVATION INSTINCT



KRISTA SCHLYERWAYFAER PHOTOGRAPHY (2)



*Cows graze on the Thomas Farm (top), the site of a decisive Civil War battle. Tom McGrath (above), superintendent of the Historic Preservation Training Center.*

inform our understanding of who we are and where we have come from.

The history of the National Park Service preservation center begins on the Chesapeake & Ohio Canal. This historic waterway—which in the 1800s served as a vital transportation system for goods heading to Washington, D.C.—had slowly fallen into disrepair since ceasing operations in 1924. When it was designated a national historical park in 1971, the Park Service had the enormous task of restoring the more than 1,000 historic structures that contributed to the workings and history of the canal. In the nearly 150 years since the locks, culverts, and canals had been built, the construction techniques employed had been largely forgotten.

As a group of craftspeople worked on the canal, they recovered these lost skills, and soon other parks began requesting the services of the budding restoration team. Demand for their abilities, in turn, sparked the 1977 establishment of the Williamsport Preservation Training Center, which was later renamed the Historic Preservation Training Center. Although it's not the only preservation group employed by the Park Service, the center is one of the few entities that operates on a national scale. Outside contractors collaborate with individual parks to tackle the majority of the work, but the preservation center's 70 staff members handle roughly 60 projects a year, totaling about \$7 million in labor and materials.

For Thomas Farm, the preservation



KRISTA SCHLIVENWANTHARER PHOTOGRAPHY (4)

center came in the nick of time. Though the Park Service designated Monocacy National Battlefield in the 1930s, little funding was allocated for its preservation until 50 years later. By the time the center's skilled workers got their hands on the farm's barn, the wood was rotting, the foundation was crumbling, and the entire structure was leaning precariously.

"Frederick County is the fastest growing county in Maryland, so these types of structures are disappearing at an alarming rate," says Tom McGrath, superintendent of the Historic Preservation Training Center. On a recent visit to the farm, McGrath pointed out the work of a carpenter cutting rotted boards away from the siding, replacing them with new wood. As is the practice, the carpenter surveys the barn, trying to determine which parts are too far gone to save, which can be kept, and how best to replace those that must be removed so that they blend with the original structure.

This barn was first built in the 1800s and reconstructed in the 1920s on the original foundation. Cows graze on the surrounding pasture, which was leased to ranchers by the Park Service so visitors feel the character of the landscape that existed when the Civil War swelled across it. Sustaining that illusion is no simple feat: Beyond the pasture to the west, cars rush along Highway 270, headed to the subdivisions that now envelop the farm and nearby Frederick.

Carpenters like Charles Woodson embrace the challenge of protecting these historical places from the weathering of time and the encroachment of development. Before joining the preservation center last year, he was working for a residential builder.

"At first I felt good about it," Woodson says. "Like I was a part of

*The Historic Preservation Center's workshop conducts various restoration projects (above), including the Curtis Freewill Baptist Church in Harpers Ferry (below), a meeting place for the Niagara Movement, one of the first civil rights groups.*



*Kalaupapa National Historical Park (below) in Hawaii was one of the team's most challenging projects. The renovation of Gettysburg's Pennsylvania Memorial (right) was a more recent project.*

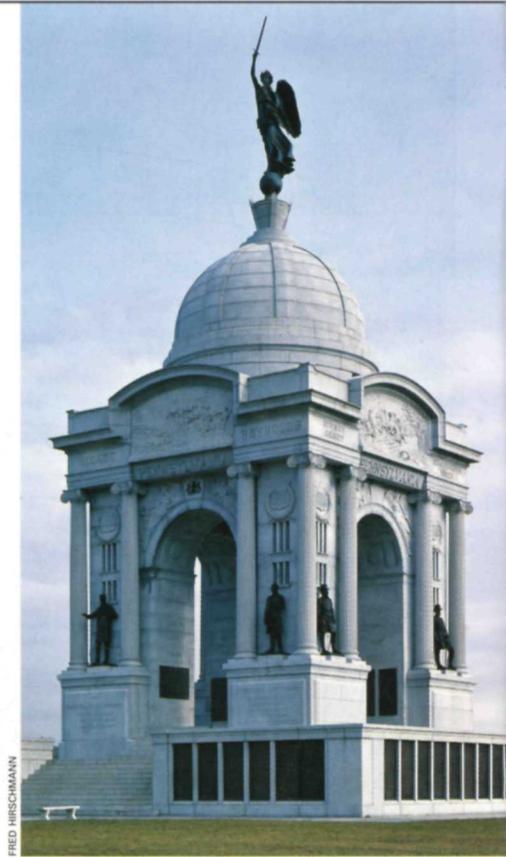
building America." But with every old house ripped down and every acre torn up to make way for hundreds of identical buildings, his outlook on the work started to change. "It just about made me sick," he says.

So now Woodson works with the carpentry team saving old structures and a bit of the past that has not yet been swallowed by bulldozers. The challenges are many. It's impossible to squeeze big machinery into the barn, so most of the work has to be done by hand, the way it was done in 1920. Sometimes whole parts of a structure are missing, so it's hard to determine the original construction specifications. In these cases, the team has to look for references in the other parts of the building and piece

together the original design.

Workers from the preservation center recently removed the front door from the Best House, a Civil War-era structure in Monocacy. The door had been pretty well beaten up over the years, subjected to five or six lock changes and at least as many coats of paint. So they transported the door to their workshop in Frederick, Maryland, where carpenter Doug Claytor began the process of repair.

Because the door is made of 200-year-old white pine, any wood replacement should be made with the same wood, from the same era, Claytor explains. But where does one purchase a 200-year-old piece of white pine? As a restoration carpenter who worked on his

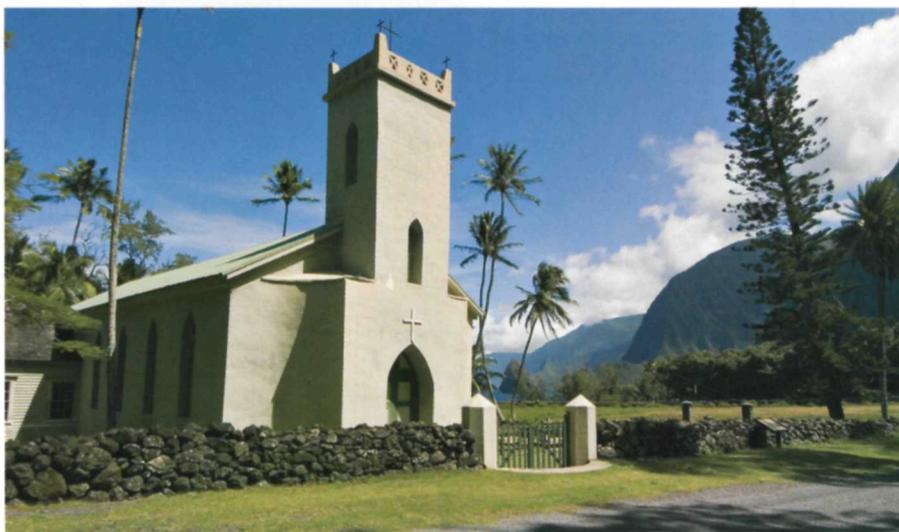


FRED HIRSCHMANN

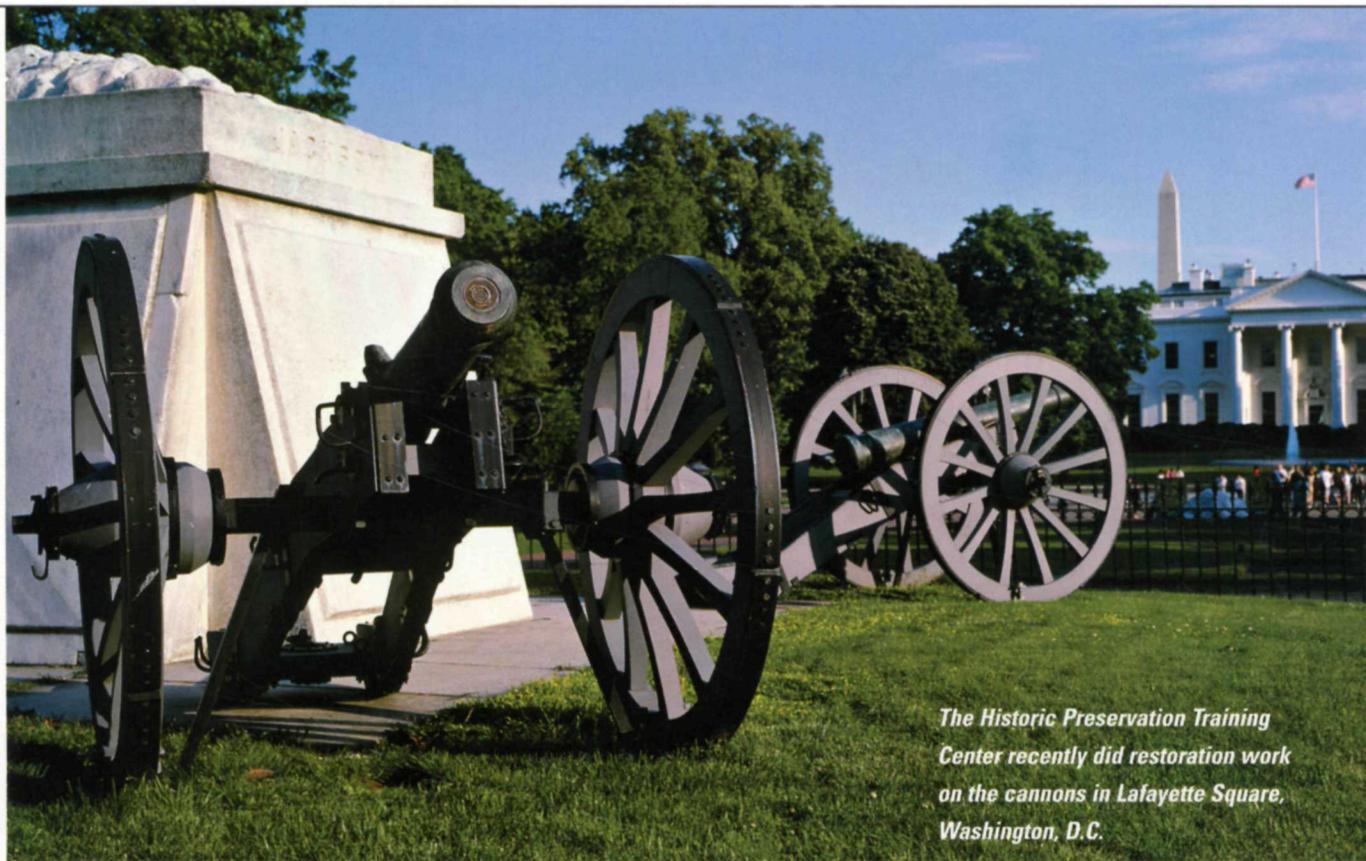
own for nearly 20 years, Claytor had amassed a stockpile of historic materials salvaged from historic places slated for demolition, and he just happened to have some ancient white pine lying around his house.

Although not all elements of historic structures get this type of detailed attention (it would be far too costly), the front door of an important Civil War site is deemed worthy. In fact, because it earned such special attention from preservation experts, that particular door revealed even more history in the process.

While inspecting the door, Claytor came across an irregular splintering and warping of the wood and an entry hole most likely caused by a bullet fired during the Civil War. Few people will ever see the bullet hole—the goal of this work is to preserve the structure and ensure



JOHN ELK III



*The Historic Preservation Training Center recently did restoration work on the cannons in Lafayette Square, Washington, D.C.*

KRISTA SCHLYER/WAYFAREER PHOTOGRAPHY

the integrity of the wood—so Claytor will record the evidence in his notes and photographs, then hide it once again under a fresh coat of paint.

Thousands of miles away, one of the team's most challenging projects is ongoing at Kalaupapa National Historical Park in Hawaii. The same degree of isolation that made Kalaupapa desirable for the forced isolation of victims of Hansen's disease (commonly called leprosy) in the late 1800s made restoring historic buildings there unmanageable for private contractors. So the preservation center took it on. Several employees moved to Hawaii for a few years and worked closely with local workers who were willing to descend a 2,000-foot cliff, stay at the bottom to work for five days, then hike back out for the weekends.

It's one of many projects that no one

else is jumping to complete. Like the case of the Grand Teton bats.

When workers at Grand Teton National Park decided to relocate the historic studio of photographer Harrison Crandall, they called on the preservation center. After the team moved the building, they discovered that the bats that had been living in the roof had followed the scent of their own urine—which had soaked into the rafters over the years—and relocated right along with the building. Because there were health concerns with all the guano that had been deposited in the past 80-odd years, the team was charged with taking the ceiling apart piece by piece, cleaning every element, and then putting it back together.

Just to make sure the bats would no longer consider the roof their home, workers have plugged all the openings

the bats had been using as entrance points and installed bat houses nearby to provide shelter.

Not everyone can do this type of specialized work, which is why training is at the heart of the preservation center's mission. The center works with community colleges, universities, and tradespeople to ensure that the skills necessary to keep historic artifacts and structures in good shape don't fade from memory as they threatened to in the middle of the last century.

But it's more than skill, McGrath insists.

"The craftsman not only has to have the skills," he says. "You have to have the underpinning philosophy—that's the art of preservation." 

**Krista Schlyer** is a writer and photographer who lives in Mt. Rainier, Maryland.

# The Changing OF THE GUARD

Increasing demands placed on border parks and icon parks are draining funds intended for broader protection of historical and natural resources.



**V**isitor bag inspections at the St. Louis Arch and weapons wands at the Lincoln Memorial. Fewer backcountry patrols in the Grand Canyon and messier bathrooms at Organ Pipe Cactus National Monument. These are symptoms of a National Park Service (NPS) that has shifted some of its focus from a long-held mission of protecting natural resources and ensuring visitor enjoyment toward issues of security.

By Anne Minard

*A border patrol car rumbles through the Pasqua-Yaqui reservation adjacent to Organ Pipe Cactus National Monument.*

# The Changing OF THE GUARD



ROBERT NICKELBERG/GETTY IMAGES

***Ironically, the Park Service is charged with safeguarding sites like the Statue of Liberty—traditionally associated with the nation's immigrant roots—while also securing the nation's borders, the subject of increasing political controversy. Above, Homeland Security disaster drills employ a chemical biological decontamination shower on Ellis Island. Below, a border patrol officer rounds up a group of illegal immigrants outside Organ Pipe Cactus National Monument.***

Park Service representatives hesitate to cite homeland security issues as a significant funding concern in light of war expenditures and broader budget issues. But park advocates believe the costs associated with beefed-up security infrastructure, more active law enforcement, and remediating the environmental impacts of U.S. Customs and Border Patrol place an undue burden on the Park Service (see sidebar, opposite page).

Apart from the national icons that are likely targets for terrorists, public

lands along the Mexican border are a top concern. The Interior Department manages 39 percent of the southern border, including seven national parks with a wide variance in the impacts of real and perceived security threats. Organ Pipe Cactus National Monument in Arizona faces some of the biggest challenges.

Jesus Rodriguez is a supervisory border patrol agent whose territory stretches from the New Mexico border almost all the way to California, and includes Organ Pipe. According to Rodriguez, between October 2005 and June 2006, 2,400 agents arrested nearly 300,000 illegal border crossers and seized more than 460,000 pounds of drugs.

Border patrol agents can no longer assume that the average immigrant crossing in Arizona "is coming to work at a farm," says Rodriguez. "Now we're getting rocks thrown at us. [Serious incidents] that never would have occurred a few years ago are happening on a daily basis. Aliens are sometimes robbed at gunpoint before they even reach the border." Nothing compares with the events of four years ago, when park ranger Kris Eggle was shot and killed as he tried to apprehend two armed drug runners, a



DAVID SANDERS

nightmare that remains fresh in the minds of the staff at Organ Pipe.

Fred Patton, chief ranger at Organ Pipe, fears for the safety of his staff so much that he declined to confirm the number of rangers or the volume of illegal drugs they've seized. Organ Pipe's law-enforcement rangers are aware they're under constant surveillance by drug cartels, which know when each ranger is home or not. Patton's law-enforcement staff is about half the ideal size, he says; staff turnover at the monument is about 25 percent.

Visitors to the park are feeling the effects, too. Some trails and roads are closed when hazards peak. Researchers who study wildlife in the unique desert landscape must be accompanied by law-enforcement officers, and their work is sometimes compromised when the park can't spare an escort. Other researchers occasionally thwart the park's rules, quietly packing guns for their own safety.

And Organ Pipe is only a part of the story. At Coronado National Monument, located on Arizona's border with Mexico, increased costs have largely resulted from doubling the size of the ranger force from two to five, and funding overtime pay for rangers, who must now work in teams of two for safety purposes. Padre Island National Seashore, Big Bend National Park, and Amistad National Recreation Area in Texas are all tackling similar issues. There's no telling how much the Park Service spends to combat drug trafficking alone, much less broader measures to counter human trafficking, remove abandoned vehicles, and repair the environmental damage caused by such illegal activities and efforts to fight them. Right now, these costs aren't even being measured, although an amend-

*A Park Service law enforcement ranger stands guard at Independence Hall in Philadelphia, Pennsylvania.*



WILLIAM THOMAS CORNINGER/GETTY IMAGES

## Homeland Security: Accounting for the Costs

**N**PCA has played a leading role in drawing media attention to the impact of homeland security on the national parks, and worked closely with Sen. Craig Thomas (R-WY), chair of the Energy and Natural Resources National Parks subcommittee, to introduce an amendment to the immigration reform legislation addressing the border security demands placed on the Park Service. The proposed legislation would determine the cost of overtime paid to understaffed parks whose rangers have been reassigned to icon units; assess the cost of additional training, equipment, and restoration because of environmental damage; create a mechanism to reimburse the Park Service for those expenses; and train other federal agencies to minimize the environmental impact of homeland security measures.

"When parks add rangers whose responsibility is to protect our national monuments from terrorists or to secure our borders—particularly without reimbursement from the Department of Homeland Security—it means diverting interpretive rangers, resource protection rangers, funds that would go for scientific experiments, and funds needed to maintain the parks," NPCA's Vice President for Government Affairs Craig Obey told the U.S. House Resources Subcommittee on National Parks in July 2005.

"Park Service law enforcement will inevitably play a role in border security," Sen. Thomas said when announcing his legislation. "But we need to keep their jobs focused on protecting the park [rather than] spending all of their time on international borders... or at least provide [the parks with] additional funding."

# The Changing OF THE GUARD



GEORGE H.H. HUEY

***The harsh Ajo Mountains in Organ Pipe Cactus National Monument, Arizona, act as a natural barrier to illegal immigrants; still, many people have successfully crossed the border into the park.***

ment sponsored by Sen. Craig Thomas (R-WY) would direct the Interior Secretary to assess those costs as the first step toward reimbursing the Park Service and other agencies.

Karl Pierce, chief of interpretation at the 160-acre Cabrillo National Monument near San Diego, says the park is comparatively safe thanks in part to cooperative relationships between park staff and nearby U.S. Navy facilities as well as the Border Patrol. Because Cabrillo is located on a tiny peninsula 20 miles north of the border, it doesn't get much in the way of illegal foot traffic—although officials do occasionally see attempts to cross into the country by boat.

Nevertheless, Pierce declined to say how many rangers are at that park, citing security concerns. He did say his staff is small enough that when even one ranger is called away for security detail at an icon park—as part of an NPS-wide system that pulls rangers from Western parks—it creates a strain on the other rangers. “Obviously, no leave is allowed during that period, so rangers work overtime,” he says. “It does put a burden on the rangers who are left behind.”

The situation is even stickier for Western parks that are also national icons. Chris Pergiel became the chief ranger at Grand Canyon National Park in the summer of 2002, after acting chief rangers filled the position for more than

a year. Almost immediately, he was sent to Washington for three months to be the acting branch chief for law enforcement and emergency services.

He's had to send his staff all over the country, to secure dams at Lake Mead and Glen Canyon, among other sites. And that puts a park like Grand Canyon in a tough spot. At the same time that his staff of about 50 rangers is expected to step up security, an average of ten fewer rangers are available to do it.

"As we get smaller staffs, we tend to concentrate our rangers into the most crowded parts of the park with the most public: the South Rim, the river corridor, the cross-canyon trails," he says. That makes for fewer patrols in the large park's remote backcountry, where natural and cultural resources get less protection and backpackers have a slimmer chance of being rescued if they run into trouble. Fortunately, security details have diminished as the federal government has issued fewer orange alerts in recent months. And in their wake, Pergiel said,



***U.S. Border Patrol agents like these officers in Nogales, Arizona, are increasingly relying on the efforts of Park Service rangers.***

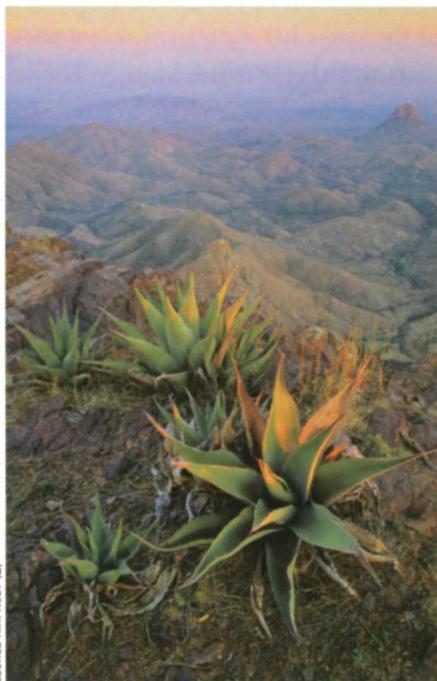
Grand Canyon security has emerged stronger and more focused.

On the other side of the country, visitors to the Statue of Liberty go through a screening process more elaborate than that in most airports. And at the St. Louis Arch, the first ranger visitors encounter might not tell them the inspiring story of Lewis and Clark, but may instead be standing guard, solemnly carrying a large weapon. On the National Mall in Washington, D.C.,

access is limited, parking is restricted, and security barriers and construction fences interrupt scenic vistas. Since September 11, NPS says annual security spending has increased by \$29.7 million at parks designated as icons like the National Mall, Statue of Liberty, Independence Hall, Mount Rushmore, and the St. Louis Arch

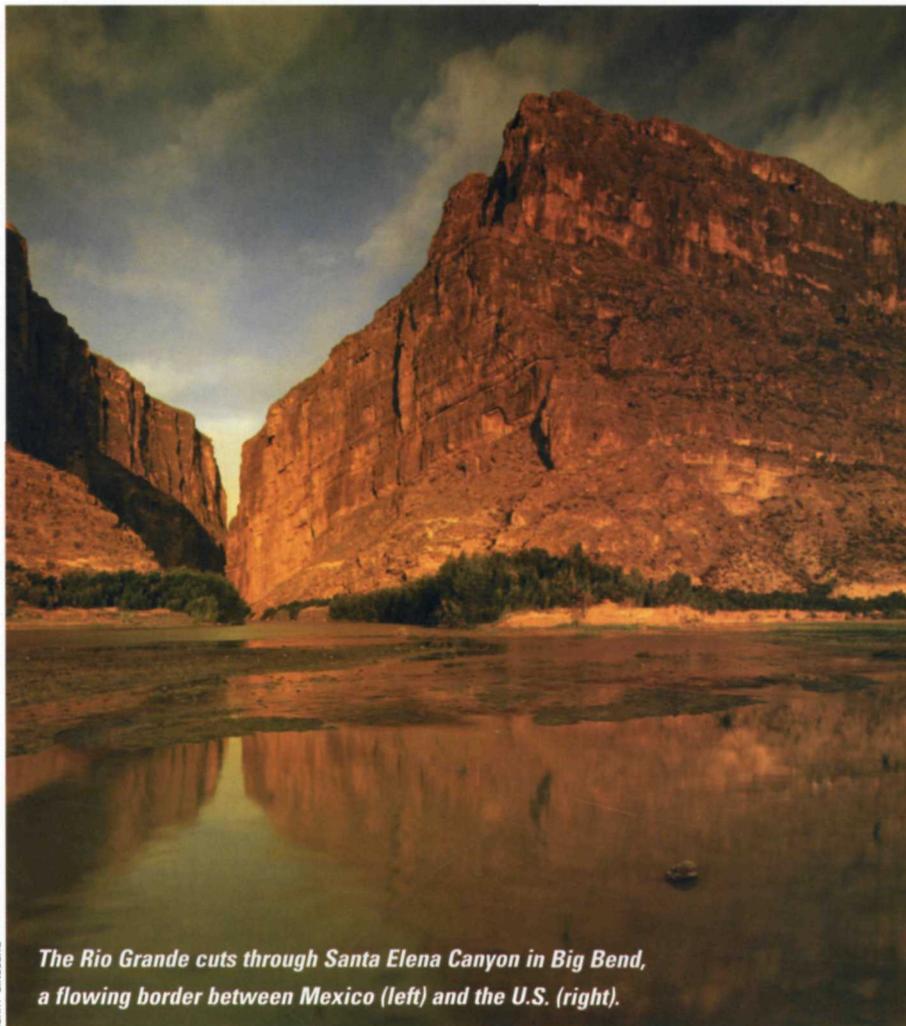
Other costs—like the impacts on visitor experiences—are harder to quantify. Catoctin Mountain Park—home to more than 1,000 native plant and animal species—has nine fewer staff positions than it did five years ago and is subject to increased security measures stemming from its location next to the presidential retreat at Camp David. According to a report by NPCA's Center for the State of the Parks, budget con-

***A view of Mexico's Chisos Mountains from Big Bend National Park, Texas (left). The Grand Canyon (right) is so vast that rangers struggle to balance visitor needs with national security demands.***



GEORGE H.H. HUEY (2)

# The Changing OF THE GUARD



*The Rio Grande cuts through Santa Elena Canyon in Big Bend, a flowing border between Mexico (left) and the U.S. (right).*

cerns have affected the staff's ability to catalogue historic letters exchanged during the New Deal period, photographs of presidential visits, and artifacts used during the era of rural industry and agriculture. Additional funds are needed to hire an educational specialist. And the park would benefit from staff and funding to combat diseases attacking park plants, such as dogwood anthracnose.

The annual Park Service budget is \$2.5 billion. After September 11, Congress authorized an additional \$90.9 million in one-time emergency and construction funding for icon parks plus \$17.7 million at border parks, according

to NPS figures. In addition, Congress has added \$5.5 million per year to base operations funding at the border parks.

Still, National Park Service Director Fran Mainella testified before Congress in May 2005 that the parks' unfunded homeland security costs total \$43 million annually. The overall cost is likely much higher. For instance, security upgrades at Independence Hall National Historical Park in Philadelphia alone are estimated to cost the park \$5 million. A 30-mile-long vehicle barrier at Organ Pipe Cactus National Monument cost approximately \$14 million to build.

According to Dave Barna, a spokesman for the Park Service, that

pinch is likely to be seen in longer construction timelines that delay the completion of new facilities and repairs to older buildings. Superintendents have to make cuts in their operating budgets, which often means leaving positions open indefinitely or filling them at a lower pay scale. And the nation's current focus has changed the types of staff hired system-wide—another potential blow to visitor experience. "Most of the job announcements tend to be law enforcement instead of interpretive rangers," says Barna, adding that there aren't as many educational programs or campfire talks available for visitors.

That's a problem that could steer the park system away from its very purpose of protecting—and showcasing—our national treasures.

"Most of the parks were created for particular purposes," says Sen. Thomas, who introduced the legislation to identify the costs of the Park Service's role in homeland security. "The water in Florida's Everglades, Grand Teton National Park, with its mountains. Each of the parks has significant resources—that's why they're parks. More and more, we are going to be required to [allow for development on] other federal lands. As that happens, it becomes more important to protect these special places we've set aside as national parks."

Of course, the most valuable gems in need of protection can't be guaranteed by officers toting machine guns or security wands, but must be watched over by botanists and biologists who know the land and whose words and deeds preserve that inheritance for the next generation. 

**Anne Minard** is a freelance writer and journalism teacher who lives in Flagstaff, Arizona.



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To find out more, please call Director of Gift Planning Morgan Dodd toll-free 1-877-468-5775 or e-mail him at [mdodd@npca.org](mailto:mdodd@npca.org)



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Please send me more information on how to triple the impact of my gift to NPCA's endowment.

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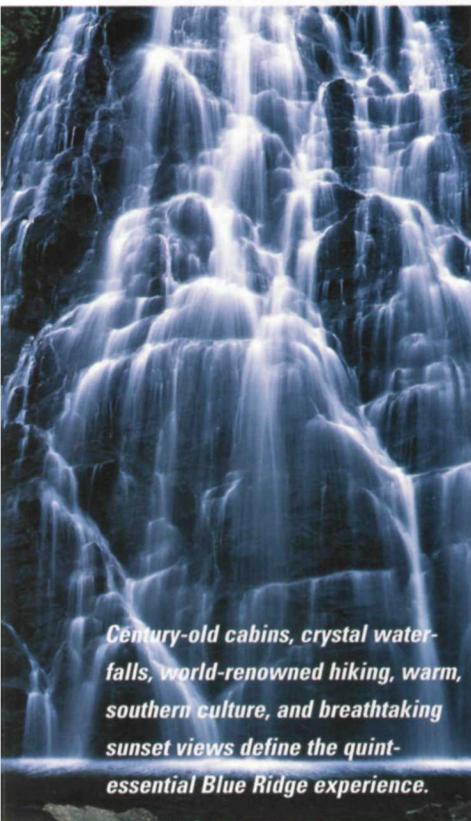
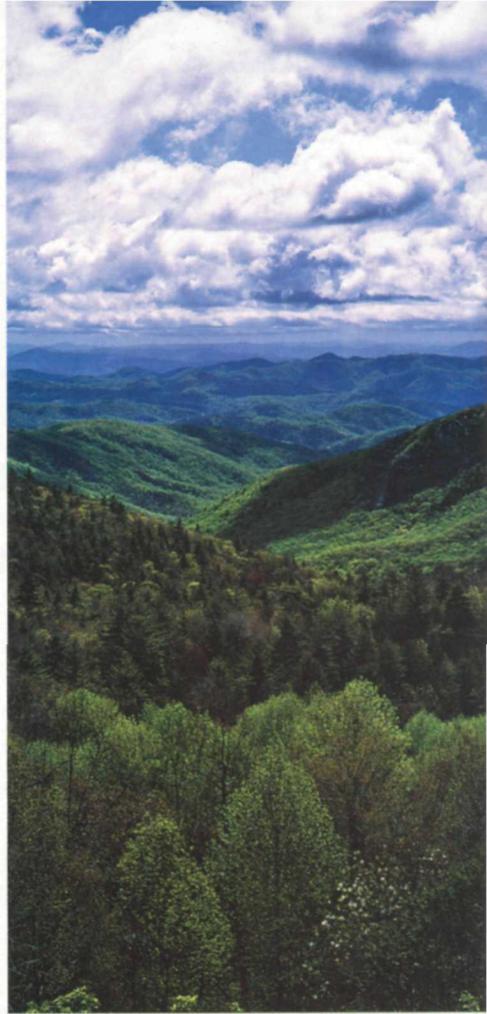
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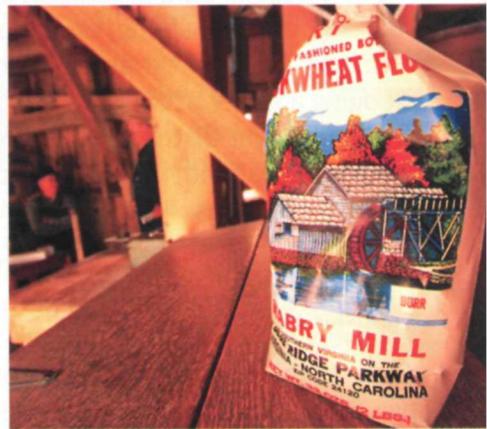
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excursions



*Century-old cabins, crystal waterfalls, world-renowned hiking, warm, southern culture, and breathtaking sunset views define the quintessential Blue Ridge experience.*

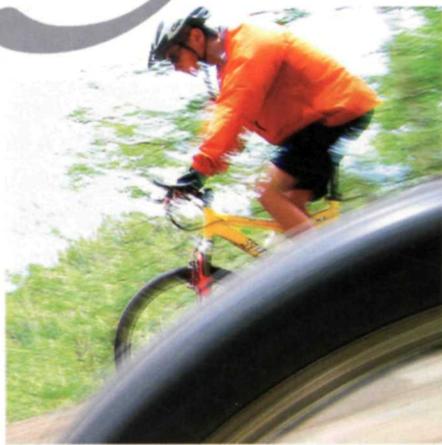


# A Blue Ridge State of Mind

Elevation isn't the only thing that shifts on a self-propelled journey through the Appalachian Mountains.

You focus your eyes on the road ahead, where the hill disappears around a steep, rocky bend. Pedals turn over in a steady rhythm, and you fight to control your breath. Beneath you, two skinny tires trace a slow, invisible line along asphalt freckled at its edges with lichen, reminding you that this isn't just any stretch of pavement, but one deeply rooted in the natural world. To your left, the landscape is brilliant with oranges, yellows, and reds on soft sloping mountains that fold into hazy horizons. It's all a nice distraction from the burning in your legs.

Welcome to the Blue Ridge Parkway—a cycling mecca. Conceived in 1935 as a way to put people to work during the Great Depression and



H. MARK WEIDMAN

encourage mountain tourism, it brought together private contractors, state and federal highway administrators, Italian and Spanish stonemasons, and thousands from the Civilian Conservation Corps, otherwise known as “Roosevelt’s tree army” for the three billion trees they planted from 1933 to 1942. Today, the parkway unites a different group: cyclists who find refuge in the mountains that

challenge muscle and mind alike.

So soak it in, keep climbing. Soon your shoulders will drop and your frazzled mind will slow to match the measured pace of your legs. You will become aware of your breath, inhaling leafy scents and birdsong; exhaling tension built up from the world you left behind in a quiet parking lot 20 miles ago.

This 469-mile, self-propelled journey isn't for the faint of heart. It traverses the very spine of the Blue Ridge Mountains that stretch from Georgia to Pennsylvania, part of the larger Appalachian range. Seven-time Tour de France winner Lance Armstrong was rumored to train here, and it's no

By Amy Leinbach Marquis

# A Blue Ridge *State of Mind*

wonder: The vertical feet climbed from end to end comes to nearly 49,000 feet—a rough equivalent to riding a bike up the Empire State Building 36 times.

But don't let that scare you away. The beauty of this ride is that you can go at your own pace, which means that anyone who's spent a respectable amount of time on a bike can ride the parkway with much joy and success. Scenic overlooks, hikes, visitor centers,

and historical sites offer great excuses to break up climbs as long as 25 miles. Thankfully, what goes up must come down: You can spin out any lactic acid (you know, the stuff that makes your legs hurt) on the heart-pumping, 45 mile-per-hour descents.

Whether you choose to conquer the entire parkway from start to finish or simply make a day trip out of it (see Travel Essentials for logistics), the story

of the Blue Ridge pulls you in like a good read. Take the northernmost 100 miles, for instance: the Ridge District. Much of this section traces the range's true ridgeline, offering views both left and right, a perfect panoramic. Hills are a little less challenging here, which leaves you with more energy to explore the mountain cabins and folklore that best define this stretch of road. The Humpback Rocks Visitor Center

(milepost 5.8) is a worthy starting point, where the restrooms are clean and roomy—perfect for the transition from plain clothes to cycling apparel.

If you happen to pass through Love Gap (milepost 15.4) around lunchtime, fuel up on warm, gooey paninis at the charming Royal Oaks country store and cabins. On a hot day, you can coast downhill on the same road for a dip in Sherando Lake, a pleasant swimming



MAP BY PETER SHU; PAT & CHUCK BLACKLEY



## Travel Essentials

One of the biggest challenges of biking the Blue Ridge is figuring out how to carry all your gear. Hitching a trailer up and down mountains is practically out of the question, so instead, choose a stretch of the parkway you'd like to explore, park your car at a central location, and ride in one direction for a couple of days before heading back to home base. It's also possible to get a taste of the parkway in a single day. Depending on your experience level and how long you linger along the way, you can cover anywhere from ten to 100 miles.

If you're in for the long haul, eliminate complicated logistics by going through a touring company like Black Bear Adventures ([www.blackbearadventures.com](http://www.blackbearadventures.com)). This outfitter, based in Asheville, North Carolina, shuttles people as far north as Front Royal, Virginia, and offers rides for every skill level—from the "Blue Ridge Sampler," with options of 60-100 miles in

three days, to a monstrous 575-mile tour that covers the entire parkway plus Shenandoah National Park's Skyline Drive in 16 days. Prices range from \$800 to \$4,700 per person, and include food, lodging, and mechanical support.

If you choose to go it alone, brush up on basic maintenance skills. You'll need to carry a map, hand pump, extra tubes, tire levers, lots of water, food, a headlight, and a taillight (some stretches of road go through dark tunnels). The best bike clothing is technical, sweat-wicking gear: Padded shorts are a must for any distance, and bright jerseys help motorists distinguish you from the scenery. Wear layers. It can get chilly in the shade and at higher elevations, even in the summer.

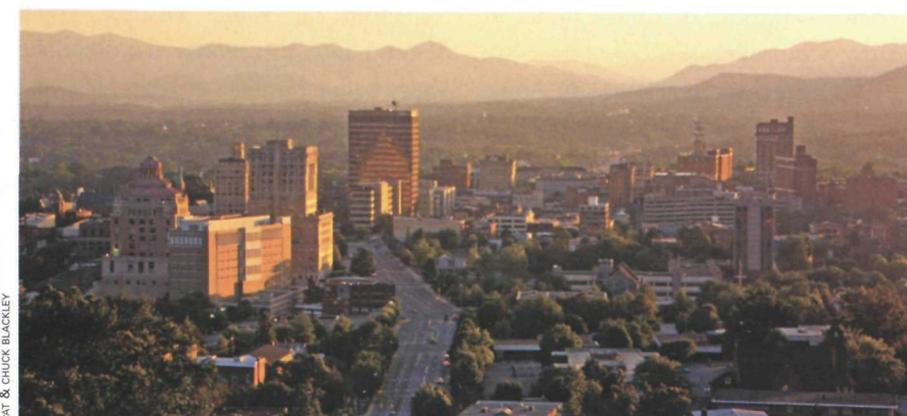
Keep in mind that traffic picks up on weekends, holidays, and when the leaves peak in mid-October. You should have experience riding in light traffic before you embark on a parkway trip.

For more information on how to plan your trip and ride safe, grab a copy of Elizabeth and Charlie Skinner's latest edition of *Bicycling the Blue Ridge Parkway*, or visit [www.nps.gov/blri](http://www.nps.gov/blri).



ANN & ROB SIMPSON

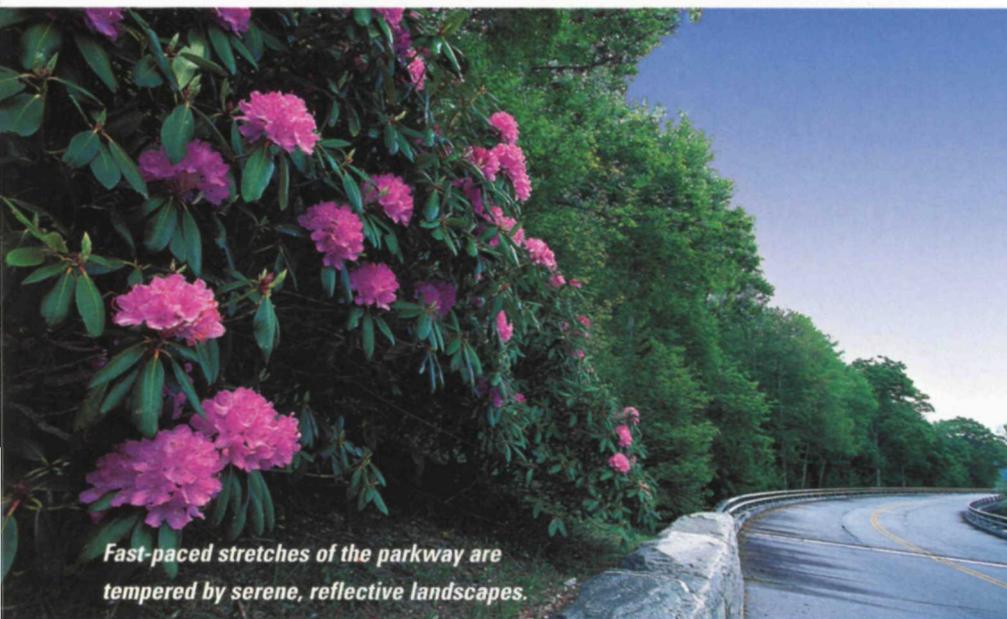
CLOCKWISE FROM TOP: The Blue Ridge Parkway snakes through an ancient mountain range that provides habitat for the cave salamander, skirts the charming city of Asheville, North Carolina, and challenges cyclists at every turn.



PAT & CHUCK BLACKLEY

HARRISON SHULL/AURORA PHOTOS

# A Blue Ridge *State OF Mind*



*Fast-paced stretches of the parkway are tempered by serene, reflective landscapes.*

ANN & ROB SIMPSON

hole in George Washington National Forest. Be aware that the climb back up to the parkway is a steep ten miles—but there's always the option of staying for a night in the cabins, where the Jacuzzis are a perfect remedy for aching muscles.

About 40 miles south, the elevation decreases significantly, and scenic overlooks offer modest but charming views of streams that twinkle and babble under shady trees. It's the ideal place to lay down the bikes and take an afternoon nap. For a change of pace, grab a canoe and float downstream with the help of James River Runners ([www.jamesriver.com](http://www.jamesriver.com)), who offer half-day rentals. Camp nearby at a primitive riverside campsite, or find a motel in nearby Scottsville.

The next section leads to Apple Orchard Mountain, the parkway's highest point in Virginia. At 3,950 feet, the ancient trees take on a different look—more craggy and gnarled than their low-lying counterparts. Then it's all downhill to the Peaks of Otter area (milepost 85.9), nestled in a solitary mountain bowl. Reward your hard work with but-

tery mashed potatoes, fried green tomatoes, and locally caught trout at the Peaks of Otter lodge. The dining room overlooks a small pond at the base of a volcano-like mountain, so ask for a window seat.

From the Ridge District, you'll descend into the mostly flat Roanoke Valley before hitting a plateau. Here, the ridge's dense forests give way to wide-open pastoral spaces and lightly rolling hills. Historic rural cabins dot the landscape between mileposts 154.6 and 252.4, offering a glimpse of the backwoods pioneer existence. Grab a camera and take advantage of the morning light to capture your own images of Mabry

***The last section of  
this ride is downhill—  
so make sure  
to hit the brakes  
now and again if  
you want it to last.***

Mill (milepost 176.2), the most photographed site on the parkway.

Forty miles later, you'll hit the Blue Ridge Music Center (milepost 213), just a few miles north of the border between Virginia and North Carolina. Stop here to get a taste of the traditional music that has thrived in the region for centuries.

You'll know when you roll into Doughton Park because of its serene pastures and historic split-rail fences. Grab your binoculars and hit the trails; hikes range from easy to strenuous. White-tailed deer, fox, and even bobcats have been known to make an appearance. If you get hungry, be sure to stop in at the Bluffs Coffee Shop and Restaurant (milepost 241), famous for its country ham and cobbler.

Twenty five miles later in North Carolina's Highlands District, you'll find yourself climbing to about 4,500 feet on Grandfather Mountain. Despite the intimidating elevation, it's primarily moderate climbs and long downhill runs until you reach Park Headquarters in Asheville.

Before muscling your way out of Asheville, you might consider spending a couple of days in this charming, cultured town. It bustles by day with locally owned craft stores, fine art galleries, and fresh produce stands—and buzzes by night with jazz clubs, Celtic pubs, and the Old Farmers Ball, where friendly locals help you fine-tune your steps to live bluegrass music. Splurge on an overnight stay at the 1899 Wright Inn and Carriage House, a mile from downtown Asheville, with its fireplaces and room-service massages.

Back on the parkway, you're nearly on the home stretch, less than 100 miles from the end where Blue Ridge meets Great Smoky Mountains National Park

## SIDETRIP: New River Gorge National River



**C**an't stand another second on a bike seat? Consider packing up and heading to the New River Gorge in West Virginia. Outdoor enthusiasts from all over the country flock here for rock climbing, fishing, hiking, mountain biking, and primitive camping—but its stellar whitewater rafting put it on the map. Established as a national river in 1978, the New River is one of the oldest on the continent, flowing northward through deep canyons from a series of slow, serene sections to heart-pounding rapids too dangerous to raft commercially. Local outfitters can help you find a happy medium: Try Class VI River Runners ([www.class-vi.com](http://www.class-vi.com)), Rivermen Whitewater ([www.rivermen.com](http://www.rivermen.com)), Passages to Adventure ([www.passagestoventure.com](http://www.passagestoventure.com)), or Wildwater ([www.wvraft.com](http://www.wvraft.com)). Rafting trips vary in length from several hours to several days during a season that runs from April through October, with a peak in visitation from mid-September to early October. For more information, visit [www.nps.gov/neri](http://www.nps.gov/neri).

on the Cherokee Indian Reservation. It's only fitting that the best place to watch sunsets comes near the end of the trip at Waterrock Knob (milepost 451). As you sit here, soaking up the scenery, you may dwell on the ache in your legs, your throbbing lower back, the sharp and sudden longing to return to your own bed. But those ailments are fleeting compared with what really lingers: the memories. The way the morning light warmed fog-cloaked mountains; the day an impossible hill became possible; the moment you let go of rattled nerves and rode with ease among motorists; and best of all, the way you've found yourself in a state of mind that one simply cannot find behind the wheel of a car. ❖

**Amy Leinbach Marquis**, assistant editor for *National Parks* magazine, is an avid cyclist.

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## Warm Weather Destinations

### Yosemite: Art of an American Icon

Explore Yosemite through the eyes of its artists, experience its changing image, and learn about the national park's impact as a cultural phenomenon.

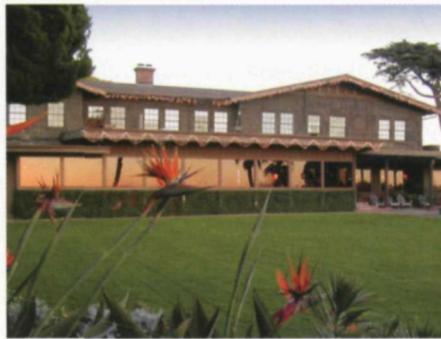
From landscape greats and contemporary photographers to native weavers, Yosemite's transition from remote haven to national destination is the focus of Los Angeles' Autry National Center's exhibition, *Yosemite: Art of an American Icon*. This exhibition will consist of more than 140 art pieces and 9,000 square feet of space. Spanning three centuries, the exhibition examines the ways in which artists have shaped the park's visual identity over time, the reflexive impact of Yosemite in their efforts, and Yosemite's ongoing relevance as a distinct, contemporary Western landscape that is visited by more than three million people each year. The exhibition also seeks to establish a comprehensive and inclusive art history for one of America's premier landscape icons.

Part One: 1855-1969, is open September 22, 2006 through January 21, 2007 in the George Montgomery Gallery. Part Two: 1970-Present is open November 10, 2006 through April 22, 2007 in the Showcase Gallery. For more information contact the Autry at 323-667-2000 or visit [www.autrynationalcenter.org/yosemite](http://www.autrynationalcenter.org/yosemite) or [www.artofyosemite.com](http://www.artofyosemite.com).



### Discover majestic whales and panoramic ocean views at historic Pierpont Inn

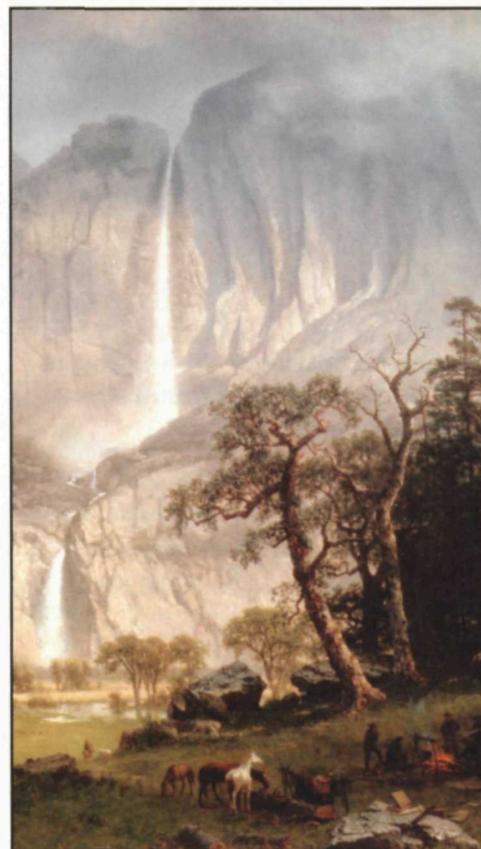
Located on the beautiful coastline of Southern California, the historic Pierpont Inn is just steps from the Pacific Ocean and a short scenic boat ride from the Channel Islands National Park. With sweeping panoramas of the Pacific Ocean and cozy craftsman-style architecture, this 77-room historic



hotel is situated on a bluff surrounded by lush landscaping. The Pierpont Inn is also within walking distance of historic downtown Ventura and the beautiful San Buenaventura Mission.

Guests are swept away with an enchanting "Island Discovery" package; this two-night getaway includes a day cruise to Channel Islands National Park, where visitors can hike trails and see wildflowers, seabirds, seals, sea lions, dolphins, and eastern pacific grey whales and humpback whales during whale watching season. Guests can also enjoy a picnic lunch for two, dinner for two at The Pierpont Restaurant, a welcome basket, and more.

Visit [www.pierpontinn.com](http://www.pierpontinn.com) or call 800-285-4667 for reservations.



## YOSEMITE

ART OF AN AMERICAN ICON

*Yosemite: Art of an American Icon* examines more than 150 years of creative vision within this spectacular landscape. Explore Yosemite's changing image and discover how artists turned a physical place into a cultural ideal.

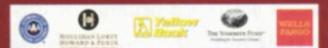
Enjoy works by Albert Bierstadt, Thomas Hill, Carleton Watkins, Ansel Adams, Wayne Thiebaud, Carrie Bethel, Lucy Telles, Mark Klett, and their contemporaries.

**Opens September 22, 2006**



Autry National Center

4700 Western Heritage Way • Los Angeles, CA 90027  
323.667.2000 • [autrynationalcenter.org](http://autrynationalcenter.org)



Left: Albert Bierstadt, *Cho-Looka, The Yosemite Fall*, 1864, oil on canvas, The Putnam Foundation, Timken Museum of Art, San Diego.

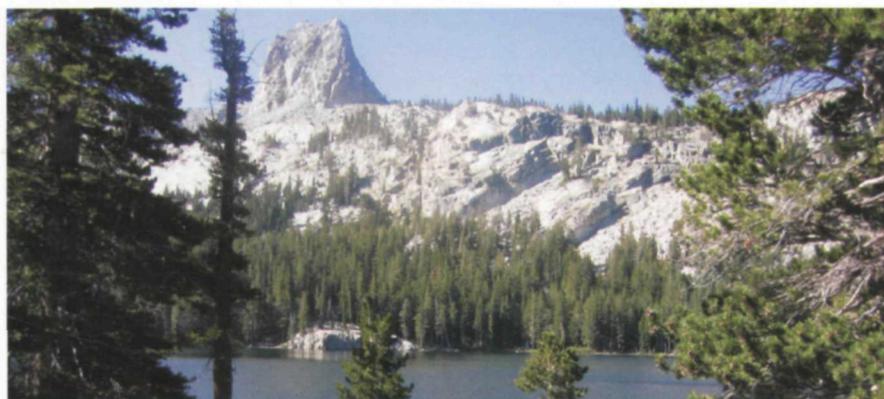
## Warm Weather Destinations

### Explore California's wild side at Mammoth Lakes

**T**he town of Mammoth Lakes sits high in the eastern Sierra Nevada Mountains of California. Mammoth Lakes is the perfect base from which to explore California's wild side. The rugged beauty of the High Sierras frame ghost towns, pristine national forest and wilderness lands, and crystal-clear lakes and streams.

The ski area of Mammoth Mountain is consistently selected as one of the top winter sports destinations in North America, with a typical season lasting from early November to late May and averaging over four hundred inches of snow annually.

With the warmer summer months comes an almost unlimited choice of outdoor activities, from trout fishing and hiking to mountain biking and golf. Mammoth Lakes is host to a number of popular music events throughout the year with outdoor



jazz and blues concerts attracting a loyal following.

Mammoth Lakes has a full complement of services to make every visit a memorable one. There are a variety of lodging options, from campsites and cabins to hotels and luxury condominiums. Mammoth Lakes has a number of great bars and restaurants offering something for every taste.

Mammoth Lakes is conveniently located within a half day's drive from Las Vegas, Los Angeles, Death Valley and San Francisco, and in the summer it is just a forty-five minute drive to the eastern entrance of Yosemite National Park.

To find out more or to request your free vacation planning guide, call 888-GoMammoth or visit [www.VisitMammoth.com](http://www.VisitMammoth.com)

## CALIFORNIA'S WILD SIDE

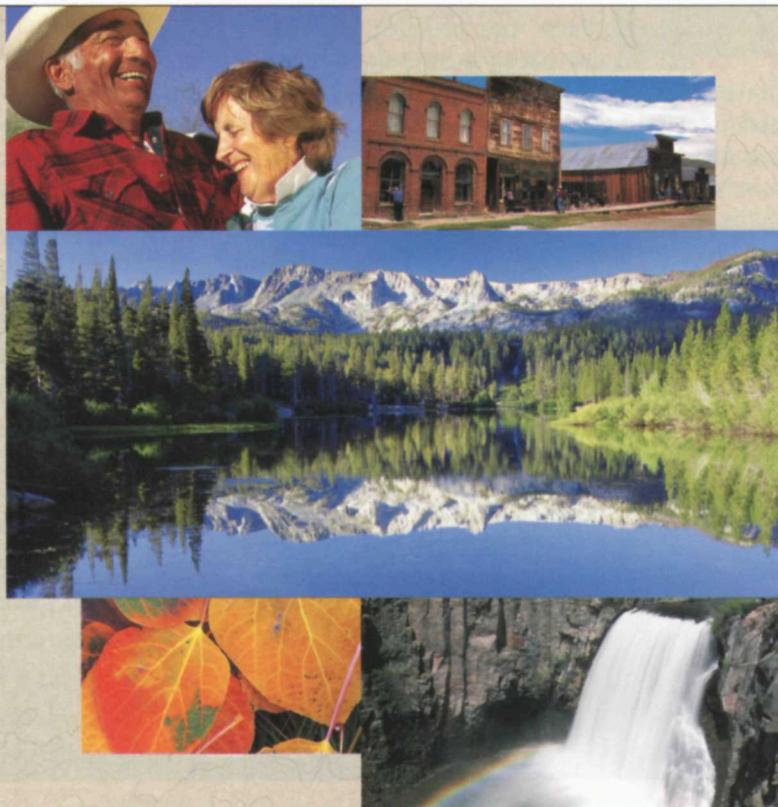
Mammoth Lakes is your base camp for adventure and exploring Yosemite National Park, Devils Postpile National Monument, Mono Lake and Bodie State Historic Park.

Cast a line, swing a club, hike a trail, enjoy music under the stars, savor fine cuisine or just relax and renew in the clear mountain air.

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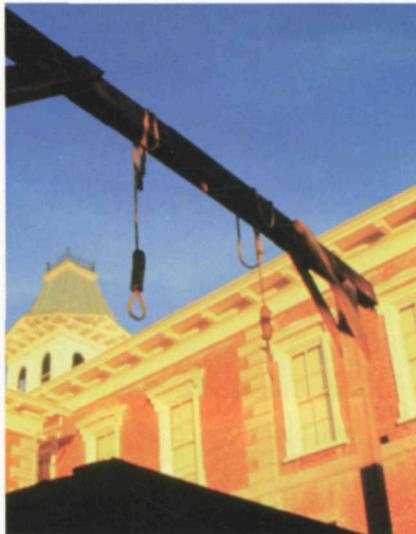


## Warm Weather Destinations

### Cultural treasures in Arizona State Parks

**S**outh of Tucson lies a cultural treasure trio of Arizona State Parks! Tubac Presidio State Historic Park, site of Arizona's first European settlement, was also chosen as the first state park in Arizona. Walk among the grounds, check out the museum and see an underground archaeology display. Further east, in the town of Tombstone, is the old courthouse, now Tombstone Courthouse State Historic Park, where exhibits include an invitation to a hanging and a tax license for operating a brothel. Head north to Kartchner Caverns State Park, where colorful cave formations help tell a unique story of conservation and dedication.

Whether you're heading north or south, let Arizona's 27 State Parks



introduce you to Arizona's cultural treasures! Visit [azstateparks.com](http://azstateparks.com) or call 602-542-1993 for more information.

### Alpine hiking for the adventurous

**A**lpine Adventure Trails Tours Inc., the Swiss Alps specialist, has led day hikers exclusively in the Swiss Alps since 1977. The tours base weekly in small three- and four-star family owned and operated Swiss inns with fine cuisine; and day hike the surrounding area. One- and two-week trips are offered, with a maximum

of 15 guests, and each guest has a choice of two hikes daily—one moderate, one more strenuous.

A new tour offering this year is the Isle of Skye, Scotland. For more information on all tours, contact an owner guide at 888-478-4004, e-mail [alpine@swisshiking.com](mailto:alpine@swisshiking.com), or visit [www.swisshiking.com](http://www.swisshiking.com).

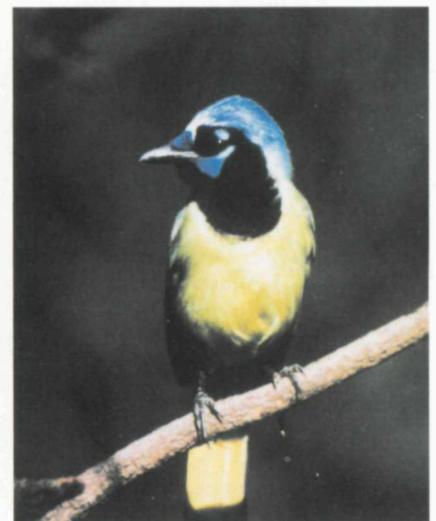


### Birders paradise at the Rio Grande

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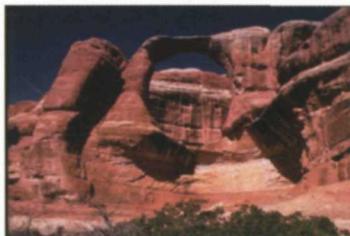


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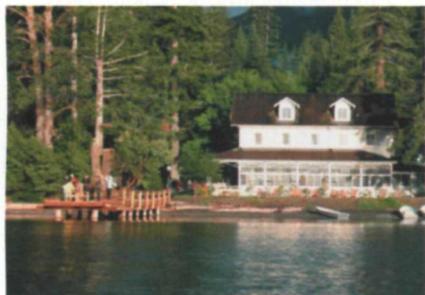


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*Photo: Historic Lake Crescent Lodge, Olympic National Park, WA*

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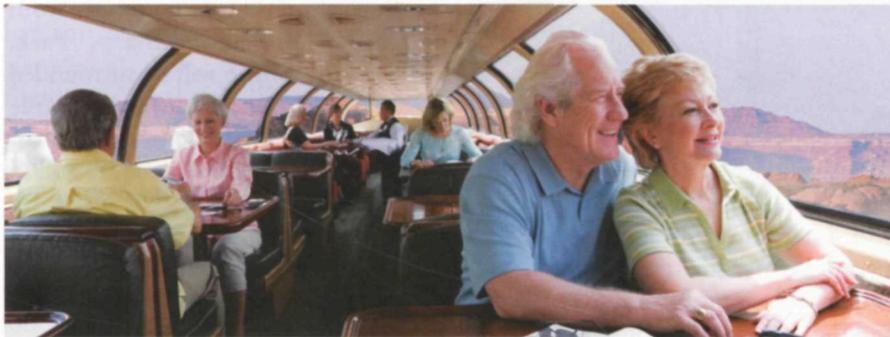
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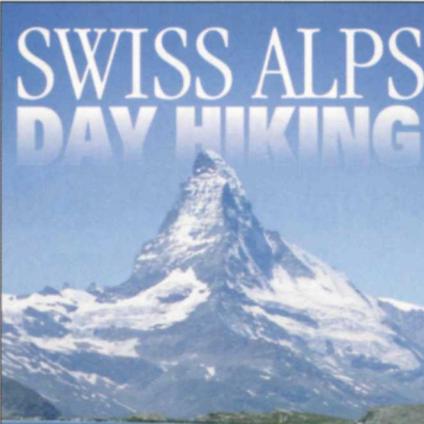

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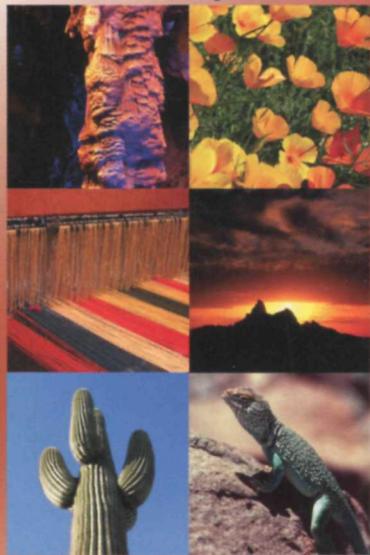



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# Rock of Ages

Alibates Flint Quarries National Monument in Texas contains the remnants of a mine, factory, and merchandise from an ancient era.

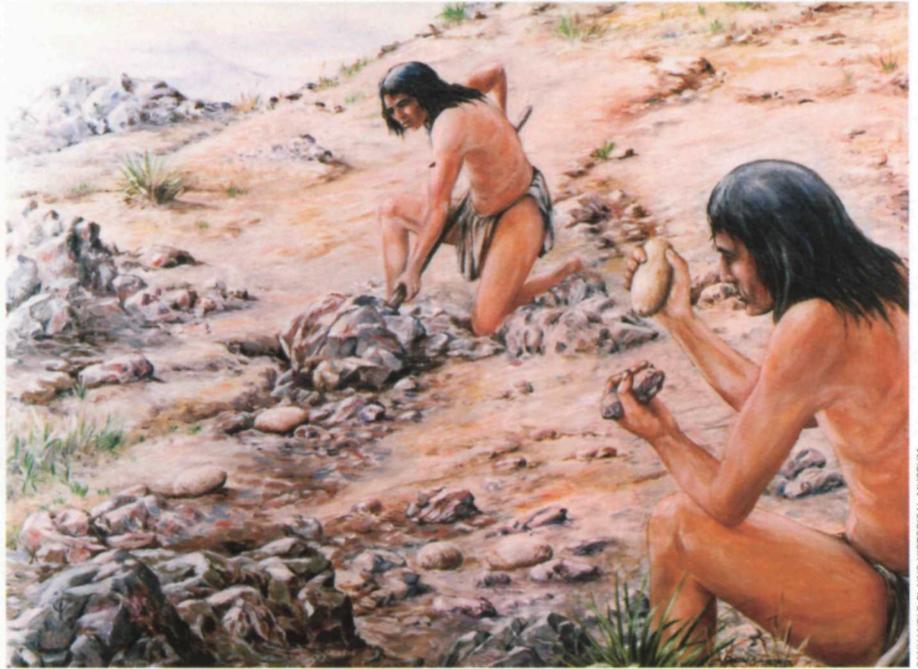
By Scott Kirkwood

Today this stretch of land in the Texas panhandle is a silent, windswept mesa covered with rubble and grass. But 1,200 years ago the air was filled with the “tock tock tock” of American Indians shaping pieces of Alibates flint into tools and weapons that were as functional as they were beautiful. Alibates Flint Quarries National Monument, which might be considered the first working mine in North America, was preserved in 1965 for its historical significance and as a way to preserve the colorful flint that still litters much of its 1,300 acres.

Archaeologist Dr. Paul Katz describes Alibates flint as “a Texas rainbow trapped in rock,” for its multi-hued variations, formed millions of years ago, when minerals seeped into a layer of clay and limestone called dolomite—not unlike the process responsible for petrified wood.

“Early hunters and gatherers didn’t even have to dig pits to quarry Alibates Flint,” says Katz. “Large boulders and chunks of flint were exposed right on the top and sides of the mesa, and some rolled into the surrounding creek valleys. Smaller pieces were available in gravel outcrops on every nearby hilltop.”

In later years, mining was done on such a large scale that some consider the land Texas’ first factory. More than 700



Artist Gustav Sundrom's rendering of Antelope Creek Indians manipulating Alibates flint.

pits are scattered throughout the monument and perhaps as many as 2,000 across the entire Alibates Flint formation extending well beyond the park's boundaries. The native people who lived along the shores of the Canadian River, referred to as Antelope Creek Indians, fashioned the flint into spear points, knives, arrowheads, and tools such as hide scrapers and drills. The creation of metal tools and weapons about 100 years ago led the “factory” to cease operations, and since then the landscape has gradually given way to nature.

“The ground is still covered with flint, and visitors can see big outcrops of flint bigger than refrigerators, but the

actual pits themselves aren't very impressive to look at anymore,” says Ed Day, a retired park ranger at Alibates who occasionally returns to work as a volunteer. “Every time it's rained for over 100 years, flint and dirt are washed back into the pits, and many of them have filled up with vegetation.”

But at one time, this area was buzzing with activity.

“The southern plains villagers living here were probably the country's first true merchants,” says Dr. Jeff Indeck, a curator of at the Panhandle-Plains Historical Museum in Texas, repository of nearly all the artifacts found at the park. “This isn't a domestic or residential

site where you might find six scrapers or eight knives or 12 projectile points—at Alibates, we’ve found literally hundreds of these tools. It’s like the Lowe’s or Home Depot of the era. There are tools in all stages of manufacture from raw materials to partially finished tools to finished tools. We don’t see that at any other archaeological site—people simply don’t leave these tools behind.”

Archaeologists have found what appears to be Alibates flint scattered all over the continent—up to 500 miles in every direction, even as far as Canada—although the wide variations in color make it difficult to prove its origin with a simple visual inspection.

The question that puzzles many anthropologists is: What exactly were these people trading for? Evidence shows that they were able to grow corn, beans, squash, and other vegetables, and bison were so plentiful that Antelope Creek Indians probably had to



**Arrowheads fashioned from Alibates flint, found in the Texas Panhandle.**

LAURENCE PARENT

work to keep them away from their crops. Although archaeologists have turned up trade items such as shells from the Pacific Coast, turquoise from New Mexico, and obsidian from volcanic environments, Indeck believes that Antelope Creek people already had most of what they needed. In fact, he speculates that they traded not so much to acquire material objects, but to promote a cultural exchange that expanded the gene pool, revealed new ways to hunt and prepare food, and exposed them to

other belief systems.

Today, people in the region are still fascinated by Alibates flint. Local “rockhounds” gather the flint from private land and fashion everything from earrings to bolo ties to book-ends. In the past, park visitors were required to make reservations with a ranger to hike out to the quarries, but now that construction crews have put the finishing touches on a new visitors center in the park, anyone can get a close look at the various colors and patterns of Alibates flint removed from private property near the park—and even take home a few small pieces. If you time your visit right, you can see rangers demonstrate how native peoples worked the flint into useful objects, turning an oval piece of rock the size of your fist into an arrowhead, millions of years in the making. ❖

**Scott Kirkwood** is senior editor for *National Parks* magazine.



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# California Kaleidoscope

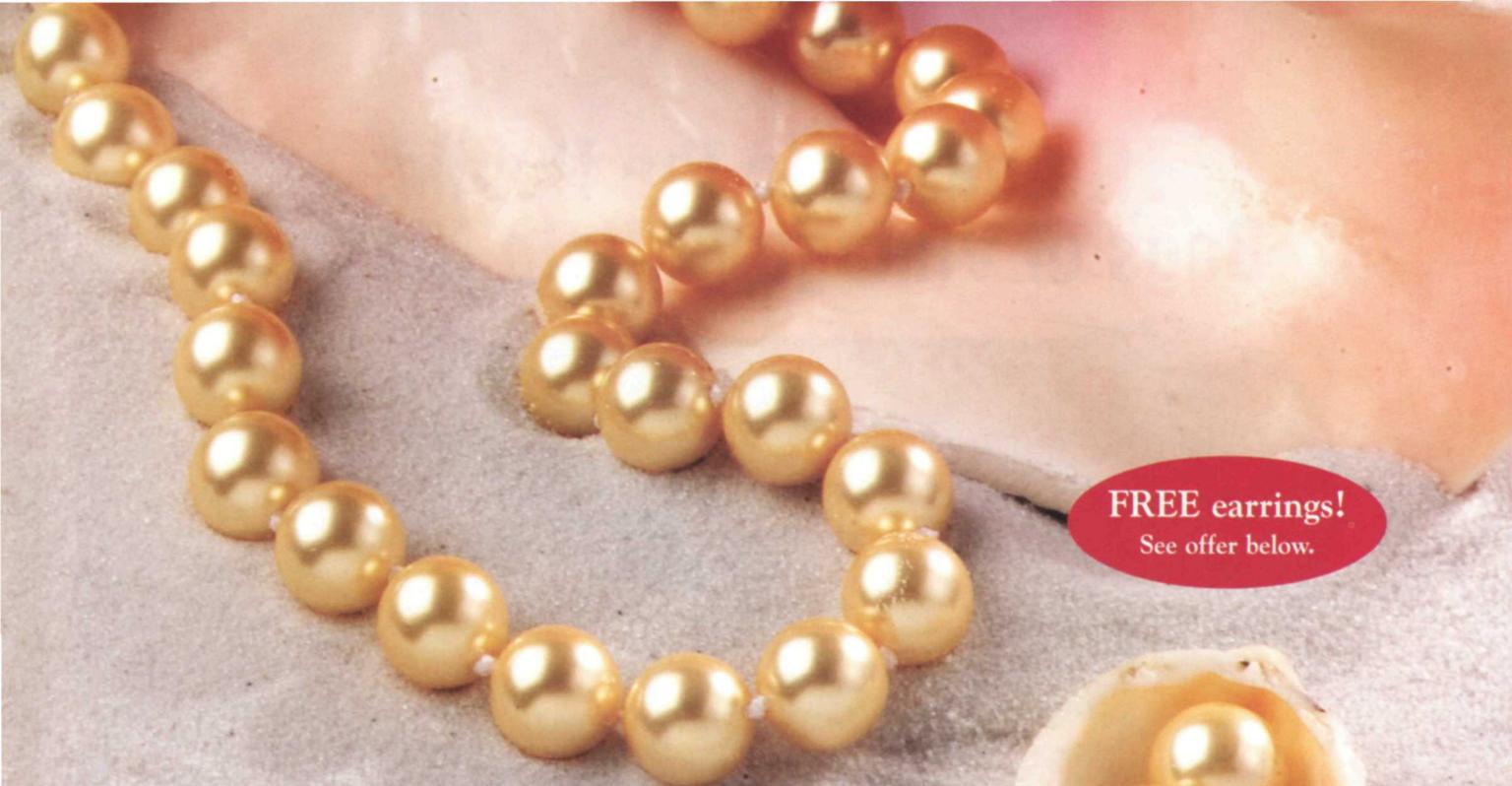
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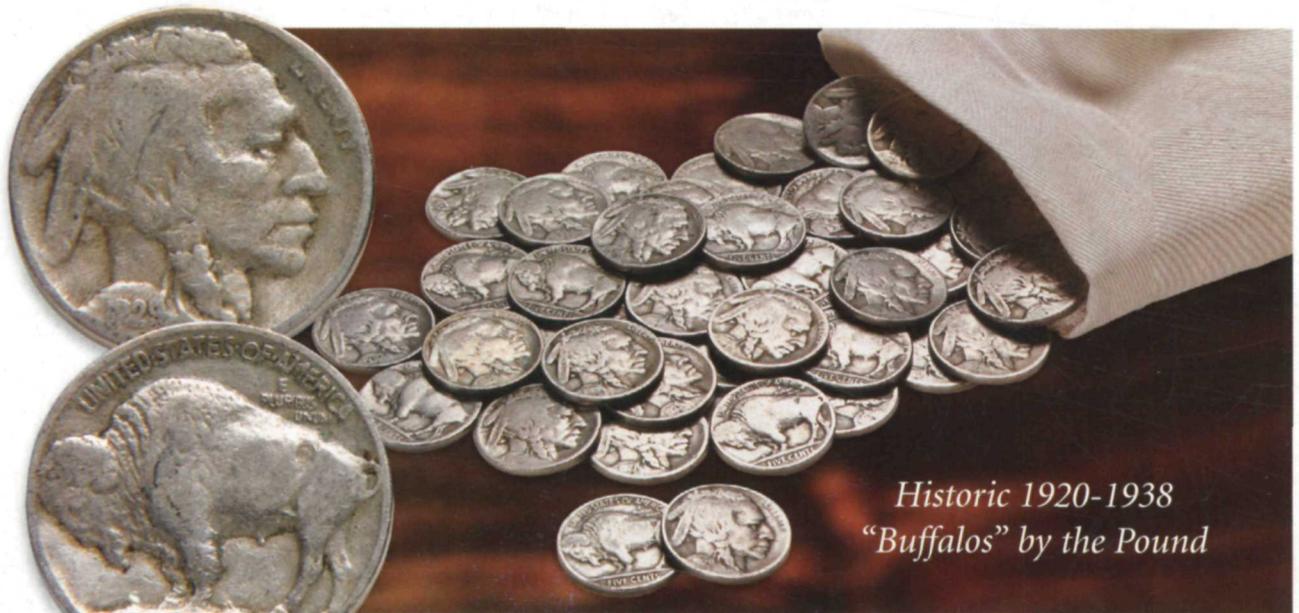
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These coins are becoming more sought-after each day. In fact, the market price for Buffalo Nickels has risen 186% in the last five years alone! The design is so popular that the U.S. now has released a brand new coin featuring the magnificent American Buffalo, a symbol of our nation's heritage. You'll get a complete set of these new coins FREE with each half troy-pound bag you order. Call today!

## Supplies Limited — Order Now!

Supplies of vintage Buffalo Nickels are limited as the availability continues to shrink. They are sure to make a precious gift for your children, family and friends that will be appreciated for a lifetime.

NOTICE: Due to recent changes in the prices for vintage U.S. coins, this advertised price may change without notice. Call today to avoid disappointment.

## 30-Day Money-Back Guarantee

You must be 100% satisfied with your bag of Buffalo Nickels or return it via insured mail within 30 days of receipt for a prompt refund.



**Yours FREE  
with Full  
Pound Order!**

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Plus FREE Magnifying Glass  
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