The Magazine of
The National Parks
Conservation
Association

National Parks

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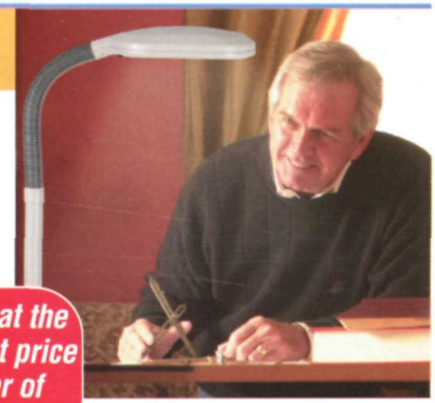

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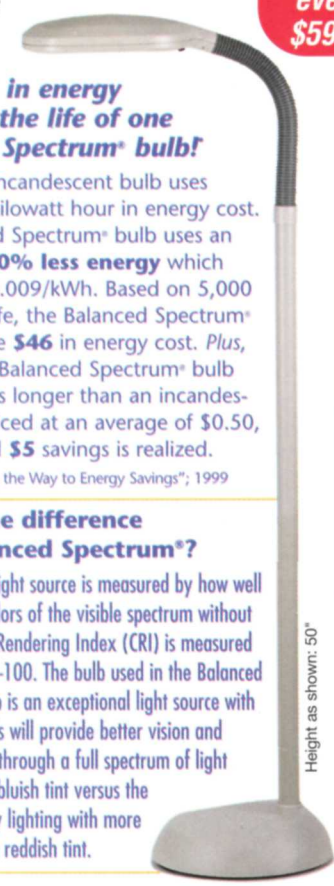

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Dennis M.
Richmond, VA

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Vol. 78, No. 3
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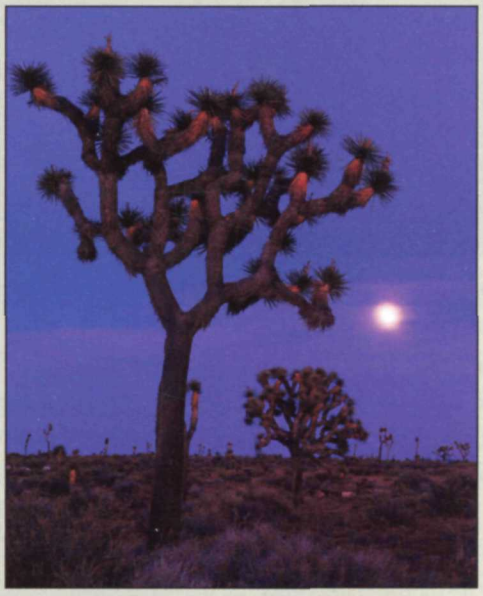

Cover photograph of moonrise over Joshua Tree National Park, *by Laurence Parent*

STEVE MULLIGAN PHOTOGRAPHY

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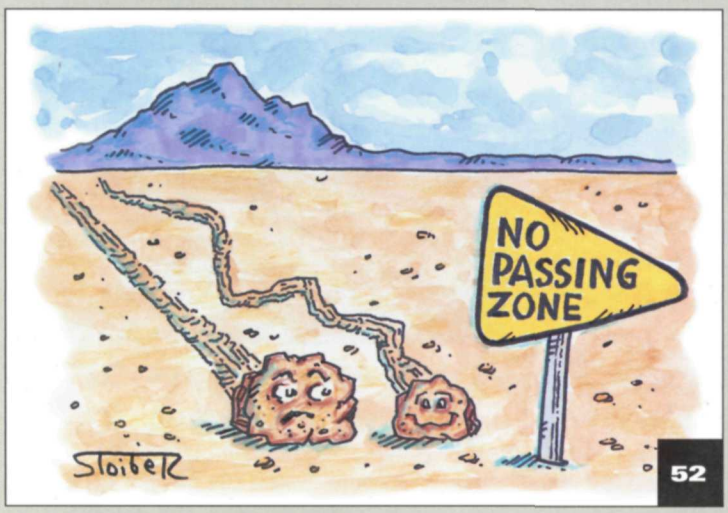
MERLIN D. TUTTLE, BAT CONSERVATION INTERNATIONAL



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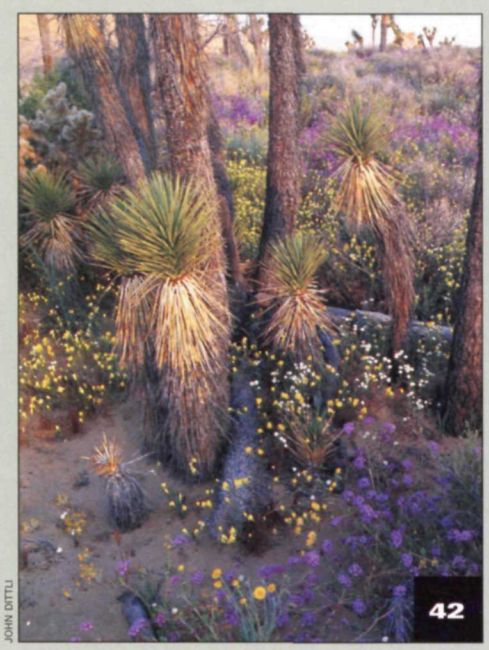

JOHN DITTLI

Departments

Preserving Family Memories

CHAD EVANS WYATT

This summer, I've been fortunate enough to enjoy a month-long journey from our home in Arlington, Virginia, to a dozen national parks, including Great Sand Dunes, Mesa Verde, Dinosaur, Grand Canyon, Yellowstone, and Rocky Mountain. I was thrilled to share this trip with my wife and three children.

You may have enjoyed some of the same parks and activities we did, all of which will live with us well beyond the summer of 2004. We enjoyed the incredibly dark night skies at Great Sand Dunes, and we had a great evening camping near Phantom Ranch after hiking into the Grand Canyon. We also enjoyed a 17-mile bike ride at the park, and we listened to an evening talk given by a ranger about John Wesley Powell's journey down the Colorado River.

We toured Timpanagos Cave and explored the wall of fossils and dinosaur bones at Dinosaur; we took a ranger-led tour of Balcony House at Mesa Verde. We enjoyed spectacular views of the Grand Tetons at Jackson Lake Lodge and reluctantly finished our vacation at Rocky Mountain with a climb up Longs Peak followed by a celebration dinner that included a campfire and s'mores.

Although we had some spectacular experiences, one story remained the same throughout our journey. Fewer rangers are available to educate the visiting public about the history and significance of these special places. Of the 12 parks we visited, 11 of them had reduced the number of staff. Dinosaur has reduced its seasonal interpretative staff from 12 to three over the last three years. Twenty of Yellowstone's staff positions were vacant. Olympic is reducing its seasonal interpretative staff from 130 to 20. As a result of these budget woes, many of the legendary educational programs are being reduced, and the agency's primary mandate to protect the parks "unimpaired for the enjoyment of future generations" will be harder to maintain.

Some officials have repeatedly said that the Park Service is receiving more money than ever before. This past summer, administration officials toured the parks to repeat this message. Although these statements are technically accurate, the modest increase has been more than eaten up by inflation, Homeland Security expenses, and mandated salary increases. Consequently, the money available to park superintendents has declined significantly.

On our journey, my children learned more about this country than I expected. Our trip demonstrated that the national parks work to tell the whole story of America—both our proudest moments and some of our most shameful. We would hope that rather than spinning the numbers to their best advantage, this administration and Congress would work to bolster them to ensure that our national parks remain the world-class resource they should be so that your family and mine can continue to enjoy them as they were meant to be enjoyed.

Thomas C. Kiernan

EDITOR'S NOTE

Desert Dreams

CHAD EVANS WYATT

Deserts have long been viewed as wastelands, but these vast expanses of wilderness harbor incredible plants and animals, trees that can live thousands of years, and creatures that can survive temperatures that would fry lesser cousins.

The desert is a place for solitude and contemplation. The dark night skies are ideal for gazing at stars, and each March through May if enough rain has fallen, the flora explodes into an array of vivid color. As Bruce Leonard says in Excursions, page 42, "Deserts can provide solace and escape, unexpected novelty and understated beauty."

This issue of *National Parks* celebrates the tenth anniversary of the California Desert Protection Act, which set aside nearly nine million acres of land in Southern California. Articles in this issue offer perspectives on both the legislation and the desert. Our cover story focuses on traveling in the region and outlines some events scheduled to celebrate the passage of the protection act. This landmark conservation bill was introduced in 1992 by Sen. Dianne Feinstein, and she shares some of her thoughts on the legislation on page 38.

Park Mysteries takes a look at the Racetrack Playa in Death Valley, where seemingly inert rocks move for no apparent reason. Scientists have puzzled for years over this phenomenon. Their theories are described on page 52. We hope this issue gives you a greater appreciation for the desert lands in southern California, and perhaps even helps to identify your next park destination.

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.

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

MAKE A DIFFERENCE
Members can help defend America's natural and cultural heritage. Activists alert Congress and the administration to park threats; comment on park planning and adjacent land-use decisions; assist NPCA in developing partnerships; and educate the public and the media. Please sign up to receive *Park Lines,* our biweekly e-mail newsletter. Go to www.npca.org to sign up.

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

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

HOW TO REACH US
National Parks Conservation Association, 1300 19th Street, N.W., Suite 300, Washington, DC 20036; by phone: 1-800-NAT-PARK; by e-mail: npca@npca.org; and www.npca.org.

History Corrected, Federal Hall, and Bison

From Our History Buffs

On page 40 of the Summer 2004 issue, there is an error in the second bullet of the "Federal Hall: Witness to History" material. Alexander Hamilton (born in 1755 or 1757 as disputed by historians) did not defend Peter Zenger at his 1735 trial. Andrew Hamilton, for whom the term "Philadelphia lawyer" was coined, successfully argued a defense in Zenger's case.

Jim Markham
Wilmington, DE

Editorial Reply: Several of our historically savvy readers wrote to us to correct this mistake, which we regret. Andrew Hamilton, not Alexander Hamilton, former secretary of the treasury, should have been listed as the defense attorney in the Zenger trial.

Native New Yorker

As a lifelong and fervent New York City booster, I wish I could agree with you that the city was the nation's first capital. Your phrase should read "the nation's first capital under the constitution." In fact the United States had many seats of government under the Articles of the Federation, and a seat of government is by definition the capital.

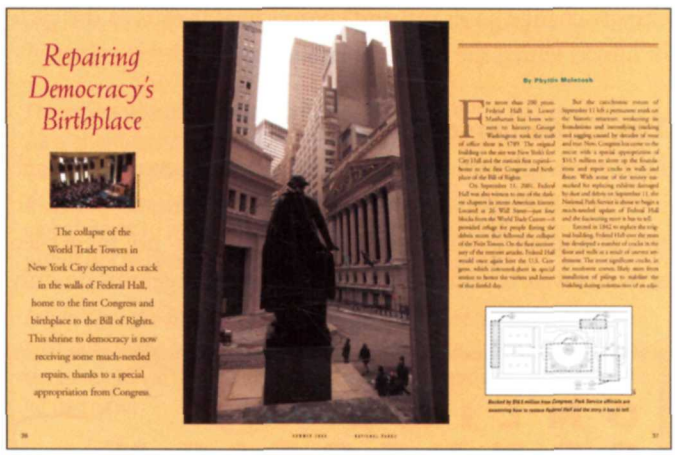
August Matzdorf
New York, NY

Worth Saving?

I question the need to spend all that money to renovate Federal Hall ["Repairing Democracy's Birthplace," Summer 2004]. As you state, Federal Hall was demolished in 1812 and a new building was erected in 1842 for a different purpose. Since this is not the original building, why fix it? A nice plaque dedicated to Federal Hall would be appropriate and would save money for other projects. In this time of tight and shrinking funds, we should use money wisely.

Clayton Schwartz
via e-mail

Editorial Reply: Although the building that succeeded Federal Hall in 1842 may not be the original site of President George Washington's inauguration, its replacement hosted other landmark moments, including the first anniversary of



the September 11th terrorist attacks when the U.S. Congress joined the nation to honor the victims. The fact that it is not the same building does not take away from its symbolic importance as the birthplace of democracy.

Tough Enough for Climate Change?

The article on the problems of global warming ["Alaskan Meltdown: On the Frontlines of Climate Change," Summer 2004] included the comment that "...polar bears will no longer walk the shores of Alaska's northwest parklands as they have for untold generations." One may not be so pessimistic if the information on polar bears reported by Farley Mowat in *Sea of Slaughter* (1984) is accurate. Historical records report that these bears formerly ranged south to Cape Cod, Delaware Bay, and the gulf islands of St. Lawrence. Mowat credits them with being adaptable and hardly a "prisoner of the Arctic" (page 103) like many other species "whose survivors in our time are now restricted to the frigid zone simply because they have been destroyed by us elsewhere."

Richard Buggeln
Knoxville, TN

Editorial Reply: Today's polar bears are built for arctic regions, and it may require generations of evolution to adapt to warmer climates should arctic temperatures rise to that of mid-Atlantic states. In addition, the bears are struggling to survive on diminishing food sources that are also being affected by climate change. A study by scientist Ian Stirling and colleagues, published in the journal *Arctic*, finds that ringed seals,

the bears' main food source, are scarce because their icy habitat on the Hudson Bay is breaking up earlier each year. The bears have a shorter window of time to hunt and return to the land underweight and unable to provide for their cubs. Rapid climate change poses real and complicated threats to the cycle of life on which the bears depend.

The Endangered Ranger

I just returned from a vacation that included several days each in Sequoia, Kings Canyon, and Yosemite national parks. To my disappointment, there were days when no ranger-led activities were scheduled or when only one ranger was on duty to provide information but no guided activity. We were told that budget cuts have bitten deeply into monies available for staff. Volunteers try to fill the void but are often without sufficient expertise in topics and ability to speak to crowds.

Ellen Lerman
via e-mail

Bountiful Bison

I travel to Yellowstone National Park four or five times a year. I agree that Montana's agriculture-driven policies are ridiculous; but I also think the article "Stopping the Slaughter" [Summer 2004] is simplistic and misleading. Park naturalists say that Yellowstone can support only a limited number of bison. You would have more credibility on the issue if you offered a rational solution instead of publishing inflammatory articles.

Tom Bergsland
Bozeman, MT

Editorial Reply: The crucial issue discussed by Congressman Rahall is not bison numbers—which the Park Service culls to a sustainable population of about 4,000—but how the animals are being slaughtered. Yellowstone remains the only place in the nation that is home to truly wild, genetically pure bison with an unbroken connection to their native habitat. The herd has irreplaceable biological, cultural, spiritual, and historic value and is one of our nation's great conservation success stories.

Setting an Example

During a family reunion in Great Smoky Mountains National Park, I was deeply distressed by the traffic in Cades Cove—the lovely, much-visited section of the park near Townsend, Tennessee. The exhaust from the bumper-to-bumper cars pollutes what is already considered one of the most polluted parks in the system. The heavy traffic is disruptive to wildlife, and the noise of the motors obscures any natural sounds of rustling leaves and singing birds. It's no fun for humans either—crawling along in one's car on a narrow track road behind a long line of other cars is not an outdoor experience, nor does it cultivate a love for or understanding of nature and wildlife.

At Zion National Park in Utah, however, I was impressed with the wonderful public transport system offered in the Virgin River Valley. Private cars are banned for much of the year; instead, visitors leave their cars in lots outside the park and ride on shuttle buses. The sound of motors have disap-

ONLINE CONNECTION

What's New at NPCA.org

What I Did On My Summer Vacation by Tom Kiernan

This past summer, NPCA President Tom Kiernan hit the road with his family to tour the parks of the Wild West. They visited 12 national parks during a month-long, once-in-a-lifetime journey. Now you can share in the adventure by visiting www.npca.org/TK to flip through his family photo album and read his personal journal.

So What Did YOU Do This Summer?

If you were one of the millions of Americans who visited a national park this summer, we want to hear from you! Visit www.npca.org/forum to share your park experiences or read about what other NPCA members have been up to.

Plan A Trip to the Parks

If you haven't planned a trip yet, you can choose from a variety of tours that NPCA will be offering in 2005 through its ParkScapes program. See page 47 or go to npca.org/travel to see the latest trip catalog.

National Park Explorer

This Halloween, NPCA is offering a new treat for our members. We've launched a monthly email newsletter called *National Park Explorer*, and we'd like to invite you to subscribe. Each month we'll select a new park of the month, highlight one of our campaigns, and keep you informed about what the staff at NPCA are up to and how you can help. Visit www.npca.org/nationalparkexplorer to read our latest issue and subscribe for your very own copy.

peared from Zion's valley. Wildlife has returned. The air smells clean and fresh. Moreover, the bus ride was fun and friendly as park visitors from around the world chatted with one another.

Cades Cove seems the ideal spot for the establishment of a similar system. Buses could easily circulate, dropping off and picking up visitors and hikers at the many historic sites and trailheads on the 11-mile, circular road. It would be a very small change in the park's policy with a very big payoff.

Peggy Grodinsky
Long Island City, NY

Editorial Reply: We agree that Cades Cove is an ideal location for a shuttle system. In fact, a study is under way at Great Smoky Mountains National Park to assist the Park Service in developing a long-range plan for Cades Cove. One of the goals of the plan is to enhance the quality of a visitor's experience by protecting the historic and natural landscape as well as by managing traffic congestion. You can help with this process. Go to nps.gov/grsm to learn more.

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I renewed my membership. Why am I getting another reminder?
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I'm on the national do-not-call list. Why did NPCA call me?
As a charitable organization, NPCA is exempted from the federal do-not-call regulations. We do, however, maintain our own list of members who don't want to be called. We occasionally engage professional firms to contact members about urgent park issues. If you prefer not to receive these calls, please let us know.

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Thank you for supporting NPCA!

ParkScope

NEWS & NOTES

By Kim A. O'Connell

Land Deal Aids Great Smoky Mountains

Private industry and conservationists join forces to protect land adjacent to park.

In a landmark agreement years in the making, a major American company and several conservation groups have struck a deal to protect about 10,000 acres of land next to Great Smoky Mountains National Park.

The Aluminum Company of America (ALCOA), which has operated four hydroelectric dams near the park for decades, had sought to extend its licenses for 40 years in accordance with the Federal Energy Regulatory Commission (FERC). The re-licensing process requires that companies mitigate any damage that their electricity projects might cause. Seeking support for its bid, ALCOA began negotiating with community leaders and local, state, and national conservation organizations to provide permanent protection for the 10,000 acres around the dams.

"This is all forested mountain land," says Don Barger, senior director of NPCA's Southeast region. "On one side is Great Smoky Mountains National Park and on the other side are the Cherokee National Forest and the Joyce Kilmer Wilderness Area. It is private land right in the spine of the Appalachians." The acreage is also home to 21 species of endangered, threatened, and rare species, including the bald eagle and peregrine falcon.

ALCOA TENNESSEE OPERATIONS COMMUNICATIONS

Part of ALCOA's relicensing bid hinged on submerged land that lies inside both the original FERC boundary and the national park. For the license to be renewed, Congress would have to approve a change in the park boundary.

AP/WIDE WORLD PHOTOS

ALCOA and partners gather to sign a historic land preservation agreement. Sen. Alexander (R-Tenn.) speaks above.

Without this, ALCOA might be forced to sell its dams, opening the lands to possible development. In response, NPCA and other conservation groups and agencies formed the Tennessee Interest Groups and Resource Agencies, or TIGRA, to craft a solution that would provide permanent protection to the land.

First, the parties agreed to exchange 100 acres of submerged land within the park for 186 acres of biologically sensitive land that ALCOA now owns. ALCOA will also grant a permanent conservation easement on nearly 6,000 acres of land to the Tennessee Nature Conservancy, preventing logging, road-building, and other potentially destructive activities on the parcel.

The Nature Conservancy would then have the option of buying the land and eventually selling it to the National Park Service. On the remaining 4,000 acres, a 40-year easement would allow outdoor recreation activities.

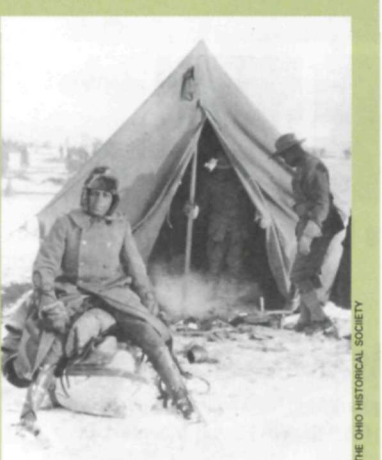
The agreement is contingent on the passage of legislation to approve the land swap, introduced by Sen. Lamar Alexander (R-Tenn.).

"This is a textbook example," Alexander said on the Senate floor, "of how a major American company can work with communities and conservation organizations to help Americans keep a high standard of living as well as to conserve the environment."

Once Alexander's measure is approved, FERC is expected to renew ALCOA's license, and the agreement will take effect. "It took the conservation community, the land trusts, and state and federal agencies all working together with the affected industry to make this happen," Barger says. "Had we not teamed up, no one of us could make this happen. It's a real interesting example of what it takes to protect land. It is collaborative, and it's long term." ❖

Historic Tidbits

Famous Americans have been honored in many different ways. A few, including Gen. Ulysses S. Grant and educator Booker T. Washington, have even had massive sequoia trees named for them. Recently, a sequoia was named for an unsung park champion whose contributions have long been overlooked. In 1903, Col. Charles Young became superintendent of Sequoia National Park, the first African American to serve in such a role. Young, then a captain in the famed U.S. 9th Cavalry unit (better known as the "Buffalo Soldiers"), directed projects to build a key park road, fence off sensitive areas, and curtail illegal grazing. Last year, after volunteer George Palmer began a letter-writing campaign to promote Young's achievements, the National Park Service unveiled a mural honoring Young and the 9th Cavalry and chose a massive tree to be named in his honor. Several of Young's descendants were on hand for the festivities. Visit www.nps.gov/seki for more information.



THE OHIO HISTORICAL SOCIETY

Col. Charles Young in winter.

NPCA Notes

Invitation to Explore

The Blue Ridge Mountains took millions of years to develop into the striking vista it is today. To educate the public about the importance of preserving its views, ecology, and visitor's experience, NPCA and Dr. J. Dan Pitillo, biologist with Western Carolina University, will lead a hike to explore the landscape just south of Asheville, North Carolina, on October 23.

Participants will learn about the ancient plants and animals that lived along the Blue Ridge and explore Flat Laurel Gap, a site that captures the past 12,000 years. A brown bag lunch discussion will follow, during which Greg Kidd, NPCA's associate Southeast regional director, will outline the opportunities and challenges for the park as it develops both its transportation and other plans for the next few years. For more information, call 865-329-2424, ext. 21 or email southeast@npca.org.

Hurricane Charley Damages Dry Tortugas National Park

Repairs raise concerns about park funding.

With wind speeds that reached 120 miles per hour, Hurricane Charley slammed into Dry Tortugas National Park in August, causing extensive damage and exacerbating the park's existing maintenance backlog. The hurricane raised concerns about whether national parks have adequate staffing to prepare for such weather emergencies.

Located about 70 miles west of Key West, Florida, Dry Tortugas is a collection of small islands with considerable natural and historic significance. Amid coral reefs and abundant aquatic wildlife, the park's centerpiece is Fort Jefferson, a massive hexagonal structure that is the largest of the 19th-century American coastal forts. During Hurricane Charley, the storm surge undermined a portion of the first layer of bricks surrounding the moat wall, damaged two boat docks, and washed out a land bridge that joined Garden Key, where Fort Jefferson is located, and nearby Bush Key.

Almost immediately, park officials, firefighters, and other personnel began to repair and clean up the damage, bringing in an interagency incident command team and tapping into a special fund set aside for such emergencies.

"We help make the park right and put it back in a pre-storm condition. It's a real partnership," says Barb Stewart, an information officer with the Dry Tortugas team.

Yet the hurricane damage has reignited concerns about whether the national parks are adequately staffed and prepared to respond to natural disasters. Hurricanes are a frequent problem in the Southeast, and parks in other parts of the country face wind storms, flooding, and wildfires. In August, for example, Death Valley National Park in California had to close certain areas because of severe flooding and damage. And in Washington, D.C., Chesapeake & Ohio Canal National Historical Park repeatedly has faced expensive repairs because of flooding. The emergency fund can cover the most obvious storm damage—but it

MIKE RYAN/NPS

Flooding at Fort Jefferson causes significant damage during the hurricane.

may be more difficult to determine the long-term effects on already beleaguered parks. Recently, the House Appropriations Committee admitted that the park system has had to absorb the costs of "storm damage, anti-terrorism requirements, competitive sourcing activities, and other mandates…for which funds have not been provided, or provided at the expense of core operating programs."

"The administration must request—and Congress appropriate—adequate funding to compensate for the frequent acts of nature that besiege our parks," says Steven Bosak, NPCA's funding campaign director. "Otherwise, storms drown the parks and their budgets."

Even before the hurricane, Dry Tortugas' staff had been struggling to keep up with repairs, including eroding mortar, weakening brickwork, and corroding wrought ironwork. In addition, the park's remoteness (the islands are accessible only by boat or plane) complicates the process of transporting maintenance equipment from the mainland.

"Hurricane Charley really underscores the staffing needs at these parks, because when they're faced with emergencies like this, they have to drop everything else," says Mary Munson, NPCA's Sun Coast regional director. "We really appreciate the Herculean task that they were up against and their rapid response." ❖

NPCA Notes

The Parks as Art

In September 2002, artist Scott W. Parker shuttered his Chicago art studio and took to the road on a quest to capture the nation's most spectacular landscapes on canvas. In just under two years, he visited 56 national parks, from Acadia in Maine to Volcanoes in Hawaii. The result is his National Parks Project, which includes a colorful collection of pastel and oil paintings interpreting national park icons. "It is my hope that these pieces will create a sense of appreciation for our American treasures, and foster a desire to learn more about these and other natural sanctuaries," says Parker. This December and January, NPCA's National Parks Art Gallery and Information Center will put Parker's work on display. The gallery is located in Seattle, Washington's Pioneer Square at 313-A First Avenue South. Call 206-903-1444 ext. 26 for information.

News in Brief

Washington, D.C.—With time running out for Congress to pass a Fiscal Year 2005 Interior Appropriations bill, NPCA is urging lawmakers to provide adequate funding for the National Park System, which continues to suffer from a $600-million operating shortfall, an extensive maintenance backlog, and a drop in the number of seasonal and permanent staff. The bill, passed by the House of Representatives, includes a $55 million increase for the parks' base operations—$33 million more than requested by the administration. In its report on the bill, the House Appropriations Committee noted that, in recent years, the Park Service has absorbed the cost of storm damage, anti-terrorism mandates, and other activities. The Senate is considering the bill. **Take Action**: Write to your senators and request an additional $100 million for the base operations of the national parks in the FY '05 Interior appropriations bill. For addresses, see page 14.

Alternate Fuel Source Tapped at Kenai Fjords

Fuel-cell technology is used to operate a remote nature center in Alaska.

With alternative energy receiving increasing attention nationwide, Kenai Fjords National Park is now operating a remote nature center with environmentally clean fuel-cell technology. If successful, the project could serve as a model for other national parks and federal agencies.

Opened in May, the Exit Glacier Nature Center is powered by a solid-oxide fuel cell that uses hydrogen as an energy source. Located about nine miles off Seward Highway, the Exit Glacier area is not served by standard commercial power, and park officials have previously relied on diesel generators. The National Park Service hopes that the fuel cell technology will keep the new center—now open only during the summer months—in operation year-round.

"The Alaska region has been experimenting with fuel cell technology because we have so many areas where we would like to have a minimal amount of power, and there's no way to get power to them," says Sandy Brue, chief of interpretation at Kenai Fjords. "The entire Park Service, the Alaska parks, and Kenai Fjords are interested in alternate fuel sources. This fuel cell will allow us to serve visitors throughout the year more efficiently and offer educational programs where we haven't been able to before."

Exit Glacier represents the first use of solid-oxide fuel-cell technology in a national park. Fuel cells operate through the chemical conversion of hydrogen and oxygen to produce water, heat, and electricity. The conversion process produces little to no harmful byproducts and is considered a clean source of power. Fuel cells come in several forms, depending on the type of electrolyte used in the conversion. Previously the Park Service has experimented with proton exchange membrane (PEM) fuel cells to power various functions at

NPS

Alaska's Exit Glacier Nature Center stands as a model for sustainable energy.

Golden Gate National Recreation Area and Yellowstone and Yosemite national parks. The solid-oxide fuel cell at Kenai Fjords depends on propane as its hydrogen source, taking advantage of existing propane delivery to the area.

At Exit Glacier, power generated by the fuel cell flushes toilets, powers videos or other interactive exhibits, and provides heat. Yet park staff are still working out kinks in the system. The first fuel cell was damaged in shipping and had to be replaced. The current fuel cell operates for several days at a time but has a habit of breaking down. Brue notes that this is a demonstration project and that each breakdown is a learning opportunity. "When they get it up and running, it's fantastic," she says. "We have lights, and we have videos on glacier calving, human-bear interaction, and other videos about the research in the park."

The Exit Glacier project is the result of a partnership between the Park Service and the Propane Education and Research Council, the Alaska Energy Authority, the Denali Commission, and the energy technology lab at the University of Alaska-Fairbanks. "We're trying to show the public that the technology is there and that, by taking advantage of existing propane delivery in the area, it's transferable technology," says Tim Hudson, NPS team leader for planning, design, and maintenance in the Alaska region. "It's very efficient and it's very clean." ❖

News in Brief

Biscayne N.P.—A coalition of personal watercraft manufacturers, dealers, and users has filed a petition to overturn a federal ban on the vehicles in Biscayne in Florida and other national parks. If successful, Jet Skis, WaveRunners, and similar models could once again disturb wildlife habitat and natural quiet in marine parks. The National Park Service banned personal watercraft from Biscayne and other parks in 2000, citing air pollution, environmental damage, and noise. The petition asks the agency to conduct an environmental assessment of the impacts of newer personal watercraft models on park resources, which industry officials say are much cleaner and quieter than older ones. NPCA and other conservation groups maintain that these motorized vehicles disturb wildlife, disrupt other visitors' park experiences, and stir up sediment, threatening submerged vegetation.

TAKE ACTION...

NPCA's Online Take Action Center:
www.npca.org/action

Important Addresses:

The White House:
President George W. Bush
1600 Pennsylvania Ave., N.W.
Washington, DC 20050
Comment Line:
202-456-1111
Fax: 202-456-2461
www.whitehouse.gov

The U.S Senate:
The Honorable .....
United States Senate
Washington, DC 20510
202-224-3121 or
800-522-6721
www.senate.gov

The U.S. House of Representatives:
The Honorable .....
United States House of Representatives
Washington, DC 20515
202-224-3121
or 800-522-6721
www.house.gov

The Department of Interior:
Secretary Gale Norton
Department of the Interior
1849 C St., N.W.
Washington, DC 20240
202-208-3100
www.doi.gov

The National Park Service:
Director Fran Mainella
National Park Service
1849 C St., N.W., Room 3112
Washington, DC 20240
202-208-4621
www.nps.gov

Budget Cuts End Testing on Chattahoochee River

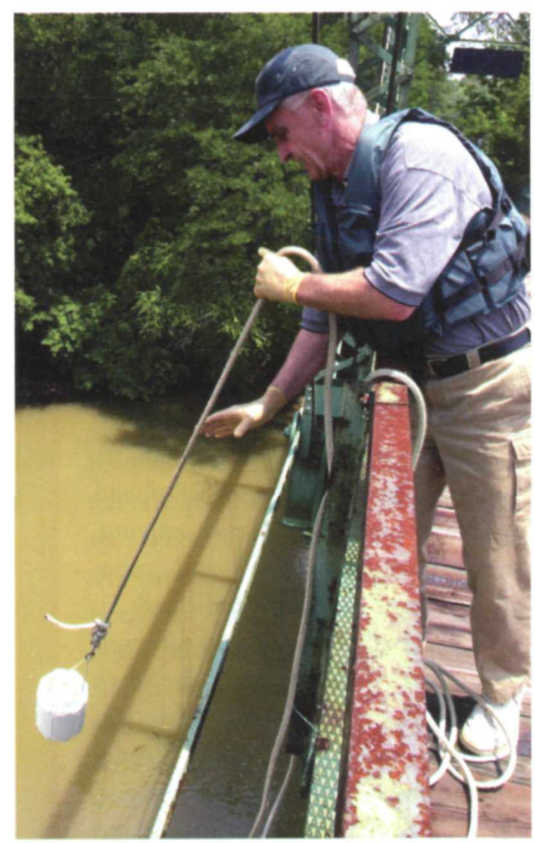
Conservationists seek alternatives to continue collecting valuable data from this popular urban river.

In the past four years, recreational users of the Chattahoochee National River and Recreation Area had an easy way to determine whether the river was healthy enough for wading, fishing, or boating. With the click of the mouse, users could visit the BacteriALERT web site to check bacteria levels in the river—or they could look for signs posted along the waterway. Yet budget cuts have ended this popular program, leaving river users with no clear way to determine water quality.

Since 2000, volunteers in the BacteriALERT program have gathered water samples at three key points on the Chattahoochee, an urban river in the greater Atlanta area. Scientists then tested the samples for levels of fecal coliform bacteria, better known as *E. coli*, keeping daily records and gathering trend data. If bacteria levels were higher than 235 colonies per 100 mL of water—the level at which a waterway is considered unsafe for human contact—park officials would post signs along the river informing users of potential risks. The program also gave staff their best indications of the overall health of the river, which had long been decried as polluted. To their surprise, the river was found to be healthy the vast majority of the time.

The annual $120,000 cost of the program was funded by a public-private partnership that included the National Park Service, the U.S. Geological Survey (USGS), the Georgia Environmental Protection Division (EPD), and the Upper Chattahoochee Riverkeeper group. This year, budget cuts forced the state to cut its $30,000 contribution, which had been met by USGS as part of a matching-funds program. Without the state's portion, USGS's money was tied up. In October, with both USGS and the Park Service citing a long backlog of projects to be funded, the BacteriALERT program was halted.

Conservationists are now seeking alternate funding sources



AP/WIDE WORLD PHOTOS

Bill Crawford of Chattahoochee Riverkeepers samples water to test bacteria levels.

to restart the program, which was considered a model partnership. "The USGS role had been to do the training, analyze the samples, and put the data up on the web page," says Sally Bethea, executive director of the Upper Chattahoochee Riverkeeper. "The Park Service did sampling on the upper two sites in the park, and we did the bottom one. The beauty was that we were finally able to get real data on what was happening in terms of this dynamic river park. The stunning result was that, 75 to 80 percent of the time, the *E. coli* levels were below 235 colonies [per 100 mL], sometimes well below 235."

As an urban river, the Chattahoochee is subjected to wastewater discharges and storm runoff that occasionally spike bacterial levels. And the pressures are mounting. Billions of dollars of infrastructure investments are planned for the greater Atlanta area over the next 25 years, Bethea says. "Yet a program that cost at most $125,000 and gave some indication of how the river was faring is being cut. It's a shame because it is not only a good example of using scientific information in a real-world venue, but also one of the best examples of federal and state agencies working with [nongovernmental organizations] to provide a service to the community."

Even without the BacteriALERT program, the Georgia EPD will continue to conduct sporadic monitoring of the river. But park officials and conservationists had wanted to use the data as the basis for new water-quality improvement programs. "We had wanted to do more than identifying the problem and communicating the issue," says David Ek, chief of science and resource management at the park. "And now we can't do that. We've had to step back from step one." ❖

NPCA Notes

New York Office Opens

After serving for nearly 20 years with the New York City Department for Parks and Recreation, Alexander Brash joined NPCA to head a Manhattan-based regional office. A native New Yorker, Brash graduated from Connecticut College and Yale's School of Forestry and Environmental Studies, and worked for the World Wildlife Fund, The Nature Conservancy, U.S. Forest Service, and NPS .

"So far the reception has been extraordinarily warm, and the Park Service in particular is delighted to have some friends to help leverage support in the region," says Tom Martin, NPCA's executive vice president. The new office will assist NPS on a variety of fronts, including developing a grassroots awareness campaign for the Harbor Parks. The new office is located at 499 Park Ave., 15th floor; New York, NY 10021; 212-318-2989.

Q&A

Locking Up Looters

CARLTON STOIBER

What part of "No Looting" don't you understand?

In 2002, an alert park ranger spotted two men loading items into a car parked at Death Valley National Park. After questioning the men, park officials realized they had stumbled across a well-organized looting ring. The discovery led to the creation of Operation Indian Rocks, an anti-looting task force composed of representatives from the National Park Service, the Bureau of Land Management, and other federal agencies. In a two-year investigation, the task force recovered more than 11,000 relics—including projectile points, pottery shards, and a human skull—that had been stolen from Death Valley and other public lands in California and Nevada. Earlier this year, key members of the looting ring were convicted of violating the Archaeological Resources Protection Act and have begun serving their sentences. *National Parks* recently spoke to Dr. Tim Canaday, a former archaeologist with Death Valley who now works at BLM's Klamath Falls Resource Area, about the latest developments in the case and what visitors can do to help.

Q: What made Operation Indian Rocks so successful?

A: Looting is rampant, but most of our staffs are so small that if you come across evidence of looting, it might be hours, days, or months after it occurred. This investigation happened after an observant ranger saw some activity that he realized might have been a problem. It was a fortuitous set of circumstances. Once we did the initial search warrants, we realized that it was far larger than a one-time occurrence, and in order to deal with this we needed to form this team of different agencies and go after them. We put in long hours, and we got results. And in our respective agencies, the managers were all behind us and supported us. One of the goals of this task force was that, once we got the convictions, we would then work to put the word out that looting is occurring and educate the public.

Q: Now that the looters have been prosecuted, what is happening to the recovered relics?

A: We were able to tie the looters to 14 prehistoric sites including the Death Valley site, and the monetary amounts of the damage exceeded more than a half million dollars on those sites. We seized more than 11,000 artifacts. Now that all the court proceedings have been dealt with, we're in the process of going through the artifacts, figuring out whether this projectile point came from this or that public land. We have "site provenance" for some artifacts, but sometimes we just have "area provenance," as in we only know that it came from federal lands. So we've got a lot of artifacts that have some provenance and a number of others that have no provenance. We're in the process of getting those artifacts back to their respective agencies. In the meantime, they've been under the care of Lake Mead National Recreation Area.

Q: What should park visitors do if they suspect that looting is taking place?

A: First of all, if you're visiting a park and you see an artifact on the ground, look at it, enjoy it, and leave it where it is. Secondly, if you see someone acting suspicious—maybe they're digging, maybe they're picking something up—do not confront them. The best thing to do would be to observe them from a distance, take some notes if you have a chance—if you see a license number, that's terrific—and report your observations immediately to a park ranger or to law enforcement. ❖

For more information on Death Valley, visit ww.nps.gov/deva.

Season of the Wolf

Take it in your hands and grasp its power.

A RARE SCULPTURAL WORK OF ART INSPIRED BY LEGEND AND INDIAN TRADITION

RICHLY EMBELLISHED WITH FEATHERS, BEADWORK AND LEATHER STRAPPING

Shown smaller than actual height of 12 inches.

To the Native American people, the wolf was a creature of mystery and great power. They listened in awe as its mighty howl split the stillness of the winter night. As a show of respect, they decorated their most prized artifact—the ceremonial tomahawk—with the likeness of the wolf.

That rich tradition now inspires a new replica collectible tomahawk which extends a full 12 inches in length and features thrilling wolf art from famed painter Al Agnew on its blade. More fascinating sculptural artwork flows down the handle in totem pole fashion.

Strong demand is expected for this limited edition, so act now to acquire your replica tomahawk at the $39.95 issue price, payable in two installments of $19.97 each (plus a total of $5.99 shipping and service). Send no money now. Just mail the Reservation Application today!

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YES. Please reserve the "Season of the Wolf" collectible as described in this announcement.

Limit: one per order. Please Respond Promptly

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Illinois residents add state sales tax. Prices higher in Canada. A limited-edition presentation restricted to 295 casting days. Please allow 4-8 weeks after initial payment for delivery. All sales are subject to product availability and order acceptance.

Restoration of Historic Cliffhouse Completed

Park concessioner takes an active role in preserving a San Francisco landmark.

Suspended above the Pacific on the western edge of San Francisco, the historic Cliff House restaurant has fascinated visitors since 1909. Today, the structure, complete with gift shop, antique arcade games, and sweeping views, has undergone a complete restoration that returns the building to its neoclassical origins.

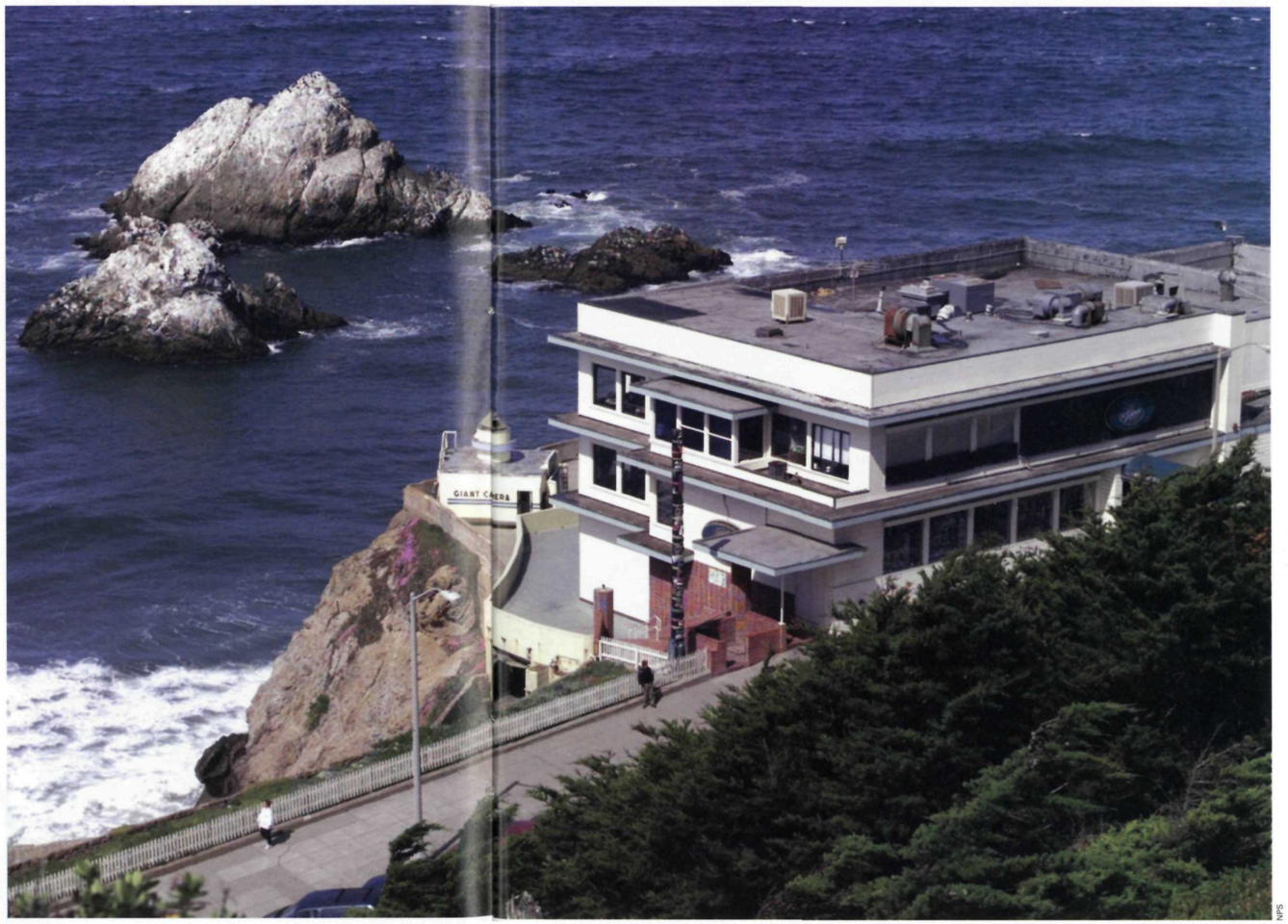
The restoration is just the latest incarnation of an establishment that has undergone many changes in its long history. The original Cliff House, built in 1863, burned down in 1894. At the turn of the century, San Francisco philanthropist and mayor Adolph Sutro rebuilt the structure in the high Victorian style, but this too burned in 1907. The current structure, built in 1909, has itself been revamped over the years, obfuscating some of its original historic details.

The massive restoration effort is the result of a unique agreement between the National Park Service and restaurateurs Dan and Mary Hountalas. The couple, who have been proprietors of the Cliff House for the last 30 years, put up $12 million of the total $17 million restoration bill, in lieu of paying rent to the Park Service for the next two decades. As park budgets remain tight, the Cliff House restoration may signal a growing trend toward the creation of such partnerships with park concessioners.

"There have always been significant opportunities for meaningful partnerships with concessioners, but the contracting process has gotten in the way of that, because it automatically puts people on opposite sides of the table," says Phil Voorhees, NPCA's vice president of the Center for Park Management. "This is an example where the parties have gotten well past that and worked extremely well together."

The restoration removed facades that have been built over the years and restored the existing wood-framed windows to an accurate period style. A new two-story section, called the Sutro Wing, has been added to the main building, which will retain historic touches such as a marble-veneered staircase and a tin ceiling. Other renovations included retrofitting the structure with current seismic technology and bringing it into compliance with the Americans with Disabilities Act.

"As money gets tighter across the park system, it becomes more difficult for the Park Service to preserve complicated structures such as Cliff House," Voorhees says. "This project is turning a dilapidated facility into something that is much more visitor friendly and that is much more appropriate to the local environment. Cliff House is a landmark." ❖



NPS

San Francisco's historic Cliff House undergoes significant renovations.

From the River Bottom Up

Even as biologists and researchers work to restore endangered mussels in the Southeast, the threats to these fragile and important creatures are mounting.

By Kim A. O'Connell

R. BIGGINS/U.S. FISH AND WILDLIFE SERVICE

Historically, mussels like the endangered little-wing pearly found refuge from material exploitation in the Big South Fork. Today, industrial pollution threatens their comeback.

In the late 19th and early 20th centuries, mountains of mussels piled up along the nation's rivers, their shells as valuable to the button industry as their pearls were to jewelers. Factory workers punched as many buttons out of mussel shells as they could, before discarding them like so much stale swiss cheese. Although the button industry was lucrative for decades, eventually the bottom fell out, as mussel beds were routinely depleted.

It took years for mussel populations to recover, and they are doing so in large measure because of federally protected riparian areas such as Big South Fork National River and Recreation Area, which straddles Tennessee and Kentucky. The park contains 90 free-flowing miles of the Big South Fork of the Cumberland River and its tributaries that wend through rugged gorges and forested plateaus that provide habitat for a wide range of plants and animals. With three other national park units, the park shares the title of having the most federally listed aquatic species.

Even as mussels recovered from exploitation by the button industry, in recent decades they have been subjected to several other threats. As river enthusiasts know, whatever happens upstream affects life downstream. Mining, logging, oil and gas drilling, and other activities, outside of park boundaries, have sent pollutants down the Big South Fork and into sensitive mussel breeding sites. The park's managers have taken the necessary steps to eliminate the effects of 300 oil and gas wells and 120 coal mines within the park's boundaries and now are focusing on encouraging its neighbors to do the same.

One heavy sediment load in the river can wipe out an entire colony of mussels. Historically, this river system

COURTESY OF UPPER MIDWEST ENVIRONMENTAL SCIENCES CENTER

At the turn of the century, the demand for mussel shells by button factories (above) wiped out abundant populations of the shellfish that once lined the riverbanks. Of 71 recorded species, 26 remain.

WILLARD CLAY

MATT KANIA

Despite its breathtaking views, Big South Fork and its struggling mussels don't always get the same attention as larger parks with more charismatic wildlife.

boasted 71 species of mussels; today, only 26 distinct species can be found here, including five endangered species: the Cumberland elktoe, Cumberlandian comb-shell, tan riffle shell, little-wing pearly mussel, and Cumberland bean pearly mussel.

"Big South Fork is a real biological treasure, but it doesn't get the kind of attention that Yellowstone and Great Smoky Mountains [national parks] do," says Steve Ahlstedt, a biologist with the U.S. Geological Survey in Knoxville. "Most of the river is on federal property, but we have exterior forces at work outside the drainage in the form of coal mining. One bad slip-up and we're out of business."

Although mussels are small and rarely seen—often burrowed deep in a river bottom—their importance to ecosystem health cannot be overstated. Mussels are filter feeders, making them essential indicators of water quality. If mussels are in decline, chances are a river is polluted, which means that other aquatic species and animals are at risk as

well. Of the 297 mussels known to occur in U.S. waters, more than 90 percent of them live in the Southeast. A full 70 percent of all freshwater mussels are listed as threatened, endangered, of special concern, or extinct by the state or federal governments.

To counteract these losses, Big South Fork National River and Recreation Area staff are working with the U.S. Fish and Wildlife Service, U.S. Geological Survey, Tennessee Wildlife Resources Agency, and two mussel hatcheries (Virginia Tech Mussel Facility and Kentucky Center for Mollusk Conservation) to propagate freshwater mussels and reintroduce them into the wild—the first such effort in a national park. Mussels depend on the presence of fish hosts to reproduce, a delicate process in the wild that becomes even more complicated to replicate in a laboratory. Essentially, gravid female mussels (those with eggs) are taken from the river and placed in holding tanks with appropriate fish hosts. Fertilized eggs are then manually placed onto the gills of the fish, where they develop into juvenile mussels before eventually dropping off their hosts. Once they reach a viable size in the lab, the juveniles are returned to the river system. Already, about 75,000 juveniles of four federally listed species have been produced at Virginia Tech's facility and reintroduced to the Big South Fork. The goal is to spread mussel populations throughout the park so that individual species are not so vulnerable.

The symbiotic relationship of mussels and fish illustrates how important it is that a waterway and its wildlife remain healthy.

"That is what's so fascinating about mussels," says Vanessa Morel, coordinator for NPCA's Eastern Streams campaign. "Not only are they the Brita water filters of the world, but they are so closely tied to other aquatic species. They are really indicators of ecosystem health."

Although groundbreaking, the mussel propagation project is just one part of the larger effort to protect these creatures. "In wildlife management, you can't just have females have more babies and dump them back in the river," says Steve Bakaletz, wildlife biologist with Big South Fork. "That's not the problem; the problem is the pollution." Bakaletz adds that he has only recently found that certain mussel species are recovering from mining operations that ceased nearly a generation ago.

The threats are cumulative. Sedimentation from past logging, mining, agriculture, and road-building activities blankets and smothers mussel beds. Habitat alteration, such as damming, alters water temperature and flows. Some species, for example, require shallow, cool riffles and runs to survive. "If you put a dam in," Morel says, "you've slowed the water down, you've deepened it, you've decreased that natural oxygenated process, and you've created a completely different kind of habitat."

AP/WIDE WORLD PHOTOS

Kentucky's Black Mountain shows scars of destructive mining methods that pollute waterways below.

The most pressing issue at Big South Fork, however, is coal mining. After years of decline in the Tennessee Valley, coal mining has experienced a resurgence, made possible by heavy earth-moving machinery and the relative ease of newer mining practices such as mountaintop removal—a process as destructive as its name suggests.

WILLARD CLAY

STEVE BAKALETZ/NPS (2)

To counter population damage, mussel hatcheries breed and reintroduce species into the river.

The most pressing issue at Big South Fork, however, is coal mining. After years of decline in the Tennessee Valley, coal mining has experienced a resurgence, made possible by heavy earth-moving machinery and the relative ease of newer mining practices such as mountaintop removal—a process as destructive as its name suggests. In addition to the vast alteration of natural landscapes, acidic drainage from the mining process can run into streams, where it can overwhelm sensitive aquatic species. Fish, of course, are affected by the pollution, but mussels are especially vulnerable because they don't move. "They're in these mussel beds, and they're processing everything that's coming downstream," Morel explains.

Recently, a federal interagency report on Appalachian surface mining found that 724 miles of streams had been buried by mining spoils between 1985 and 2001 and that another 1,200 miles of streams were in danger from mining over the next decade. Yet new regulations on sulphuric emissions from coal-fired power plants might have the ironic effect of increasing the coal mined in the region. As the Tennessee Valley Authority installs devices to remove sulphur (better known as scrubbers) at its plants, it will likely increase its efforts to mine locally instead of buying less-sulphuric coal from western mines as it has in recent years.

Near the Big South Fork, mining companies are also loosely interpreting the practice of "remining," which allows mining to take place in an abandoned area as long as it is reclaimed afterwards. Morel says that most recent remining proposals call for new mining in these areas and that even reclaimed sites fail to support the forest communities that were present before the mining took place. Abandoned mine lands and incentives for remining will be debated in the upcoming reauthorization of the Abandoned Mine Land Reclamation Fund, which was scheduled to expire September 2004. The fund has allowed for the cleanup of about 10,000 sites across the country, but one of the reauthorization bills before Congress would allow mining companies to use money from the fund to post their performance bonds if the proposal contains some remining. This would pave the way for new mining in already degraded and sensitive areas.

One proposal now under consideration could recover as much as 70 million tons of coal from the Koppers Coal Reserve, a 53,000-acre area in eastern Tennessee. By comparison, in 2002 only three million tons of coal was produced in the entire state of Tennessee. If the Koppers Coal project moves forward, the impact on natural resources including mussels and other aquatic species will be difficult to fathom.

Particularly disheartening for the region's mussel advocates is the fact that massive mining projects could reverse decades of hard-won recovery in a relatively short time. Many agree that the Big South Fork is healthier than ever and that mussel species have been expanding their territory, even without the propagation project.

"Thirty years ago everyone assumed that the river was destroyed because of the mining, and it does have a tremendous amount of mining waste in it," says Steve Ahlstedt. "But it's coming back dramatically, and it has the best mussel fauna that's left in the whole Cumberland River system—and you're talking about many hundreds of miles of river."

Both Ahlstedt and Bakaletz, who have worked together on the propagation effort, understand that mussel recovery is a slow and unpredictable process. "Natural survival of mussels, out in the wild, is probably only as little as less than 1 percent," Ahlstedt says. "It's a matter of putting out as many as you can

Biologists record data to track propagation efforts.

get, into the thousands, and you keep doing it over time until populations become self-sustaining. It can take a lifetime of work to restore mussels back into the wild."

An ongoing challenge for biologists and environmentalists is convincing federal agencies and others that mussels are worth saving. "Mussels are constantly ignored because they are down amongst the gravel and the sand," Ahlstedt says. "But if you have good mussel populations, you'll have good fish fauna, good insect fauna, and good water quality."

Going forward, NPCA will continue to raise awareness about the importance of mussels and the dangers of mining and other threats. The organization is also advocating that the Abandoned Mine Land Fund be reauthorized in a way that protects natural resources. For her part, Vanessa Morel believes there is a growing understanding of the connection between aquatic biodiversity and water quality and our own quality of life.

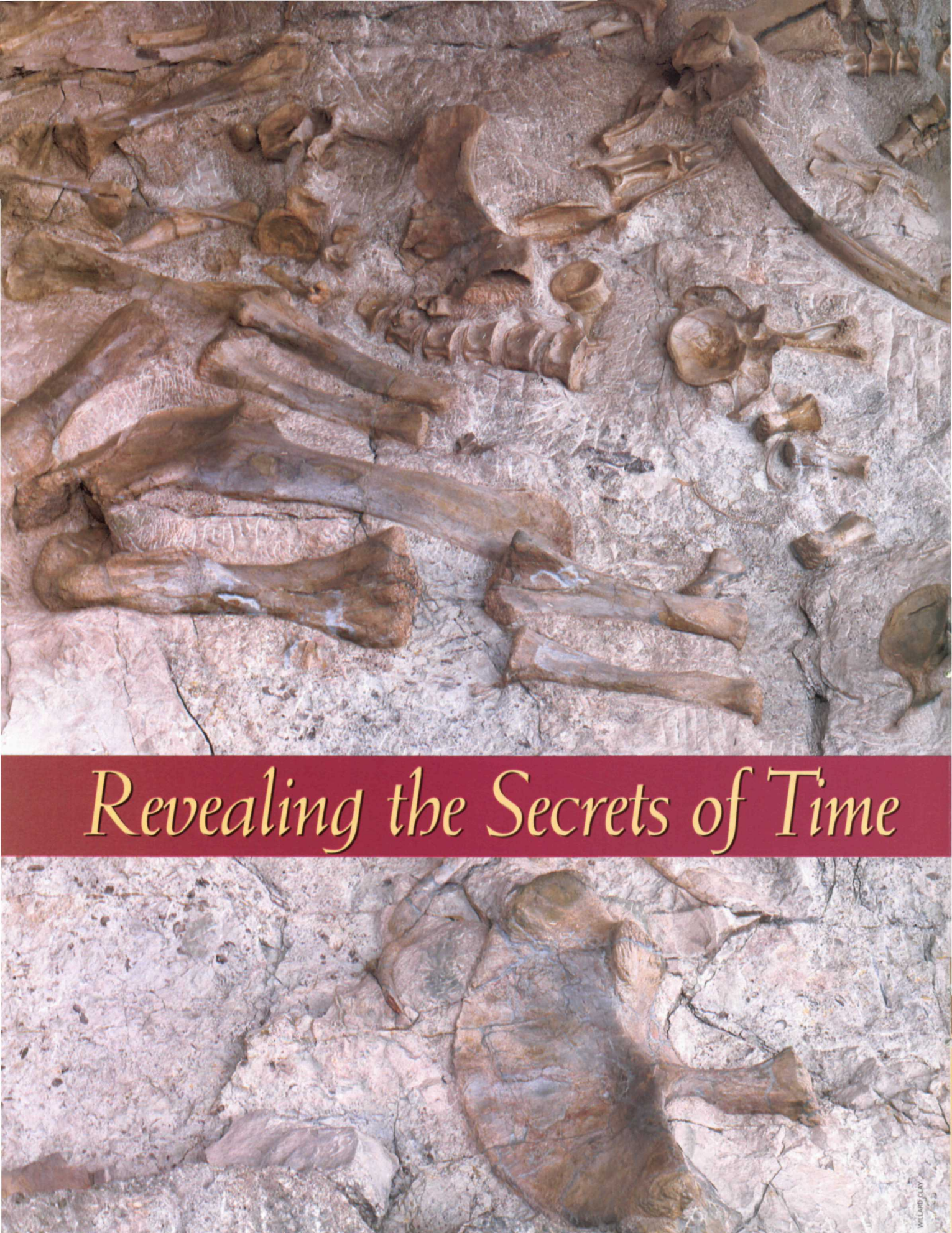
"There is a generation that has seen the before and after [of stream degradation]," Morel says. "If you don't have these critters in the streams, chances are you won't be fishing in them anymore, and you can't eat what you catch if you do fish there. If we can support efforts like the mussel propagation, I think they have a chance. This really is the test case. The fate of mussels in the Southeast hinges on it."

LAURENCE PARENT

Returning the river to its pristine state would benefit both humans and mussels .

"...If we can support efforts like the mussel propagation, I think they have a chance. This really is the test case. The fate of mussels in the Southeast hinges on it."

Based in Arlington, Virginia, **Kim A. O'Connell** last wrote for *National Parks* about visiting Lewis & Clark sites by train.



Revealing the Secrets of Time

WILLARD CLAY

The National Park System contains a wealth of fossils and dinosaur bones that tell a story about our geologic past, but stronger laws, better enforcement, and better education programs are needed to more fully protect these valuable relics.

By David Williams

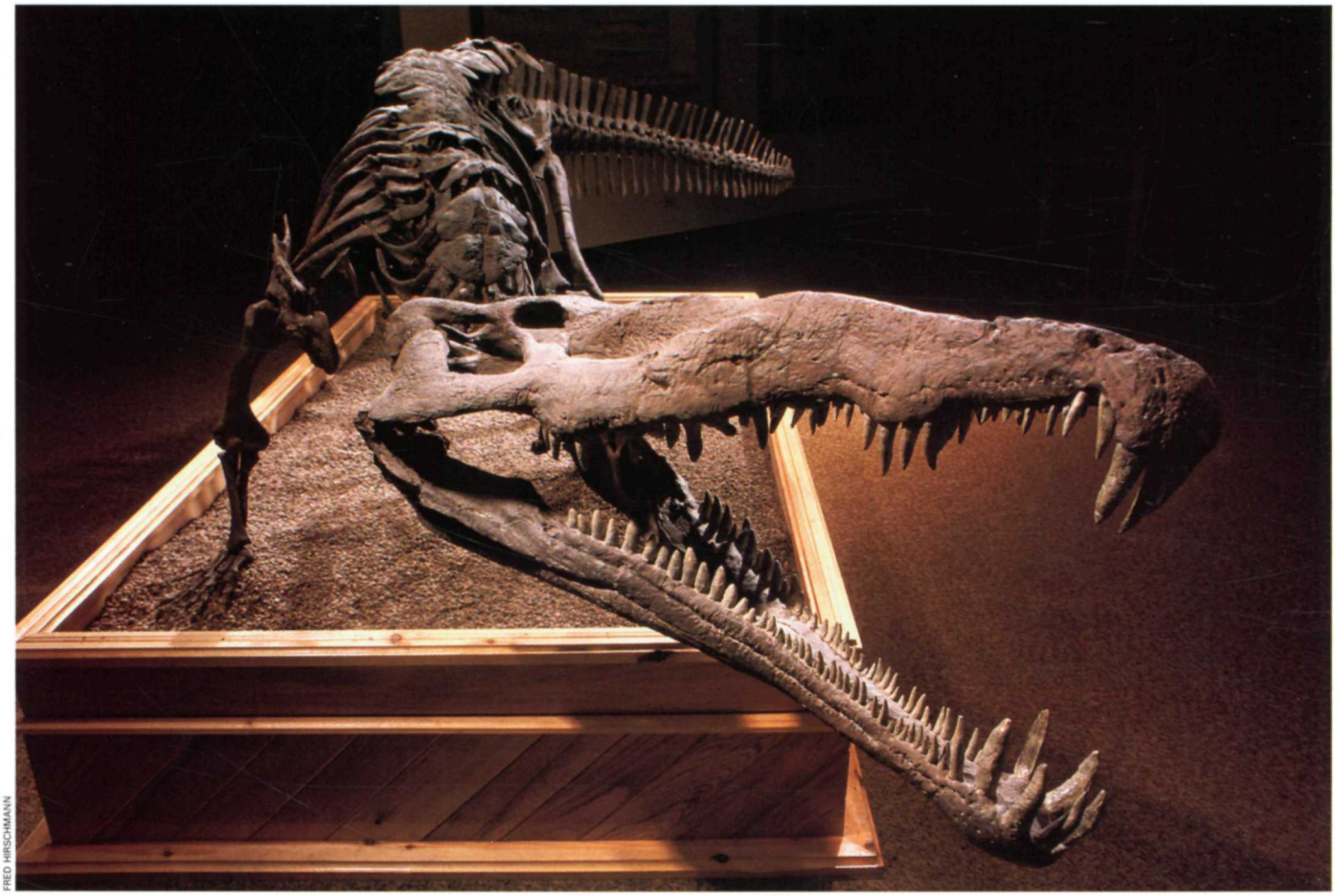
Thirty-two million years ago, a five-foot-tall, hornless rhinoceros died at a waterhole in what is now South Dakota. The herbivore was not alone. A collie-size horse and a foot-tall, deer-like mammal also perished at the oasis along with a tortoise.

No one knew about these animals and the lives they had lived until July 2003, when Park Service personnel Greg McDonald and Rod Horrocks discovered the fossilized remains at Wind Cave National Park. "This is a really extraordinary find," says McDonald, paleontology program coordinator for the National Park Service. "Oligocene fossils from the Black Hills are rare, and most previous discoveries have been single bones and isolated teeth. To find not only a complete skull and jaws but part of the skeleton was totally unexpected."

This extraordinary find continues a long tradition of fossil discovery on National Park Service lands. These include 70-million-year-old hadrosaur prints, the first dinosaur tracks from Alaska, located after two years of searching Aniakchak National Monument and Preserve on the Aleutian Islands; the most complete skeleton of the only pygmy island-dwelling mammoth at Channel Islands National Park in California; the first fossils ever described from the western hemisphere, mollusks collected in 1687 at what is now Colonial National Historical Park in Virginia; and the graveyards of 20-million-year-old camels

FRED HIRSCHMANN

True to their prehistoric focus, Arizona's Petrified Forest National Park boasts a full* Postosuchus *skeleton mold (above), while Dinosaur National Monument's bone quarry (left) displays more than 1,500 bones from 11 dinosaur species. But to the surprise of many, sites such as Gettysburg National Military Park also show evidence of dinosaurs.



FRED HIRSCHMANN

Finds like this crocodile-like* Phytosaur *offer keys to understanding Petrified Forest National Park's natural and cultural resources, and unraveling the mysterious landscape that once existed here.

and rhinos at Agate Fossil Beds National Monument in Nebraska. This last site was described by early 20th-century paleontologist W.D. Mathews as "one of the greatest fossil quarries ever found in America."

"Everything you can ever think of preserved in the fossil record, from microscopic pollen to 35-ton *Apatosaurus*, I can probably find an example of it in at least one park, if not more than one," says McDonald. The fossils span geologic time, from Precambrian to the Holocene, and have helped flesh out the lives of hundreds of different animals and plants. They also tell the story of how mammals evolved and what the landscape once looked like millions of years ago.

The fossils span geologic time, from Precambrian to the Holocene, and have helped flesh out the lives of hundreds of different animals and plants. They also tell the story of how mammals evolved and what the landscape once looked like millions of years ago.

Although today it is hard to imagine that dinosaurs once lived in a tropical rainforest in what is now the Painted Desert of southern Arizona, the beautiful mahogany, ochre, and orange agatized fossils found there provide the proof. And although it is no surprise that abundant fossils have been found at places with names such as Agate Fossil Beds, Hagerman Fossil Beds, John Day Fossil Beds, and Dinosaur national monuments, they also have been unearthed at Gettysburg National Military Park in Pennsylvania, revealing that dinosaurs walked across the area more than 200 million years ago.

Despite the incredible historic and geologic value of these fantastic discoveries, all is not well in the fossil world. When McDonald and Hor-

rocks found their fossils, they told the park superintendent but no one else, not even their wives. "If word had gotten out, the fossils would have disappeared," says Horrocks, physical science specialist at Wind Cave.

Their desire for secrecy is well founded. In 1999, National Park Service staff reported 721 incidents of fossil theft or vandalism, and one study estimated that visitors annually take up to 12 tons of petrified wood from Petrified Forest National Park in Arizona, a fact that in 2000 and 2001 led NPCA to place the park on its list of America's Ten Most Endangered National Parks. The park has come off the list in the last few years partly because Congress has moved forward with legislation, supported by NPCA, to expand the park to include the 22-mile-long Chinle escarpment, only six miles of which are currently within the park. The legislation, sponsored by Sen. John McCain (R-Ariz.) and Rep. Rick Renzi (R-Ariz.), would more than double the park's acreage and protect world-class paleontological resources, unique archaeological sites, and the park's scenic vistas.

Although the amount of petrified wood disappearing from Petrified Forest is tremendous, the most notorious case of fossil theft occurred at Fossil Cycad National Monument in South Dakota.

Congress established the monument in 1922 to protect what Yale paleobotanist George Wieland called "the world's finest actually petrified forest." First discovered in 1892, the 320-acre site contained one of the best collections of these primitive plants. By the 1930s, however, professional and amateur collectors had removed most of the fossils. In fact, so many were removed that Congress abolished the monument in 1957 because no cycads remained visible at the surface.

"Two lessons can be learned from Cycad, neither of which we have applied fully," says Vince Santucci, now chief ranger at George Washington Memorial Parkway in Virginia but formerly the only self-described "pistol-packing park paleontologist."

"First, the Park Service has a bias toward biology; geologic resources don't get the attention they deserve. The sec-

FRED HIRSCHMANN

Fossil theft placed Petrified Forest National Park on America's Ten Most Endangered National Parks list.

COURTESY OF MAMMOTH SITE, HOT SPRINGS

Intern Catherine Burgess arranges teeth excavated from Wind Cave National Park.

NPS

Paleontologist Rod Horrocks protects newly discovered bones with plaster and burlap.

In 2003, the Senate unanimously passed the Paleontological Resources Preservation Act, which NPCA has helped to promote. The bill would codify existing regulations and create specific laws regarding fossil collection. It is stalled in the House.

ond is that we have to be aggressive about preventing souvenir collecting."

Only 14 park units mention fossils in their enabling legislation, although researchers have found fossils in more than 170 of the 388 park units. Until recently, the Park Service had only two professional paleontologists on staff. Although there are signs that the Park Service has begun to pay more attention to its extraordinary collection of paleontological resources, Santucci notes that greater enforcement and stronger laws would help to deter commercial thieves who steal fossils for a profit and that better education programs would help to dissuade visitors from removing what can be historically invaluable items from national parks.

Visitors may believe they are doing no harm, but once a fossil is removed, its historical context and scientific value are lost. Santucci says visitors take fossils for a number of reasons. Many don't know it is illegal. "When they see the Kemmerer [Wyoming] Chamber of Commerce advertise that it is a good area to collect fossils, visitors to Fossil Butte can be perplexed that you cannot collect anything on our 8,000 acres," says Santucci, who added that commercial collecting is limited to a few state and private quarries in the area.

Others collect fossils because it is a family tradition, and some do it because they think if they don't take it, the fossil will merely erode.

Another reason may be the hope of financial reward. In 1997, the Field Museum of Chicago bought the most complete skeleton ever found of a *Tyrannosaurus rex*. Known as Sue, for its discoverer Susan Hendrickson, the 50-foot-long specimen sold for $8.4 million. "Sue started people thinking they could find their own million-dollar fossil," says Santucci. "They see fossil collecting as an easy way to make money."

For more than a decade, the Park Service has been trying to focus more directly on this problem. A survey conducted in 1992 showed that the parks were underreporting fossil thefts. "Law enforcement rangers often did not know what to look for, or parks didn't report incidents because of embarrassment," says Santucci.

As a result, the Park Service began a training program to underscore the importance of fossils. The program also provides rangers with guidance on where to go if they need additional help and what laws govern these resources. Santucci says the number of thefts and vandalism has increased in recent years, but he can't say whether this is the result of better reporting or worsening behavior. "But we clearly see that rangers and other federal employees are doing a

better job of watching and reporting," says Santucci.

The National Park Service also has begun to invest more staff and focus more research on paleontology. The Park Service now employs 15 professional paleontologists, and McDonald, who works out of the Denver Service Center, is the first full-time paleontologist in a central office.

In addition to an increase in staff, the Park Service has begun its first inventory and monitoring program of fossils. Surveys already have been completed at Yellowstone and Death Valley national parks to establish baselines, provide management recommendations, and develop interpretive guidelines. Other surveys are under way at Arches and Joshua Tree, several Alaska parks, and the Northeast Coastal Barrier Network.

STEVE MULLIGAN PHOTOGRAPHY

Camarasaurus *skull at Dinosaur National Monument.*

McDonald also cites another positive development. In 2003, the Senate unanimously passed the Paleontological Resources Preservation Act, which NPCA has helped to promote. The bill would codify existing regulations and create specific laws regarding fossil collection. It is stalled in the House.

"The idea is to make it easier for the public to understand the laws," says McDonald. "The law not only says what you can't do, but it also guarantees the rights of amateurs to have access to fossils on public lands," says McDonald.

NPS

Excavation of a pygmy mammoth at Channel Islands.

Collecting vertebrate fossils without a permit would be illegal, but individuals could still collect plants and invertebrate fossils for personal use. Collectors and others would not be permitted to remove fossils from national park lands.

The act also would make laws consistent on all federal lands and would significantly increase penalties for stealing fossils from federal lands. "One of the big problems we have is that with higher values for fossils, the deterrent hasn't gone up," says Ted Vlamis of the Society of Vertebrate Paleontologists.

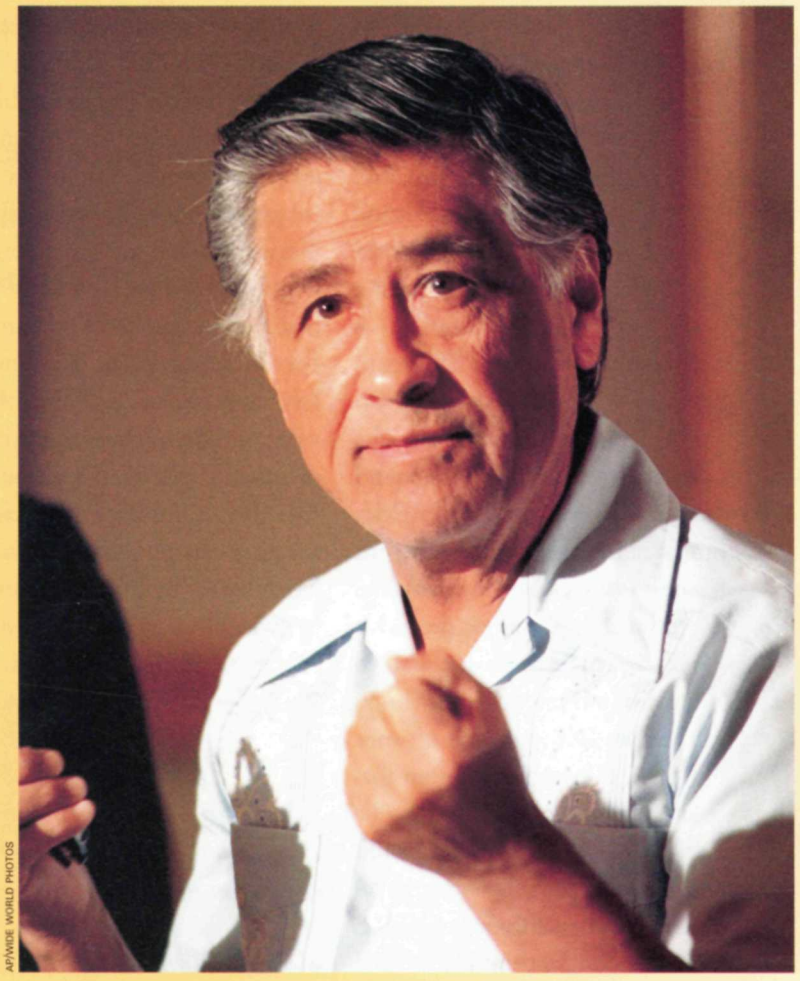
For example, a commercial dealer purchased for $90,000 an *Allosaurus* illegally collected from Bureau of Land Management land, sold it for $400,000, and paid only a $50,000 penalty. Under the new regulations, the penalty would be based on the scientific or fair market value, whichever is higher, as well as costs for response, restoration, and repair of the resource and the paleontological site involved.

Protecting paleontological resources is about more than just preserving the scientific context though, says McDonald. "What makes us human, as far as I am concerned, is wanting to know about the world around us. It doesn't matter whether you are a bird watcher, like wildflowers, are a rockhound, or collect fossils—that experience helps you better appreciate the world around you." For McDonald, his life-long curiosity has come full circle. "When I was seven years old, my parents made the mistake of taking me to Dinosaur National Monument. I saw all those big bones on the wall and caught the dinosaur bug. My folks are still waiting for me to outgrow it."

David Williams is a freelance writer based in Seattle, Washington. He last wrote an Excursions piece for *National Parks* about Seattle.

A HAIL TO CESAR CHAVEZ

During his lifetime, Cesar Chavez led a national movement to better the lives of migrant farm workers; today, legislators and others consider ways to honor the man who helped lead that struggle for more than three decades.



AP/WIDE WORLD PHOTOS

Chavez provides a voice for migrant workers at a 1989 news conference.

By Alan Spears

In 1965, thousands of migrant farm workers earned 90 cents an hour—35 cents less than minimum wage—for the arduous and backbreaking work of putting food on the nation's dining tables. Hundreds of thousands of workers, primarily Filipino, Mexican, or Chicano men, women, and children, followed the growing season to pick grapes, lettuce, and other fruits and vegetables for wealthy agribusinesses throughout California. They lived in mosquito-infested shacks that had no indoor plumbing or kitchen facilities and paid $2 per day for the privilege. They earned an extra ten cents per "lug" or basket picked in the dusty, pesticide-strewn fields that offered no portable toilets. The average life expectancy of a farm worker was 49.

It was the middle of the 1960s, and social change was in the air. Congress passed the Civil Rights Act in 1964 and a Voting Rights Act in 1965, in efforts at

"In this world it is possible to achieve great material wealth, to live an opulent life. But a life built upon those things alone leaves a shallow legacy, in the end, we will be judged by other standards."

–Cesar Chavez

guaranteeing voting rights and ending segregation in public places. During this same decade, the women's rights movement began in earnest. The times, as the song from the era went, were a' changin'.

Into this mix of social change and reform stepped Cesar Chavez, originally from Yuma, Arizona, who would lead a fledgling, under-funded union on a strike against some of the largest agribusinesses in California. The action eventually won higher wages for the farm workers, allowed them to organize into unions, and led to a nationwide boycott of grapes—one that would last for years, elevating the nation's conscience about the plight of the farm workers.

The strike would cement Chavez's place in history as both a national hero and a labor leader. It would also eventually lead to a movement to commemorate Chavez's life and work, which could take a variety of forms. It may include a National Park System unit or National Historic Landmark designation for a variety of sites important to the man and his work. But more than a decade after Chavez's death, the debate over national recognition for the labor leader remains unresolved.

At the center of the impasse are two vastly different interpretations of the meaning of his legacy. Supporters reflect on Chavez's place in history as a social justice advocate and labor reformer of such significance that he was posthumously awarded the Presidential Medal of Freedom (1994). Critics, including some of the most powerful leaders in California agribusiness, regard Chavez as a troublemaker who attempted to "demonize" all farmers "and wreaked economic havoc on their industry." After Chavez's death in 1993, the debate between his supporters (*Chavistas*) and the growers spilled from the fields into the towns of Central California, where efforts to rename schools and boulevards in the man's honor were often opposed, although some succeeded.

On September 25, 2001, Rep. Hilda Solis (D-Calif.) introduced a bill "to authorize the Secretary of the Interior to conduct a special resource study of sites associated with the life of Cesar Estrada Chavez." Such a study would look at the suitability and feasibility of sites and alternatives that may include National Park Service protection. Passage of the legislation, reintroduced in the 108th Congress, would be the first step toward sanctioning Park Service preservation and interpretation of "places in California and Arizona [of] special significance" in Chavez's life. Despite the passage of a similar bill in the Senate, which was introduced by Sen. John McCain (R-Ariz.), no further action has been taken on the legislation, which remains stalled in the House subcommittee on national parks.

AP/WIDE WORLD PHOTOS

A tired but determined Chavez works from his office in December 1965 during the height of a ground-breaking boycott.

The drive to designate and preserve landmarks associated with the life of the man many referred to as the Latino Martin Luther King has become more urgent because of the imminent demolition of the Salinas Jail, where Chavez was incarcerated for 20 days after refusing to end a strike. If a site is established in Chavez's honor, it would be the only one of 388 units in the National Park System that memorializes the contributions of a contemporary Latino.

Chavez began his rise to national prominence in 1952, when Fred Ross of the Community Service Organization

AP/WIDE WORLD PHOTOS (2)

A labor agreement between the United States and Mexico provided 100,000 Mexican laborers (shown harvesting chili peppers) to Californian farms in 1964.

Chavez not only succeeded in securing better conditions for California's migrant farm laborers but also changed the way many people in the United States viewed the goods and services they purchased. Chavez appealed to the conscience of American consumers, stressing that they, too, had a role to play in the struggle for social justice.

(CSO) recruited him to register Latino voters. Chavez worked from dawn to dusk as a field hand and would spend his evenings and weekends going door-to-door to register voters. According to Ross, Chavez was timid at first, often tongue-tied and "unable to clearly articulate" what he wanted.

Chavez spent ten years with the CSO, fashioning the ideals and principles that would guide him as the leader of the National Farm Workers of America (NFWA) and later the United Farm Workers (UFW). (NFWA formally became the United Farm Workers in 1966.) Chavez, who held strong beliefs in Catholicism and nonviolent methods of affecting change, believed in building social movements one member at a time. "You knock on 20 doors or so, and 20 guys tell you to go to hell, or that they haven't got time. But maybe at the 40th or 60th house you find the one guy who is all you need."

He inspired poor people to understand they had a role to play in making their lives better. In 1962, Chavez left the CSO to form the NFWA, and by the time of the strike in 1965, he had increased the organization's membership to 1,700 families, most of them poor but all of them dedicated to *La Causa*.

Chavez's ability to inspire his followers came largely from the fact that he shared so many of their hardships. He viewed himself as a sufferer and saw the struggle for farm workers' rights as a redemptive process. He once said, "To be a man is to suffer for others. God help us be men." It was this deeply spiritual base that connected Chavez to a wide range of supporters, from the disenfranchised of the Central Valley to Sen. Robert F. Kennedy, who described the leader of the UFW as "one of the heroic figures of our time."

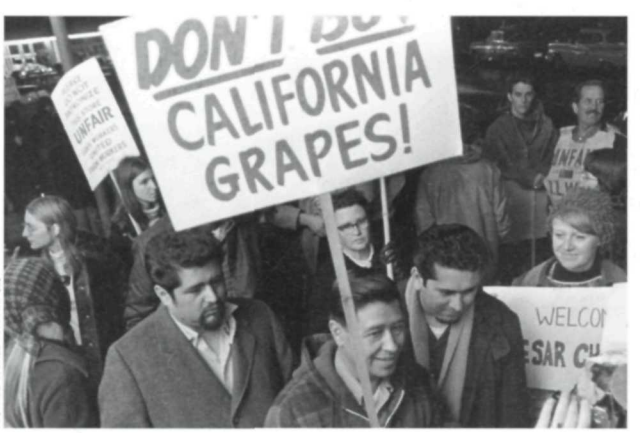
Chavez not only succeeded in securing better conditions for California's migrant farm laborers but also changed the way many people in the United States viewed the goods and

Mexican migrant workers provided cheap labor to the large agribusinesses of California. Many of them undertook the strenuous work for less than minimum wage.

services they purchased. Chavez appealed to the conscience of American consumers, stressing that they, too, had a role to play in the struggle for social justice. In 1975, a public opinion poll found that 17 million Americans had stopped buying grapes because of the UFW boycott, which was estimated to have cost the growers in the San Joaquin Valley millions of dollars in lost revenue.

That kind of success bred enemies. Chavez's tactics, which included the use of fasts, prayer vigils, picket lines, and strikes, earned him the bitter enmity of growers and political conservatives, who branded him an agitator and a communist. Rep. Bob Mathias of California criticized the union's use of strikes, declaring in the early 1970s, "Such actions should be outlawed. It is not fair for a farmer to work all year to produce a crop and then be wiped out by a two-week strike."

Standing in front of a supermarket in Philadelphia, Pennsylvania, in 1985, Chavez leads a demonstration protesting the use of harmful pesticides on fresh grapes.



AP/WIDE WORLD PHOTOS (2)

Chavez leads 400 people outside a grocery store in Seattle, Washington, during a 1969 boycott of California grapes.

But in many cases, striking was the only recourse the workers had. California's agribusiness depended on an abundant supply of cheap labor. Until the later 1800s, most of the laborers were Chinese, but a backlash that culminated in the Chinese Exclusion Act of 1882 ran them out of the industry. They were replaced by Japanese, poor whites, small numbers of blacks, Filipinos, Chicanos, and Mexicans.

Mexican, Chicano, and Filipino farm workers faced prejudice and hatred in California comparable to that which many African Americans experienced throughout the United States (especially in parts of the Deep South). John Steinbeck, author and social critic, knew first hand of the unfair treatment of California's farm workers. After the police ended a strike in Steinbeck's hometown of Salinas in 1936, he wrote: "Is it possible that this state is so stupid, so vicious, and so greedy that it cannot clothe and feed the men and women who help to make it the richest area in the world?"

Chavez learned early that *La Huelga* ("strike" in Spanish) was the one great recourse available to disenfranchised workers. Years later, when asked what motivated his lifelong fight in support of workers' rights, Chavez replied, "For many years I was a farm worker, a migratory worker and, well, personally—and I'm being very frank—maybe it's just a matter of trying to even the score."

Before Cesar Chavez and the UFW, migrant workers lacked not only basic rights but much of the dignity and self-respect fair and gainful employment can convey. Chavez helped to change that for the better. As one UFW activist noted, Chavez burned "with a patient fire, poor like us, dark like us...." He gave his all to help make this country live up to "the better angels" of its nature. His supporters believe honoring his legacy in our National Park System would be a good and wise thing to do.

Alan Spears is NPCA's associate director for diversity.

Scary Future for Bats

By Amy M. Leinbach

Dwindling habitat and increased mercury contamination could spell disaster for the Indiana bat, but scientists are working to restore the animal's range at Mammoth Cave.

This Halloween, forget the image of bats as bloodthirsty vampires from the underworld. A species of these flying mammals—the furry-faced Indiana bat, equal in weight to three pennies—faces a reality much more frightening: the threat of extinction.

The Indiana bat, found throughout the eastern states, is estimated to have numbered in the tens of millions in and around Kentucky's Mammoth Cave National Park before farming, urban development, and deadly tree diseases took a toll on the animal's habitat and food sources. Since 1967, when the bats were added to the federal endangered species list, their numbers have declined by more than 60 percent, with a current national population of about 330,000.

"What's perceived by bat biologists is that this decline is due to a shortage of maternity habitat," says Mark DePoy, Mammoth Cave's chief of science and resource management.

Over the decades, the bats have lost old growth forest that they prefer for nesting—a challenge for animals that bear one offspring each year—along with food sources, foraging space, and hibernation sites. Scientists estimate that at one time as many as ten million bats wintered in Mammoth Cave, a number that has dropped to zero. And while Indiana bats currently use five other caves in the park as hibernation sites, they are sparsely occupied.

A variety of factors have caused these losses. They range from human-made changes to Mammoth Cave itself, to the loss of American chestnut and elm trees as a result of disease and blight, to the high levels of mercury from nearby coal-burning power plants.

Before Mammoth Cave was established as a national park in 1941, much of its 52,000-plus acres was grazed, farmed, or exploited for timber harvest. In addition, Dutch elm disease killed 90 percent of the nation's American elm trees—a species the Indiana bat depended on to raise its young. Today, the woodlands that replaced the elm are too young for roosting females.

Food sources may have dwindled when the American chestnut fell victim to blight in the 1930s and '40s. The trees bloomed in mid- to late-June when few other plants were blossoming, and scientists believe the pollen lured nectar-loving insects, providing abundant prey for

MERLIN D. TUTTLE/BAT CONSERVATION INTERNATIONAL

The endangered Indiana bat weighs as much as three pennies.

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

the Indiana bat. The bats' foraging grounds were also affected. At one time, DePoy says, Kentucky had two million acres of tallgrass prairie known as the Penny Royal Plateau—all but 1,200 acres of which have been plowed.

Another major food source—aquatic insects such as dragonflies and may flies—is contaminated with mercury. One bat can eat the equivalent of one-half to three-fourths of its weight in insects each day. Mercury builds up in the bats, which can live to be 20, compromising their health and making them more susceptible to other stressors, such as disease, drought, and disturbances during hibernation.

Several decades ago, the Indiana bats' hibernating population in Mammoth Cave dipped drastically, decreasing by the millions. When scientists looked for causes, they realized a solid cement staircase built in the 1950s had restricted ventilation, reducing the cold winter airflows. "We realized that the cave was too warm in the winter," DePoy says. "Indiana bats prefer anywhere from 4 to 8 degrees Celsius for hibernating—now the cave averages 11 degrees Celsius."

But a number of steps are being taken to aid the bats. DePoy and his colleagues have replaced the cement stairs in Mammoth Cave with metal grating to allow more airflow. "We're hoping it restores the average winter temperature needed for hibernation," he says. His team will scout out other caves for potential hibernation sites and post signs to warn visitors away from sensitive habitat.

Bat Conservation International, a major force in the research and recovery efforts of threatened and endangered bat species, has been involved at Mammoth Cave with the construction of an artificial bat housing structure where the animals can raise young. And a research project in the park, created in partnership with the Kentucky Department of Fish and Wildlife Resources, concentrates on identifying nesting sites by capturing lactating females and tracking them using radio transmitters.

"We want to identify areas of the park that are heavily used for nesting to make sure there's no development, like trails and campsites," DePoy says. "We need to keep people away so those places remain quiet and secluded. This should help the recruitment process of bats."

Two other projects may aid the bats: restoration of original grasslands in Kentucky and a breeding program to produce disease-resistant strains of American elm and chestnut trees. DePoy and his team are removing exotic vegetation and replanting tallgrass prairie species on 120 acres within the park.

"The only remaining obstacle," DePoy says, "is to find a way to attenuate the high levels of mercury in the park's environment derived from burning large quantities of coal." ❖

Celebrating the Desert

Celebrating the Tenth Anniversary of the California Desert Protection Act

By Sen. Dianne Feinstein

Ten years ago this October, President Bill Clinton signed the California Desert Protection Act into law, preserving nearly nine million acres of stunning landscape for generations to come.

With the passage of this legislation, the largest parks and wilderness bill to affect the lower 48 states was enacted, redesignating and expanding Joshua Tree and Death Valley national monuments as national parks and establishing Mojave National Preserve.

Protecting these beautiful lands stands as one of my proudest legislative accomplishments to this day.

The California desert is home to some of the last remaining dinosaur tracks, Native American petroglyphs, abundant spring wildflowers, and threatened species, including the bighorn sheep and the desert tortoise, an animal known to live for as many as 100 years.

Joshua Tree, encompassing parts of both the Mojave and the Colorado deserts, contains magnificent rock formations and forests that blanket the high country throughout the park. The abundant yellow creosote bushes of the eastern side of the park are mirrored by the rugged Joshua trees to the west.

CARR CLIFTON

The California desert is home to beautiful scenery, unusual wildlife, and sacred lands.

The Death Valley landscape, marked by a diverse range of salt playas, alpine forests, and jagged rocks, is one of the hottest, driest, and lowest places on Earth. At one lookout point in the park, Dante's View, a visitor may look down into Badwater, the lowest place in the western hemisphere, and on a clear day look west to Mount Whitney, the highest point in the lower 48 states.

Mojave National Preserve, with its granite, limestone, and metamorphic rocks, has a remarkable geologic diversity, as well as the largest Joshua tree forest in the world. Many of the preserve's peaks are pink at the top, the result of a volcanic explosion more than 18 million years ago in Arizona that sent deposits flying through the air and flowing across the land to the Mojave Desert.

These lands are not only home to beautiful scenery, they are also sacred lands to Native American Tribes. Petroglyphs, archaeological sites, and medicinal plants may be found throughout these parks.

The California Desert Protection Act ensured that these lands would be preserved for years to come. In total, the act raised the protection level for nine million acres of parks and wilderness.

Since 2000, the wilderness area has been expanded even farther with the purchase of nearly 600,000 acres of land primarily in and around Mojave National Preserve. The transaction, the largest conservation acquisition of private lands in U.S. history, combined federal Land and Water Conservation Fund appropriations with funding from the Wildlands Conservancy to buy discounted land owned by the Catellus Development Corporation.

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As we celebrate the ten-year anniversary, the preservation of our park system has never been more important.

This expansion protected 200,000 acres of critical habitat for the endangered desert tortoise, 150,000 acres for bighorn sheep, the largest cactus gardens in the world at Bigelow Cholla Gardens, and rights-of-way for 165 trails and access roads leading to 3.7 million additional acres of land used for hunting, hiking, and camping.

Visitors have taken advantage of these abundant recreation and research opportunities in the California desert. Last year, 2.8 million people traveled to Joshua Tree and Death Valley national parks and Mojave National Preserve. In turn, these visitors provided an economic boost of approximately $100 million at nearby hotels, restaurants, and other local businesses.

Now, as we celebrate the ten-year anniversary of the California Desert Protection Act, the preservation of our National Park System has never been more important. Population growth, especially in the western United States, is placing increased pressure on our public lands and the demand for recreation areas. That is why it was so critical that we acted ten years ago and why it is urgent that we continue to preserve our nation's natural treasures today.

Unfortunately, there is much evidence that our national parks are not receiving the funding or attention they deserve. A recent survey of 12 national parks by the Coalition of Concerned National Park Service Retirees found that six parks had either reduced or planned to reduce visitor center hours or days of operation. The survey also found that all 12 parks had recently cut full-time or seasonal staff positions.

One of the parks surveyed, Death Valley, reduced its law enforcement positions from 23 several years ago to 15 at the time of the study. More than 600 miles of backcountry roads are inadequately secured, leaving natural resources, wildlife, and visitors less safe.

Meanwhile, the backlog of maintenance projects in our parks has grown to a range of $4 billion to $6.8 billion, according to the General Accounting Office. Throughout our park system, roads, bridges, and historic structures are falling into disrepair, trails and campgrounds are poorly maintained, and visitor centers are becoming outdated.

Additionally, a recent report by the Environmental Protection Agency designated eight national parks, four of which are in California, as containing excessively high levels of ozone. It is alarming to know that the air at Joshua Tree, Yosemite, and Sequoia-Kings Canyon national parks is harmful to one's health, especially since the problem of poor air quality in these regions was identified for action under the Clean Air Act in 1977.

Our national parks are America's treasures. They make the natural beauty of our nation accessible to all Americans and, indeed, visitors from around the world. We have a responsibility to preserve these places for the enjoyment of generations to come.

Enacting the California Desert Protection Act was an important step toward that end. Now, we must continue to work to ensure that the parks we have already established, and those we may yet protect, have the resources they need. ❖

Sen. Dianne Feinstein (D-Calif.) is in her second full term. She serves on several Senate committees, including Appropriations and Energy and Natural Resources.

Defending the Desert

In 1986, Sen. Alan Cranston (D-Calif.) introduced a bill to strengthen protection for sites in the California desert by placing them under the National Park Service. Subsequently, California elected Sens. Dianne Feinstein and Barbara Boxer, who shared Cranston's vision. In January 1993, Sen. Feinstein introduced the California Desert Protection Act, her first piece of legislation. A year and a half later, the legislation was signed into law by President Clinton. With Feinstein's leadership and the support of a variety of environmental groups including NPCA, Congress passed the landmark legislation, protecting nearly nine million acres of the California desert.

In the past ten years, NPCA has continued to protect these special places from a variety of threats. NPCA has been instrumental in blocking the world's largest landfill for a site outside of Joshua Tree and helped to stave off a development outside the park that would have included thousands of homes. NPCA helped to stop plans to mine an underground aquifer near Mojave National Preserve. NPCA is opposing county road claims in the desert parks and working for cleaner park air and better funding. NPCA recently established a field office in Joshua Tree, California, to build a strong local constituency for Joshua Tree and Death Valley national parks and Mojave National Preserve.

Please join us in celebrating the passage of this extraordinary legislation. We hope you enjoy the senator's reflections on the desert as well as the destination guide and calendar of events.

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DESERT DESTINATIONS

Travelers willing to slow their pace and walk among the sand and creosote or explore new depths of silence and relaxation will find exactly what they seek in California's desert parks.

Rains in early March can bring on a spectacular wildflower bloom in the desert.

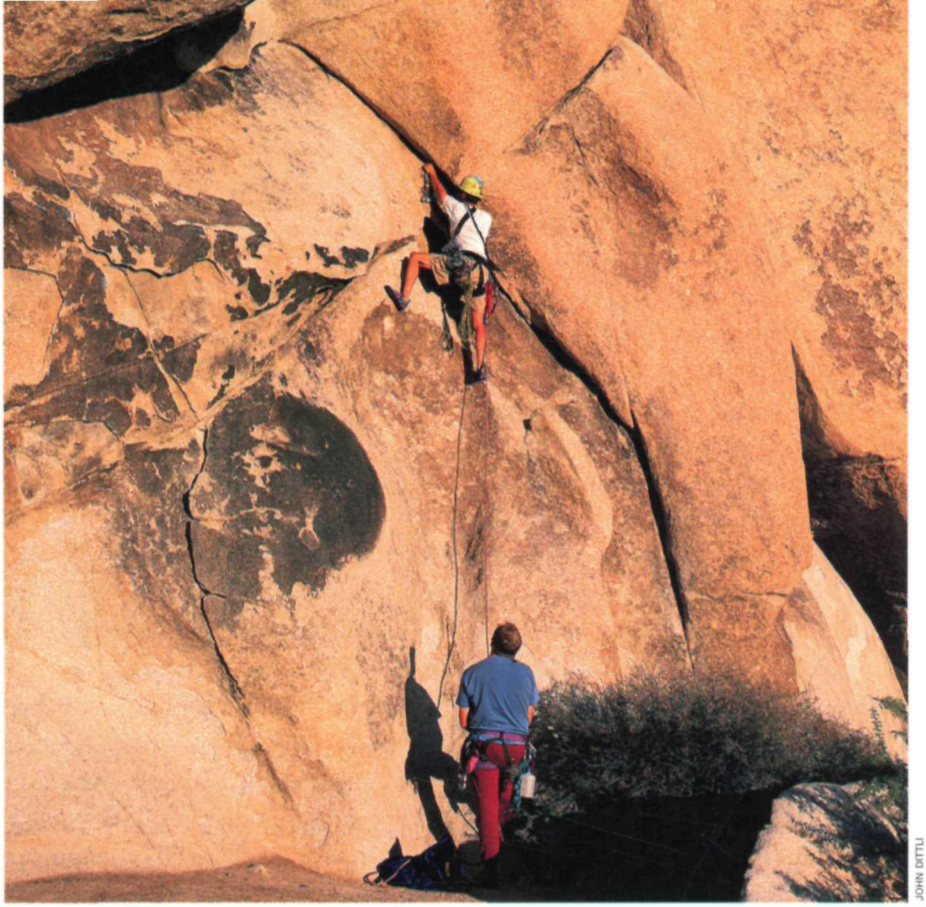
By Bruce Leonard

The world makes sense on the summit of Ryan Mountain. The mile-and-a-half hike to the top of this 5,461-foot peak in Southern California's Joshua Tree National Park reminds visitors what life is like without cell phones, traffic, and deadlines. With each step up the mountain's sun-scorched flanks, hikers feel the languid rhythms of the desert replacing the caffeinated pace of everyday life. A side-blotched lizard may sun itself alongside the trail as a golden eagle arcs above the namesake Joshua trees in search of prey; or a jackrabbit may scurry out of sight behind an old-man cactus. The 360-degree views from Ryan Mountain's summit include snowcapped Mount San Jacinto in the distance and the seemingly endless, untrammeled landscape below, contributing to the curative powers of this California desert park.

Some travelers don't appreciate deserts, since they are sand without beach, scenery leached of color. On their way to seashores or mountains, these travelers often view deserts as transition zones, arid patches of nothingness they must endure. But deserts are destinations unto themselves to many vacationers. Some like the isolation, others go for the arid climate, and still others enjoy the unusual geology. No matter why they seek the desert, travelers willing to slow their pace and walk among the sand and creosote or explore new depths of silence and relaxation will find exactly what they seek in California's deserts.

Ten years ago, the three parks featured here were expanded or further protected as part of the California Desert Protection Act. This fall, towns in the area will be commemorating this anniversary with a variety of events—making this a good time to visit these special places and California's deserts.

JEFF FOOTT/NATURE PICTURE LIBRARY



JOHN DITTLI

During the winter months, rock climbers flock to Joshua Tree National Park.

Joshua Tree National Park

In 1936, President Franklin Roosevelt recognized the natural and historical significance of the land about three hours east of Los Angeles by designating Joshua Tree a national monument. The California Desert Protection Act increased the size of the park from 550,000 to 794,000 acres and decreed it a national park. More than 1.2 million visitors annually now explore the park. Comprised of the low Colorado Desert and the high Mojave Desert, Joshua Tree supports three distinct ecosystems, replete with 262 species of birds, an abundance of mammals and reptiles, and, of course, the countless giant yuccas that give the park its name.

Before visitors set out to explore the bizarre jumbles of quartz monzonite that seem like oversized geologic ice-cream scoops or attempt to choose from among the park's 491 campsites, they should stop by the visitor center, located outside the North Entrance Station off Highway 62, in the town of Twentynine Palms. The free Joshua Tree Guide provides an overview of the flora and fauna visitors are likely to encounter. The roads in Joshua Tree touch only a small fraction of the park's area, and veteran parkgoers know that the desert's secrets reveal themselves more readily the farther one gets from the blacktop.

Of course, travelers don't have to lace up their hiking boots to take in one of Joshua Tree's most fascinating features: its rock climbers. In the cool winter months, Joshua Tree is the world's premier climbing destination, serving up a stunning variety of routes, allowing beginners to experience the gentle demands of a 5.5 climb and experts to show off their rock-mastering prowess. From a chair set down in nearly any campsite, the earthbound can watch climbers tempt gravity, test muscles and tendons, then rappel back down to the desert floor.

Death Valley National Park

At the wrong time of year, deserts can certainly be inhospitable, even uninhabitable. The air in Death Valley National Park, for example, reached the almost unimaginable temperature of 134 degrees Fahrenheit in 1913. Although many travelers do brave summer's heat, most visitors explore Death Valley's 3.3 million acres between November and April. Year-round, of course, the park is a land of extremes, with the lowest point in the Western Hemisphere (Badwater Basin —282 feet below sea level) located only 15 miles from 11,049-foot Telescope Peak. This spectacular elevation change typifies the rugged, dramatic land that skirts California's eastern border and hints at how the park earned its ominous name.

A stop at the Furnace Creek Visitor Center and museum will introduce travelers to the park's resources. Once they've learned of the geologic and meteorological forces that created and continue to affect the 156-mile north-south valley, visitors can easily plan which of the many activities they want to experience. Four-wheelers seeking isolation can set out from Furnace Creek and head 25 miles north to the four-wheel-drive-only Chloride City road, where they can set up camp. In the northeast corner of the park, four-wheel drive enthusiasts or mountain bikers looking for a real challenge can conquer two 5,000-foot summits in the Grapevine Mountains on the 26-mile Titus Canyon jeep road. With nearly 60 named canyons, the park offers hikers a lifetime's worth of options; Mosaic Canyon's two-mile climb with 1,000 feet of elevation gain serves as a fine introduction. Dante's View and Zabriskie Point showcase the valley's striated scenery.

Once visitors have taken in some of the park's natural wonders, including some of the 1,000 plant species and the ancient Ubehebe Crater, they may want to investigate human handiwork in the

BRUCE LEONARD

SIDETRIP: Manzanar

About a hundred miles northwest of Death Valley is Manzanar National Historic Site, where visitors can reflect on the history of the Owens Valley and the internment of 11,061 Japanese Americans during World War II. The 814-acre site, on the eastern slope of the Sierra Nevadas, is located between the towns of Lone Pine and Independence, California. Visitors can explore the site and try to imagine what life was like for those forced to live in the city that once existed here. The recently opened Interpretive Center displays 8,000 square feet of exhibits, some drawing parallels between the site's history and current world events. A 22-minute film called "Remembering Manzanar" features oral histories of former internees.

Visitors can also take a 3.2-mile self-guided auto tour or go on a ranger-led tour. Or travelers can walk among the orchards and the remnants of the town hall, the cemetery, and the Buddhist Temple. The historic site is open during daylight hours and admission is free. The Interpretive Center is open seven days a week from 8:30 a.m. to 5 p.m. For more information, call 760-878-2194, or visit www.nps.gov/manz.

BRADLEY IRELAND PRODUCTIONS

Ubehebe Crater provides great hiking opportunities in Death Valley National Park.

forms of Scotty's Castle and the Furnace Creek Inn. The former is a 32,000-foot compound built in the 1920s as a millionaire's hideaway and best experienced on a 50-minute tour; the latter is a high-end resort from which guests can gaze out on the harsh desert environment from their air-conditioned rooms.

Mojave National Preserve

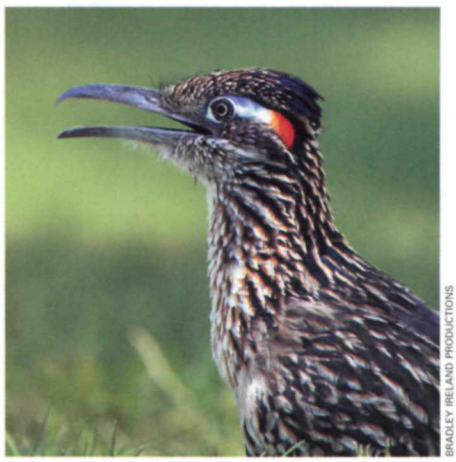
Considering the variety of outdoor activities that this 1.6-million acre swath of California desert provides, people may be surprised to learn that only about 600,000 visitors made their way off I-15 or I-40 in 2003 to explore Mojave National Preserve. Yet much of the allure of this isolated preserve is that city escapees have not overrun its hiking and biking trails, weekend warriors don't invariably horde its campsites, and the travelers that turn the concrete corridors that border the preserve into traffic jams have not done so to the blacktop and dirt roads that bisect this desert wilderness. Certainly, the thousands of miles of dirt roads that zig and zag through the preserve draw backcountry explorers from distant metropolises—so this arid real estate is definitely not undiscovered, but it is less traveled. Mojave National Preserve is simply a place where travelers in the know scratch their desert itch.

It is understandable that the masses haven't descended yet on the preserve, since it only officially came into existence with the passage of the California Desert Protection Act in 1994. Visitation will undoubtedly increase, however, as word spreads of the challenging hikes, the unmatched backcountry opportunities and the nature view-

MICHAEL EVAN SEWELL/VISUAL PURSUIT

The otherwise reclusive chuckwalla is an easy find when basking in the morning sun.

MATT KANIA



BRADLEY IRELAND PRODUCTIONS

A roadrunner is among the many birds that can be seen in the desert.

ing. The four-mile-roundtrip Teutonia Peak Hike, for example, south of Cima Road off I-15, wanders through a Joshua tree forest before it tops out on Cima Dome. Of the approximately 1,200 miles of roads in the park, historic Mojave Road is one of the most popular for a reason: Once part of a trail that connected Wilmington, California—with its military barracks—to the recently established town of Prescott, Arizona, the road today passes by army-post remnants and an array of desert vistas. And, if enough rain has fallen, the desert can come alive with vivid colors when the wildflowers bloom from March through May.

California's deserts provide solace and escape, unexpected novelty and understated beauty. Outdoor activities abound, and wildlife scampers, scurries and soars throughout. A profusion of stars above a tranquil desert night can seductively redefine California dreamin'. ❖

JOHN DITTLI

Young Joshua trees sprout up among a spring wildflower mix in the California desert.

Bruce Leonard is a freelance writer based in California. He writes a monthly outdoors column called Roads to Adventure.

TRAVEL ESSENTIALS FOR DESERT PARKS

Of Joshua Tree's nine campgrounds, only Black Rock, Indian Cove, and the group camp, Cottonwood, accept reservations ($10/night), which guests can make by calling 800-365-CAMP, or visiting www.reservations.nps.gov, the same contact information as all national parks. After paying the $10 per vehicle park entrance fee, valid for seven days, campers can stay at the other campgrounds for $5 per night. No RV hookups or motels exist in the park. For more information, call 760-367-5500, or visit www.nps.gov/jotr.

Summer's high temperatures almost always guarantee availability at Death Valley's six campgrounds, with the three free campgrounds high in the Panamint Mountains filling up first. During summer, all sites are first-come, first-served, but for stays between October 15 and April 15, Furnace Creek Campground accepts reservations, 800-365-2267. Guests can call 760-786-2345 to reserve rooms at both Furnace Creek Inn, open the third Friday in October through Mother's Day, and the more casual Furnace Creek Ranch. On Highway 190, travelers can stay at Stovepipe Wells Motel, 760-786-2387, or Panamint Springs Resort, 775-482-7680. For more information, call 760-786-3200, or visit www.nps.gov/deva.

Entrance to Mojave National Preserve is free. Overnight stays in the first-come, first-served Hole-in-the-Wall and Mid Hills campgrounds cost $12 per site, with Golden Age or Golden Access Passport holders paying half that. The Hole-in-the-Wall sites accommodate RVs, though without hookups. Since the road to the higher, cooler Mid Hills Campground is unpaved, RVs are not recommended. No motels exist within the preserve. Call 760-255-8800, or visit www.nps.gov/moja.

NPCA's web site offers links to national parks, as well as information about its Parkscapes travel program. Trips in 2005 are filling up, but space is still available on several including: Heritage of America, New York City to Washington, D.C., April 23 to May 1; a family trip on the trail of Lewis and Clark, July 16 through July 22; and Glacier to the Canadian Rockies, August 18 through August 24. More information can be found at www.npca.org/travel, or for reservations call 1-800-628-7275, ext 136.

Desert Communities Celebrate Ten-Year Anniversary

Ten years ago this fall, the California Desert Protection Act created the Mojave National Preserve and expanded and re-designated Joshua Tree and Death Valley national monuments as national parks. Communities throughout the desert are planning to celebrate this anniversary with a series of events. Visit www.jtnp10years.net for the most recent calendar.

OCTOBER 22

7 – 9 pm

Presentations on Death Valley National Park by J.T. Reynolds, park superintendent, and William Tweed, co-author of *Death Valley and the Northern Mojave: A Visitor's Guide* will be held in Ridgecrest City Council Chambers, 100 W. California Avenue, Ridgecrest. Refreshments to follow. 760-375-6900.

OCTOBER 23

11 am – 6 pm

Ridgecrest Celebrates Death Valley National Park. A morning birding walk led by the Kerncrest Audubon Chapter will start at 8 am, followed by a community celebration in Helmer's Park from 11 am-6 pm. The event includes three bands, community cookout, Death Valley displays, and a visit from a mule team wagon. Two Death Valley presentations from Park Service Ranger Charlie Callagan in the Ridgecrest Senior Center, 125 S. Warner St., will also take place. 760-375-8202.

OCTOBER 27

Desert art exhibit and reception at the Riverside Art Museum. 909-684-7111.

OCTOBER 30

The Shoshone Museum on Highway 127 will unveil a new exhibit highlighting the designation of Death Valley as a national park at 3 pm. The exhibit will represent a timeline of how the public has viewed Death Valley since the 1930s. That evening there will be a program in Shoshone sponsored by the Death Valley and surrounding communities' chambers of commerce. Speakers will include past and current superintendents of Death Valley. A reception will follow. 760-852-4524.

OCTOBER 31

Ranger-led programs at Death Valley, and a Tenth Anniversary exhibit at the park visitor center. 760-786-3200.

A Park Service program and exhibit about Mojave National Preserve's tenth anniversary will take place at the preserve's information center in Baker at 1 pm. 760-733-4040.

NOVEMBER 9TH

Death Valley anniversary ceremony at Badwater and related displays at the visitor center. 760-786-4100.

NOVEMBER 9–JANUARY 21

Joshua Tree-inspired art show at Gallery 62, inside Roadside Attraction, 69197 Twentynine Palms Hwy., Twentynine Palms. 760-362-4100.

NOVEMBER 11

7 – 9 pm

Evening panel/community discussion highlighting the importance of Morongo Valley and the Big Morongo Canyon Preserve as neighbor to Joshua Tree National Park and an ecological link between the park and the San Bernardino Mountains. Presenters are Dee Zeller (Big Morongo Canyon Preserve), Greg Hill (Bureau of Land Management), Robin Kobaly (SummerTree Institute), and Kristeen Penrod (South Coast Wildlands Project). Photographers will display desert-inspired work, and refreshments will be served. Covington Park All-purpose Room, 1116 Vale Drive, Morongo Valley. 760-218-6668.

NOVEMBER 12

7:30 pm - midnight

New Moon Over Joshua Tree. An evening of speakers, star-gazing, musical entertainment, and food. National Park Service Regional Director Jon Jarvis is scheduled to speak, followed by a slideshow from renowned night-sky photographer Wally Pacholka. After the slideshow, the Andromeda Society will provide telescopes for star-gazing opportunities, along with live music until midnight. Guild Hall, 61231 Twentynine Palms Hwy., Joshua Tree. 760-366-3723.

NOVEMBER 13

all day

A fun-filled day in Twentynine Palms. Joshua Tree National Park displays at the park's visitor center and Old Schoolhouse Museum. Rangers will lead tours at the park. For more information, brochures can be found in the park's visitor center. At 10 am, 11:30 am, and 1 pm, bus tours of the

INDIAN PAINTBRUSH BY RANDI HIRSCHMANN

Minerva Hoyt Historical Exhibit and Twenty-nine Palms murals will leave from the Twentynine Palms Historical Society (Old Schoolhouse Museum) parking lot. An official commemoration of the Tenth Anniversary will take place at 3 pm at the park visitor center, including dedication of the Minerva Hoyt mural and presentation of the 1st Annual Minerva Hoyt California Desert Conservation Award. And beginning at 6 pm, an Anniversary Gala dinner at the Twentynine Palms Community Services Center will feature presentations by Jim Cornett, educator and desert ecologist, and Huell Howser, television personality. 760-367-3445.

Also on Saturday, Big Morongo Canyon Preserve will be leading two hikes at 8 am, a bird walk and an interpretive canyon hike. 760-363-7190.

NOVEMBER 14

1– 4 pm

Yucca Valley hosts an afternoon of fun, park-oriented activities for the whole family at the Community Center, 57090 Twentynine Palms Highway, Yucca Valley. Music, art, and historical collections, community organization displays, and refreshments will be included. 760-369-7212.

For more information, contact the number listed for each event, or the National Parks Conservation Association (760-366-3035).

Travel Planner

Southwest Destination Guide

Relax your mind and body at Chisos Mountains Lodge

Whether planning an escape for two or a family retreat, Chisos Mountains Lodge has plenty to offer all types of travelers. Located in Big Bend National Park's Chisos Basin, the lodge offers comfortable accommodations, friendly Southwest Texas hospitality and sweeping vistas.

It's easy to enjoy a peaceful, breathtaking view of the Chisos Mountains while relaxing on the patio of a stone cottage, soaking in the wildlife and natural beauty that define this area. For the more adventurous, the Chihuahuan Desert offers rugged and remote opportunities that provide another perspective of the dramatic contrast in climate, scenery, plant, and animal life found in the park.

Chisos Mountain Lodge offers historic stone cabins, lodge units or motel-type accommodations. Dining opportunities include a restaurant open seven days a week for breakfast, lunch and dinner. Other facilities at Chisos Basin include a Visitor Center, post office, and convenience store.

For more information on the park and Chisos Mountain Lodge, visit ChisosMountainLodge.com and ForeverLodging.com.

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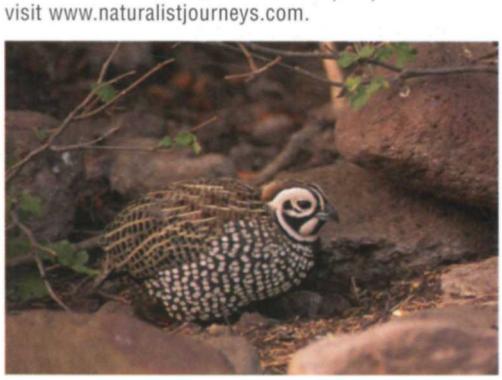
Naturalist Journeys is a small company built on the efforts and reputation of Peg Abbott, a guide with more than 20 years experience working in a natural setting.

Based in Portal, Arizona, the company offers small group (between 8-14 participants), educational travel to scenic locations in Arizona, New Mexico, Utah, Colorado and beyond. These exciting ventures focus on birding opportunities and other wildlife observation, geology, botany, plus explanations of cultural and natural history of an area.

The expeditions are informative, well-organized journeys and include convenient and comfortable accommodations, and a variety of dining opportunities close to natural destinations. Items such as meals, safety, and understanding local conservation issues are important to the Naturalist Journeys staff.

Trips are flexible and can be shaped to meet a variety of expectations, from beginning traveler to experienced naturalist. Journeys can range from three to fourteen days and include moderate hiking, scenic drives and field lectures.

For more information, call toll-free (866) 900-1146 or visit www.naturalistjourneys.com.



Spirit of the southwest comes alive in Arizona

Southern Arizona, a land of rugged beauty and unique stories, transports visitors into the past. The Spanish settled the area in the late 1680s and built missions before continuing on to California. The beauty of this culture is preserved in San Xavier del Bac Mission and Tumacacori National Historical Park.

Several State Parks dot the landscape and illustrate the state's history. Tubac Presidio State Historic Park, through its ruins, living history programs, and museum, makes the past come alive. Patagonia Lake State Park, an oasis in the desert, offers camping, hiking, fishing, and swimming. Birdwatching is also popular, and birders may glimpse the elusive Elegant Trogon. Further east lies Kartchner Caverns State Park, a rare living cave. It offers two cave tours, hiking trails, camping, birding, and much more.

For a free brochure, calendar of events, and full-color Santa Cruz County Eco-Cultural Loop map, call (602) 542-1993 or visit www.azstateparks.com.

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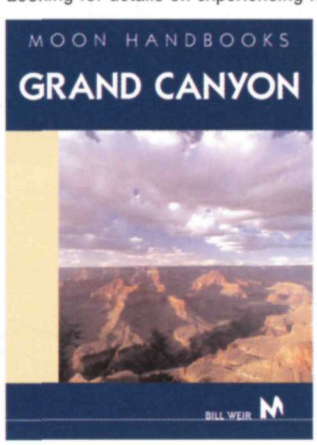

With the new Moon Handbooks Parks Series, first-timers and returning visitors get travel strategies, getaway city information, recreation and sightseeing highlights, and details on exploring and staying in the parks.

For more than 30 years, Moon Handbooks have appealed to an eclectic group of travelers, from backpacking students to solo adventurers to families on vacation (and a budget). With expert writers delivering a mix of honest insight, first-rate strategic advice, and an essential dose of humor, Moon Handbooks ensure that travelers have an uncommon experience—and a few new stories to tell.

Moon Handbooks Southwest guides include: Arizona, California, Colorado, Four Corners, Grand Canyon, Nevada, New Mexico, Tahoe, Texas, Utah, Yellowstone & Grand Teton, Yosemite, and Zion & Bryce; priced from $14.95 to $19.95, available at bookstores and online booksellers.

"National Parks from an Architect's Sketchbook"

In this recently published book, John Rolf Hattam honors a group of individuals rarely given credit for a part in preserving national parks—artists. Works of Benjamin Latrobe, Frederick Church, John Henry Hill, Alfred Miller and Thomas Moran, influenced politicians and the public towards park creation.

These early graphic historians traveled on foot or horseback and worked under severe circumstances. In the absence of photography, they performed a unique service to history.

The book features 40-plus sketches and commentary by Rolf and represents work from 30 years of travel, featuring parks from Acadia in Maine to California's Yosemite.

Visit doublearchbooks.com or call (510) 841-5933 to order for $12.95 plus $3 shipping and handling.

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John Muir didn't truly see the beauty of the world until a machinery accident temporarily blinded the naturalist. That event caused Muir to see the world in a different light, leading him toward the unsettled West and Yosemite where he eventually founded the Sierra Club, an association dedicated to the preservation of the Sierra Nevada.

Muir's writings are a perfect example of the type of education one receives through the Master of Arts in Natural Science degree at the College of the Humanities and Sciences. The program allows the participant to discover the greatness of the southwest and the world through a journey of the mind.

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Often called the cradle of American History, the shores of the Chesapeake Bay have something to offer every traveler. And now, with American Cruise Lines' Chesapeake Bay cruise, it's easy to explore the riches of these shores—from carefully preserved Colonial-era seaports boasting exquisite period architecture, to museums and attractions devoted to United States culture and history.

Onboard these brand-new vessels, passengers enjoy the ultimate amenities in small ship cruising: spacious staterooms with private bathrooms, verandas and large opening picture windows; fine cuisine and complimentary cocktail hours, and onboard lectures by renowned historians and naturalists.

These ships carry no more than 98 passengers, and can navigate the small rivers and inlets of the Chesapeake Bay to provide travelers a unique perspective on the area. Opportunities for discovery abound at each port-of-call—from the premiere living history site of Williamsburg, VA, to the charming island of Tangier, to the beautifully preserved villages of Cambridge, Oxford and St. Michaels. And along the water, passengers can observe Skipjacks, schooners and classic Baltimore Clippers dotting the shore.

Other points of interest include the Chesapeake Bay Maritime Museum, featuring the Hooper Strait Lighthouse, and the Yorktown Victory Center, dedicated to the events leading up to the victory at the Battle of Yorktown. And, of course, this tour would not be complete without a visit to Annapolis and the magnificent campus of the United States Naval Academy.

Nature's Rolling Stones

The sliding rocks in Death Valley National Park's Racetrack Playa have long defied logic, puzzled scientists, and dazzled park visitors.

By Ryan Dougherty

CARLTON STOIBER

"Hey buddy! What's the hurry? Can't you read?"

One of the hottest places on the surface of the Earth is home to one of its most puzzling geological mysteries.

The sliding rocks, from pebbles to 500 pound boulders, of Death Valley National Park's Racetrack Playa have long puzzled scientists and park visitors. The rocks seem to defy nature, moving hundreds of yards at a time, sometimes uphill. Some slide in straight lines or circles, others zig and zag. They leave behind long, though erratic, grooves in the flat basin that raise more questions than they answer. The most obvious: What makes these amazing rocks move?

Although they were first reported about 90 years ago and studied extensively for decades, the results are still subject to debate. Part of the issue is that scientists must overcome several challenges to collect results. For instance, trails left by the sliding rocks are usually short-lived; a single rainstorm can wash away smaller trails, and even the deepest grooves last no more than a few years. The most challenging aspect of the mystery, though, is that no one has ever actually seen the rocks move.

"I try to explain that to people by pointing out that it is probably a pretty extreme set of weather conditions that causes the rocks to slide," says Alan Van Valkenburg, park interpreter at Death Valley. "We're talking about winds strong enough to move rocks that are several hundred pounds. No one would want to be out there—they'd move, too!"

The playa's remoteness—it is in the northern half of the park at the end of a 30-mile trip on a treacherous dirt road—also explains why no one has as yet seen the rocks slide, and the conditions under which the rocks move are sporadic. "We'll see the rocks not move for years and then they suddenly move halfway across the lake bed," says Van Valkenburg. "When they move, they don't creep along."

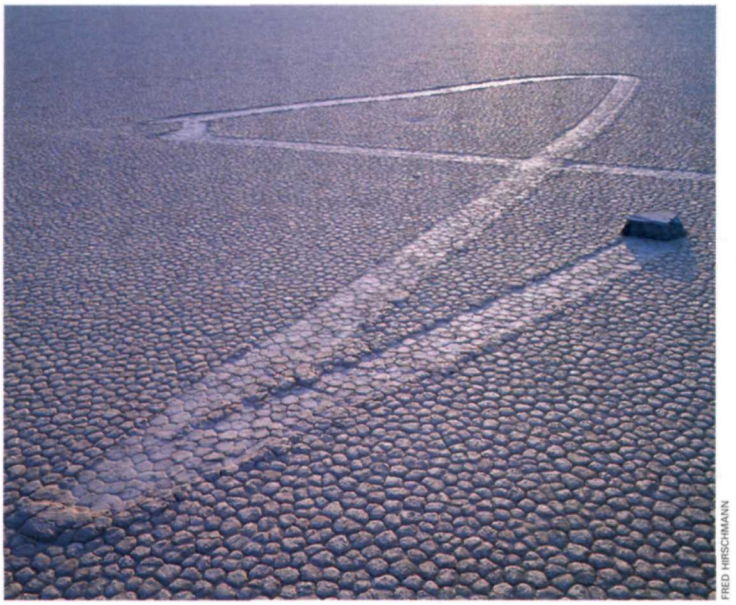
The most widely accepted theory for how the rocks slide in the playa centers on mud and high winds. The theory suggests that water travels from nearby mountain slopes onto the playa and creates mud. When that mud becomes slippery—but not so soft that the rocks sink—it creates a highly slick surface. Strong, high winds capable of moving

Ryan Dougherty is a freelance writer for *National Parks* magazine.

boulders of several hundred pounds come through the nearby mountains.

An in-depth study of the playa in the 1990s confirmed much of the theory, finding that the movement of most of the rocks correlated to the strongest winds, according to the U.S. Geological Survey. But other theories persist, such as the belief that sheets of ice at the surface of the lakebed create a raft upon which the rocks slide. The haphazard nature of the rocks' movement casts doubt on that theory, because a sheet of ice would likely send all nearby rocks in a similar direction.

Among the theories that have been discredited is that gravity is the real culprit—that the rocks slide downhill on a sharply narrow slope. Scientists later noted that the rocks tend to slide toward the northern end of the playa, which is slightly higher than its southern end—and the rocks were, in fact, moving uphill. Other theories were much more easily discredited, says Van Valkenburg: "People have sometimes accused the Park Service of moving them, or attributed it to flying saucers."



FRED HIRSCHMANN

A combination of strong winds and a surface made slippery by rain may explain the mystery of the moving rocks in Racetrack Playa.

The fascination that visitors have with the playa makes it one of the Park Service's most talked-about spots, officials say—but it also endangers the area. Overly excited visitors sometimes try to drive on the lakebed or walk on it when it is muddy, which obscures tracks left behind by the rocks. Others break the law by removing the rocks.

"I guess that people think they are taking a magic rock away with them," says Van Valkenburg. "But once the rock leaves the playa, it loses its magic." ❖

Disappearing Act

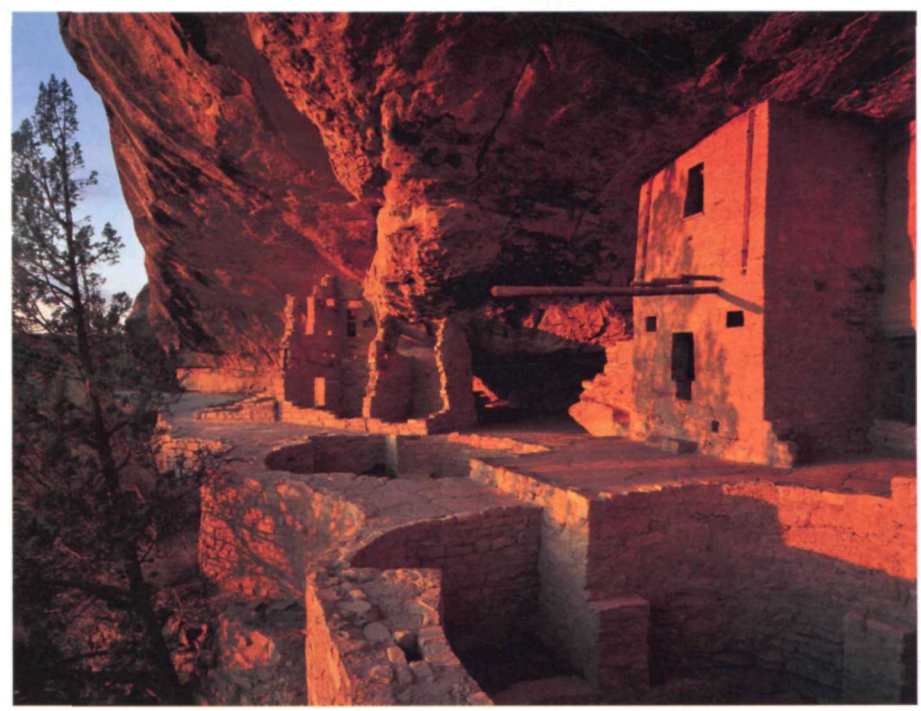
An ancient society thrived at Mesa Verde National Park in Colorado before vanishing from the area. Archaeological sites provide a glimpse of this ancient society.

By Ryan Dougherty

Who were they? What were their lives like? Where did they go, and why? These are a few of the questions long pondered by scientists who study the ancestral Puebloans who thrived amid the mesa tops and canyon alcoves of what is now Mesa Verde National Park in Colorado. They inhabited the area for 750 years, evolving from a simple hunting-gathering culture to an intricate society. They flourished long before any European exploration of the New World, but by around 1300, they were gone.

Nearly 5,000 known archaeology sites exist in the park, including about 600 cliff dwellings (the most found anywhere in the world) and pit houses dating back to 500. Viewed in the order that they were built, these sites reveal the architectural development at Mesa Verde and offer a fascinating snapshot of an earlier time in America.

The first inhabitants were an agricultural people, and the earliest evidence suggests that they began moving into the area around 550. Historians call them the "Basket-makers" for their craft. They hunted deer, rabbits, and squirrels and gathered wild plants. The women made pottery, and the men made tools and roofed houses. By 750, they used the bow and arrow but relied more on farming for food such as corn, beans, and squash. The culture was evolving, and archaeologists refer to the inhabitants of this time as the Modified Basket-makers.



LAURENCE PARENT

More than 600 cliff dwellings provide ample evidence of early inhabitants at Mesa Verde.

Smoke-blackened walls and ceilings that have been discovered indicate that the villagers lit fires during the colder months. Many pit house villages have been found on the mesas, and two have been reconstructed within the park. They had a living room, sunk a few feet into the ground, and a fire pit. They became the ceremonial places now known as "kivas," where historians believe the people may have conducted healing rites, prayed for rain or food, performed chores, and gathered socially.

The years leading up to 1000 were marked by experimentation and progress. The inhabitants used an array of materials to build their homes under cliffs. A mix of water, ash, and mud became mortar for bricks, and wooden beams were used with adobe to con-

Ryan Dougherty is a freelance writer for *National Parks* magazine.

struct floors and roofs. The inhabitants arranged the homes in close-knit villages, or "pueblos," with open courtyards in which the happenings of daily life occurred.

Between 1100 and 1300, the population grew to several thousand, but many abandoned the mesa tops and constructed their dwellings in the alcoves of canyon walls. Historians are not sure why—it may have been for refuge from Mother Nature or for religious or psychological reasons. Around 1276, drought devastated the area. Some years were drier than others, but a period of abnormally dry seasons continued for 25 years, drying up springs, threatening crops, and possibly forcing the inhabitants to leave the area in search of more dependable water sources.

Some historians believe that a larger, associated reason for their departure was the overpopulation of Mesa Verde and the overuse of its resources—which may have caused conflict among the inhabitants or with outsiders. Another theory is that the inhabitants simply saw the late 1200s as the time to move on, the next stop in a natural migration. Village by village, they deserted Mesa Verde, many to New Mexico and Arizona. (Scientists study ancestral Puebloans, in part, by comparing their dwellings to those of their indigenous descendants who live in the Southwest today.)

CHUCK PLACE/PLACE STOCK PHOTO

Petroglyphs provide a record of an earlier time at Mesa Verde National Park in Colorado.

It would be nearly six centuries before the first known mention of Mesa Verde in 1859 by Professor J.S. Newberry, who explored territory in what is now the state of Utah. After decades of archaeological discoveries, Mesa Verde was established as a national park in 1906. Nearly 100 years later, however, the full story of the people of Mesa Verde is not known.

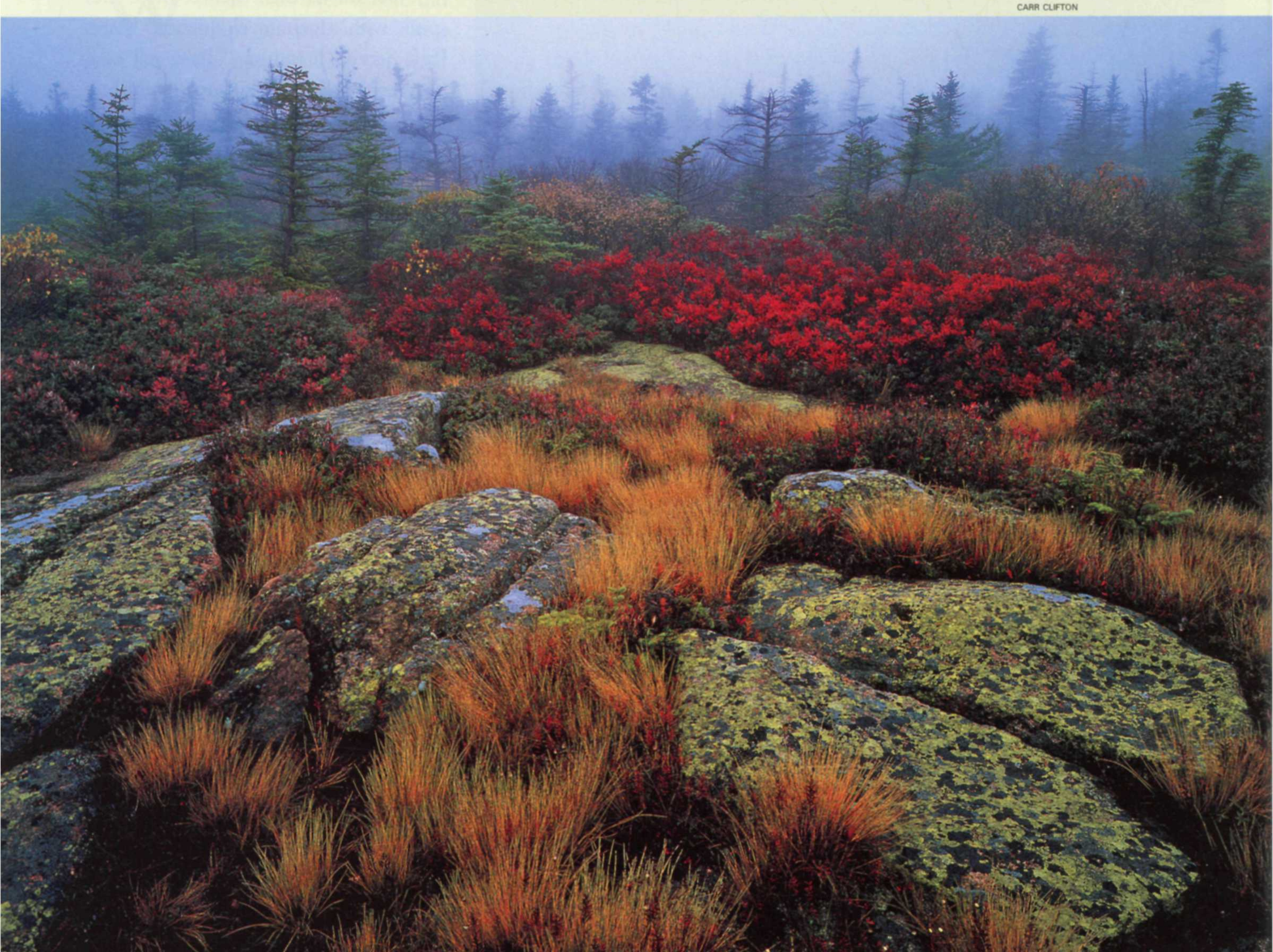
"Yet for all their silence, these sites speak with a certain eloquence," states Park Service literature. "They tell of a people adept at building, artistic in their crafts, and skillful at wresting a living from difficult land. These accomplishments rank among the finest expressions of human culture in ancient America." ❖

Northern Exposure

Granite mountains, boreal woodlands, serene lakes, and a majestic shoreline make up the first national park established east of the Mississippi.

Encompassing more than 47,000 acres of sweeping ocean vistas and diverse terrestrial habitats, the only thing that rivals this park's inspiring landscape is the people who sought to preserve it centuries ago. In the mid-1800s, outside artists and journalists known as "rusticators" introduced the lands to the rest of the world. Affluent Americans inspired by their art flocked to the location—quickly realizing that this corner of New England was worth preserving for future generations. Park status was bestowed on the area in 1919. Have you visited this park? See below for the answer.

CARR CLIFTON



Answer: Acadia National Park, Maine

Astonishing Discovery of Mysterious "Gold Rush" Coin Stuns Experts

World's Rarest U.S. $20 Gold Proof Found: The San Francisco Mint 1854 Double Eagle Proof!

WASHINGTON, D.C—A one-of-a-kind U.S. Treasury gold proof coin has been suprisingly discovered within the vaults of the Smithsonian Institution. This 1854-S gold Double Eagle $20 coin was struck by the San Francisco Mint in its first year of operation. The San Francisco Mint was born out of the need for a Western Frontier Mint when, in January of 1848, gold flakes were discovered at Sutter's Mill triggering one of the most important chapters in U.S. History—The California Gold Rush! To the surprise of historians, this single "S" mint Proof coin was individually struck from specially polished minting dies. How this unique Proof Double Eagle made its way across the continent and then into the hands of the Smithsonian Institution is still a mystery.

Today the First Federal Mint announces the public release of the first ever Proof commemorative layered in 24k gold honoring this rarest U.S. Government $20 gold piece. This Proof has a frosted image against a deep mirror field, creating a breathtaking work of art in gold. This 150th anniversary Mint release honors the legacy of a true historic masterpiece.

The magnificent proof is layered in 24k gold and measures a full 39mm in diameter to truly showcase the beauty and intricacy of this legendary coin design. The Double Eagle Proof is available only through this limited edition, private release from the First Federal Mint at the advance issue price of $19.95 each.

Fabulous Rarity Valued at $12 Million.

Only one original proof coin is known to have been struck. Even the foremost rare coin experts were unaware of its existence until it was unexpectedly found deep in the vaults of the Smithsonian museum. America's foremost authority on U.S. gold coins, David Akers, has written, "the 1854-S Double Eagle is easily the most significant and desirable branch mint proof coin in existence". With the recent auction sale of one of the three 1933 St. Gaudens Double Eagles for $7.9 million, senior numismatist Nicholas Bruyer estimates the unique 1854-S Proof Double Eagle would bring at least $12 million if it ever becomes available at auction.

Not shown actual size

The "Gold Rush" Coin.

2004 marks the 150th anniversary of this historic mint striking. The First Federal Mint is releasing this collectors quality Gem Proof layered in 24k gold to honor the legend, lore and legacy of the 1854-S Double Eagle!

Special Discount for Advance Orders.

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Your 1854-S Double Eagle 150th Anniversary layered Gold Proof will be protected in a clear acrylic holder and mounted in a deluxe presentation case. A signed and numbered Certificate of Authenticity will attest to the specifications and Limited Edition status of this exclusive private mintage.

Your order must be placed during this advance issue period to qualify for the $19.95 price. Multiple orders of five or more will be priced at $17.95 per Proof. You must be 100% satisfied with your order, or simply return it within 30 days by insured mail for a prompt refund of the purchase price.

Price Guarantee!

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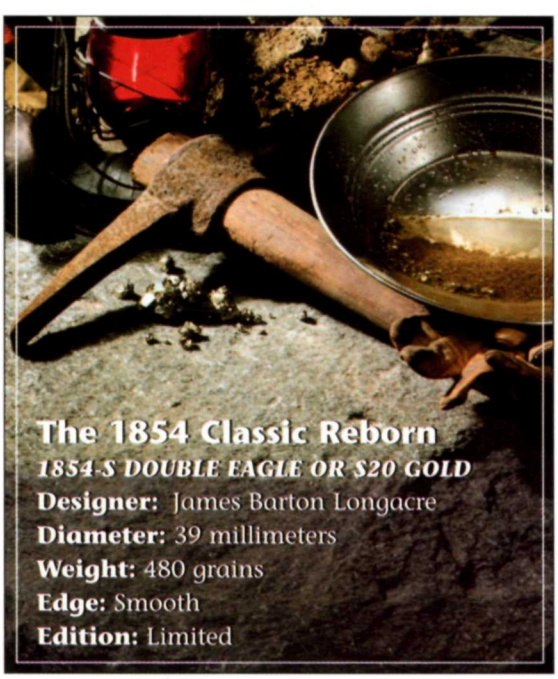

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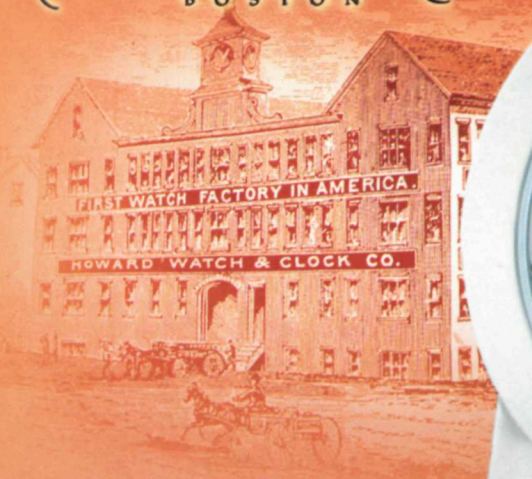

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