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The National Parks
Conservation
Association

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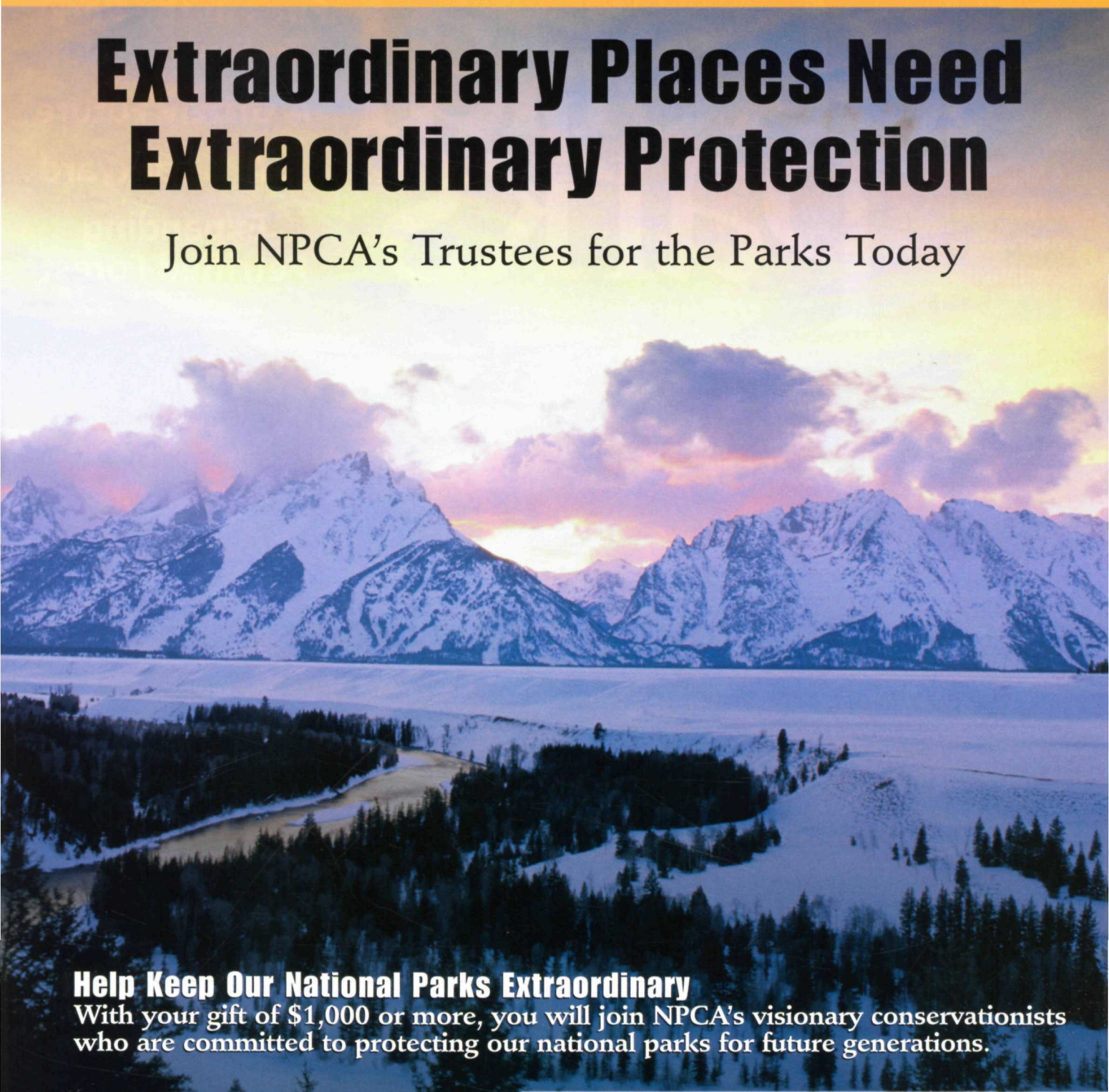

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The Magazine of the National Parks Conservation Association

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Photo by Erwin & Peggy Bauer.

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DEPARTMENTS

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Making Inroads

National park advocates move center stage, but full funding for the parks continues to be elusive.


CHAD EVANS WYATT

Nearly five years ago, NPCA and the National Park Service embarked on a pioneering program. The Business Plan Initiative (BPI) was designed to assess just how much money was needed to fully protect parks in perpetuity. The plan promised to provide the solid information needed to convince Congress and the public that the parks had been existing on a starvation diet.

Congress has indeed recognized the value of this information, which is now being used by Americans for National Parks, an NPCA-launched coalition of more than 200 groups, to encourage Congress to bolster park funding. This year, the coalition requested an additional $280 million for the Park Service, a portion of the $600 million that has been identified by BPI as a recurring shortfall.

Unfortunately, even analysis and research have not spurred Congress to fully fund the national parks.

Although the House of Representatives has allocated more than it ever has before—an additional $118.5 million above the enacted 2002 budget—it still falls far short of the amount needed.

We are making inroads. The parks will likely see a funding increase this year, and for the first time, the national parks are moving center stage in the environmental arena. A recent article in the *Washington Post* summarizes this success: "Once minor players in the environmental movement, national park advocates this year assembled a formidable coalition to press for record increases in long-term spending on Park Service operations and maintenance."

In addition, legislation that would dramatically clean up the air throughout the country passed the Senate. NPCA was one of only two environmental groups asked to testify because of our analysis of and advocacy for improved air quality in the parks.

These are important successes for our parks and for NPCA. But these successes still leave us far short of true victory. We will continue to lose plant and animal species, along with historic, cultural, and archaeological treasures. We will continue to have too few rangers leading and teaching Americans in our parks.

We need nothing short of a public outcry—one that would force Congress and the administration to fully fund our parks, to clean up our air, and to make parks a national priority. The fact that the parks are grossly underfunded is a national disgrace and should incite Congress into action.

As we enter another election season, you may wish to encourage your representatives and senators to bolster funds for the national parks. The parks demand nothing less.

Thomas C. Kiernan
President

EDITOR'S NOTE

The Fire Debate


CHAD EVANS WYATT

Most of us can remember Smokey Bear's admonition: "Only you can prevent forest fires."

The U.S. Forest Service's most visible mouthpiece implied that most fires were started by carelessness. Campfires were not properly doused, lit cigarettes were thoughtlessly tossed out of moving car windows, and unsupervised children played with matches. It was clear that we all had a role to play in keeping the forests fire free.

Today, the message is not so clear. We are painfully aware, especially after this past summer, that fires destroy, but we also know they can restore. We know that fires should never be carelessly set, especially in severe drought conditions. But we also know that fire is part of the same natural process that ensures the health of an ecosystem, like sunshine and rain. But just as too much rain can cause a flood, too much fire also can be devastating.

This past summer, western fires consumed more than 500,000 acres, displacing thousands of people. As our story on page 18 explains, weather, more than any other factor, affects the size and power of a blaze. Drought was a key reason this past season was such a record-breaker—but suppression and logging also contribute to a blaze's ferocity.

The National Park Service is working to reintroduce fire as a natural element at a variety of parks—and personnel at Grand Canyon National Park plan to experiment with four methods to determine which works best. Because, as the park recognizes, it's not a matter of IF a large fire will rage through the forests contained in national parks out West, but when.

Linda M. Rancourt
Editor-in-Chief

National Parks

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About NPCA

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.

HOW TO JOIN
You can become a member by calling our Membership Department, extension 213. *National Parks* magazine is among the benefits you will receive. Of the $25 membership dues, $3 covers a one-year subscription to the magazine.

EDITORIAL MISSION
The magazine is the only national publication focusing solely on national parks. The magazine 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. For more information, contact our grassroots coordinator, extension 222.

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, where 5 percent of your purchases is donated to NPCA at no extra cost to you.

HOW TO REACH US
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A Clear View, A Tour Through Time

The Forgotten Colony

Please allow me to elaborate on a correction in the July/August issue of *National Parks* noting that two illustrations in the "The Forgotten Colony" [April/May 2002] were misidentified. The photographs of the re-created 17th-century vessel and the women in 17th-century-style clothing are of Jamestown Settlement, a living history museum unnamed in the correction. Jamestown Settlement tells the story of 17th-century Virginia through extensive gallery exhibits and historical interpretation in three re-created settings: the three ships that brought English colonists to Virginia in 1607, a colonial fort, and a Powhatan Indian village.

Jamestown Settlement is operated by the Jamestown-Yorktown Foundation, a Virginia state agency accredited by the American Association of Museums. The museum is a wonderful complement to the adjacent Historic *James*towne, the original site of America's first permanent English colony.

I hope the information in *National Parks* will pique your readers' interest in visiting both Jamestown Settlement and Historic *James*towne for a comprehensive and engaging learning experience.

Deborah L. Padgett
Jamestown-Yorktown Foundation

An American Statesman

I was brought up in Providence, where we were taught that Roger Williams shared credit with Anne Hutchinson for founding the state of Rhode Island and Providence Plantations, yet there was no mention of her in "An American Statesman" [July/August 2002].

Robert B. Abel
Shrewsbury, NJ

A Clear View

I was disappointed to read another editorial by Thomas Kiernan [Outlook, July/August 2002] that appears to criticize the Bush administration.

Three of the last five editorials by Kiernan criticize Bush and the Bush administration. I give credit to the magazine for trying to hold true to its mission, but the way it is coming across is not positive. It should not come across as

Democrat versus Republican or conservative versus liberal.

Many different environmental and ecological organizations use their influence through the political process, and, to an extent, this is good and needed. But I also believe there is a balance between rhetoric and actions. Environmental groups need to be advocates for the environment and ecology, but should also consider building alliances with ranchers, government agencies, and the science community.

I am advocating more balance between words and actions in NPCA's message.

Tom Crofoot
Tomball, TX

Editorial Reply: We agree that NPCA must remain nonpartisan and take a balanced, thoughtful approach to park protection. Tom Kiernan's Outlooks have both criticized and praised the Bush administration when it was warranted. The current administration's management of the parks is mixed, and in NPCA's role as a park watchdog, it is our role to point this out.

A Tour Through Time

I loved my July/August issue of *National Parks*. Both the piece on the desert bighorn and the grand tour through the Southwest were quite satisfying. However, the picture on page 39 looks more like my pictures of Betatakin in the Navajo National Monument.

My visit to Betatakin and Keet Seel several years ago was one of the most thrilling experiences of my life. My son-in-law and I camped out at Keet Seel and woke to the majesty of the canyon in first light, just as it looked to the American Indians hundreds of years ago.

Adam Lynch
Monroeville, PA

In reading "A Tour Through Time," my head snapped back in the section on Canyon de Chelly. The piece said that the Hopi were the modern-day ancestors of the ancient Puebloans. The modern-day anythings cannot be the ancestors of the ancient anythings. I'm sorry for picking on such a trivial point in an otherwise interesting piece.

Larry Manes
via e-mail

To see more letters on these and other topics, please visit our web site at www.npca.org.

CORRECTION

A photograph that ran with "A Tour Through Time" in July/August was misidentified. The photograph was taken in Navajo National Monument.

WRITE TO US

Send mail to: Letters, *National Parks*, 1300 19th St., N.W., Suite 300, Washington, DC 20036. Letters can also be e-mailed to npmag@npca.org.

"YOU ARE HERE"

Congress authorized the establishment of this park in 1926, designating two-fifths of it as wilderness 50 years later. Today the park faces many challenges as air quality declines, forest pests invade, and land use patterns around the area change.

Answer: Shenandoah National Park, Virginia

NPCA

ParkScope

News and Notes

BY RYAN DOUGHERTY

MOTORIZED USE

Snowmobiles to Stay in Yellowstone

Park Service decision disregards heavy public support for a ban.

YELLOWSTONE N.P., WYO.—Though the people don't want them and science has proven their harm, snowmobiles will continue to roam Yellowstone and Grand Teton national parks.

The National Park Service in June announced that the noisy, polluting machines would remain at the parks with "very strict limitations." Park advocates immediately decried the decision, citing, among other issues, the fact that about 80 percent of the more than 350,000 public comment letters favored a ban. The Park Service received the letters in response to its supplemental environmental impact statement.

"We are very disappointed that the Park Service dismissed the overwhelming public support in favor of the bans," said Steve Bosak, NPCA's director of motorized use. "People believe in protecting the parks, and they understand that is more important than giving a small group of people who want to use snowmobiles the right to pollute and disrupt the park experience for everyone else."

Though the Park Service has yet to provide specifics of the plan, the agency has indicated that it will require snowmobiles with reduced emissions through new technology and may require that those who ride snowmobiles do so on a guided tour or after specialized training. The plan, which may not be released until this winter, would go into effect by winter 2003-2004.

Meanwhile, legislation introduced in the House and Senate, the bipartisan Yellowstone Protection Act, would uphold the snowmobile ban issued in November 2000. NPCA strongly supports the legislation and is working to add co-sponsors.

"The administration has said it will allow snowmobile use in the parks and will work out the details later," NPCA President Tom Kiernan said at a press conference announcing the Yellowstone Protection Act. "This is not the right process."

Rep. Rush Holt (D-N.J.), who introduced the House bill along with Rep. Christopher Shays (R-Conn.) said Congress must protect Yellowstone.

"We must do this, not as Republicans or Democrats but as Americans who believe we have a moral obligation to safeguard the world's oldest national park," Holt said.

Following the decision by the Clinton administration in November 2000 to phase the snowmobiles out of the parks by 2001-2002, the snowmobile industry filed a lawsuit. Settling that suit, the Bush administration then ordered further study of snowmobiles in the parks and invited public comment. That invitation drew more than 350,000 comments. In April, the Environmental Protection Agency called a snowmobile ban "the best available protection for the parks."

CARLTON STOBER

The snowmobile issue has been hot at Yellowstone since 1997, when an animal rights group, Fund for Animals, sued to force Yellowstone to examine the impact that snowmobile use had on the park's wildlife. Snowmobile advocates contend that a ban would be unfair to riders and also to businesses that rely on snowmobile sales. The issue attracted heavy media attention last winter when rangers at the park began wearing gas masks because of the choking fumes emitted by snowmobiles.

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ENERGY EXPLORATION

Drilling Threatens Seashore, Turtles

Park Service works to protect park resources during oil exploration.

PADRE ISLAND N.S., TEX.—Oil exploration is under way within Padre Island National Seashore, bringing heavy truck traffic that park advocates worry will disrupt visitors and threaten the endangered Kemp's ridley sea turtle.

The BNP Petroleum Corporation has already drilled a natural gas well within the park, bringing truck traffic along 15 miles of the Gulf beach. BNP intends to drill several more wells at the seashore.

"This could mean that, for the next five to ten years, visitors to the seashore would see heavy truck traffic running up and down the Gulf beach coast," said Randy Rasmussen, NPCA's Southwest regional program manager.

ASSOCIATED PRESS/DAVID PELLERIN

A drill pipe is added to increase the depth of the gas rig on Padre Island National Seashore.

"There is no question that would be a huge impairment to visitor experience," he said. "Our national seashores should be places where the public can escape the crowding of large cities and enjoy a pristine beach setting."

In March, the National Park Service (NPS) released an environmental assessment for BNP's permit to drill its second and third wells at Padre Island. The Sierra Club, NPCA, and others criticized the study, stating it did not fully detail potential impacts to park visitors and the Kemp's ridley sea turtle.

They fear that the trucks will create deep ruts and prevent the turtles from crossing the beach and establishing their nests. Park staff have worked for more than two decades to restore nesting sites at Padre Island, with some success.

In response, the Park Service in late July released a revised study on the proposed wells. The study was open for public review through late August.

"It now has a very thorough analysis, especially for endangered and threatened species," said park Superintendent Jock Whitworth. "Our goal is to have the best program possible to manage oil and gas activities while protecting the park."

Responding to criticism, BNP officials have said that all steps are taken during drilling to ensure that nesting turtles will not be affected. Spokesman Scott Taylor has said trucks move slowly down the beach and that many BNP employees attended "turtle school"—training sessions with park staff about the turtles and their nesting habits.

Park officials also monitor the areas that trucks travel through, looking for tracks up to the sand left by the nesting turtles. When nests are found, park staff remove them from the beach and place them under incubation, said Donna Shaver-Miller, staff leader of the Padre Island Field Research Station.

The park has briefed BNP staff on what to look for during nesting so that they know what the tracks left by the turtles look like and can report them to park staff upon finding them.

When Congress established the seashore in 1962, they made provisions to allow mineral rights below the seashore to remain in state and private ownership. These rights can then be leased to developers, who must adhere to regulations designed to protect the parks. At press time, nearly 700 oil and gas wells existed in 13 national parks, NPS officials said.

Among those parks until recently was Big Cypress National Preserve in Flor-

NPCA Notes

Public Lands Day

On September 28, an estimated 70,000 volunteers at close to 500 sites across the country will participate in the ninth annual National Public Lands Day. The event, the largest grassroots volunteer effort organized on behalf of America's parks, rivers, lakes, forests, and beaches, is directed by the National Environmental Education & Training Foundation and other nonprofit organizations, including NPCA. Volunteers will build trails and bridges, restore facilities and historic structures, plant trees, and improve wildlife habitat. Event organizers expect more than $8 million of work to be done.

—Jenell Talley

ida. This spring, the Bush administration pledged $235 million to buy the preserve's mineral rights. Reaction among conservationists was mixed. While praising the administration for protecting the park, some asked why such a policy was not extended to other parks, such as Padre Island, which is in the president's home state.

They also noted the Bush administration's recent attempts to explore part of the Arctic National Wildlife Refuge in Alaska for oil. Administration officials, however, have said that each case must be evaluated on its own merits.

The Bush administration has made no secret of its plan to expand oil and gas exploration on federal lands, which it says is necessary, as demand for natural gas continues and current gas wells tap out. Since exploration within parks does not seem likely to end anytime soon, it remains up to NPS to protect the parks.

"It's been the role of the Park Service to make sure that when (developers) access these areas, they do so with as little impact as possible," Whitworth said.

REGIONAL REPORT

BISCAYNE N.P., Florida—Three years of legal wrangling ended in June when the seven aging houses in Biscayne Bay known as Stiltsville were ruled public property. Three environmental groups, including NPCA, sued last year to open the cottages to the public. Under the National Park Service ruling, current Stiltsville occupants can continue to use the structures until a final plan for the area is completed, probably within a year. NPCA participated in federal mediation to identify plan options. Stakeholders involved in the mediation recommended the creation of a public, non-profit trust to manage the structures. Mary Munson, NPCA's Sun Coast regional director, said such a trust could help raise the hundreds of thousands of dollars needed to make safety upgrades necessary to allow public access.

DENALI N.P., Alaska—Legislation recently introduced in Congress would permit recreational snowmobiling in the 2-million-acre wilderness core of Denali National Park in Alaska. If passed, the legislation would allow unlimited, recreational snowmobiling in approximately 20 percent of the federally designated wilderness within the park. NPCA opposes the legislation and is working to prevent it from being passed. Joan Frankevich, NPCA's Alaska regional program manager, said that more than 95 percent of public lands in south-central Alaska are already open to snowmobile use. The noisy, polluting machines do not belong in the Denali wilderness, Frankevich said. "If any place should remain closed (to snowmobile use), it is Denali, the first national park in Alaska and sanctuary for some of the most viewed wildlife in North America."

AIR QUALITY

Bush's Clear Skies Plan Bad for Parks

Administration's proposal to alter the Clean Air Act draws criticism.

WASHINGTON, D.C.—The Bush administration recently announced its intent to relax air pollution laws affecting 17,000 of the nation's oldest and dirtiest power plants, oil refineries, and other industries. The announcement sparked protest from environmental advocates and lawmakers who consider the plan a concession to big industry that would harm parks and people.

The Environmental Protection Agency in June announced new rules that would weaken the current New Source Review laws requiring industry to install up-to-date pollution controls when expansion or repairs increase pollution, with provisions to protect parks and wilderness. The program offset a loophole in Clean Air Act amendments that exempted existing industry from following the new requirements.

Park and public health advocates view the Bush administration action as the worst attack on the Clean Air Act in the law's 32-year history.

"The proposed rollback of the Clean Air Act would result in more pollution in America's parks and communities," said Joy Oakes, director of NPCA's Clean Air for Parks and People Campaign. "The administration is taking care of big polluters, not America's national parks."

The announcement followed years of industry lobbying. Industry has long complained that New Source Review was cumbersome and bad for production. Park advocates, however, view the action as another threat to the already dangerous levels of air pollution in the parks. The EPA is likely to face a court challenge to the changes, analysts say.

Despite the protection promised to parks in the Clean Air Act, things have been getting worse at many national parks over the last decade, park advocates say.

For example: summer days in Great Smoky Mountains National Park often have higher levels of smog than those in a major city; global climate change is melting glaciers at Glacier National Park; and mercury deposition threatens ecosystems at Everglades, Big Bend, and Acadia national parks.

The Bush administration's Clear Skies Initiative (CSI), which would set pollution caps for nitrogen oxide, mercury, and sulfur dioxide, was introduced as legislation in July. Utilities could buy credits from other utilities if they fail to meet the caps.

Park advocates have strongly opposed that plan, however, stating that CSI doesn't go far enough, fast enough.

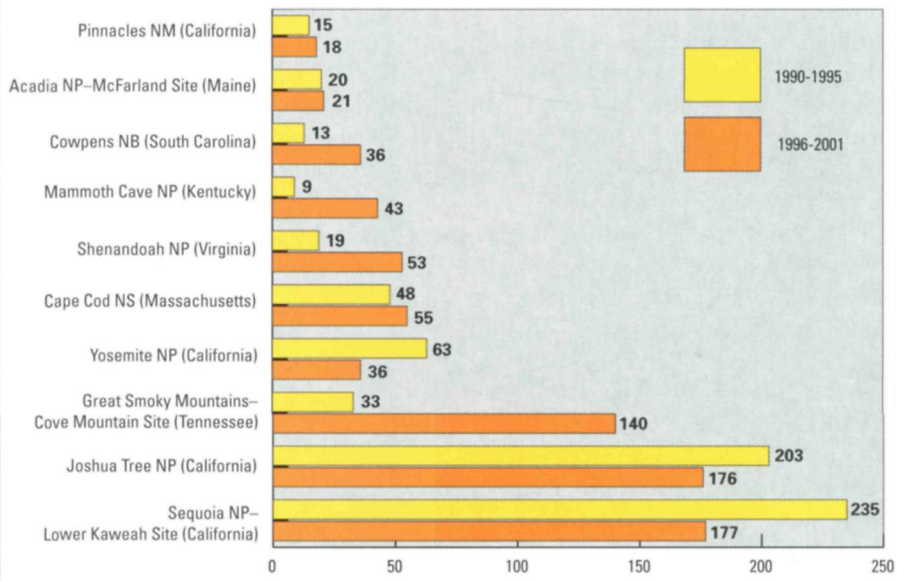
"The Clear Skies Initiative creates a smokescreen for the rollbacks of the Clean Air Act," said Don Barger, NPCA's Southeast regional director.

"While the science and regulation of air pollution can be complex, one thing is simple: We must do more, not less, to protect the parks and people from air pollution. This administration is going in the wrong direction."

Another piece of legislation introduced in the Senate, the Clean Power Act, and a House companion bill would require deeper cuts in emissions of the three pollutants included in Bush's plan, in less time. Unlike Bush's plan, the Clean Power Act also would cut carbon dioxide emissions, which can have a tremendous impact on parks through global climate change.

In June, the Senate Environment and Public Works Committee voted to adopt the Clean Power Act. NPCA called the bill "an essential step to protect America's parks and people."

Days with Unhealthy Ozone Levels at Selected National Park Sites, 1990-2001.



Of all the ozone-monitoring sites within the National Park System, these are the ten with the highest number of unhealthy ground-level ozone days since 1990. Unhealthy ozone days are those for which daily maximum 8-hour ozone average concentrations exceeded 84 parts per billion, or PPB.
Source: The Air Resources Division of the National Park Service.

INGRID GEHLE

Take Action

To support clean air in parks, write to your members of Congress and ask them to support the Clean Power Act, not the Clear Skies Initiative: United States Senate, Washington, DC 20510; United States House of Representatives, Washington, DC 20515.

Security, Fire Duties Strain Park Rangers

Park Service's field staff reaches its lowest level in 20 years.

WASHINGTON, D.C.—With the National Park Service's rangers and other staff out fighting wildfires and bolstering homeland security, it is a safe bet that visitors did not see as many rangers in the parks this summer and that some projects were pushed to the back burner.

"There's no aspect of field park operations that has not been affected by the combination of a very difficult fire season and homeland security," said Ken Mabery, president of the Association of National Park Rangers. "The impacts to the parks and visitors have been huge."

At one large western park, prior to the terrorist attacks and the summer wildfires, only 6 percent of visitors had the opportunity to participate in a ranger-conducted program, said Mabery. "Now it may be half of that or worse."

After September 11, the Department of Interior reassigned law enforcement rangers to secure several areas around the country, including the major dams and landmarks such as the Liberty Bell, Cape Canavaral, and Pearl Harbor. Then, after this summer's outbreak of significant fires throughout the West, park employees were reassigned from their home parks to battle wildfires.

Even prior to the attacks of September 11 and the historic number and size of wildfires over the summer, the Park Service's field staff reached its lowest level in 20 years, adjusted for significant increases in park visitation and acreage.

"One ranger from Yosemite has been home just six days in the past three months, just enough to do laundry and rest," said Mabery. "There are probably 100 rangers in that same situation."

Dennis Burnett, the Park Service's law enforcement administrator, said 400 rangers left their parks in February to aid with security at sites around the country or at the winter Olympics in Utah. On the 4th of July, another 300 rangers guarded sites such as Mount Rushmore and the Gateway Arch in St. Louis. "The real impact has been to visitors," said Burnett, "and it continues."

Given the Park Service's added responsibilities, some say the agency cannot meet its mission without more money from Congress. Time spent planning or executing projects has been "cut to the bone" this year, Mabery said.

Americans for National Parks (ANP), launched last September by NPCA, is a coalition working with Congress to secure additional operating funds for the national parks. Although the campaign requested an additional $280 million for parks this year, so far Congress and the administration have not met that amount.

"Inadequate funding and staff put the parks and the experiences of millions of visitors annually at risk," said Jennifer Coken, ANP's national campaign director. "We must act now, because there's just too much to lose."

Historic TIDBITS

Never underestimate the power of a persistent few. It has been 50 years since two-dozen women joined together to protect the Indiana Dunes from development. Their "Save the Dunes" council formed in 1952, with the women meeting for the first time in the living room of member Dorothy Buell.

They played a crucial role in the authorization of Indiana Dunes National Lakeshore as a Park Service site in 1966. The council has successfully lobbied Congress to expand the park four times since. The council's persistent efforts are now considered classic conservation, and it continues to fight for the park.

NPCA Notes

Anacostia Brochure

Anacostia National Park released its first-ever park brochure in May. The brochure was a joint venture between the Cultural Resources Diversity Initiative of the National Park Service and NPCA's DC Community Partners Program. The teams received $20,000 in funding and grants, partly from NPS' Challenge Cost Share Program, and raised another $15,000 to complete the endeavor.

They began work on the project in January 2001. The brochure provides details about the historical and cultural aspects of the Washington, D.C., park and its surrounding neighborhoods. NPCA's Alan Spears, co-chair of the project, said the brochure "establishes some context for D.C., and will hopefully be a source of great pride for all Washingtonians."

Most Polluted Parks

Data compiled by Appalachian Voices, a nonprofit organization working to protect the forests of the Appalachian Mountain region, concludes that the five parks with the most polluted air in the United States, in order, are: Great Smoky Mountains, Mammoth Cave, Shenandoah, Sequoia/Kings Canyon, and Acadia.

The rankings are based on measures of visibility, ozone pollution, and acid precipitation gauged by the National Park Service since 1991. The burning of fossil fuels is the primary cause of air pollution. Significant reductions in pollutants such as nitrogen, sulfur and carbon dioxide are needed to protect the parks for present and future generations.

—Jenell Talley

PARK SCIENCE

Non-Native Beetle Key in Park's Battle

One non-native pitted against another in effort to save trees.

GREAT SMOKY MOUNTAINS N.P.—Non-native species have traditionally been enemy number one at national parks, often disrupting the natural balance of ecosystems and spreading disease to native species.

But, as the saying goes, desperate times call for desperate measures. Faced with a likely, rapid death of the park's hemlock trees, officials at Great Smoky Mountains National Park are counting on a non-native species—a tiny, black predator beetle—to control another non-native species.

Resource managers recently released about 10,000 of the beetles at four sites in the park in an attempt to battle infestations of the non-native hemlock woolly adelgid, an Asian import that kills most of the hemlock trees it attacks by sucking sap from the trees' needles, causing defoliation.

Park officials discovered the hemlock woolly adelgid in May and have since found 30 infested strands of hemlock. They expect to find more infestations throughout the park, which made identifying a swift solution imperative. After consulting with other agencies and states that have dealt with the adelgid, the park decided to try the predator beetle, *Pseudoscymnus tsugae.*

Years of study went into that decision. The sites at which the beetle was released were chosen because enough adelgids were present to allow the beetle to find its prey quickly and feed swiftly.

One upside of using the beetle is that it is a selective predator. "Research shows this species only preys on adelgids," said park spokeswoman Nancy Gray.

The predator beetles are related to the common native ladybug beetles but are about one-tenth their size.

LEFT: NPS; BELOW: USDA FOREST SERVICE

The beetle eats the adelgid (the white mass, above), which destroys hemlocks.

"No one is likely to see them since they are about the size of a pin head," said park forester Kris Johnson.

The park also tried spraying trees with soap and using injected insecticides, but those methods are not possible in remote forest, said Johnson.

At press time, the hemlock woolly adelgid was beginning its summer dormancy, so it was difficult to tell whether the beetles were effective, Johnson said.

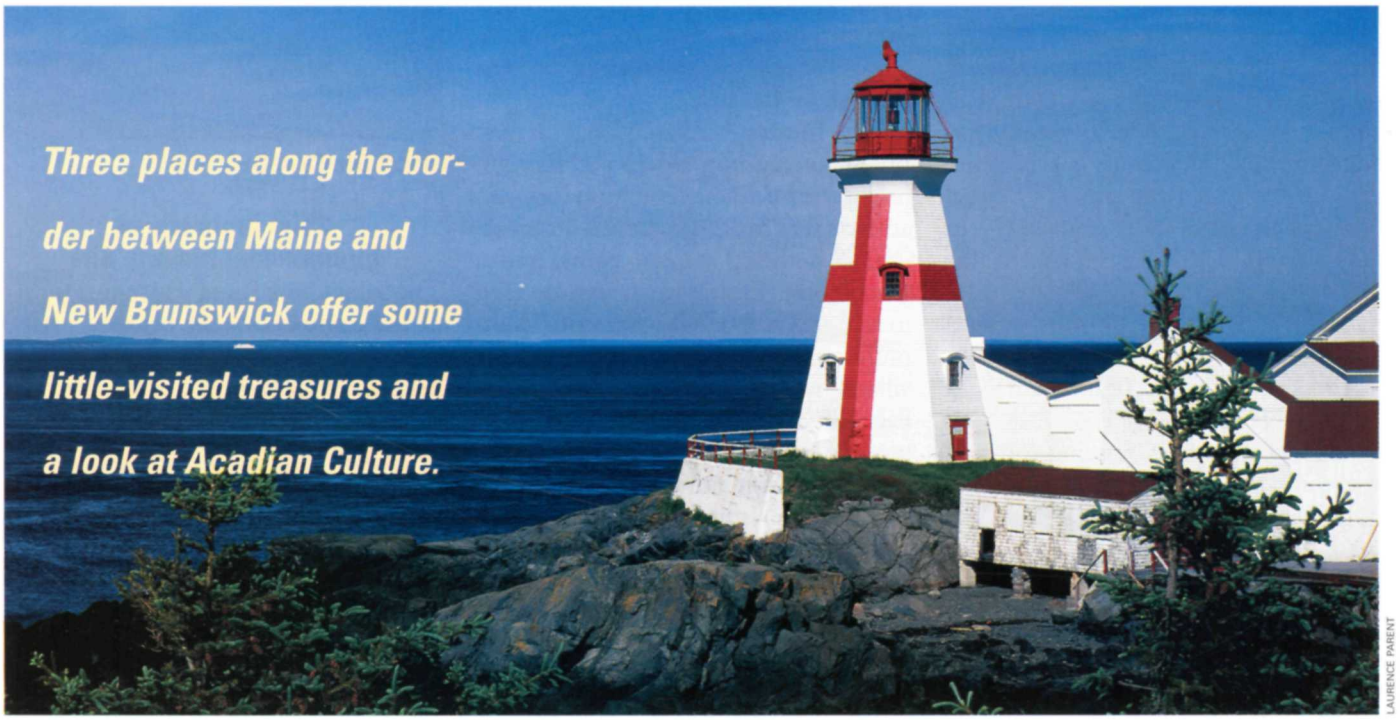
"The [adelgids] are hard to see right now. Once they start to feed again in the fall, we'll have a sense of how much reduction there was," she said. "Next spring, when the hemlock begins to produce new groves, we'll have an even better indication."

The first signs of hemlock woolly adelgid infestation were found in the East about 50 years ago. They have killed three-quarters of the hemlocks in Shenandoah National Park in Virginia and are poised to similarly damage trees at Delaware Water Gap National Recreation Area in Pennsylvania.

The hemlock woolly adelgid is a close relative of the balsam woolly adelgid, from Europe, which has destroyed about 80 percent of Fraser firs in Great Smoky Mountains National Park.

The predator beetle has been used in other areas in attempts to control the adelgid, but its effectiveness is uncertain because the infestations in those areas were already well-established.

TOURING THE NORTHERN BORDER



LAURENCE PARENT

East Quoddy Head Lighthouse, Campobello Island, New Brunswick.

By Dan Gifford

Whether decked out in the verdant green of summer or the fabled foliage of autumn, the borderland where Maine touches New Brunswick, Canada, is a stunning sight to behold. It is also a land rich in tradition and history. Along this 250-mile corridor between U.S. state and Canadian province, the National Park Service (NPS) is working to interpret, protect, and promote the area. But NPS is not working alone. Visitors to this stretch of international border will reap the benefits of unique partnerships that have come together to tell the stories of the region, its history, and its people.

The Maine Acadian Culture Project

"Un petit village au grand coeur" proclaims the welcome sign as you enter Frenchville, Maine. This "small town with a big heart" is one of many places in the Saint John Valley where it is common to see bilingual signs or sit down in a diner and hear French spoken at one table and English at another.

This bilingualism is the influence of a group of Acadians who settled in the valley of the Saint John River after being displaced.

The story of the Acadians is immortalized in Henry Wadsworth Longfellow's poem "Evangeline." In the late 17th and early 18th centuries, Acadia—which is today's Nova Scotia—changed hands numerous times between the French and British empires. The British finally seized permanent control of the area by 1713, and the two factions lived peacefully together for many years. But when the neutral but francophone Acadians refused to pledge loyalty to the British crown, 6,000 of them—men, women, and children—were deported, beginning in 1755. The Acadians were separated into small groups, often splitting up families, which were scattered among the 13 American colonies, the West Indies, and the British Isles. A large group eventually settled in Louisiana, forming the foundation of Cajun society. Others began a migration back north.

Thirteen families escaped the deporta-

tion but were refugees for 30 years. It was this group that ultimately settled in the Saint John Valley, forming the nucleus of Acadian culture in present-day Maine.

Today, a large cross marks the landing site, and an estimated 15,000 people of Acadian descent live in the valley, nestled against the northernmost tip of the U.S. border. Although the language, religion, and other practices that make their identity unique seemed to be diminishing in much of the 20th century, a resurgence of Acadian pride began a sort of cultural renaissance in the 1970s and 1980s. In 1990 the U.S. Congress created the Maine Acadian Culture Project, with funding administered by the National Park Service.

Unlike a specific site or museum managed by NPS, the Maine Acadian Culture Project provides funding for local museums and historical organizations to help them interpret and perpetuate Acadian culture. "There isn't a museum or historical society in the valley that hasn't benefited from the funds," says Don Cyr, a long-time cultural preservation activist. With only $60,000 appropriated to the project each year, the grants are small and carefully chosen. However, local preservationists and culturists make sure each dollar is spent to its maximum advantage, and the results can be seen throughout the area.

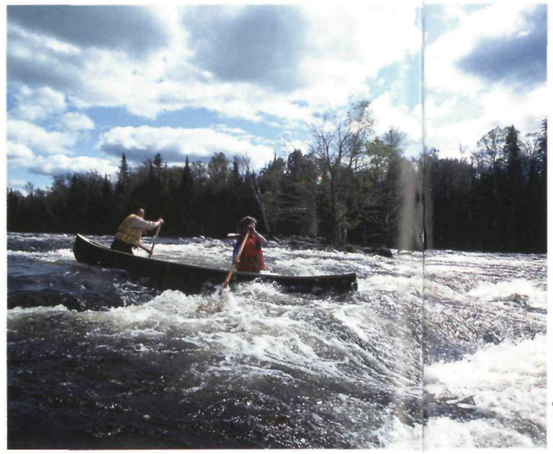
The 14-acre Acadian Village in Van Buren, for example, uses project funds to help preserve traditional structures and artifacts that make up an open-air museum of historical homes, barns, and a schoolhouse. Project funds are also used to hire and train guides from local communities to take visitors on tours of the village, where the Acadian tri-colored flag with the golden Star of Mary snaps proudly overhead.

Travel farther north to Lille, Maine, and discover the dramatic Baroque structure of Notre-Dame-du-Mont-Carmel, a former Roman Catholic church with trumpeting archangels atop the steeples. Today, with the help of project funds, the church has been converted into a cultural and historical institution. Often the site of concerts and performances, the building is also a vivid reminder of the importance of the Roman Catholic church to the region.

A brochure produced by the National Park Service on Maine Acadian Culture, which includes a map, is available by calling 202-728-6826. You can also visit www. nps.gov/maac. Many of these Acadian sites and museums are open only during the summer. Acadian Village is open daily from noon to 5 p.m. from June 15 to September 15. Admission is $3.50 for adults and $1.50 for children. Call 207-868-5042 for more information. For the latest cultural events at the converted Notre-Dame-du-Mont-Carmel, call 207-895-3339. Accommodations in the valley are scarce, but the towns of Caribou, Van Buren, and Fort Kent offer some options.

JOHN ELK III

Autumn foliage in Maine.



BARRETT & MACKAY PHOTO

Little Falls, Saint Croix River.

Saint Croix Island International Historic Site

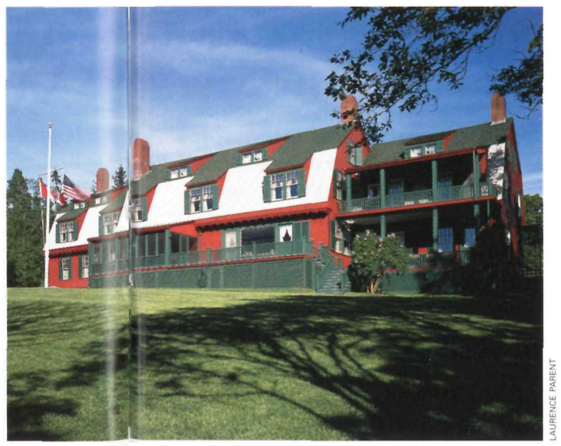
The Saint Croix River, which forms part of the east/west border between Maine and New Brunswick, is a sort of best-kept secret for canoers and kayakers. As the river nears Passamaquoddy Bay, it drifts slowly past an apparently unremarkable little island. Driving along Maine Highway 1 between Robbinston and Calais, you could blink and miss it. However, that island represents one of the most significant events in the Europeans' move to North America.

In 1604, a group of 77 French settlers led by Pierre Dugua and including Samuel Champlain established an outpost on the island, making it the first European settlement in North America north of Florida. Champlain and his men predicted temperate weather for the colony, reasoning that the location was about the same latitude as their own French Mediterranean coast. Sadly, their predictions were wrong. Unprepared for the area's harsh winters, nearly half of the settlers on the exposed, unprotected island were dead from cold and scurvy by spring. In 1605, the survivors moved to the more successful settlement of Port Royal.

Today few Canadians or Americans know that Saint Croix Island preceded Port Royal in Canada and Jamestown and Plymouth Rock in the United States. In 1984 Congress designated Saint Croix Island an international historic site, recognizing the significance of the island to North American history.

Both NPS and Parks Canada oversee the site, each from its respective side of the river. On the U.S. side, the Park Service has maintained a quiet presence with minimal facilities confined mostly to an overlook. From the viewing platform, visitors have an unobstructed view of the island and may spot an eagle or osprey along the river. After traveling north to Calais, crossing over the international border, and returning south along the New Brunswick side, visitors can view Parks Canada's interpretive work: a series of informative panels and a short trail overlooking the island.

On November 22, 2000, the Saint Croix Island Heritage Act authorized the Park Service to help develop a Down East Heritage Center. The center, scheduled for completion in 2004 (the settlement's 400th anniversary), will provide the United States with a much larger interpretive presence to tell the island's history—including habitation of the island by American Indians for more than 3,000 years.



LAURENCE PARENT

Roosevelt cottage on Campobello Island.

For more information, visit www. nps.gov/sacr, or call 207-288-3338 (note that this number is for Acadia National Park, which provides oversight for Saint Croix). Both overlooks are open year-round; however, interpretive panels are removed in October for the season. Calais, Maine, provides numerous lodging and dining choices. Access to the island itself is limited to private vessels, and the island does not have docking facilities. Camping is prohibited.

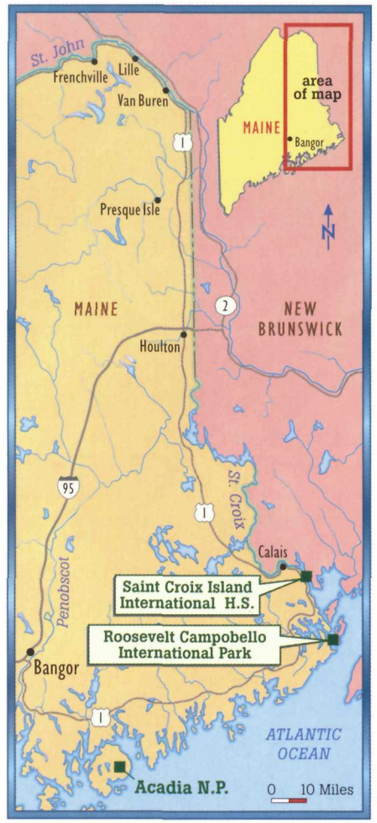
Roosevelt Campobello International Park

Certainly the best known of the partnerships along the Maine/New Brunswick border is on Franklin D. Roosevelt's "beloved island," Campobello. This island rests just across the border, on the Canadian side, accessible by bridge from Lubec, Maine. Travelers also can be ferried seasonally across the chilly North Atlantic waters from St. Andrews, New Brunswick.

The centerpiece of the park is the Roosevelt "cottage," a rambling structure with 18 bedrooms. Peeking into the rooms is like rediscovering the pleasures of a summer vacation. Games and toys are scattered throughout the house, with curtains thrown open to reveal the grand sweep of the sea. Sheet music stands on the piano at the ready for a family sing-a-long, and a telescope invites a quick look across the bay. FDR spent nearly all of his first 38 summers here, until he contracted polio in 1921. He returned only three times after that, although by all accounts he retained a love for this special place.

In addition to its primary goals of memorializing FDR and of interpreting the Roosevelt experience on the island, the park manages natural areas including more than 900 acres of heath-covered bogs. The best place to discover this surprisingly diverse ecosystem is the boardwalk at Eagle Hill Bog. From the trailhead, the bog looks largely monochromatic and homogenous. But visitors who get closer can experience the bog's tremendous diversity in plant life, including the carnivorous pitcher plant.

In 1964, President Johnson and Prime Minister Pearson signed a treaty establishing the park in a unique partnership. Although Canadian soil, the park is funded equally by both nations, making it the only park in the world financed (and therefore owned) by the people of two countries. The park has an American superintendent, a Canadian-majority staff, and an oversight commission with an equal number of members from both nations.



MATT KANIA

The park is open from the Saturday before Memorial Day to Columbus Day (corresponding to Canadian Victoria Day and Thanksgiving). Visiting hours are from 10 a.m. to 6 p.m, Atlantic Time, and admission is free. Bogs and other natural areas are open year-round. The island has many choices for lodging and meals, and a kiosk of local information is across from the park's visitor center. For more information, visit www.fdr.net or call 506-752-2922.

DAN GIFFORD *oversees NPCA's Parkscapes travel program.*

Out of the Ashes

A huge blaze two years ago that originated in a national park destroyed 235 homes and incited the federal government to develop a national fire plan. But because the weather has such a tremendous effect on fires, even outright suppression may not be enough to protect some areas from damage.

DARRELL GULIN/DEMBINSKY PHOTO ASSOC; INSET: AP PHOTOS/ALBUQUERQUE JOURNAL, JOSH STEPHENSON

By George Wuerthner

On May 4, 2000, a Bandelier National Monument crew climbed to the top of New Mexico's 10,199-foot Cerro Grande Peak to ignite a small fire. The prescribed burn was designed to kill trees invading a meadow and create a fuel break along the park boundary to reduce the threat of fire to nearby Los Alamos National Lab. But the blaze, fanned by high winds, jumped the fire lines. Then a series of errors conspired with the weather to blow the fire out of control. Seven days later, 70-mph winds whipped the flames into the history books, as the fire engulfed 48,000 acres and destroyed 235 homes.

The fire gave prescribed burns a bad name and sparked heated congressional debate about the benefits of suppression versus controlled burns. An independent review by the General Accounting Office (GAO) revealed some missteps on the part of Bandelier's fire crew and others fighting the blaze.

As a result, the GAO recommended federal policy changes, released a year and a half ago in a new National Fire Plan. This plan directs all federal agencies to maintain firefighting capability and preparedness and demands accountability and review. Although the national plan emphasizes fire suppression, it also recognizes the ecological benefits of fire and its use under controlled conditions. Congress allotted $2.26 billion to implement it.

Even though the Cerro Grande fire elevated the topic to the highest levels of government, the debate is not a new one. And as we ended one of the worst fire seasons in recent years—fueled by a widespread drought in the western states—the debate is far from over. What fire policy best serves the various needs of national parks as well as the people living near them? Parks such as Grand Canyon are experimenting with a number of approaches (see page 21), but the search for answers is sure to continue. And even with outright suppression, homes will still be destroyed because of variables that are beyond the govern-

GALEN ROWELL

Los Alamos wildfire.

ment's control, such as the weather.

Although the popular vocabulary is skewed to view fires as "bad," experts say fire is a natural process in a variety of ecosystems that range from the tundra in Alaska to sawgrass prairies in the Everglades of Florida.

Fire acts like a wolf on a deer herd—thinning forests and creating healthier timber stands. Because most fires dance and leap across the landscape, they create a random burn pattern of varying intensity and size favoring different species and age classes, increasing biodiversity and ecosystem stability. The resulting mosaic also creates natural firebreaks that influence future fires, as recently burned areas are less likely to burn again.

Fires also release nutrients bound up in dead litter, enriching soils and aquatic systems. Fires open up the forest floor to greater light, increasing the production of nitrogen by bacteria and other plants. Even the smoke may cleanse the forest of certain pathogens.

Dead trees that result from fires are not a wasted resource, as some may presume. Snags left in a fire's wake are used by cavity-nesting birds and mammals. When snags fall to the ground, they become shelter to creatures ranging from ants to black bears. If a snag falls into a stream or lake, it creates aquatic habitat and helps to stabilize stream banks. For these and other reasons, the Park Service tries to maintain fire as an ecological process in park units where it was historically an evolutionary force.

For centuries, American Indians introduced fires to create better hunting, grazing, and living conditions, unlike the white settlers who used fire to clear land for settlement. Many of the beautiful and productive forests that greeted settlers in the new land were actually crafted by American Indians through manipulation by fire.

Although fire is a beneficial force in many cases, public lands advocates also recognize the danger of fires burning out of control and consuming private homes and other property in its path.

"Since Cerro Grande, we have implemented a no-go check list where we review fuel moisture, weather, fire behavior, availability of additional firefighting equipment and personnel, air quality, plus other factors," says Bob Reece, a wildlands fire specialist at Yosemite National Park for 25 years. "Then the superintendent has to sign off on the burn before we proceed. It's all about accountability."

The new national plan encourages many parks to restart a prescribed burn program to reduce the amount of dead wood and scrub—called fuels—to limit hazards to nearby communities.

At 700,000-acre Big Cypress National Preserve in Florida, a leader in prescribed burning, an astounding 40,000-50,000 acres are burned to reduce fuel each year—about equal to what burned in the Cerro Grande fire. But even such ambitious fuel-reduction programs are only part of the answer. One of the biggest challenges facing fire managers is the growing number of homes in areas surrounding parks and other public lands.

"This has created a political incentive to put out fires so they don't spread," says NPCA's Mark Peterson, director of the State of the Parks program. Such an incentive, he adds, "only exacerbates the fire management conundrum for agencies."

Many of those homes are not defensible against fires. A review of homes that burned in Los Alamos found that most were ill prepared to deal with blazes. In many cases, surface fires ignited homes with wood stacked next to them, or a burning ember blew onto a wooden roof covered with pine needles.

Fire suppression and attempts to restrict fires to parks not only reduces the ability of agencies to use fire as a restorative process but is a huge subsidy to homeowners, says Peterson.

"Taxpayers are paying for fire suppression costs to protect outlying homes where they probably shouldn't be permitted to build," he says. "In many fire-prone ecosystems, sooner or later you will have a blaze."

The National Park Service believes education may be the key. Fire education specialists are teaching homeowners how to live with fire much as they might educate hikers about bear safety.

Rocky Mountain National Park is taking a lead in this effort, says Larry Gambel, the park's land use specialist. Rocky Mountain has worked with the

George Wuerthner is an ecologist with a strong interest in fire ecology. He is the author of 28 books on natural history, wildlands, and national parks, including one on fire ecology.

Fueling the Fire Debate

AP PHOTOS/ELAINE THOMPSON

This past summer, the largest wildfires on record consumed hundreds of thousands of acres of forest, destroyed hundreds of homes, and displaced thousands of people in both Colorado and Arizona.

The Arizona fire became the largest in U.S. history when two separate fires joined at the end of June, charring more than 450,000 acres and destroying more than 400 structures. In Colorado, the state's largest fire on record consumed nearly 140,000 acres.

Although the fires did not affect national park units, the sheer magnitude of the fires and their destructive force will undoubtedly encourage policymakers to take another look at fire management policies, especially on Forest Service lands.

At the height of the disaster, Gov. Jane Hull (R-Arizona) criticized past forest management practices, finding fault with what she called the layers of administrative process that prevented more aggressive efforts to clear national forests of dense underbrush.

Although most federal land agencies, such as the National Park Service and U.S. Forest Service, try to reduce "fuel" on public lands by clearing small-diameter trees and dense undergrowth, these measures do not slow blazes under extreme conditions.

Little could have been done about the abnormally dry winters and continuing drought—the single most important contributing factor to these and other large fires. Under such dry conditions, some live trees are actually more flammable than dead ones because of the resins they contain.

Wind is another major factor, spreading flames beyond fire breaks, and under such conditions, firefighting has nearly no effect on advancing flames.

Large fires have been common in the West for decades. Dr. Greg Aplet of the Wilderness Society recently charted the total acreage in the United States burned by the decade, beginning in 1919 and continuing up through 1999. In the Dust Bowl drought decade between 1930 and 1939, nearly 40 million acres of land burned. By contrast, between 1990 and 1999, about 4 million acres burned, just one-tenth the acreage charred by blazes in the 1930s. Says Aplet, "Despite all the talk about increases in fire frequency and intensity, the current level of fires is trivial compared with historical levels."

ERWIN & PEGGY BAUER

A bison rummages through a charred landscape after a fire at Yellowstone.

community of Estes Park and county government officials to map fire hazard zones. They developed wildfire mitigation standards for the county. Altough these standards don't prohibit development, they do require clearance of trees adjacent to homes and other commonsense approaches.

Fuels reduction and homeowner responsibility may not be enough to prevent another Los Alamos, and thinning forests may ultimately fail. Most fire ecologists agree that factors controlling the spread of fire depend on a host of variables. Under ordinary conditions, fuels are usually the biggest factor. But under extreme drought, such as that experienced this past summer in many parts of the country, weather more than fuels controls the size and spread of big fires.

Identifying all the factors is critical because they affect which management options are realistic. Although Dr. William Romme, a fire ecologist at Colorado State University, believes thinning low-elevation forests can reduce fire hazards for homeowners, mechanical thinning or logging isn't a likely panacea on a landscape scale. Too many acres have to be treated to have a significant effect on fuel build-up.

Unfortunately, even current prescribed fire programs are deficient. The acreage burned during controlled conditions often fails to affect a significant amount of the landscape. When it's absolutely safe to burn, it's difficult to get the fire to spread. Tony Caprio, a fire ecologist in Sequoia-Kings Canyon National Parks—among the park units with the most experience and longest track records with prescribed burning—says his park has a "fairly aggressive burn program." Yet, in terms of restoring fire to anything like its historic role, says Caprio, "we are still falling behind."

That's where wildfires or natural ignitions allowed to burn under prescribed conditions play a critical role.

According to Dr. Greg Aplet, an ecologist at the Wilderness Society, "It's clear that we need to protect homes and lives that are in harm's way, but we have to acknowledge that fire suppression has created some of the problems we find

Under ordinary conditions, fuels are the biggest factor in the spread of fire, but under extreme drought, weather plays a greater role.

today. Fire suppression is not a long-term sustainable solution."

Neither is prescribed burning, in Aplet's view. "We are not going to get fire back into the ecosystem 300 acres at a time," he says. "We need landscape-scale fires, and only wildfires can come close to burning the acreage we need to achieve the ecological restoration and fuel-reduction results we desire."

Managers may not have a choice about whether large fires occur. Fred Van Horn, assistant chief ranger at Glacier National Park in Montana, says fire suppression and even fuel treatments often have no effect on a fire's spread during extreme drought, a statement tragically confirmed by the more than half-a-million acres combined that burned during the Colorado and Arizona fires this past summer. And during the summer of 2001 in Montana, the 71,000-acre Moose Creek fire burned with fury across Forest Service land adjacent to Glacier National Park—despite a heavy suppression effort.

William Romme, of Colorado State University, agrees. "There are almost no places in the lower 48 states where a fire couldn't potentially threaten someone's home. This poses a real threat to the natural processes by which we are supposed to be managing our parks." Yet, ironically, under extreme conditions of high winds and drought, the forests are going to burn, and "there's nothing we can do about it," says Romme.

Whether the new national fire plan will lead to a greater willingness to live with fire and use it effectively remains to be seen. Fire exclusion, however, is ultimately not an option. The inevitability of fire is probably the greatest lesson we can take from the Cerro Grande fire.

LAURENCE PARENT

To Suppress or Not to Suppress

More than a century and a half ago, the ponderosa pine forests of Grand Canyon National Park were dominated by large old trees. Periodic low-intensity blazes, most likely set by lightning strikes, burned most of the leaf litter and seedlings from the forest floor, leaving the mature trees unharmed. More than a century of fire suppression has changed this dynamic.

Today, extensive areas of the forest are crowded with dense stands of small trees, which are more susceptible to disease, insect infestation, and high-intensity wild fires.

In part because of fear of high-intensity fires and also to improve the health of the forest, the Park Service wants to begin long-term experiments at Grand Canyon National Park to evaluate the short- and long-term effects of reintroducing fire to ponderosa pine ecosystems. Through this research, the agency plans to gain information that can be used to refine fire management practices and preserve the park's forests.

The Park Service proposes to set up two 80-acre parcels, one on the North Rim on Swamp Ridge and one on the South Rim near Grandview, to test four different approaches. The research will compare prescribed fire and fire suppression with two levels of thinning small-diameter trees followed by prescribed burning. The Park Service is looking at a mixture of alternatives because not all forest conditions are appropriate for prescribed burning alone, and without the reduction of "fuel" through thinning, some prescribed burns have been hot enough to damage old trees. One of the driving forces for devising a plan to deal with the change in forests is to protect the park as well as surrounding lands.

"It has yet to be proven that either prescribed burning alone or in combination with mechanical treatments can correct the fuels problem quickly enough to prevent large, catastrophic wildfires," the Park Service states in its Executive Summary of the environmental assessment. "However, the risks of no action far outweigh the risks of prescribed fire or mechanical thinning. There is no doubt that without intervention to modify the fuels complex, an unnatural and catastrophic wildfire will sweep across tens of thousands of acres on the North Rim within the next few years."

The Park Service first outlined this plan more than three years ago, but environmental groups, including NPCA, opposed several of the proposals. Among the most offensive to the environmental groups were proposals to cut relatively mature trees of up to 16 inches in diameter and sell the wood and to use chainsaws in an area on the North Rim that is included in the park's wilderness proposal.

The Park Service's most recent proposal limits the size of the trees cut to five inches, which will allow for the use of hand tools on the North Rim sites, and none of the material will be removed from the park. The park intends to release the final plan sometime this fall.

DEIRDRE EITEL

A GRIZZLY FUTURE

As western states push to remove Yellowstone grizzlies from federal protection, concerns surface over the survival of these great bears in the modern world.

By Todd Wilkinson

Early one morning, an 11-year-old grizzly bear mother known as Bear #264 wanders the steamy, geothermal flanks of Roaring Mountain with her two cubs. As Kerry Gunther, Yellowstone National Park's lead grizzly biologist looks on, her main challenge is holding back the eager tourists piling out of their cars and rushing forward for a closer look. "You can't blame people for getting excited about grizzlies," Gunther says. "We're just here to make sure that folks give them enough space to live without being harassed."

That space is critical for the survival of this, the world's most famous bruin population. Even in an ecosystem as vast as greater Yellowstone, which encompasses thousands of square miles and is home to between 400 and 600 grizzlies, the loss of only a few breeding females can mean the difference between a growing population and one in decline.

The good news is that in recent years, grizzly numbers have been steadily ascending. Today, these big brown bears are recolonizing corners of the ecosystem where they haven't been seen in years—not since hunters, poachers, and ranchers eradicated them in the mid-20th century. Sightings of mothers with cubs, a key barometer of the status of the population, are also up.

Only a quarter-century ago, Yellowstone's grizzlies were on a fast slide toward possible extinction, prompting the federal government in 1975 to declare the population "threatened" under the federal Endangered Species Act (ESA).

"The present stability of Yellowstone grizzlies is a major success that wildlife biologists and bear supporters can take great credit for," says Tony Jewett, NPCA's senior director of the Northern Rockies region. "However, no one should be lulled into complacency because the threats to the bear are extensive, and we're entering a dangerous period."

The primary immediate danger is political. With bear numbers appearing to grow, Wyoming, Montana, and Idaho are pressing the U.S. Fish and Wildlife Service to remove grizzlies from the Endangered Species Act and turn management authority for them over to the states as early as 2005. Ultimately, the Fish and Wildlife Service will decide whether these states have crafted management plans that convincingly demonstrate they are up to the task.

Anti-grizzly sentiment has boiled up recently among lawmakers in Wyoming and Idaho, at least partly because the Greater Yellowstone region is one of the fastest growing rural areas in the West. Already, Wyoming, Idaho, and Montana are planning to resurrect a trophy hunt of grizzlies. Politicians have also signaled resource extraction industries, like energy developers, that they support increased exploration in bear-occupied habitat. Critics of the Endangered Species Act, including high-ranking Bush administration officials, say the act is too cumbersome for developers.

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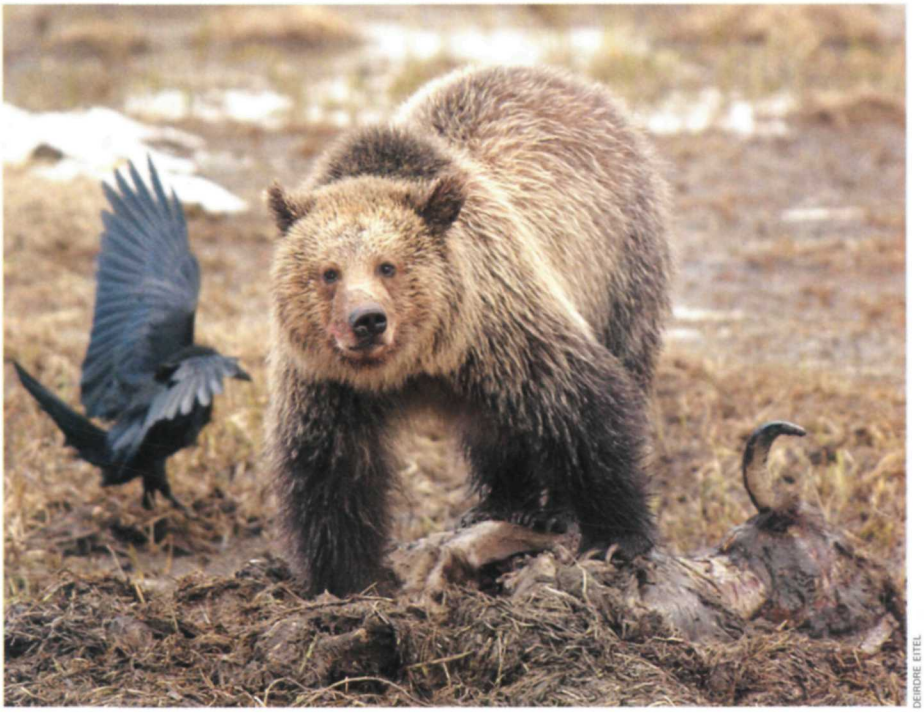
The states' delisting proposal has met with concern from conservationists who believe the Endangered Species Act has been a pivotal tool in protecting habitat. It has controlled invasive land uses, ranging from oil and gas drilling and livestock grazing to logging and off-road vehicle use on public lands outside Yellowstone where many bears live.

"But for Endangered Species Act protections, the great bear in the Lower 48 would have gone the way of the passenger pigeon by now," says Louisa Willcox, a Montana activist involved with grizzly bear conservation for three decades.



DEIRDRE EITEL

Losing just one breeding female grizzly can thwart the species' population growth.

Todd Wilkinson lives in Bozeman, Montana, and is a regular contributor to *National Parks.*

Not long ago, U.S. Geological Survey bear researcher David Mattson and independent biologist Troy Merrill devised a formula for calculating the efficacy of the ESA with regard to bears. Their findings, published in the scientific journal *Conservation Biology*, concluded that, without the ESA, the chances of Yellowstone grizzlies being as abundant today would be about one in a quadrillion.

Just as states are pushing to eliminate federal protection, several biological indicators suggest more trouble ahead. Once-abundant natural foods long associated with rising bear numbers in and around Yellowstone are either declining or face an uncertain future.

"The value of the Endangered Species Act is that it changed human behavior," Mattson says. "It made us less lethal in how we as humans interact with bears, and in greater Yellowstone it prevented us from repeating destructive patterns that led to grizzlies being eliminated from most of the West."

Even with those gains, the 1,100 or so grizzlies inhabiting the Lower 48 today represent just 1 percent of historic numbers and occupy less than 2 percent of their original homelands. Although five different clusters live south of Canada, only the isolated concentrations in greater Yellowstone (the southernmost population) and the Northern Continental Divide Ecosystem (around Glacier National Park and the Bob Marshall Wilderness to the north) hang on in any sizable number. "In some ways, the fact that we still have grizzlies in Yellowstone is a miracle, but it's a miracle that the American people made happen, and they deserve praise for it," says Charles Schwartz, head of the Yellowstone Grizzly Bear Study Team, a division of the U.S. Geological Survey and the most renowned bear research unit in the world.

However, conservation biologists say ensuring the Yellowstone grizzly's genetic viability over the long term requires a population twice as large. It should also be connected to other populations via a navigable corridor of wildlands because isolated populations are more vulnerable to extinction than those with wide distribution.

Under provisions of the ESA, grizzlies have received management priority inside a 9,200-square-mile zone known as the Primary Conservation Area that includes Yellowstone and adjacent federal wilderness in national forests. As the growing bear population has filled up all available habitat in the park, bears have established new territories outside the area. At present, between one-third and one-half of the Yellowstone grizzly population resides outside of the national park, Schwartz notes.

Just as states are pushing to eliminate federal protection, several biological indicators suggest more trouble ahead. Once-abundant natural foods long associated with rising bear numbers in and around Yellowstone are either declining or face an uncertain future. Whitebark pine, whose seeds are a crucial source of nutrition for grizzlies, are rapidly disappearing from the West, although the Yellowstone population is currently doing well. The loss is the result of an outbreak of an arboreal plague called blister rust. Populations of cutthroat trout, another important nutrient-rich food source, have been affected by predation by non-native lake trout. Grizzlies also feast on army cutworm moths, whose future is uncertain in an age of global climate change, and bison, which are threatened by livestock industry proposals to reduce the park's herd to help control brucellosis, which the animals are known to carry.

Although grizzlies could eat earthworms, ants, hornets, and mushrooms, when "you stack them up against what we are likely to lose . . . there is a net loss of nutritional value for bears," says Mattson. Among the possible outcomes: a smaller bear population, smaller cub litter sizes, bears having to roam farther beyond Yellowstone, and bears

ERWIN & PEGGY BAUER

Grizzly bears always draw a crowd of photographers and other onlookers at Yellowstone.

What You Can Do

Citizens who believe grizzlies deserve adequate protection in the Yellowstone ecosystem and that federal agencies should fund grizzly research should write their representatives in Congress and the U.S. Fish and Wildlife Service. Emphasize that efforts to remove grizzlies from federal protection are premature, given threats to their survival and hostility to bears from local states. Please send a copy of your letter to NPCA.

Write:

Chris Servheen
Grizzly Bear Recovery Coordinator
U.S. Fish and Wildlife Service
University of Montana,
University Hall, Room 309
Missoula, MT 59807

DEIRDRE EITEL

Although this grizzly has found plenty to eat, the bear's food sources are being depleted.

foraging for these alternative foods in places located near people.

Conservationists say now is the time, before the bear population is removed from federal protection, for grizzly scientists to learn more about the effects of losing key natural foods, expanding human development, and more human-bear conflicts. Yet the Bush administration's recently proposed budget for the Interior Department reflected substantial cuts to science, which could force the cancellation of annual bear counts crucial to assessing the health of the Yellowstone population. NPCA has been among a cadre of vocal groups reminding Congress that scientific research is the guiding light to making informed decisions about imperiled public wildlife.

Beyond science, however, the bear's future may depend on the outcome of a struggle between the public and special interests. After all, NPCA's Jewett notes, grizzlies belong to the American people, and citizens have taken great pride in showing the world they are willing to make a place for these great bears on public lands.

"Wyoming and Idaho have yet to engage a realistic discussion on this issue, and haven't established the necessary cultural parameters to accept the grizzly as a part of who they are as a state," he says. "It's largely political obstacles and entrenched special interests, because the people of Wyoming want the grizzly there by a huge majority. Unfortunately, it's exactly these powerful interests that control the decision making and politics, and ultimately pose the greatest threat to the grizzly in those states."

Not long ago, as Bear # 264 wandered into the tourist development at Yellowstone's Mammoth Hot Springs, grizzly ranger Kerry Gunther shooed her back into the wild with care. A couple of generations ago, the bear might have been killed by managers or shipped to a zoo. Today, every bear counts, Gunther says. The only proof you need is to drive through Yellowstone when a grizzly appears along the roadside and watch people who have come from around the world to catch a glimpse of one of these rare animals. It's a sight they cherish the rest of their lives.

Meeting IN L.A.'s BACKYARD

More than just the natural backdrop to Los Angeles, the Santa Monica Mountains combine culture and community in innovative ways.

By Kim A. O'Connell

Thousands of years ago, in the shadow of the Santa Monica Mountains, the Chumash Indians could often be seen plying the waterways of southern California in their wood-plank canoes. Called a *tomol*, the Chumash canoe was both sturdy and striking, its planks glued together with asphaltic tar and decorated.

This asphalt-based pitch also waterproofed baskets and affixed arrowheads to shafts. By the 1800s, however, the asphalt beds and oil slicks that were essential to the Chumash had also become attractive to the growing cities along the California coast. Asphalt was increasingly used in paving, and oil began to rival coal as an energy source.

Today, asphalt and petroleum have helped build the sprawling, car-dominated megalopolis of Los Angeles, a city that may seem far removed from the lives of the Chumash. Yet modern Chumash Indians, who reside mainly on the Santa Ynez reservation, are just one of the many diverse cultures represented in southern California. Like the Chumash

The mountains offer serenity above the bustle of L.A.

LARRY ULRICH

JAMES RANDKLEV/LARRY ULRICH STOCK

The park protects a rare Mediterranean-type ecosystem, found in only five places on Earth.

of long ago, more than 15 million people now live and work in the shadow of the Santa Monica Mountains.

Established in 1978, Santa Monica Mountains National Recreation Area is, at more than 150,000 acres, one of the world's largest urban recreation areas. Its mission is to provide recreation and education programs that are accessible to the region's diverse residents. In meeting this charge, the park has created innovative opportunities to encourage underrepresented groups to visit the park, learn about its resources, and find common ground.

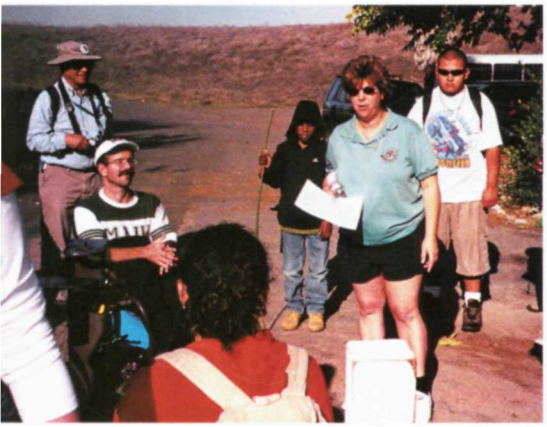
The mountains that give the park its name rise dramatically above Los Angeles and widen to meet the curve of Santa Monica Bay. The park also runs along the coastline from the Santa Monica Pier west to Malibu, whose city limits are entirely within park boundaries. Biodiversity abounds: About 450 vertebrate species have been spotted there, and the park includes stands of rare broadleaf evergreen shrubs. The park protects the rare Mediterranean-type ecosystem, a habitat found in only five places on Earth. And in addition to its Chumash history, the park contains artifacts related to the Gabrielino/Tongva peoples and the region's Spanish missions. Together, these varied resources are cooperatively managed by the National Park Service, California State Parks, the Santa Monica Mountains Conservancy, private landowners, and local governments.

Despite these pooled efforts, the park has ongoing staffing, maintenance, and resource management needs. The Park Service cannot afford to maintain modest, thorough wildlife and vegetation programs to protect the unique ecosystems. Currently, 25 species native to the Santa Monica Mountains are federally listed as rare, threatened, or endangered, and another 50 are candidates for the list. More than 1,000 archaeological sites lie within park boundaries as well, yet they remain unexamined by scientists and historians. The Park Service also struggles to maintain the park's 200-mile trail network, which must be expanded and made accessible to a diverse user

Kim A. O'Connell lives in Arlington, Virginia, and last wrote for *National Parks* about the science-based State of the Parks program.

base. Lastly, local schools must wait up to two years to participate in the park's educational programs.

Yet it is the park's outreach and educational programs that may very well help fulfill its other needs. Working with NPCA and other entities, the park has launched several programs designed to get inner-city students into the park—not just to play, but to work on real sci-



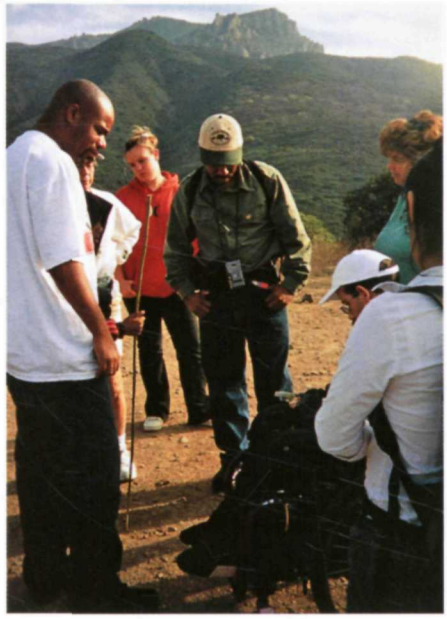
entific projects and obtain marketable skills. These programs are just part of a larger effort to involve urban communities: many of them are not aware of the park, would have trouble getting to the park if they did know about it, and would expect to feel alienated even if they were able to get there. The park's nearly completed general management plan includes new ways to reach visitors in downtown Los Angeles, as well as establishing a center focusing on the traditional Indian tribes that still live nearby.

At the heart of these efforts is the Community Youth Program Outreach Initiative, which works with local school systems to introduce kids to the park's natural and cultural resources. In-park programs, including trail work, tree planting, and weeding, combine with career days and interpretive talks in the classroom. More than three-quarters of the students in this program are from underserved groups.

"We're interested in outreach that provides worthwhile educational opportunities to primarily the kids of our service area," says Charles Taylor, the park's chief of external affairs. "We introduce young people to the environment in a program-like setting. For example, we do a program about different ways cultures view the land—contrasting the way current cultures view the land with the way the Chumash did."

But the park does not simply give kids a camp-like experience and then send them on their way. As part of this initiative, the park has begun an intern program with Wilson High School in East L.A. In this four- or five-year program, the park begins a long-term relationship with 89 students a year, beginning when they are juniors. Kids are transported to and from the park and paid to do resource-related work, which becomes more sophisticated—and more helpful to park staff—the longer they participate.

"This is the program we're most



NPCA (3)

Through a special program at the park, youth learn to appreciate other cultures as well as a more natural part of their city.

proud of," Taylor says. "Hopefully, the kids will go on to college, and we have jobs for their first two years, or we help them if they want to work in other parks. We hope that by the end of four years they're competitive." Already, one student who has graduated from the intern program is back at Santa Monica, doing a survey on the park's non-native Argentine ants. Because they are rampant wherever there is encroaching development, the ants are an important ecological indicator species.

The youth initiative also helps urban students to learn that natural areas offer beauty, recreation, and relaxation seldom found on city streets.

"For a lot of our students, it's the first time they've seen a natural area," says Marion Guthrie-Kennedy, supervisory park ranger. "And they realize they can be comfortable with that."

Essential to this effort are the contributions of the Los Angeles Community Partners (LACP), one of six community-based groups nationwide that constitute NPCA's Community Partners program. LACP has been awarded grants by the Sierra Club's "Youth in Wilderness" Program to underwrite a series of youth outdoor education and leadership development outings to various state and national parks, including Santa Monica Mountains.

"Our mission is to connect all people to all parks," says Patrick McCullough, LACP's co-coordinator with Charles Thomas, Jr. "As we meet on a monthly basis, we move toward that goal. One of the greatest things I personally have experienced with Community Partners is the base of resources from all of the partners that come to the table. The national

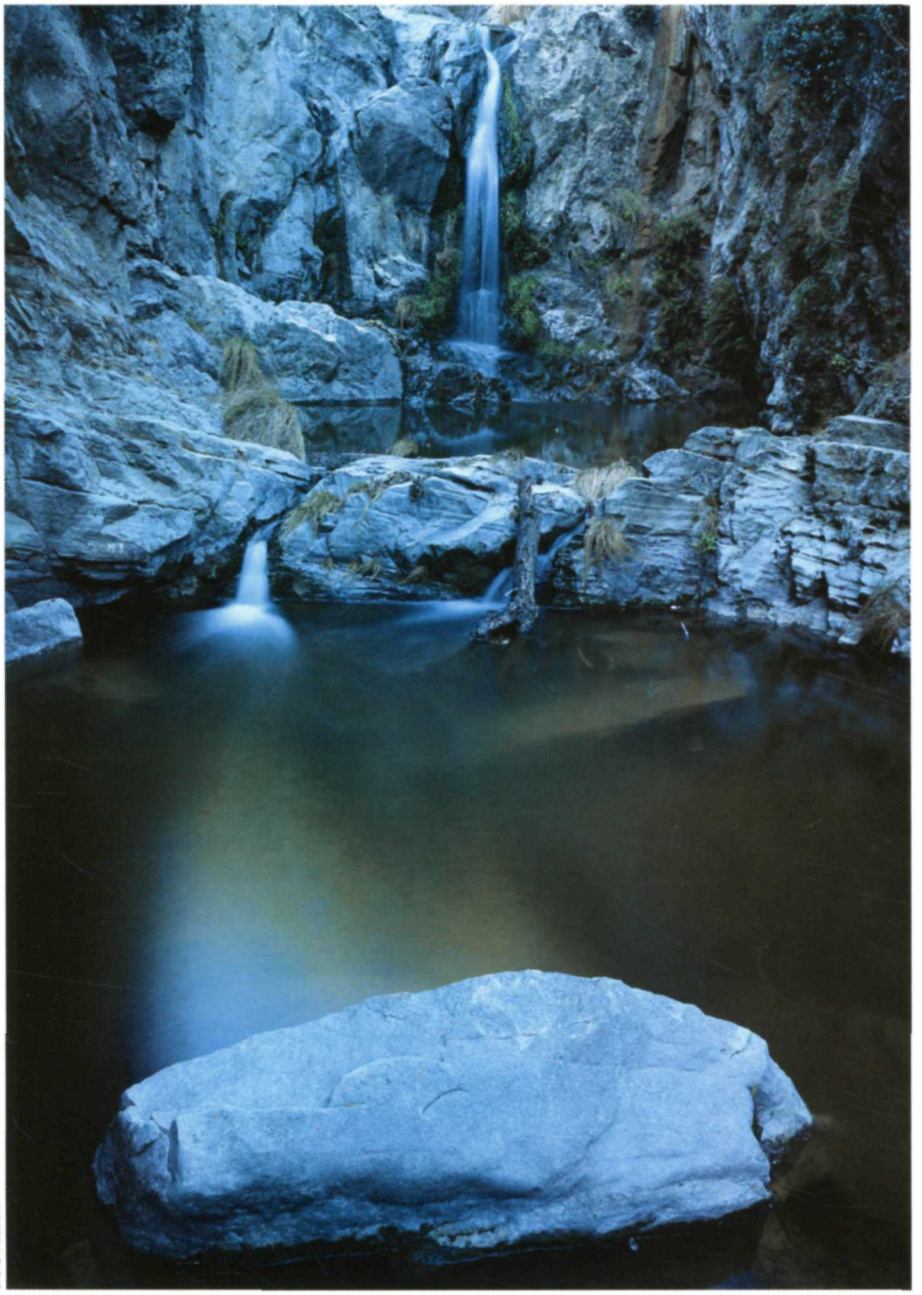
recreation area, which is very active in our partnership, and the California state parks make a lot of resources available to us for various programs."

LACP is committed to listening to what the kids say they want in the program. The youth were routinely saying, for example, that when they returned from working in the parks, their families

often had little understanding of what they were doing. So LACP arranged a family camping trip. "That had a phenomenal impact on the youth and the families," McCullough says. The group also arranged "teach-back programs," in which the students took a ranger-led interpretive walk around the park. "The next day, the kids took the teachers and the families out and did the same interpretation, in both English and Spanish," McCullough says. "I saw some young leaders being developed that day."

But the park is also reaching out to the millions of urban adults who are not aware of the park or cannot get there easily. "It's an awareness issue," Taylor says. "There's a park, they say, but 'what do we do when we get there?' We're finding we'd serve more people if we had a more structured program for people who are new to parks." Getting them there is half the battle. The Park Service is testing a renewable-fuel bus system that connects with the Los Angeles transit system and tours the park's interior.

The park has launched several programs designed to get inner-city students in the park—not just to play, but to work on real scientific projects and obtain marketable skills.



STEVE MULLIGAN

Despite pristine beauty, the park has ongoing staffing and resource management problems.

LARRY ULRICH

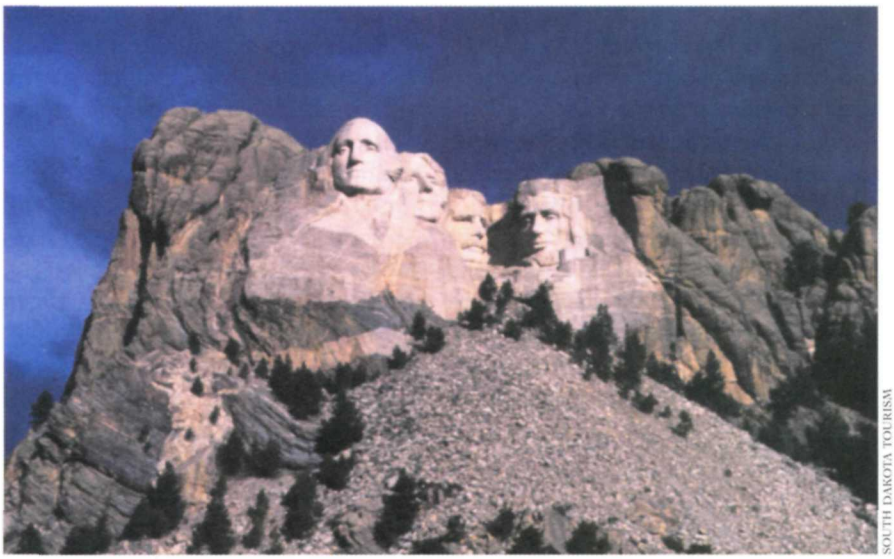
Artifacts from Spanish missions abound.

Interpretive staff are finding that traditional ways of reaching visitors do not necessarily work in this diverse region. "We tried to do a program on invasive plants, a ranger-led hike, and one person signed up," says Guthrie-Kennedy. "That's telling me it just isn't working." So, the park is increasingly attending county fairs and other community get-togethers, as well as publishing information on the Internet.

The park has been working to increase its accessibility for physically challenged visitors as well. Frank Greenway, a retiree who lost the use of his legs in an auto accident, spent about 700 hours touring park sites to identify accessibility barriers, which earned him the NPS Volunteer Achievement Merit Award. Out of hundreds of miles of trails in the Santa Monica Mountains, Greenway identified only 50 miles that are accessible to all park visitors.

"We can always do better, but it starts with involving people," Taylor says. "Eventually we're hoping that a significant portion of the population will appreciate the park's resources."

South Dakota



SOUTH DAKOTA TOURISM

Among the first European descendants to report on the beauty and natural wonders of South Dakota were Meriwether Lewis and William Clark. From 1804 to 1806, the pair journeyed across the western frontier and into American history. In South Dakota, the men discovered pronghorns and prairie dogs, had their first meetings with the Yanktons, Tetons, and Arikaras, hiked the infamous Spirit Mound, and witnessed bison herds numbering in the thousands and river bluffs that appeared to be on fire.

Today visitors to South Dakota often find themselves as awestruck as Lewis and Clark. South Dakota is divided into four regions. Travelers to the southeast portion can explore the same areas as Lewis and Clark and traverse the same waterway—the Missouri River. Outfitters along the waterway offer kayak and canoe rentals and are available for multi-day guided trips. Birding enthusiasts can spot many of the same species the explorers saw along the Missouri River, which is a migratory waterfowl flyway. The Missouri, though, is only one of three rivers that flow through the southeast region, where some 175 natural and human-made lakes are also located.

Campers, hikers, mountain bikers, horseback riders, and anglers will find an outdoor paradise in southeastern South Dakota. Modern-day explorers can see the unusual quartzite spires and sheer cliff walls at Palisades State Park, home to the Lewis and Clark Recreation Area and several camping areas. Several of the parks offer trails of all sorts. Anglers can pursue walleye, bass, muskie, northern pike, sturgeon, crappie, and trout.

History resonates across the gentle hills of northeastern South Dakota, known as the Glacial Lakes and Prairies region. Sculpted by glaciers thousands of years ago, it's a land that has been inhabited by Dakota tribes, frontier soldiers, and homesteaders. Visitors can explore places such as historic Fort Sisseton and Laura Ingalls Wilder's Little Town on the Prairie.

Off-the-beaten-path treasures can be found at charming towns in this region, such as a series of murals at Huron that depict scenes from the town's past. The history of De Smet, named for a Belgian-born Jesuit who ministered to Sioux Indians, is well preserved in the town's Depot Museum. Many travelers are surprised to discover Eureka, a delightful community with strong German ties that embraces its rich past through authentic cuisine and festivals. The 1883 home of Arthur C. Mellette, the state's first governor, is preserved at Watertown, and one of the nation's best preserved historical forts is now a state park near Lake City.

The region has hundreds of glacial lakes as well as Redfield, the self-proclaimed Pheasant Capital of the World, and Huron, home to thousands of ringneck pheasants.

Four massive reservoirs on the Missouri River are a highlight of the Great Lakes—or central—region. Its numerous recreation areas are a haven for eagles, pronghorn, and prairie dogs. American Indian reservations and small towns with Old West roots mark the area. At Pierre, the state's capital, visitors can tour the 1910 capitol building. Near the city, visitors also can see Lake Oahe, which stretches 231 miles to Bismarck, North Dakota, and the Native American National Scenic Byway.

The mere name of the Black Hills and Badlands conjures images of the Wild West and rich Native American history. Known as the Black Hills, Badlands, and Lakes region of South Dakota, the area is dominated by sky-piercing granite peaks and forested mountains.

Visitors can tour America's "Shrine of Democracy," Mount Rushmore National Memorial, to see the 60-foot-high faces of four American presidents: Washington, Jefferson, Lincoln, and Teddy Roosevelt. The region is also home to the Crazy Horse Memorial and seven other national and state parks, where hiking, biking, camping, and rock-climbing opportunities abound.

In the southwestern part of the state, the scenic, erosion-carved landscape at Badlands National Park con-

tains animal fossils from 26 to 37 million years ago, while the prairie grasslands today support bison, bighorn sheep, deer, pronghorn, fox, and black-footed ferrets. The mineral-rich area is home to museums, including those that tell the story of the Gold Rush. The entire town of Deadwood, an original gold camp, is on the National Register of Historic Places.

Limestone hills often hide caves, such as Wind Cave National Park near Hot Springs or Jewel Cave National Monument near Custer. Named for the ill-fated Lt. Col. George Custer, Custer State Park interprets the history of Custer and his men and is where a herd of nearly 1,500 bison freely roam. Also, more than 180 species of birds have been recorded in the park. Those looking for the Wild West today will be pleased to find rodeos, guest ranches, and historic railroad stations.

American Cruise Lines

From the rich maritime heritage of New England to the Spanish settlements along Florida's sunny coastline, American Cruise Lines' small ships allow guests the opportunity to travel inland waterways and access ports unavailable to larger ships. The result is often front-door stops at quaint island towns or bustling coastal cities. The voyage itself is an important part of the experience. Travelers enjoy large staterooms, sundecks, glass-enclosed lounges, and fine cuisine in an informal atmosphere, while treated to presentations by historians and local experts.

Discerning guests can choose among a variety of itineraries that offer excursions along the length of the Atlantic Coast. Two Florida options are popular during winter months. The seven-night Great Rivers of Florida cruise traverses the lush, tropical passages of Florida. Guests depart from Amelia Island near Jacksonville, where a picturesque waterfront town boasts historic streets lined with 19th-century Victorian homes and shops. Included are historic stops along St. Johns River, designated in 1998 as an American Heritage River. On this excursion, guests experience Palatka, a town steeped in Civil War history, where nature enthusiasts can hike trails at Ravine Gardens State Park among thousands of azaleas and subtropical plants. This cruise features the Historic Districts of Sanford and the enchanting beauty of the cool mineral waters of Green Cove Springs. Also on the itinerary is America's oldest surviving European settlement, St. Augustine. Established in 1565, the city features

AMERICAN CRUISE LINES

St. Augustine, America's oldest surviving European settlement, is a port visited on the Great Rivers of Florida cruise.

magnificent architecture reminiscent of a small Mediterranean town.

The second option travels Florida's inland waterways, where guests can enjoy diverse historical sites and wildlife. Warm sunshine and blue skies are a trademark of the seven-night Okeechobee & Southern Waterways Cruise. This cruise also leaves Amelia Island before traveling to St. Augustine, with its picture-perfect beaches and museums detailing the history of Spanish and French influences in the area.

Guests also have opportunities to discover modern space technology at Cape Canaveral, the unspoiled landscape of St. Lucie, and Lake Okeechobee's fascinating wildlife. After sailing along the shady, moss-draped Caloosahatchee River, the ship docks at Fort Myers, where guests can experience museums and tropical flora and fauna.

Both Florida cruises are offered throughout November and December of 2002, as well as February and March of 2003.

Missouri

Two hundred years ago, Missouri marked the nation's western frontier. It is here that the nation's push to open up the west, led by Lewis and Clark's Corps of Discovery in 1804, is celebrated. The Jefferson National Expansion Memorial in St. Louis—home to the 630-foot Gateway Arch—includes the Museum of Westward Expansion, which showcases interpretive exhibits of the Lewis and Clark expedition along with other pioneers who ventured west to unsettled lands. Also in St. Louis at the Missouri History Museum, visitors can see an extensive Lewis and Clark collection. Exhibits include William Clark's journal, clothing, and other artifacts.

PHOTODISC

St. Louis' Gateway Arch

Just north of St. Louis, the Museum of the Western Jesuit Missions at Florissant chronicles the important role of the Black Robes, who were some of the earliest European descendants to travel west. Another colorful piece of western history unfolds only a few miles from St. Louis at the Daniel Boone Home in Defiance. It was here that the legendary frontiersman, trailblazer, trapper, surveyor, judge, and West Virginia legislator died in 1820 at the age of 86. Behind the Boone Home, visitors can get a sense of frontier town life at Boonesfield Village, a living history settlement composed of five 19th-century structures.

Well into the 1800s, Missouri events and characters continued to earn the state its Wild West reputation. In the early 1870s, Jesse James and his gang hid out in Meramec Caverns (just south of St. Louis) following train and bank robberies. Today the caverns are available for tours. Those intrigued by the James Gang can further satisfy their curiosity with trips to the Jesse James Farm and Museum in Kearney or the Jesse James Bank Museum, site of the first successful daylight bank robbery during peacetime, at Kansas City.

St. Joseph, just north of Kansas City, is where Jesse James was shot to death and where the daring days of parcel delivery are recounted at the Pony Express Stables Museum and National Memorial. Finally, for those hoping to remember their journey with a memento of the Wild West, St. Joseph is also home to the Stetson Factory, the renowned maker of traditional cowboy hats.

Springfield, Missouri

Visitors to Springfield, divided during the Civil War, today find peace in the Ozarks. In 1861, the first major Civil War battle occurred at what is now Wilson's Creek National Battlefield. In the wake of the war, the city's square became the location of the first Wild West shootout when "Wild Bill" Hickok killed Dave Tutt. Rich in modern history, Springfield's best performing arts are presented in the Landers Theatre, built in 1909. More than 150 preserved homes and unique shops and restaurants are located in the Walnut Street National Historic Register District. And anglers enjoy the Bass Pro Shops Outdoor World and the new American National Fish and Wildlife Museum.

SPRINGFIELD, MO WB

Wilson's Creek National Battlefield

The Outer Banks of North Carolina

After serving as beacons to 18th- and 19th-century sailors, the lighthouses of the Outer Banks now beckon those in search of history and unspoiled beaches. Five historic lighthouses stand today as testimony to the area's rich maritime heritage. These towering structures played a crucial role along a treacherous coastline. More than 2,000 ships have been lost along the Outer Banks, nicknamed the "Graveyard of the Atlantic." Many of these wrecks are now on display, and some are visible on the beaches during low tide.

Long before stately lighthouses guided mariners to safety, the first Europeans were drawn to these islands. On August 18, 1587, the first English child was born in the New World—on the Outer Banks' Roanoke Island. The child, Virginia Dare, and other colonists who settled Fort Raleigh would become known as "The Lost Colony," and their disappearance remains a mystery. Visitors can explore the story at Fort Raleigh National Historic Site, experience a preserved wetland habitat at the Alligator River National Wildlife Refuge, or tour the North Carolina Aquarium and its coastal environment exhibits.

Another historic event occurred on the shores of the Outer Banks on December 17, 1903, when Orville and Wilbur Wright made the first sustained flight in a heavier-than-air machine, ushering in the age of aviation. Visitors will find a full-scale reproduction of the Wright flyer, as well as interpretive exhibits and

NATIONAL PARK SERVICE

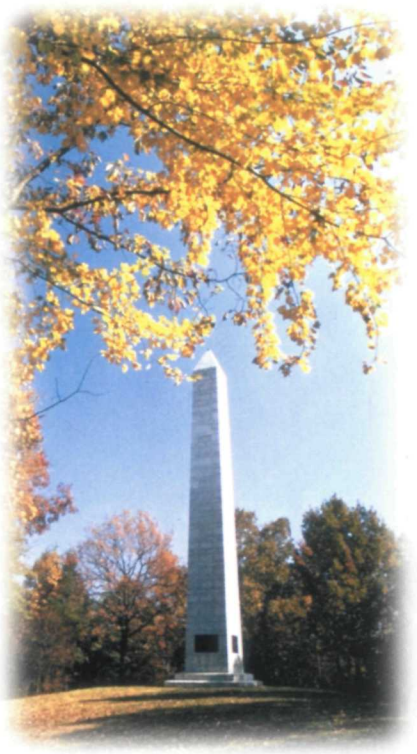
Bodie Island Lighthouse

programs, at Wright Brothers National Memorial at Kill Devil Hills.

At the opposite end of the Outer Banks, Cape Hatteras, which covers more than 70 miles and 30,000 acres of coastline and barrier islands, was the first national seashore and is understandably popular among outdoor enthusiasts. Anglers can choose from a variety of fishing piers or chartered and guided services, and birders will find the area a sanctuary for marshland species. The Pea Island National Wildlife Refuge and the Bodie Island Marshes attract more than 265 species of birds. Commonly sighted birds include egrets, herons, glossy ibis, Canada geese, snow geese (during winter), and many others. Visitors to Cape Hatteras can also tour the Frisco Native American Museum and Natural History Center.

North Carolina

North Carolina's Crystal Coast is where natural beauty and historical treasures are intertwined. A place where more than 80 miles of barrier islands and inviting beaches are dotted with historic sites and villages, such as Beaufort Historic Site. Off the coast, dolphin-watching excursions explore the same waters off Cape Lookout National Seashore where Blackbeard's flagship is believed to have sunk in the 18th century. (Artifacts from the wreckage are exhibited at the North Carolina Maritime Museum.) And during the Civil War, Fort Macon State Park was the site of fierce battles and today preserves and interprets that history.



NATIONAL PARK SERVICE

Kings Mountain Military Park

South Carolina

America's road to independence may not have started in South Carolina, but the story would not be complete without a stop here. As many as 300 Revolutionary War skirmishes occurred in South Carolina, more than in any other colony. Visitors can explore the 1.5-mile self-guided battlefield trail at Kings Mountain National Military Park in Blacksburg, where American patriots won a key victory over Loyalists in 1780, or Cowpens National Battlefield, where Brigadier General Daniel Morgan's Colonial army won a decisive battle over Lt. Colonel Banastre Tarleton's force of British regulars on January 17, 1781. Authentic weapons from the victory and a full-size replica of the British three-pounder "Grasshopper" cannon are on display at the site.

Other sites include South Carolina's historic Camden Revolutionary War Site, which served as supply headquarters for Lord Charles Cornwallis during the Revolutionary War and commemorates the battles of Camden and Hobkirk Hill. Ninety Six National Historic Site played an important role as an early backcountry trading village and later during the fight for independence. And on South Carolina's coast at Fort Moultrie, part of Fort Sumter National Monument, American patriots dealt the British one of their early defeats on June 28, 1776.

History is brought to life at Historic Brattonsville, which interprets the Carolina Backcountry and the evolution of the Bratton family's lives during the Revolutionary and Civil wars. It also served as a key filming location for Mel Gibson's movie, *The Patriot*.

South Carolina's towns and cities offer many examples of 18th-century architecture that have withstood the

test of time (and wars). A good place to start is along South Carolina's National Heritage Corridor, which covers more than 14 counties and stretches some 240 miles from the mountains to the sea. Charleston, one city the Founding Fathers might recognize if alive today, invites travelers to stop and absorb its rich character and heritage. Other historic stops along the corridor include Drayton Hall, an authentic example of colonial architecture, and a plantation that was once home to the president of the First Continental Congress as well as a signer of the Declaration of Independence (Middleton Place). Boone Hall Plantation, which dates to 1681, displays nine original slave cabins and a breathtaking avenue of oaks.

Olde English District

Along Carolina's Backcountry Revolutionary War Trail, which begins with a bang in the Olde English District, visitors travel through scenic countryside and time. The District, seven counties between Columbia, South Carolina, and Charlotte, North Carolina, is home to dozens of Revolutionary and Civil War sites and historic treasures, such as courthouses, plantations, mansions, and museums. Step back in time at Olde English towns like Camden, Winnsboro, Chester, Union, Lancaster, Cheraw, and York that boast historic districts with colonial, antebellum, and Victorian homes and 19th-century public buildings. Discover African-American historic sites such as Brainerd Institute, an educational institution for freed slaves.

Eastern National

Before your next visit to a Civil War battle site, learn what Union and Confederate soldiers and generals were thinking. Understand the events leading to the battle and appreciate the resulting impact. Ideal for new or seasoned enthusiasts, the National Park Civil War Series, produced in conjunction with the National Park Service, adds context to any visit to sites where the fate of the Union was resolved. The series includes illustrations and photographs on battles such as those fought at Shiloh, Fredericksburg, and Chancellorsville as well as volumes on black soldiers and prison camps. See the entire set—and other Civil War items—at www.eParks.com.

NATIONAL PARK SERVICE

Blue Ridge Parkway

Blue Ridge Parkway

The lavender-hued mountains of the Blue Ridge Parkway have long been home to historic journeys. Today the parkway winds through towns with historic districts and scenic valleys dotted with 19th-century farms. The parkway passes from Shenandoah National Park in Virginia to Great Smoky Mountains National Park in North Carolina and Tennessee. The parkway itself extends 469 miles, but the region is much larger, encompassing the homes of former presidents Andrew Johnson and Thomas Jefferson; Jonesboro, Tennessee, the first town placed on the National Register of Historic Places; Bristol, Virginia, considered country music's birthplace; and the frontier first opened to settlers by Daniel Boone and Davy Crockett through the Wilderness Road. Visitors also can explore the natural beauty of Great Smoky Mountains National Park or the Appalachian National Scenic Trail.

Alaska Heritage Tours

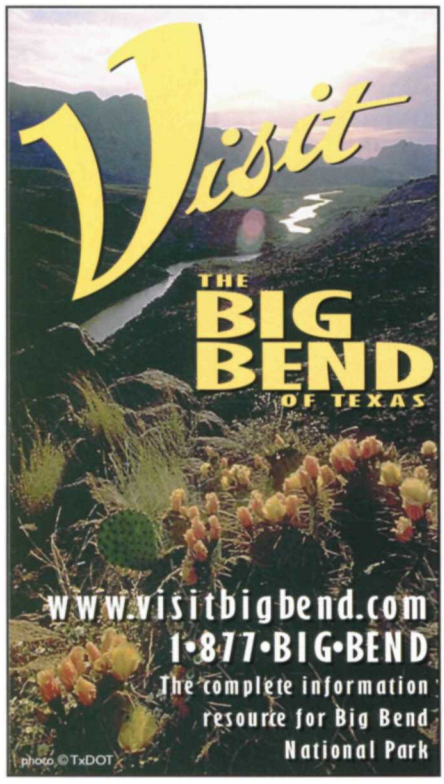
Seasoned travelers recognize that locals are the ones who know where an area's treasures can be found. It is this basic principle that drives Alaska Heritage Tours, which is owned by more than 6,900 Alaska Native shareholders. Available cruises explore abundant marine wildlife and massive tidewater glaciers at Kenai Fjords National Park or Prince William Sound. At Denali National Park, home to Mount McKinley, guests experience and learn about the history, geology, and wildlife of the six-million-acre wilderness. Trips to the unspoiled wilds, though, do not go without comfort. Alaska Heritage also owns modern, rustic lodges in beautiful settings with unsurpassed views.

ALASKA HERITAGE TOURS

Visitors admire Alaska's beauty

Kennicott Glacier Lodge, Alaska

At center of the largest national park in the United States and set amidst the unspoiled beauty of Alaska's rugged mountains, wild rivers, and remote valleys, sits Kennicott Glacier Lodge. At 13.2 million acres, Wrangell-St. Elias National Park and Preserve is the size of six Yellowstones and is home to a variety of wildlife, including moose and bear. With a history rich in copper mining, Kennicott is a national historic landmark and lays claim to Alaska's largest ghost town. Guests at the lodge, which is a replica of a historic mining building, enjoy spacious rooms, a massive porch, "wilderness gourmet" fare, and hiking, mountain biking, and rafting options.



Big Bend National Park, Texas

Human history at Big Bend National Park is as rocky—and at times as violent—as the geological forces that created this impressive landscape. The oldest archaeological site dates back 8,800 years. More recently, both Spain and Mexico laid claim to the land controlled by the Mescalero and Camanche, but neither was able to settle it. After the Civil War, Buffalo Soldiers (black troops) were instrumental in driving the native populations to reservations. When the Mexican Revolution began in 1910, Big Bend became a haven for renegade bands retreating after raids and massacres, and figures such as Pancho Villa and General John Pershing were major players in the area's past.

NATIONAL PARK SERVICE

Big Bend National Park

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By the Dawn's Early Light

Fort McHenry National Monument and Historic Shrine tells the story of the battle that inspired Francis Scott Key to write America's national anthem.

BY RYAN DOUGHERTY

The crackle of artillery ceased, a wall of smoke began to clear, and the Americans roared in triumph —defenders of Fort McHenry thwarted England's attempt to capture Baltimore.

It was at this moment on September 14, 1814, that Francis Scott Key, aboard an American truce vessel several miles from Fort McHenry, saw an inspiring sight: despite the heavy British bombardment, the fort's mammoth American flag still waved, "o'er the ramparts."

CAROL HIGHSMITH; CORBIS (INSET)

The sight of Fort McHenry's flag inspired Key to author the anthem.

"Then, in the hour of deliverance and joyful triumph, my heart spoke: 'Does not such a country and such defenders of their country deserve a song?'" Key later remembered.

While aboard the ship, Key etched the battle into legend by writing what would become America's national anthem in 1931. *The Star-Spangled Banner* is but one aspect of Fort McHenry's history, however. Indeed, the fort's history begins with the Revolutionary War, when the people of Baltimore, fearing a British attack, built the earthen star-shaped fort.

While England and France waged war at the turn of the 19th century, each country prevented American merchant ships from trading with Europe. The British even imprisoned some American seamen and pressed them into service. Because these actions violated America's "free trade and sailors' rights" as a neutral nation, the United States declared war on England in 1812. A year later, a British force of about 5,000 sailed up the Chesapeake Bay, planning to give the Americans "a complete drubbing."

The British army burned Washington, D.C., then zeroed in on Baltimore. But the people of Baltimore were ready—defenses had been built, arms and equipment gathered, troops trained. About 15,000 men stood ready.

British troops landed near Baltimore on September 12, 1814, marched to within two miles of the city, and waited for their ships to destroy the fort. The bombardment lasted more than 24 hours, during which about 1,800 shells, fired from ships about two miles away, descended upon the fort.

At about midnight on September 13, realizing that shelling Fort McHenry was ineffective, the British forged a sneak attack to distract the Americans and rush the west side of the city. That attack failed, crushing any hope the British had of capturing Baltimore.

England relented early in the morning of September 14, at which time American soldiers hoisted a 42-by-30-foot flag made so large to ensure that it could be seen from afar.

Earlier that September, Key, a 35-year-old lawyer, and Col. John S. Skinner traveled to the British fleet, seeking the release of a friend, Dr. William Beanes, whom the British arrested near Washington. While aboard the ship, the Americans heard of the planned attack on Baltimore, so the British detained them. The Americans witnessed the bombardment from the truce ship, about eight miles from Fort McHenry.

Fort McHenry never again faced enemy fire but remained an active military post for the next 100 years. It was a Union prison during the Civil War and an army hospital during World War I. In 1939, Fort McHenry became a national monument and historic shrine—the only park unit today with such distinction.

Some have argued that the Battle of Baltimore would be remembered only as one of a few American victories during the War of 1812—a mere footnote in history—had it not been for *The Star-Spangled Banner.*

Key responded to that notion modestly: "Let the praise, then, if any be due, be given, not to me, who only did what I could not help doing, but to the inspirers of the song!"

RYAN DOUGHERTY *is news editor.*

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This Bat Is All Ears

Buffalo National River provides much-needed habitat for the Ozark big-eared bat, among the most endangered of the 43 bat species in the country.

BY JENELL TALLEY

Contrary to what scary movies and spooky campfire tales would have one believe, bats are not dangerous neck-biting, blood-sucking creatures. In fact, most bats, such as the Ozark big-eared bat, are highly beneficial to humans. Many species prey on night-flying insects known to damage staple crops, while some pollinate fruit-bearing trees. Bats account for 25 percent of all mammal species, but they reproduce slowly and need certain types of caves to breed and hibernate, making them susceptible to threats that can affect their numbers. And the Ozark big-eared bat, first described in 1950 from Hewlit Cave in Arkansas, is among the most endangered of the United States' species.

MERLIN D. TUTTLE, BAT CONSERVATION INTERNATIONAL

The Ozark big-eared bat's ears curl while resting and can be more than an inch long.

Ozarks are medium-size bats with long ears that connect across the forehead. Their ears are more than an inch long and often curl when the animals are resting. The bat is reddish brown with tan underparts, but its color can vary from pale brown to black. The bats are approximately 3.5 to 4.5 inches long, have about a 12-inch wingspan, and typically weigh between 0.2 and 0.5 ounces.

The Ozark big-eared bat, or *Corynorhinus townsendii ingens*, is found primarily in the Ozarks of eastern Oklahoma but also can be found in southern Missouri and at Buffalo National River in western Arkansas. It is the largest and most rare of the five *townsendii* subspecies. The Ozark's population is estimated at 1,800. The species likely was never very common because its intolerance of human and animal disturbance causes the bats to abandon favorite roosts. They live in caves, moving from one to another depending on the time of year. Some caves are used for hibernation, others are used for maternity sites, and some serve as shelter during summer. Hibernation caves' temperatures usually range between 40 and 50 degrees Fahrenheit, while maternity colonies are found in caves with temperatures between 50 and 59 degrees Fahrenheit.

Disturbing the bats during winter hibernation causes them to use valuable stored fat reserves and increases chances of starvation. Disturbing maternal roosting spots can cause the premature death of young Ozarks, and female Ozarks produce just one offspring each year, adding to the species' vulnerability.

The demand for land in the Ozarks has been on the rise, as the population over the last ten years has grown at twice the national average. These bats, which typically feed on moths and other insects along forest edges, have been most affected by the loss of foraging space and a diminishing number of caves because of reservoir construction and residential, agricultural, and timber development. A reduced food supply, diseases, and an increase in predators, such as raccoons, bobcats, and snakes, also may be contributing to the decline.

According to the U.S. Fish and Wildlife Service, the best way to conserve the Ozark bit-eared bat is to preserve its habitat. Where feasible, incorporate artificial habitat as a summer habitat enhancement, adds Bob Benson, public information manager at Bat Conservation International, a nonprofit dedicated to protecting and restoring bats and their habitat.

Protecting Ozarks, as well as the country's other bat species, is a vital part of maintaining the environment. The loss of bats increases the demand for chemical pesticides, which can wash into streams and harm other plant and animal species and even hurt the economy. Although the Ozark's population may not be increasing, Benson says that educating people about the Ozark, and bats in general, and getting them to set aside their fears of the tiny creatures is a step in the right direction.

JENELL TALLEY *is publications coordinator.*

GEAR GUIDE

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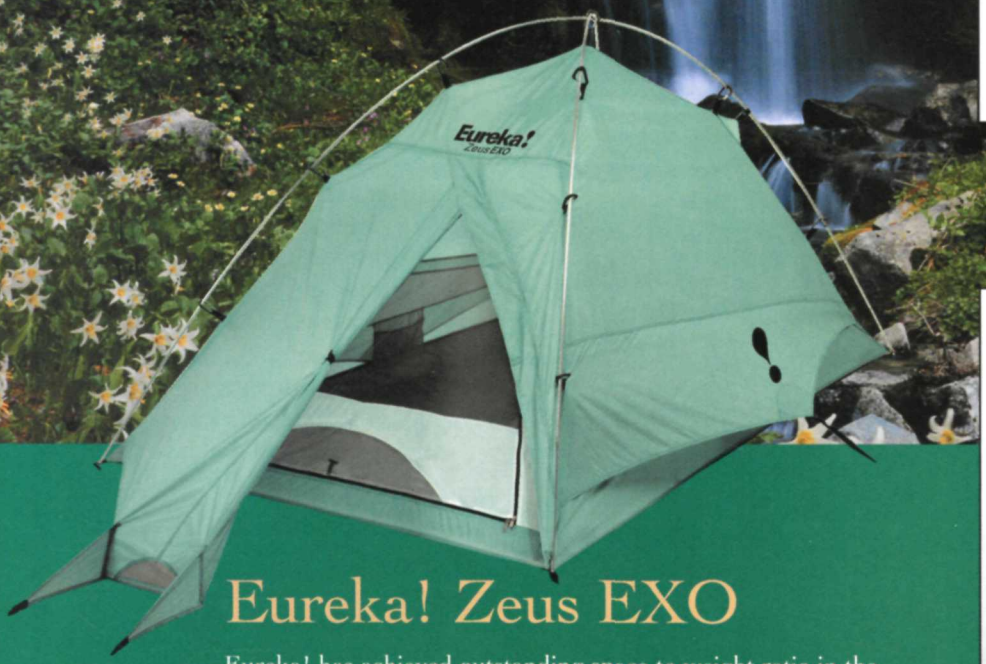

Eureka! Zeus EXO

Eureka! has achieved outstanding space to weight ratio in the new Zeus EXO models, with the solo weighing only 3 pounds with 27.36 square feet, and the two-person only 3.10 pounds, with 38 square feet of useable space. The Zeus is designed with an external frame and super-tough gated carabiners that make for lightning fast set up and add stability to this free-standing backpacking shelter. The Eureka! Zeus EXO maximizes venting with large mesh panels, High/Low venting door and vestibule vent. Compact, 13-inch pole sections make this a great lightweight backpacking shelter. $149.99 for the solo and $169.99 for the two-person shelter. For more information, visit www.eurekatent.com or call (800) 661-9086.

Unlocking Secrets in Time

Doubling the size of Petrified Forest National Park would protect lands that could shed light on the past and enlighten the future.

BY DAVID D. GILLETTE

More than 220 million years ago, the Earth was in transition. Pangaea, the World Continent, was the predominant landmass, the Atlantic Ocean did not exist, and dinosaurs roamed the land.

We know these things because evidence from this period is frozen in time. In addition to evidence from around the globe, a treasure trove of information can be found at Petrified Forest National Park in Arizona. A vast forest of petrified logs, strewn across what is now a desert, and fantastic life forms locked in stone bespeak a time when tropical streams and nearby swamps were home to giant 200-pound amphibians, enormous crocodile-like beasts called phytosaurs, and the earliest dinosaurs.

Petrified Forest today presents a unique opportunity to educate the public. The park was set aside nearly 100 years ago to preserve the spectacular concentrations of rainbow-hued petrified wood, scenic landscapes of the Painted Desert, rare shortgrass prairie, and more than 500 archaeological and historical sites that reflect a 10,000-year continuum of human history. We now know that few places in the world contain such a rich fossil record of the Triassic period.

Recent scientific work has revealed that petrified wood is only a part of the globally significant record contained within the Chinle escarpment, the name given to the geological formation containing the "mineralized remains of the Mesozoic forest." Only six miles of the 22-mile-long escarpment, which contains the world's most significant record of late Triassic period fossils, is in the park. The area outside the park may contain fossils that can more readily increase our understanding of flora and fauna and the changing climatic and tectonic conditions on Earth during that era.

CARLTON STOIBER

Legislation now before the House and Senate proposes to add 97,800 acres, more than doubling the size of the park. The legislation would allow the National Park Service to acquire lands that have been off limits for the past century to all but ranchers, their herds of cattle, and profiteering treasure hunters.

These lands contain a priceless natural heritage of fossils and artifacts that are being systematically pilfered. Grave robbers supply the black market with artifacts from areas so remote even the cows get lost. On a recent tour of the proposed expansion area, we visited site after site that had been looted by treasure hunters seeking pots and burial items held sacred by American Indians. Fossils in the same area have come under similar pressure; dinosaur bones can bring thousands of dollars on the commercial market, but once they are removed, they are forever lost to science.

These stories should be developed in the interest of all Americans. That issue—black market versus national heritage—is only the beginning of our nation's interest in these lands. This national inheritance, both within the modern boundaries of the park and in the expansion area, cuts to the core of our existence as citizens and leaders.

With leadership and vision, our parks can move to center stage where we need help the most—in solid, hard-nosed education. The mission cannot be conservation and protection alone, for preservation without education is like a library under lock and key.

Petrified Forest is filled with information that could unlock secrets about current challenges, such as biodiversity, ecosystem failures, the importance of fire to the health of an ecosystem, and endangered species. Gut-wrenching stories of predator-prey interactions, floods that carried giant trees into colossal log jams, and the humble beginnings of our mod-

DAVID D. GILLETTE, PH.D., *is the Colbert Curator of Paleontology at the Museum of Northern Arizona, Flagstaff.*

ern world can be pried from the rocks at Petrified Forest National Park and the expansion areas. We cannot afford to lose these stories or the ability to share them.

Every paleontologist I know has had the experience of showing fossils in the ground to eager onlookers. Suddenly these are not cold, lifeless rocks; instead, they hold the key to our Earth's complicated history. "This one was a quick, nimble dinosaur. Can you see these slender legs and sharp, nipping teeth?"

"Look at this one," the paleontologist adds. "We're excavating its skull. It's not a dinosaur; it's a HUGE phytosaur, bigger and meaner than today's crocodiles!"

"Are these real fossils? How old are they? How did they get preserved?" The questions come from all directions and all at once from everyone, not just kids. Now we can see the forest. The logs are no longer the story. It's a big picture. It's time, on a grand scale. Two hundred twenty million years of time.

The educational opportunities pour out like sand on the ancient sandbars where the giant logs in Petrified Forest were stranded. This is our natural laboratory. Petrified Forest National Park and the proposed expansion area hold the keys to education in the raw, the full surround-sound, sunburn, and flash-flood experience. Here we can teach teachers and students alike, elbow to elbow, with hands-on dinosaur excavations, by mapping archaeological sites with the Global Positioning System, with high technology remote sensing, and the down-and-dirty work of hoisting thousand-pound blocks of rock encased in burlap and plaster that contain dinosaur skeletons. This is a training ground for the next generation of scientists and politicians, historians, and business executives.

And it's more than a training ground: here are biodiversity and global environments on a grand scale. Is global climate change a real and permanent crisis? Are we truly experiencing a major extinction episode with the loss of tropical habitats and widespread pollution? Or are these crises nothing more than inconsequential blips on our collective radar screen?

Here is where we put our fears in perspective. Petrified Forest National Park does not have all the answers, but those whom we educate here will lead us into the future as we have been led by our wise and brilliant forefathers. Education is the only solution to understanding our modern world. This is the real experience, where we teach the scientific method, where we become professional skeptics, where we demand to know how we know what we think we know.

Our technology today makes our natural laboratories accessible to everyone. Why accept replicas and models? We must educate our public first. The time dimension is the missing link. We can understand the logs, but can we place them in perspective? Can we see the forest? Now, at one of our parks, Petrified Forest National Park in Arizona, we have the unique opportunity to enlarge and amplify that perspective.

Imagine what would happen if President Bush received 100,000 letters about our national parks.

For the last 12 months, Americans for National Parks has been working with Congress and the administration to help make sure the National Park System receives the necessary funding to fully meet the needs of the parks. As the president prepares for next year, we want to remind him how strongly people care about our national parks. We've set a goal of 100,000 letters to the president by October 30. It's been said that "one voice is just a whisper, but many voices create a roar." Let the president hear from you.

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Dear President Bush:

Thank you for your leadership in preserving and protecting our national parks. But there's more to do. Please support an increase to the National Park Service's 2004 budget to meet the annual needs of our national parks. Because there's just too much to lose.

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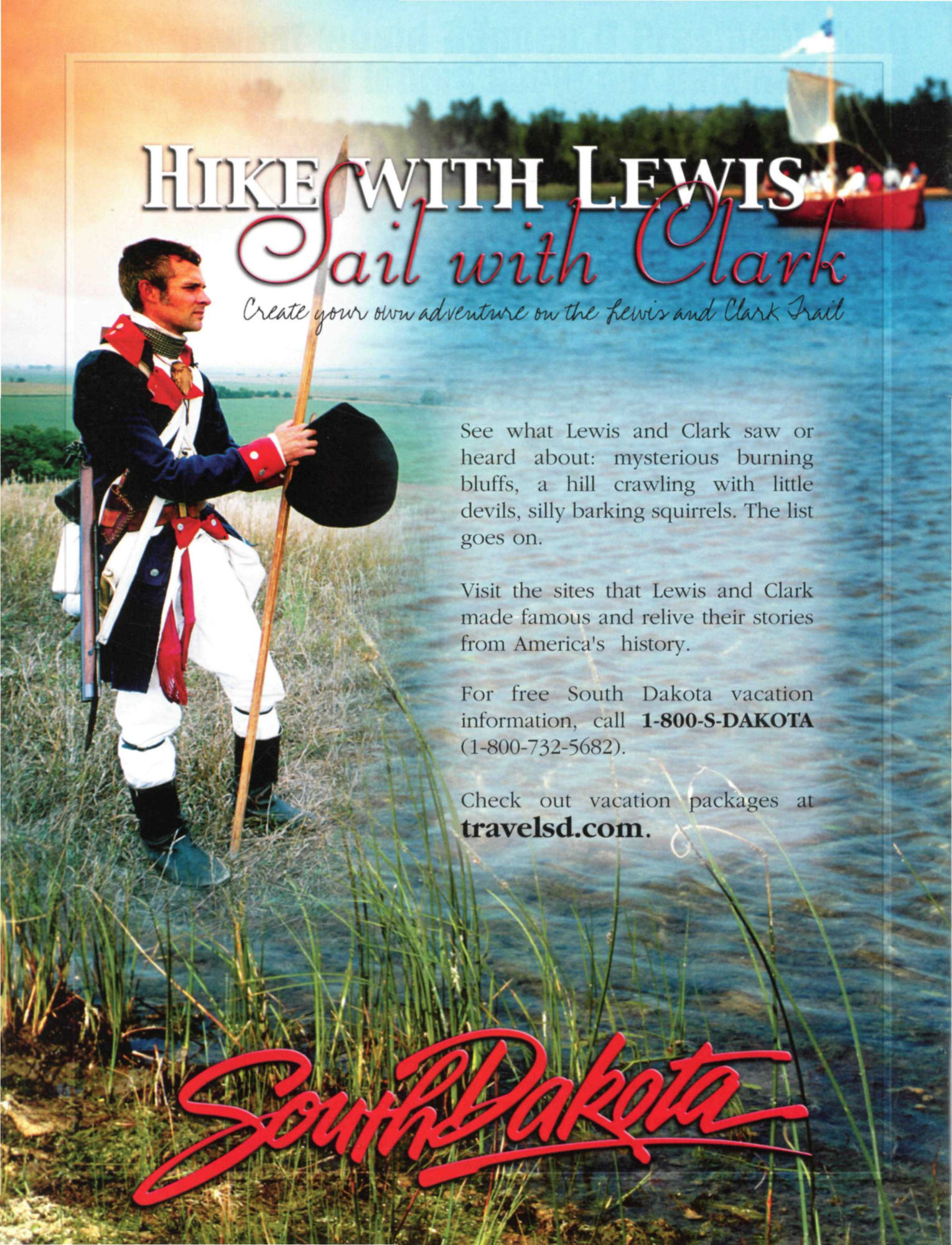
Peaks of Interest

This park's range of elevation provides habitat for a variety of species, including bobcats, copperhead snakes, and more than 200 types of birds.

LAURENCE PARENT

This park is partly immersed in the Blue Ridge Mountains, forming the eastern rampart of the Appalachians, and extends more than 4,000 feet at its highest point. The park's range of elevation and slopes, rocks, soils, and precipitation create an array of habitats, providing nearly 200 bird species, copperhead snakes, black bears, and bobcats with a place to call home. Hardwood forests abound, with roughly 100 species of trees covering more than 95 percent of its landscape. Have you visited this park? Do you know which one it is? [Answer on page 7.]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