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JULY/AUGUST 2000

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National Parks
Vol. 74, No. 7-8
July/August 2000
The Magazine of the National Parks Conservation Association

FEATURES

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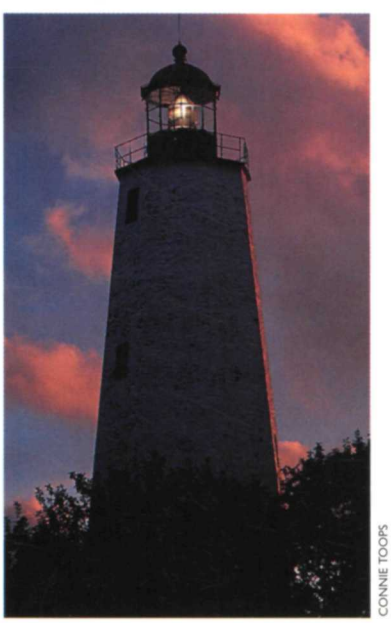
COVER: Because of its climate, Great Smoky Mountains National Park has many fungi, which will be cataloged by the All Taxa Biodiversity Inventory. Photo by Chuck Summers.



CONNIE TOOPS

PAGE 34

DEPARTMENTS

Resources Challenged

To fully protect the national parks, we must first understand what they contain.

WHEN I TRAVEL to the national parks, automobiles seem to be more prevalent than wildlife, but that may be changing at least at Yosemite National Park thanks to an innovative plan to reduce the number of cars by 60 percent.

SCOTT SUCHMAN

I recently joined Interior Secretary Bruce Babbitt at a press conference announcing the plan, which envisions restoring wildlife habitat along a more free-flowing Merced River by removing some of the roads, buildings, and bridges. An environmentally efficient bus service will replace the cars and reduce the congestion and air pollution that has marred the valley and our experience of it.

NPCA helped to design and strongly supports the Yosemite restoration plan. This effort has been similar to our work to restore the fundamental integrity of other parks, including Everglades National Park and Gettysburg National Military Park. But as we all have learned in our own lives, restoring something that has been damaged can be drastically more expensive than protecting it in the first place. And the first step in protection is knowing what you have.

Not knowing what we have in our parks is a problem that will limit future protection and restoration efforts. Unbelievable as it may seem, we do not know all of the plants, animals, archaeological treasures, or historic documents of a single park. Although the All Taxa Biodiversity Inventory, under way at Great Smoky Mountains, aims to fix this (page 22), the effort may take as long as 15 years, and Great Smokies is just one of 379 park units. The situation is patently irresponsible.

Under the leadership of National Park Service Director Bob Stanton, the service has launched the Natural Resources Challenge. In the short term, it would improve natural resource knowledge and management in the parks. In the long term, it would increase the extent to which resource protection is the service's overriding concern. Unfortunately, the resource challenge has been caught in the middle of a bureaucratic dispute over funding. An effort is under way to transfer money from the National Park Service to the U.S. Geological Survey, which would undermine the Park Service's effort to do a better job of resource protection.

Before you make plans to visit the parks this summer, please visit our web site and make your views known. From the site, contact Babbitt and key representatives and senators to encourage them to fully fund the Natural Resource Challenge. While efforts to restore Yosemite, the Everglades, and Gettysburg are admirable, we must not lose sight of the fact that we do not yet know the full complexity of what it is we are trying to restore. Without your help, I fear we will continue to manage the veneer of our parks, while they rot from within.

Thomas C. Kiernan
President

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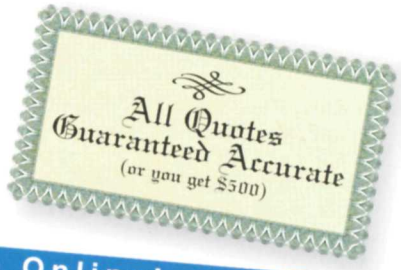

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ABOUT NPCA

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: NPCA's mission is to protect and enhance America's National Park System for present and future generations.

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

EDITORIAL MISSION: The magazine is the only national publication focusing solely on national parks. The magazine creates an awareness of the need to protect and properly manage park resources, encourages an appreciation for the natural and historic treasures found in the parks, and informs and inspires individuals who have concerns about the parks and want to know how they can help to protect them.

MAKE A DIFFERENCE: Members can help defend America's natural and cultural heritage. Activists alert Congress and the administration to park threats; comment on park planning and adjacent land-use decisions; assist NPCA in developing partnerships; and educate the public and the media. For more information, contact our grassroots coordinator, extension 222.

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

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

EDITOR'S NOTE

Unsung Heroes

NEARLY 20 YEARS AGO, I bought a 19-foot wooden sailboat that needed a lot of care. For the greater part of one spring, I sanded and varnished its pine floor and mahogany trim, replaced stainless steel screws with brass ones, and repainted the banana yellow hull a more traditional pine green.

One boat, one person, one spring. Imagine that task multiplied a million fold, and we may have a modicum of an idea of the task that faces the staff of dedicated conservators who work for the National Park Service. The park system contains nearly 80 million objects of amazing variety: furnishings from homes of famous Americans; reams of historic papers; fossils, rocks, and minerals; paintings; and objects unearthed at archaeological digs.

The Park Service maintains three laboratories, including the largest at Harpers Ferry Center, where experts in the conservation of textiles, wood, paper, glass, and ceramics research, clean, and conserve the objects that reflect our nation's history and culture. In this issue of the magazine, Phyllis McIntosh explores the incredible job these Park Service personnel perform.

The agency estimates that it would cost $47.1 million to meet all its current conservation needs. Yet, the annual service-wide budget for cyclic maintenance of park museum collections and operation of the conservation labs is just slightly more than $2 million.

The next time you visit a park, do more than appreciate the majestic mountains and the wildlife. Take the time to look at a painting, admire a beautifully upholstered chair, read a historic document, or examine the intricacies of a 400-year-old vase, and know that a small, dedicated staff of Park Service people has toiled behind the scenes to make your visit more authentic and complete.

Linda M. Rancourt
Editor-in-Chief

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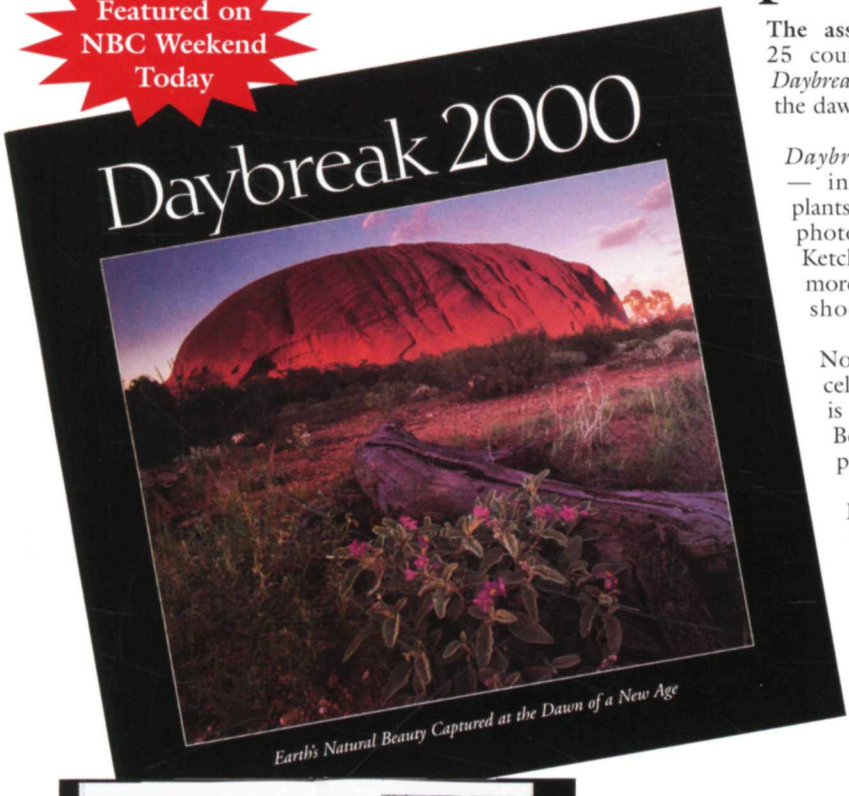

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Livestock, Golden Eaglets, Silence

The Beef with Livestock

I read your article, "The Beef with Livestock" [May/June 2000]. It concerns me that cattle are endangering our national wildlife.

It brought to mind the situation between cattle and wolves. I know there is compensation to ranchers who lose cattle to wolves. If ranchers want to use parkland, then they should accept the hazards it poses to their cattle.

If they insist on using park property for pastureland, then they should be willing to see their cattle become food for the wolves, since they are causing the need for wolves to attack cattle by depleting the fodder that should feed the ungulates that the wolves would normally hunt.

Heidi Gendron
Southbury, CT


The Beef with Livestock

Eaglet Capture

We were very upset to read that the Hopis want to take young golden eagles from their nest to kill them as part of a religious ceremony [News, March/April 2000].

It is my understanding that these eagles are protected under treaty regulations, and that all raptors are protected by both state and federal laws. I would like to hear more as to why the American Indians need to collect and kill these birds. What does this killing signify in their religion?

We would like to voice our objection to this practice.

Peter and Carolyn Dring
Land O'Lakes, WI

After reading "Hopis Petition for Eaglet Capture," I find myself in moral confusion concerning the Hopi request to capture and kill golden eaglets in Wupatki National Monument.

This "removal" of golden eagles is horrifying and goes against all tenets of both our democracy and our general belief that "all creatures great and small" were placed upon this planet to cohabitate and share.

Why should we permit this rite? It caters to a gigantic guilt feeling toward Native Americans—which is certainly overdue. It's not a question of guilt, however, but a question of what is civilized, enlightened, and right.

Cynthia Rufty
Mason Neck, VA

Call It Silence

I am writing in response to T.H. Watkins' "Call It Silence" [September/October 1999]. I thought the article was well written and expressed feelings that I am sure most people have had in the out-of-doors. It can be very frustrating to have a beautiful moment spoiled by an unwanted visitor.

I own a couple of personal watercraft and have taken them up rivers to some very isolated places just to enjoy the solitude and the silence. I believe myself to be a very safe and courteous user and don't think my passing has too much of a negative impact on another person's enjoyment. I feel bad that the majority of the public gets its negative feelings toward recreational vehicles from the minority of users who are unsafe and discourteous.

I am all for areas to be designated for motor-free transportation only because we must all have a chance to recreate in our own chosen ways. People who are seeking a trip uninterrupted by the sounds of engines should take their trips where motors are restricted. If you are not in one of these motor vehicle-restricted areas, you have to realize that the possibility of running into a recreational vehicle is there. I am sure that not many recreational vehicle users are out to ruin anyone's experience, but they are there to recreate and have fun in their own way.

Dave Jaunese, Jr.
Mt. Pleasant, MI

Yellowstone Snowmobiles

Recently, I spent ten days cross-country skiing in this pearl of the national parks. I also rented a rather unpleasant machine—a snowmobile—for one day to taste the pleasures.

When I rented a snowmobile, observing the speed limit, about 80 percent of other drivers, usually in large groups, passed me. I did not see a single law enforcement officer.

The Yellowstone experience of beautiful scenery and thousands of animals is ruined by the hundreds of extremely noisy and air-polluting snowmobiles, particularly in the Old Faithful area (500 snowmobiles on 3/4/2000).

There is a better engine design being tested by the Park Service. However, it is little used by the park visitors. Several options are being considered to improve the situation. For those who want to express opinions, write to the Park Service, the Yellowstone superintendent, the Environmental Protection Agency, and the Secretary of the Interior. [For contact information on the agencies and individuals listed above, go to www.npca.org/takeaction/getpolitical.html.]

Otakar Jonas
Wilmington, DE

Alaska

Regarding Linda Benson's letter [March/April 2000], if the majority of residents in Alaska want to protect the fragile ecosystems that exist there, why are they continually returning people like Murkowski and Young to office? It appears someone is not getting the picture up there.

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Sea Otters

I was extremely disappointed by the article about sea otters, titled "Marine Mystery" [March/April 2000].

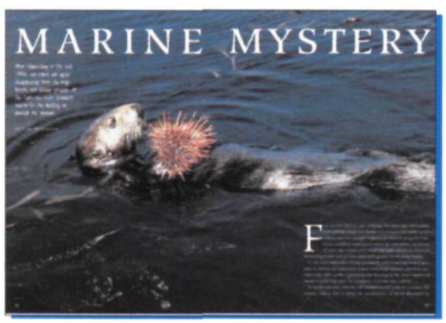
The writer obviously did not do his homework. If he had contacted the Pacific Coast Federation of Fisherman's Association, he would have quite a different picture about sea otters, their reintroduction, their expanding range, and their interaction with commercial and sports fisheries.

If you are going to blame someone for causing a problem, at least be courteous enough to get their side of the story.

Responsible fishermen work very hard to support sustainable fisheries in a healthy environment. The accusations in the story were unfair, highly biased, and mostly untrue.

I expect NPCA to do better than printing unfounded accusation and innuendo. Next time, get the facts!

Tom Peters
Eureka, CA



Cultural Challenge

"The Cultural Challenge" [January/February 2000] fails to mention the Student Conservation Association.

While helping the parks with repair and installation projects every season, it introduces a wide variety of youth—representing a cross-section of our citizens—to the parks. These students include all the races in America.

Although the participants are only a small number compared with total visitors, they will attract to the parks their communities, their children, and succeeding generations of their descendants. The impact of the youth's cultural diversity is probably imperceptible now, but it will grow and should be recognized in any discussion of this issue.

Ruth McCloskey
Bothell, WA

Bering Land Bridge

I was troubled by "Bridge to the Americas" [March/April 2000]. How does any anthropologist know that simple survival drove humans across the Bering land mass and onto North America? Perhaps they were trying to expand their "empire"—whatever form it may have taken.

It may not be possible for the author to understand the hardships that faced those "early nomads," but it is not hard for other people. A brief study of life in the Arctic in this century reveals hardships that probably differed little from those faced by humans 11,000 years ago.

The author appears to posit some form of "noble savage" as our ancestral explorers. This is cultural prejudice.

Evans Johnson
Kerrville, TX

Memories of Manzanar

I noticed a picture of Manzanar National Historic Site commemorating the World War II internment of Japanese Americans in the story "Eighty Years of Advocacy" [May/June 1999].

In 1946, I worked for a contractor who bought a number of the buildings at Manzanar from 1945-1946. He dismantled them and salvaged sheet rock, sub floors, decking, studs, rafters, wiring, windows, and bathroom fixtures. Everything except the roofs.

There were residential barracks and some apartments. In one of the apartments, there was a beautiful Oriental style painting on the wall opposite the door. The door to the apartment was not locked but did have a barricade and signs saying: "Do not touch, damage, or remove."

I often wondered what happened to the painting.

Marion L. Garriott
Scottsburg, IN

EDITORIAL REPLY: A number of the paintings made by Japanese Americans interned at Manzanar during World War II exist at the Eastern California Museum, P.O. Box 106, Independence, CA, 93526, 760-878-0258. One is available for public view at the museum as part of its permanent collection. However, according to the museum, the others are in dire need of funds for restoration.

"YOU ARE HERE"

This park secures the coastal flank of one of the largest internationally protected areas on Earth. In 1916, Professor William S. Cooper began work in the park on the theory of plant succession, which suggests that plant competition modifies the environment so that plant populations also change. Professor Donald Lawrence continued Cooper's work in 1941.

Endangered humpback whales, of which only 7 percent of pre-whaling numbers remain, swim alongside orcas, minke, and other whales. The threatened steller sea lion and spectacled eider, the endangered peregrine falcon, and a unique species of black bear called the glacier or blue bear roam through the wilds of this national park.

Answer: Glacier Bay National Park and Preserve, Alaska

WRITE TO US

Send mail to: Letters, NPCA, 1300 19th St., N.W., Washington, DC 20036. Letters can be sent via e-mail to npmag@npca.org. Letters should be no longer than 300 words and may be edited for length and clarity. Please include a telephone number for verification. We will notify you if your letter will be published and in which issue.

BY ELIZABETH G. DAERR

AIR QUALITY

Unhealthy Air Awaits Visitors at Great Smokies

Smokies air pollution worsens despite improving national trend.

GATLINBURG, TENN.—Visitors traveling to Great Smoky Mountains National Park this summer might see some spectacular mountain vistas—or they might not. As smog, haze, and acid rain grow steadily worse each year, air quality and visibility at one of the nation's most visited national parks is spiraling downward.

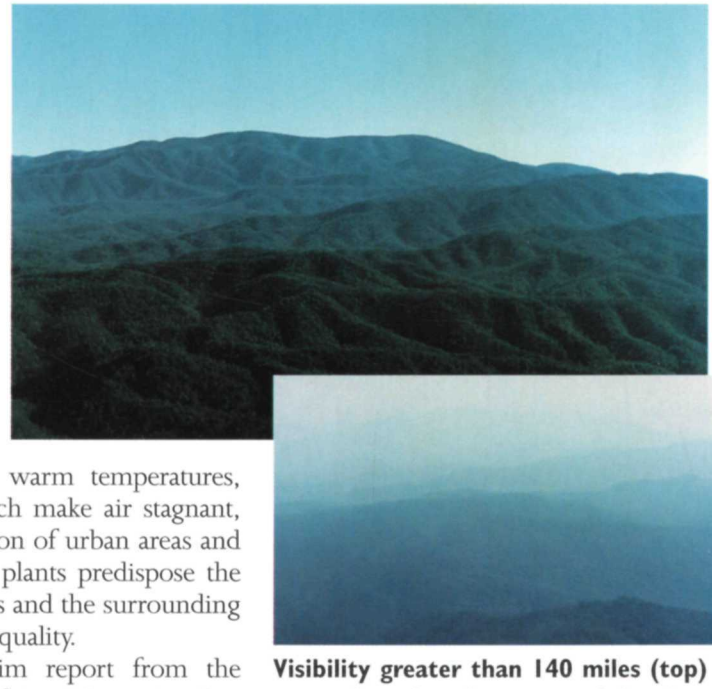
In March, the park recorded its earliest seasonal unhealthy ground-level ozone day to date. And in 1999 it recorded its greatest number of unhealthy ozone days—52. That was up from the previous record of 44 set in 1998, which was nearly double the number recorded in 1997. Physical signs of air pollution's negative effects abound in the Great Smokies: on average last summer, the air was unhealthy to breathe one out of every three days; summer visibility that once averaged 65 miles now averages 15 miles; and 30 plant species have been found to have damage from ground-level ozone, and 60 others have ozone-like damage.

Jim Renfro, air quality specialist at Great Smokies, laments that although the Park Service is taking steps to control air pollution in the park, the task depends on more than the agency's efforts. "Most of the pollution that impacts the park is from outside the boundaries," he said. "It's truly a regional problem that needs a regional solution." The park does daily monitoring, research, and education on air quality issues and is planning a transportation study for Cades Cove, the most visited area of the park. Automobile emissions are the second leading cause of poor air quality in the region, behind coal-fired power plants. Cars carrying about 10 million people visit the Smoky Mountains each year, contributing to emissions problems.

An annual report on ozone from the Environmental Protection Agency (EPA) found that although air quality improved nationwide from 1989 to 1998, ozone levels grew significantly in seven of 24 national parks measured. Among the parks measured were Smoky Mountains and Denali National Park in Alaska. High elevations, high humidity, warm temperatures, light winds, which make air stagnant, and a concentration of urban areas and coal-fired power plants predispose the Smoky Mountains and the surrounding region to bad air quality.

A 1999 interim report from the Southern Appalachian Mountains Initiative, a consortium of state, federal, nonprofit, and corporate air quality experts, found that coal-fired power plants in the region account for nearly 77 percent of sulfur dioxide emissions and 37 percent of nitrogen oxide emissions. When the Clean Air Act was passed in 1977, new pollution control devices were mandated for most coal-fired power plants. But because many of the plants were aging and expected to be replaced with more modern facilities in the future, they were exempted from new regulations.

The Tennessee Valley Authority (TVA), which owns many of these plants and supplies power to more than 8 million customers in seven southeastern states, has refused to build new plants because it is cheaper to maintain the old ones. Sixty-four percent of the power TVA



NATIONAL PARK SERVICE (2)

Visibility greater than 140 miles (top) occurs less than 1 percent of the time in the Smoky Mountains. More often, visibility is five to ten miles (bottom).

produces comes from its 11 coal-fired plants. The EPA issued an administrative order in November requiring the federal agency to comply with Clean Air Act standards. In response, TVA asked the 11th Circuit Court of Appeals to review the administrative order. To comply with EPA's order, the utility said, would cost billions of dollars and force electric rates to increase up to 14 percent.

Several bills have been introduced in Congress to change the exemption that has allowed TVA to continue to use old coal-fired plants. Two bills, H.R.2900 and S. 1369, call for the strongest reductions in emissions, but hearings have not been held to date.

"The cuts in emissions in these bills are deep enough to achieve substantial environmental and health benefits," said Jonathan Banks, legislative coordinator for Clear the Air, a national public education campaign to improve air quality.

Don Barger, NPCA's Southeast regional director, reiterated the importance of the bills. "The legislation won't solve all of our problems, but by removing the loophole, we take the largest, most cost-effective step toward the goal of remedying the pollution problem in our national parks," he said.

In May, more than 100 state and federal air quality experts and representatives from corporations and environmental groups attended the second annual Governors' Summit on Mountain Air Quality, held in Atlanta, Georgia. Although the governors reaffirmed their commitment to improve air quality, no concrete action was taken. "The evidence is clear that the problem is getting worse," Barger said. "We're beyond the point of having three more governors' conferences to talk about how bad the problem is—we need action now."

TAKE ACTION: Write to your members of Congress asking them to cosponsor H.R. 2900 or S. 1369, which will force outdated coal-fired power plants to comply with Clean Air standards. For a list of addresses, go to NPCA's web site at www.npca.org. Look under Take Action, Get Political.

LITIGATION

Yellowstone to Receive Royalties

Court says park can have bioprospecting fees.

WASHINGTON, D.C.—A federal court has ruled that Yellowstone National Park's 1997 agreement with the Diversa Corporation to share scientific data and royalties from the company's bioprospecting research is valid. Yellowstone's Cooperative Research and Development Agreement (CRADA) is the first of its type made by the National Park Service, and the ruling sets a precedent for other national parks that stand to benefit from similar agreements.

Since 1898, researchers have collected samples from the park's geothermal pools to be used for research purposes, but the park has never benefited from any of the products developed. For example, an enzyme identified in the park in the 1960s was used to develop a process for DNA fingerprinting, which is used for a variety of applications, including identifying criminals and diagnosing cancer. Hoffmann-LaRoche, the company that bought the patent rights to the enzyme, now earns about $100 million annually from it, while Yellowstone receives nothing.

Several groups opposed the CRADA saying that it violated national park regulations and was entered into without proper environmental analysis. The Edmonds Institute, the lead plaintiff in the case, fought the agreement, alleging that the Park Service "is participating in the commercialization and privatization of life." Furthermore, the agreement was made without proper public input, says Beth Burrows, president of the organization.

Under the agreement, Diversa will pay the National Park Service $100,000 over five years and 0.5 percent to 10 percent in royalties for any commercial sales of a product. Any revenue received would be used for research and conser-

vation purposes in Yellowstone.

Judge Royce Lamberth of the U.S. District Court of the District of Columbia wrote in his decision that the agreement was consistent with park statutes and "would produce direct concrete benefits to the park's conservation efforts." Despite the ruling, the agreement continues to be suspended until the park completes an environmental assessment as is required under the National Environmental Policy Act. Because the Park Service's agreement represented a "dramatic change" in national policy, Lamberth said an assessment was necessary. The park began the environmental assessment in February but does not know when it will be completed. In the meantime, Diversa has suspended research until the assessment is complete.

NPCA's Counsel Elizabeth Fayad said the association supports the Park Service's use of this type of profit-sharing agreement, but such arrangements should be entered into only after completion of an environmental analysis.

"The use of CRADA is good public policy, but the Park Service must be certain that any research conducted does not harm the resources or visitors' experience," Fayad said.

VISITOR USE

Bill May Hinder NPS Authority Over Air Access

Utah's Hansen wants states to approve park airstrip closures.

WASHINGTON D.C.—Utah Rep. James Hansen (R) has introduced legislation that would require the U.S. Forest Service, the Bureau of Land Management, and the National Park Service to keep open airstrips on federal lands used by private pilots. If enacted, the law could cost national parks millions of dollars in maintenance fees and agency staff time.

"This bill is unprecedented in that it gives near-permanent access rights to one class of park users—the private pilots of America," said William J. Chandler, NPCA's vice president of conservation policy.

The bill, H.R. 3661, requires the National Park Service to get permission from state aviation administrations before closing an airstrip either actively or through suspending necessary maintenance. The legislation also mandates development of a nationwide policy governing general aviation issues related to federal lands.

NPCA maintains that the bill undercuts the Park Service's authority to decide the time, place, manner, and amount of visitation to the parks, thereby undermining the agency's ability to protect park resources.

NPCA also maintains that scant evidence has been presented to document the alleged problem the bill purports to resolve, which is unmerited, unilateral closures of airstrips by federal land managers. The Park Service does not even have an inventory of how many airstrips are affected by this bill, which was drafted in response to airstrip closures on nonpark federal lands. Furthermore, the bill's proponents have not cited any airstrip closures in parks that were unjustified.

"The agency should continue to have the last word on whether airstrips are appropriate or not in particular parks just as it does for other forms of visitation," Chandler said.

In hearing testimony, the Park Service strongly opposed the bill stating, "it would impose new, unanticipated, and extensive management and financial burdens."

TAKE ACTION: Write to your representatives asking them to oppose this attempt to weaken the Park Service's authority to regulate access to parklands. To find your representative, go to NPCA's web site at www.npca.org.

RESOURCE PROTECTION

Golden Gate NRA Officials Caught In a Dog Fight

NPS tries to protect birds and gets sued by dog owners.

SAN FRANCISCO, CALIF.—Without watching where managerial flexibilty was leading them, managers at Golden Gate National Recreation Area (GGNRA) have stepped into a different kind of dog mess.

Though off-leash dog walking is not permitted in any unit of the National Park System, managers at GGNRA have allowed the activity along the bluffs at Fort Funston through a superintendent's compendium. The provision is meant to allow superintendents flexibility for unique situations. But when the Park Service recently fenced off a small section of the area to protect a threatened bird's critical nesting habitat, the dog walkers sued the National Park Service (NPS). At press time, the dog owners were a step closer to running their dogs through the protected area.

A U.S. District Court judge has issued a preliminary ruling in favor of the dog owners, who argued that NPS violated its own regulations when it closed the area without public notification. The plaintiffs, led by the Fort Funston Dog Walkers, say that they are not opposed to protecting the bird's habitat but that a public comment period was required. That period would have allowed them to suggest ways to protect the area without banning them from one of the few places in San Francisco where they are able to run their dogs unleashed, says Lydia Boesch, attorney for the plaintiffs.

The six-acre area was fenced off primarily to protect bank swallows that return from South America each March to nest in the sand cliffs below. The birds remain through August and make up one of two remaining colonies with coastal nesting sites in California. Bank swallows are a state threatened species but are not federally listed as threatened or endangered. The Park Service also used the closure to reestablish native plants, which had been eradicated by nonnative vegetation.

In his statement, Judge William Alsup said that the plaintiffs have shown probability that NPS violated its own regulations requiring notice and has asked both sides to provide possible remedies for the action. Except in emergency situations, NPS regulations require notice and public comment before closure of a park area that is of a

SUSANNA FROHMAN/SAN FRANCISCO CHRONICLE

Dogs at play at Fort Funston in Golden Gate National Recreation Area.

"highly controversial nature" or that will result in "a significant alteration in the public use pattern of the park area." On that technical aspect of the case, the Park Service argued that it provided notification through several venues and went beyond what was necessary for such a minor closure.

The agency would not comment because the case is ongoing, but in its testimony, NPS stated, "while the dog-walking community has been vocal in its opposition to the park's closures at Fort Funston, they represent only a small portion of the...array of visitors Fort Funston accommodates...Contrary to plaintiff's assertions, these actions neither significantly alter the public use pattern of Golden Gate National Recreation Area nor are highly controversial in nature. The permanent closure is less than four acres in size, while the entirety of Fort Funston is 230 acres." Two additional acres would be closed temporarily during the season.

The case has far greater implications than simply allowing unleashed dog walking in national parks, said Brian Huse, NPCA's Pacific regional director. "The judge has clearly not grasped the consequences of forcing the Park Service to go through lengthy processes to create rules for routine actions to protect park resources," Huse said. "In this case, the Park Service attempted to set aside six acres to protect a threatened species—that shouldn't be a several-month process."

In its testimony, NPS suggested that the judge's ruling would hinder the agency unnecessarily. "If the NPS were required to invoke formal rulemaking for all public use restrictions and closures...the NPS ability to balance the competing uses of park resources would be severely compromised."

The fences will remain this year to protect the birds; however, if the judge rules for the plaintiffs, the Park Service may be required to remove them next year.

Dan Murphy, a past president of the Golden Gate Audubon Society and someone who has followed the swallow colony for more than 20 years, said that the closure is necessary. Bank swallows will not return to nests when they perceive a threat from above, such as predatory birds, he said. In his observations, he has witnessed the same behavior when people or hang gliders are seen from above. "We don't know for sure how it affects them, but prudence would dictate that we make the space as large as possible," he said.

PRESERVATION

Petersburg Sites Losing Ground

Civil War sites threatened by suburban sprawl and industry.

PETERSBURG, VA. — Petersburg is being besieged once again. But this time it is suburban sprawl and industrial development that are encircling the town instead of Ulysses S. Grant's Union Army.

More than 100 battle sites have been identified in the area where a ten-month exchange between Union and Confederate armies eventually led to the end of the Civil War. But only six of the 22 sites deemed nationally significant by Congress are partially or wholly protected within the boundaries of Petersburg National Battlefield. The National Park Service (NPS) is fearful that those areas will be lost to homes and industrial parks because of growing development pressure.

"This isn't another Gettysburg where you have just one site," said park Superintendent Michael Hill. "Petersburg was a whole campaign that lasted months and included many battles."

The same roads and railroads that drew the Union Army to Petersburg in 1864 are enticing industry and residents there today. Petersburg sits within a vital transportation corridor that served as a supply route to the Confederate Army during the Civil War and now provides convenient shipping routes among the South's major cities. Businesses have been eager to relocate

where the cost of living is cheaper, and the rural community has welcomed the tax revenue.

One example of development's intrusion is the TXI Chaparral steel plant. When it was approved adjacent to the park in the late 1990s, the U.S. Army Corps of Engineers stipulated that a 500-foot buffer zone must be maintained. The goals were to provide wetland protection and to hide the plant from the park's view.

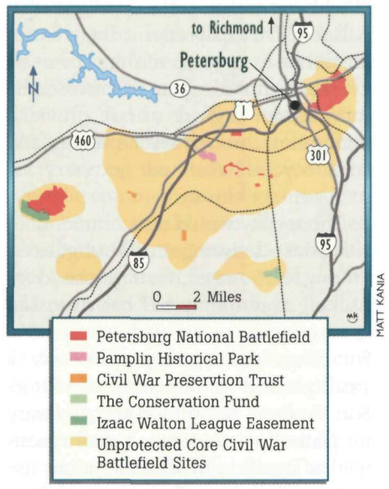
The company agreed, and said it would build a trail through the area to enhance the park's interpretative program. However, without notice, the original landowner and Chaparral cut down most of the trees between the plant and the battlefield, leaving a scarred vista visible from the Peebles Farm—one of the 22 nationally significant sites. The Park Service is now in talks with the company to replant the forest.

Having the National Park Service buy and manage the additional 40,000 acres of land that encompass the remaining battle sites is financially unrealistic for the agency, Hill said. Moreover, development pressures are driving up property prices, making it increasingly difficult for the local farm families—some of whom have been there since the time of the Civil War—to hold on to land.

To stem the loss of these historic sites, the Park Service is casting a wide net, hoping to create partnerships with local land and business owners, conservation organizations, and local jurisdictions to help in the effort. To date, the American Farmland Trust and the Civil War Preservation Trust have both expressed interest in working with local landowners to secure conservation easements, and a few already exist.

Hill said the greatest challenges are trying to change zoning laws and getting local residents and businesses to see the value of saving the landscape. Current zoning laws allow a piece of property to be subdivided in a number of ways without public review.

"I think people like the rural lifestyle here," he said. "The problem is that land



MATT KANIA

disappears in such incremental percentages that people don't notice it. Then they wake up one day and realize a huge percentage is gone, and it's too late."

Preserving these battle sites is important not just to the local community but to the nation, argued NPCA Northeast Regional Director Eileen Woodford. "When you walk the ground of a battlefield, no matter what century or war, you are walking in the footsteps of people who were willing to kill or be killed for what they believed," Woodford said.

"While jobs and economic growth are important to any community, of at least equal importance are the marks left on a community by those who built it, and in this case, died trying to preserve it," she added.

TAKE ACTION: Write to the Dinwiddie County Board of Supervisors asking them to preserve battlefield sites throughout Petersburg by discouraging housing sprawl and industrial development. Ask them to enact stricter zoning laws that require public input and encourage land conservation. Remind them that local development decisions affect more than the Petersburg community because the sites commemorate a turning point in American Civil War history.

Address: Dinwiddie County Board of Supervisors, 14016 Boydton Plank Rd., Dinwiddie, VA 23841.

NEWS UPDATE

Bear Creek Dam—The U.S. Army Corps of Engineers in Little Rock, Arkansas, denied the application of a local utility district to build a dam on Bear Creek, a major tributary to the Buffalo National River (see News, January/February 2000). The Bear Creek Dam would have been the first impoundment on any tributary of the Buffalo National River since it was designated in 1972.

Land and Water Conservation Fund—The House passed landmark legislation (see News, May/June 2000) in May that would set aside $3 billion annually for the next 15 years to buy parks and open space, restore coastal areas, and protect wildlife. The legislation had broad bipartisan support in the House but is expected to have more difficulty passing the Senate. Although the bill is a major step forward for land conservation and acquisition, it falls short of providing full, permanent funding. The legislation does not mandate that the money be spent even though it is allocated. Moreover, the bill provides incentives to increase offshore oil and gas drilling to fund the program, which is financed through royalties from those activities.

Sequoia National Monument—In April, President Clinton proclaimed Sequoia National Monument in California, giving added protection to 34 groves of ancient sequoia trees. Although the new 328,000-acre monument, located on the western slope of the Sierra Nevada Mountains, will protect the trees from new mining claims and some timber harvesting, much of the current activity allowed in the area will continue. Hiking, camping, fishing, river rafting, and other types of nonmotorized uses will remain as will existing water rights, private access, and special permits for grazing.

PARK PLANNING

Memorials to be Dispersed in Nation's Capital

New policy aims to maintain open spaces and views on Mall.

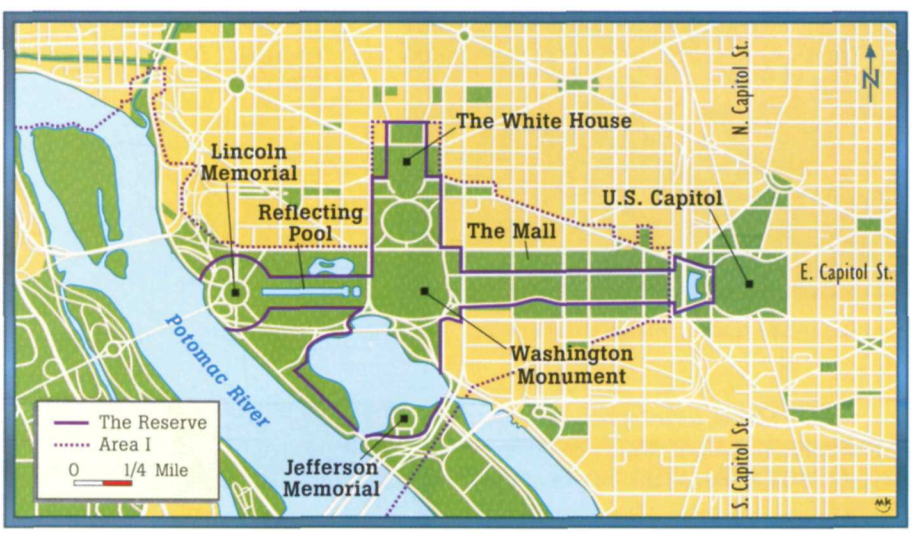
WASHINGTON D.C.—New national memorials will be distributed throughout Washington, D.C., rather than along the National Mall, according to a policy announced this spring. The new policy, developed by a joint task force of the National Capital Planning Commission (NCPC), the Commission on Fine Arts, and the National Capital Memorial Commission, will prohibit the placement of any new memorial sites in the corridors running from the Capitol to the Lincoln Memorial, and the White House to the Jefferson Memorial.

The policy was developed in response to two recent findings. A 1996 NCPC report determined that, on average, one new memorial was dedicated in the nation's capital each year. Many of these were located on or near the National Mall, potentially turning the grassy, heavily used urban park, into a congested mass of concrete structures by the year 2050. In addition, public comments taken in response to a 1997 proposal to erect the World War II Memorial between the Washington Monument and the Lincoln Memorial supported keeping the view unobstructed. "We recognized that the public is very attached to that open space," said NCPC spokeswoman Denise Liebowitz.

The World War II Memorial, which is not subject to the new policy, will be built at the east end of the Reflecting Pool, but the height of the memorial was reduced to limit its effect on the vista—the site of many historic speeches, including Martin Luther King, Jr.'s, "I Have a Dream" speech in 1963. Construction on the memorial is expected to start this fall, and a previously approved memorial to King will also be built in the area.

At press time, the task force was developing a Memorials and Museums Master Plan to identify appropriate sites throughout Washington based on accessibility, traffic and parking considerations, and opportunities for economic revitalization. The new "places of commemoration," as the task force has named them, are expected to change the public's image of national memorials, said Margaret Vanderhye, chairwoman of the task force.

"When most people hear the word monument, they usually think of a guy on a horse or a large slab of concrete," she said. "We want them to know that they can be nice, green open spaces or a place that comes alive with flowers."



MATT KANIA

A draft plan is expected to be released in early September for a 60-day public comment period, and the final plan should be out by the end of the year. To comment on the plan, visit the NCPC web site at www.ncpc.gov or call the commission at 202-482-7200.

EDUCATION

Museum Coalition to Promote Democracy

International sites coalesce to discuss issues of social change.

WASHINGTON, D.C.—With the goal of promoting and strengthening democratic processes and humanitarian principles, the International Coalition of Historic Site Museums of Conscience recently formed.

Three National Park Service (NPS) sites, Women's Rights National Historical Park, the Underground Railroad Network to Freedom, Manzanar National Historic Site, and a Park Service affiliated area, the Lower East Side Tenement Museum (see Historic Highlights, November/December 1999), have entered into partnership with seven museums from around the world to form the coalition.

"For a number of years, the National Park Service has had sites that represent the history of social change," said NPS Northeast Regional Director Marie Rust. "These places reflect social movements that are not uniquely American.

"No story is just a national story," she added.

The coalition intends to explore complex historical issues, including sexism, racism, totalitarianism, immigration, genocide, and poverty, with the goal of strengthening existing relationships among the international museums, protecting sites that may be threat-

ened by political pressure, adding new sites to the group, and facilitating collaboration between the museums of conscience and human rights organizations, arts organizations, and others.

As the coalition's founding document reads: "We hold in common the belief that it is the obligation of historic sites to assist the public in drawing connections between history interpreted at our sites and the contemporary implications. We view stimulating dialogue on pressing social issues and promoting humanitarian and democratic values as a primary function."

Other museums in the coalition are: South Africa's District Six Museum, which traces the history of segregation and the forced removal of people in Cape Town, Russia's Gulag Museum, which is located on the site of a Stalinist labor camp and teaches about political repression and totalitarianism in the former Soviet Union, Bangladesh's Liberation War Museum, which focuses on the horrors of that country's war for independence, Senegal's Maison des Esclaves (The Slave House), which interprets the history of slavery from a site where slaves were deported to the Americas, Argentina's Projecto Recordar (To Remember) Project, which charts the history of human rights abuses during the military dictatorship of the late 70s and early 80s, Czech Republic's Terezin Memorial, which is located on the site of a Holocaust transit center, and England's Workhouse, which tells the story of workhouse subsistence living in Victorian Britain.

Ruth Abrams, director of the Lower East Side Tenement Museum, believes that the coalition can have a substantial impact on both the museum community and on the public. "My hope is that we will have such an impact that it will be the norm for visitors at historic sites to learn about the various histories, but also about the contemporary connection to those histories," she said. "We can demonstrate in unequivocal terms why history does matter.

"We can use the museums as citizen makers," she added.

Abrams also commented on the variety of challenges that the coalition faces—one of which is the charged political atmosphere that surrounds many of the sites.

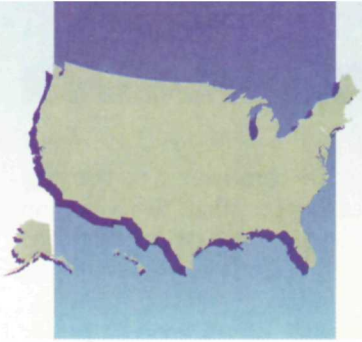
"Some people read what I say as being political," she said. "But what we are simply trying to do is to use history to think about the present."

Rust reflected Abrams concerns. "The Park Service should never presume to dictate any position or philosophy," she said. "Only by accepting the truth, both the mistakes and triumphs, can we move ahead to the future."

Coalition members are committed to telling stories of everyday people, not just leaders or governments, who suffered and also those who survived.

"It is not a museum in the traditional sense; it's a memoir to people," said M. Eloi Coly, deputy director of Maison des Esclaves, about his site. "It's a place to remind people of the fragility of liberty and the need to remember in order to move to a more egalitarian society."

—*William A. Updike*



REGIONAL REPORT

ON NPCA'S WORK IN THE PARKS

Text by Elizabeth G. Daerr

ALASKA

At press time, the National Park Service was expected to publish new Denali National Park regulations in the Federal Register. The formal regulations will ban the use of snowmobiles for "traditional activities" as well as recreational uses in the wilderness core of Denali. The final rule has come as snowmobile enthusiasts have been threatening to ride into the park wilderness over the last several winters for recreation. Although the Park Service is acting within its authority to regulate motorized vehicle use that could potentially harm natural resources, the rule is expected to meet with congressional opposition and a lawsuit. The regulations address various other issues, including a cap on the number of vehicles per season allowed on the park road.

By banning snowmachine use in Denali's 2-million-acre wilderness, the Park Service is closing a very small portion of public land. More than 95 percent of public lands in southcentral Alaska are open to snowmachines.

NPCA REGIONAL DIRECTORS:

ALASKA: Chip Dennerlein

CENTRAL ROCKIES: Mark Peterson

HEARTLAND: Lori Nelson

NORTHEAST: Eileen Woodford

NORTHERN ROCKIES: Tony Jewett

PACIFIC: Brian Huse

SOUTHEAST: Don Barger

SOUTHWEST: Dave Simon

CENTRAL ROCKIES

The Mountain States Legal Foundation, a conservative group that defends individual property rights and works to limit government control of public lands, has filed suit against the National Park Service (NPS) over its management of Rainbow Bridge National Monument in Utah. The foundation filed a complaint in March with the U.S. District Court on behalf of the Natural Bridge and Arch Society, which claims that the agency's policy of asking people to refrain from walking under the 290-foot stone arch is unconstitutional. In 1995, the Park Service enacted a voluntary ban in response to American Indians' concerns that their ancient religious site was being desecrated by park visitors. NPS erected a low wall and posted a sign asking visitors to respect the site by remaining at a distance. However, the plaintiff alleges that the Park Service has gone beyond asking and has threatened to hand out citations to people who cross the barrier. Furthermore, they see the agency's defense of a particular religion as a violation of the First Amendment's separation of church and state. At press time, no trial date had been set, and NPS denied being in violation of the First Amendment.

HEARTLAND

Proposed lead mining in the Mark Twain National Forest surrounding the Ozark National Scenic Riverways in Missouri again threatens the watershed. A last-minute provision inserted on the Interior appropriations bill last year put a moratorium on withdrawing mineral rights from the national forests, leaving the area open to several prospecting claims. NPCA fears that if exploratory drilling finds lead ore, the mines will likely be approved by the U.S. Forest Service and Bureau of Land Management, which administer the land. The area's karst geology—an irregular system of limestone formations with sinks, caverns, and underground streams—makes the effects of potential mine runoff unpredictable.

NORTHEAST

Sen. Robert Byrd (D-W. Va.) has inserted a provision in the Senate fiscal year 2001 Agricultural appropriations bill that would mandate the transfer of 327 acres of U.S. Fish and Wildlife Service land to the Department of Treasury for the construction of a national firearms training center. The land was a Civil War battle site where more than 11,000 Union troops were captured and has been targeted for inclusion in a potential future expansion of Harpers Ferry National Historical Park in West Virginia. NPCA is concerned that the land would be transferred to Treasury prior to any public input or formal review of alternative sites, and that the agency has no land preservation mandate. Additionally, there is no detailed information on the need for the firearms facility, safety factors, or what Treasury intends to do with surplus land that is not used for the project.

TAKE ACTION: Contact Sen. Byrd (especially if you are from West Virginia) and ask him to withdraw the provision that would transfer Fish and Wildlife Service land to Treasury to build a firearms facility near Harpers Ferry. Write to: The Hon. Robert Byrd, 311 Hart Senate Office Bldg., Washington, DC 20510. Send e-mail to senator_byrd@byrd.senate.gov or call him at 202-224-3954.

NORTHERN ROCKIES

Less than two years after landmark concessions reform legislation was passed, Rep. Rick Hill (R) and Sen. Conrad Burns (R), both from Montana, are proposing bills that would undermine the law to benefit the Glacier National Park concessioner. The 1998 National Parks Omnibus Management Act established higher franchise fees, created a competitive selection process among businesses seeking to operate in the parks, and limited concessions contracts to 20 years. Hill and Conrad's legislation extends the concessioner's contract to up to 40 years and expands the park's operating season so that the concessioner could finance and complete major structural renovations of the historic lodges. Extending the season raises serious wildlife concerns, as several of the historic hotels are located in critical winter and spring ranges. Both increasing the number of available rooms in Glacier and expanding the operating season would violate Glacier's recently adopted general management plan.

PACIFIC

A California company has proposed a project that would pump water from an aquifer under Mojave National Preserve to accommodate the growing need for water in Southern California. The company, Cadiz, Inc., and the Metropolitan Water District of Southern California are pursuing plans to create a water storage program that would divert water from the Colorado River into the aquifer during years of heavy rainfall and drain water from the aquifer in years of drought. The company argues that the 30,000 acre-feet of water estimated to be removed each year would not harm the desert plants and animals that rely on the water source, but the National Park Service, the U.S. Geological Survey, and the Environmental Protection Agency disagreed. Comments submitted by the agencies on a draft environmental impact statement (EIS) said the hydrological documents were seriously flawed. A supplemental EIS is in progress to address the questions. Specifically, the Park Service is concerned that the project may deplete natural springs and seeps on which many species, including the desert bighorn, depend.

TOM & PAT LEESON

A desert bighorn sheep.

SOUTHEAST

The North Carolina Department of Transportation has backed away from a verbal agreement with the National Park Service to conduct a regional transportation study for the Blue Ridge Parkway. Instead, the state has said it will only commit to an analysis of technical road design—a step that may have limited results on protecting the park.

The state has placed increasing pressure on the National Park Service to accommodate growing development outside the park by building new roads and paving existing gravel roads that bisect the park.

A regional transportation study would analyze long-range needs and the accompanying sprawl associated with road development in the counties that encompass the Blue Ridge Parkway. To date, the state has taken a piecemeal approach to road planning. NPCA believes that the study is imperative to protecting the Blue Ridge Parkway's scenic views, which attract millions of visitors and valuable tourist dollars to the region each year.

TAKE ACTION: Ask North Carolina Governor James Hunt to join the National Park Service in a regional transportation study to address future congestion and development sprawl around the park. Write to: James B. Hunt, Jr., Office of the Governor, 20301 Mail Service Center, Raleigh, NC 27699-0301. Visit NPCA's web site to send an electronic letter. NPCA's North Carolina members may call the governor at 800-662-7952.

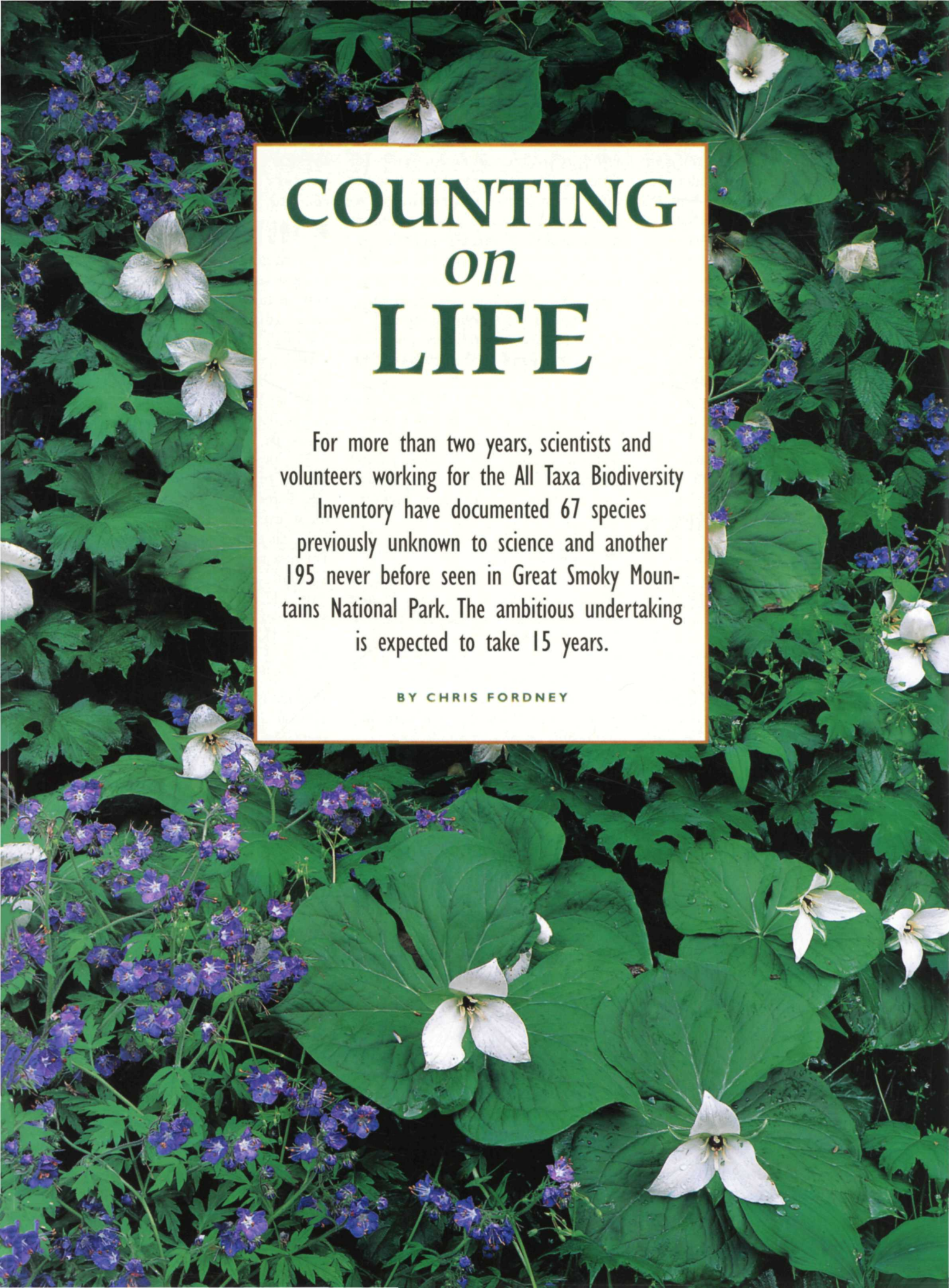
SOUTHWEST

A coalition of eight conservation groups, led by NPCA, has proposed a new national monument to protect lands adjacent to Carlsbad Caverns National Park in New Mexico and Guadalupe Mountains National Park in Texas. The proposed Capitan Reef National Monument would protect up to 150,000 acres of New Mexico's wild landscape.

The proposal recommends that the Bureau of Land Management and the U.S. Forest Service maintain management over the lands but grants the National Park Service an advisory role. The new monument would allow traditional uses such as hunting and grazing, thus addressing the main objections from local residents who fear loss of access. The Forest Service has already proposed a mineral withdrawal for about 27,000 acres in the Guadalupe Mountains, which would prohibit new mineral development for the next 20 years. National monument status would further protect the area's many world-class, extensive caves.

In addition, the proposal would allow for improved interagency cooperation for better long-term ecosystem protection. It would also encourage better management of wildlife habitat, cultural resources, watersheds, and more unified fire management policies.

TAKE ACTION: Write to the Secretary of the Interior, Secretary of Agriculture, and New Mexico Senator Jeff Bingaman and ask them to support the establishment of Capitan Reef National Monument. Write: The Hon. Bruce Babbitt, Secretary of the Interior, 1849 C Street, N.W., Washington, DC 20240; The Hon. Dan Glickman, Secretary of Agriculture, 14th and Independence Ave., S.W., Washington, DC 20250; and Sen. Jeff Bingaman, 703 Hart Building, Washington, DC 20510.



COUNTING *on* LIFE

For more than two years, scientists and volunteers working for the All Taxa Biodiversity Inventory have documented 67 species previously unknown to science and another 195 never before seen in Great Smoky Mountains National Park. The ambitious undertaking is expected to take 15 years.

BY CHRIS FORDNEY

BLESSED WITH some of the finest trout streams in North America, Great Smoky Mountains National Park has always produced its share of big fish stories. Now people are talking about giant worms, and scientists are listening.

The first unusually large worm was found in the summer of 1998, when park maintenance volunteer Matthew Slaughter spotted an 18-inch specimen as he was clearing brush on the Appalachian Trail in the park.

"It was right in the middle of the trail just squirming around," Slaughter told the *News Sentinel* of Knoxville, Tennessee. "When I picked it up, it went into possum mode and draped across my hands like a wet noodle."

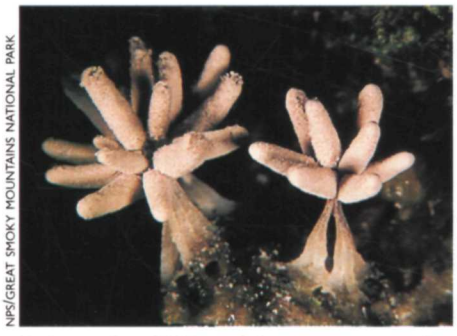
The unusual worm—and several slightly smaller examples found by other volunteers the following summer—has grabbed the biggest headlines since the beginning of the All Taxa Biodiversity Inventory (ATBI). The ambitious effort aims to identify every species in the park, which embraces half a million acres of the highest mountains along the border between North Carolina and Tennessee.

Found only in high elevations, the giant worms have been examined by Sam James, an associate professor of biology at Maharishi University of Management in Fairfield, Iowa, and one of a half-dozen experts in the world on oligochaetes, a class that includes earthworms. "This is a previously unknown species," James said. It will help him as he investigates earthworms' anti-inflammatory properties for treating arthritis and other joint ailments and seeks other medical uses associated with earthworms' ability to burrow through and eat soil without being attacked by bacteria.

James is one of around 150 scientists—and about 50 volunteer assistants—who have traveled from as far away as Germany to participate in the ATBI. Hiking into remote reaches of the park to set traps and collect samples of everything from small mammals to fungi, these workers are confirming theories about the opulent array of life in the Smokies, whose location and climate make the park a hothouse of biodiversity. By this spring, as the ATBI was entering its second field season, researchers had documented 67 species previously unknown to science and another 195 that have never before been seen in the park. The biggest gain so far has been arachnids, with nearly 40 species found, followed by 17 new micro-crustaceans and a few species of flies, algae, and two slime molds never seen in this hemisphere.

FREDERICK A. COYLE

NPS/GREAT SMOKY MOUNTAINS NATIONAL PARK



NPS/GREAT SMOKY MOUNTAINS NATIONAL PARK

Before the 1996 spider inventory, the orb-weaver (top) was not known to exist in the park. Both the green salamander (middle) and slime mold (bottom) are included in the ATBI.

Conceived shortly after another all taxa inventory was abandoned in Costa Rica in late 1996, the Smokies ATBI has generated national publicity and a flood of public interest with its potential to unlock natural secrets that could vanquish diseases, stem the onslaught of invasive species and document the loss of native ones, and provide more data about the ravages of air pollution on Appalachian forests—although such discoveries are still years away. The National Park Service is an enthusiastic proponent of the ATBI, viewing it as a model for other parks in the drive to inventory and monitor the system's natural resources. Having a baseline of information about the park's animals and plants will be an invaluable management tool, park officials say.

For more than two years, organizers—mostly volunteers from the scientific and academic worlds who have other full-time jobs—have steadily assembled the components of the biodiversity inventory. They have created a nonprofit to oversee it, Discover Life in America (DLIA), organized scientists into taxonomic working groups, or TWIGs, established scientific protocols, hosted conferences, built relationships with federal agencies and other nonprofits, and set up a web site (www.discoverlife.org) for scientists to network and post their research results.

But one vital piece is still missing: major funding. DLIA's board of directors agrees that it will need a significant infusion of cash if the ATBI is to be completed anywhere close to its original timetable of ten to 15 years. The money raised so far—about $300,000, mostly from the Friends of Great Smoky Mountains National Park and the Great Smokies Natural History Association—has been sufficient to create an organization and achieve respectable results for a pilot season, but it's far short of what's needed to eventually identify the estimated 100,000 species in the park, organizers say.

Money isn't the only concern. Another continuing challenge is to build the administrative machinery for such a massive project that involves so many scientists and also must integrate hundreds, perhaps thousands, of volunteers into the effort. "Never underestimate the challenge of putting together a team" for an undertaking on the scale of the ATBI, said NPCA President Thomas C. Kiernan, a member of DLIA's board.

Large-flowered trillium and purple phacelia are but two of the more than 100,000 species in the park.

The first chairman of DLIA says he resigned to "streamline the decision-making process," and other key advocates have expressed frustration with the pace so far. "I think it's been a little slower than I wanted it to be," said Keith Langdon, the park's supervisory biologist and one of the project's conceptualizers. "We need to get the science up and running."

"Things are happening. I'd like to see them happening a little faster," agrees Frank Harris, DLIA's new chairman and the associate laboratory director for biology and the environment at Oak Ridge National Laboratory in Tennessee.

This past spring DLIA had one full-time employee, Jody Flemming, who has an administrative job title but is handling a variety of management functions out of government office space in the park's Twin Creeks Natural Resource Center in Gatlinburg, Tennessee. The park's friends group has recently given money to hire a full-time fundraiser.

To attract some serious money and really get rolling, the ATBI will need a full-time executive director, and that job won't be filled until DLIA has enough in the bank—around $1.25 million—to guarantee long-term employment for a professional, said Mary Johnson Williams, a vice chairman in charge of fundraising.

The vision of the ATBI has also always included public education and involvement, and in that it has been successful, perhaps a little too successful at such an early stage. In fact, the ATBI has struck such a chord with the public, with offers of help pouring in, that organizers are struggling to harness that enthusiasm and energy into effective work on the ground.

Langdon is concerned that more publicity will spawn a new wave of volunteer offers before DLIA is ready to handle them. He supports the creation of an initial cadre of 100-200 people, to be expanded as the project grows, that could be trained to properly collect samples and learn to use global positioning equipment, maps, and compasses.

JOHN K. GATES

Scientists intend to document all species of wildflowers in the park, including the wake-robin, or red trillium, shown here.

Volunteers like Slaughter, the worm finder, have already demonstrated their usefulness. Others have shown how they can effectively work with scientists and benefit from the research of the ATBI. David Stair, a biologist with Tetra Tech NUS, an environmental consulting firm in Oak Ridge, Tennessee, said he sees great potential for the ATBI to assist his work. He envisions a day when he will be able to use a handheld device to log on to the Internet and DLIA's web site to identify species while he's in the field, which will save him research time and labor.

A frequent hiker in the Smokies, Stair was browsing the Internet when he came across DLIA's web site. He volunteered the same day and has made several trips to the park to work with scientists on wasp and algae species, even taking one scientist out in his boat to look for diatoms, a type of plankton. He has also offered bed space for visiting scientists at his home in Knoxville, Tennessee.

Stair said much of what he has done is the drudgery of collection, but he has been thrilled with the opportunity to rub elbows with international experts in taxonomy, his hobby.

"That's not work, that's a blast," he said. "There are incredible, really meaningful participation opportunities."

Stair lives about an hour's drive from Great Smoky Mountains, close enough to rendezvous with scientists at trailheads when e-mails from DLIA alert him to volunteer opportunities. But considerations of distance and time have made it difficult for some other volunteers to participate.

Like other naturalists, Robert W. Maddix was excited when he heard that the ATBI needed large numbers of volunteers, and he registered with Discover Life. Since then, Maddix, who operates the Sweet Biscuit Inn, a bed and breakfast in Asheville, North Carolina, has been asked to help empty insect traps in the park. But each time he's had to say no because doing so would involve a six-hour round-trip.

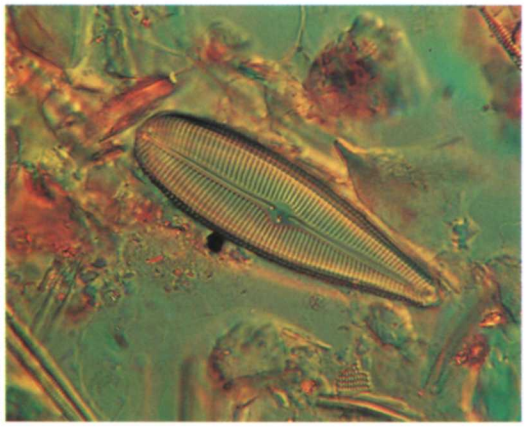
"I really want to be part of it," Maddix said. "But that was just more than I could bite off."

Volunteers who have obtained housing at the park have been able to do the most. Lucretia Fairchild, a graduate student in biology, stayed at the park for a month during the winter, emptying traps and sorting insects by order for them to be sent off to scientists for examination—a novel experience for her.

"Everything is new to me," she said. "I'm starting from scratch." Even so, she said, "it's a lot of fun."

Even younger students have been able to participate. The Great Smoky Mountains Institute has brought in school groups. In two years, students and staff at Tremont have identified 35 moth species that weren't known to be living in the park and have collected aquatic invertebrates and details about the geographic range of moths and salamanders.

"We are making steady progress in developing ways for volunteers, espe-



NPS/GREAT SMOKY MOUNTAINS NATIONAL PARK

This *Gomphoneis minuta*, a diatom—one-celled photosynthetic algae—was found near Abram's Falls in the Smokies.

cially, in our case, middle and high school students, to be involved," says Paul E. Super, science education specialist with Tremont.

Some NPCA members have also had an opportunity to participate. A group of 15 members took an April trip to the Smokies, part of NPCA's Parkscapes Travel Program. Group members stayed at an inn at the edge of the park and, after receiving training, spent their time on trails counting trillium, a genus of wildflower.

Aside from the organizational challenges, whether large numbers of volunteers can participate in the inventory depends on how much housing can be arranged. Although some space is available in campgrounds and other park facilities, the Smokies are swamped with millions of visitors in the summer, and bed space can be scarce. Efforts to acquire donated space in local hotels and rental houses have met with limited success, DLIA says.

Some dormitory space is expected to be included in a new, multi-million-dollar laboratory in the park for which NPS has budgeted $450,000 so far in planning money, one of several ways the federal government is supporting the project. To get a better handle on costs, the Biological Resources Division of the U.S. Geological Survey (USGS) is funding a $210,000, three-year study that will produce estimates of the time and price tag of the ATBI and come up with some statistically sound rules to determine when it's done.

The scientific work done so far on the ATBI has come from small grants given out by DLIA—around $73,000 for the 1999 field season—and support from universities and other institutions, such as the National Science Foundation, that have either kicked in some money or given their personnel time to participate.

How much the ATBI will ultimately cost and where the money will come from have become chief concerns of organizers. The former chairman of DLIA, John Pickering, an entomologist at the University of Georgia, has suggested a total cost of $250 million, an estimate sharply disputed by other members of DLIA's board, who say that number is highly inflated and will scare off potential funding.

Pickering, who still serves on Discover Life's board, said he bases his figure on 1,000 taxonomists, each paid $25,000 per year to work in the park or the cost to send a graduate student. Each would have to inventory 100 species a year to finish the park's estimated 100,000 species in a decade. With about $1 million going toward the ATBI this year from money and in-kind contributions, "We've got to ramp up by a factor of 25," he said. "The big foundations need to buy into this."

Even if they don't endorse Pickering's estimate, others agree that DLIA will have to raise tens of millions of dollars to pay scientists enough to drop some of what they're doing to conduct the ATBI. Taxonomy has been in decline for years as a profession, and those who remain have heavy workloads.

"Our plates are already full," said David Wagner, a taxonomist at the University of Connecticut. "It's very hard for me to jump ship and work in the Appalachians."

Wagner and other scientists, however, have come up with creative ways to get a lot done with limited resources. He was organizing a "bioblitz" this summer to bring 30 or 40 taxonomists to the Smokies to spend a couple of days in a concentrated effort to collect specimens. But depending on such excursions won't get the ATBI done, he said. "If you wait for volunteers, it's going to take 300 years."

Williams, the board member in charge of fundraising, said she is in discussions with several corporations to see how they can fit into the effort.

Harris, DLIA's chairman, also suggests that DLIA may have to consider becoming a membership organization to raise the money.

Some scientists say the higher estimates of what the ATBI will cost do not take into account the large numbers of species that can be collected with relatively few traps and people. And despite its name, no one thinks the ATBI will collect every last species in the park. In its first years, scientists expect to make rapid progress, with vertebrates completed in as few as three years. But as the inventory stretches out over the years, scientists will reach a point of diminishing returns and will have to decide whether to expend limited resources on a few species.

"We anticipate a very large number of species will be added to the list in a hurry," said Charles R. Parker, a research aquatic biologist with the USGS. "It's not feasible at all to get every last species."

Regardless of the start-up issues, no one disputes the value and importance of the ATBI, particularly to the national parks. "This is a profoundly important project for the National Park System," says NPCA's Kiernan. "It's ludicrous that we haven't invested in this before."

Without knowledge of what's in the parks, advocates agree, they can't be properly protected.

FREDERICK A. COYLE

An ATBI team member uses a stick to tap a tree in an effort to dislodge spiders for collection.

Freelance writer CHRIS FORDNEY *is based in Winchester, Virginia. He last wrote for* National Parks *about high-tech archaeology in the parks.*

KEEPING HISTORY INTACT

From General Washington's campaign tent to a Sioux chief's war bonnet, three Park Service laboratories perform the immense task of conserving the vast collections of the park system.

BY PHYLLIS MCINTOSH

CAREFULLY STORED in an unmarked building near Harpers Ferry, West Virginia, is a national treasure—portions of two existing field tents George Washington used as his traveling headquarters during the Revolutionary War.

One National Park Service (NPS) conservator worked painstakingly for six weeks to remove 100,000 stitches to detach a modern liner that had caused the tent to pucker, had a new support fabric woven from linen thread in exactly the same pattern as the linen tent, and constructed an aluminum support that will allow the tent to drape as it probably did at General Washington's encampment. When it returns to its permanent home at the Yorktown battlefield museum at Colonial National Historical Park in Virginia, the tent will reside in a display case with a refurbished environmental control system designed to ensure that it survives another 200 years.

At any given time, the Department of Conservation at the Park Service's Harpers Ferry Center is temporary home to a host of gee-whiz items like Washington's tent: Carl Sandburg's dining table, Frederick Douglass' leather chair, architectural drawings from the 1950s renovation of the White House, a Sioux chief's war bonnet, glassware from the farmhouse where Lee surrendered to Grant, effectively ending the Civil War. There, in a cluster of high-tech laboratories, experts in the conservation of textiles, wood, paper, glass, and ceramics research, clean, and conserve these objects that reflect our nation's history and culture.

The facility is one of just three National Park Service laboratories responsible for conserving the vast collections of 379 national parks, monuments, historic sites, and battlefields. All told, the Park Service manages nearly 80 million objects of amazing variety: furnishings from the homes of famous Americans; reams of documents, letters, and personal papers; items associated with American Indians and other ethnic groups; fossils, rocks, and minerals; preserved plant and animal specimens; and objects excavated in archaeological digs at historic sites.

NPS/WESTERN ARCHEOLOGICAL AND CONSERVATION CENTER

Gretchen Voeks, a conservator at the Western Archeological Center in Tucson, works on a santo—a saint image—at Tumacacori National Historical Park.

"When we go into a historic house or museum, we tend not to think about what goes on beyond the public eye," says Eileen Woodford, NPCA's Northeast regional director. "But historic objects don't just exist; they need to be maintained and cared for. And it's an ongoing process. Conservators are always going to have to come back and treat something that was done 25 or 30 years before, especially as the technology of preservation continues to evolve."

With a permanent staff of 17, seven specialized conservation labs, a state-of-the-art science lab, and fully outfitted woodworking and metalworking shops, Harpers Ferry is by far the largest and best equipped of the three NPS facilities.

It is the only facility that serves the entire park system. A three-member staff at the Collections Conservation Branch of the Northeast Cultural Resources Center in Lowell, Massachusetts, serves the Maine to Virginia area. And a single conservator based at the Western Archeological and Conservation Center in Tucson, Arizona, works primarily in the West.

Often the first step in conservation work is a collection condition survey, performed either by a Park Service conservator or a conservator in private practice. The conservator visits a site, tours the exhibition and storage areas, determines whether environmental conditions are appropriate, and helps the curator set priorities for individual objects that need attention. The actual treatment work is then done either by the Park Service labs or by private contractors, depending on the expertise needed and the duration and complexity of the work involved. NPS has no

NPS/HARPERS FERRY CENTER (2)

Torn drapes (above) from the Melrose house parlor (left) at Natchez National Historical Park reveal the need for conservation lab work.

books or paintings conservators on staff, for example, so work on those objects is automatically contracted out. When Harpers Ferry took on the task of disassembling and cleaning 360 guns from the Chickamauga and Chattanooga National Military Park in Georgia, Martin Burke, associate manager of the Department of Conservation, contracted with a conservator in private practice to perform the work in the lab's metal shop rather than commit a staff member to the year-long project.

In selecting which projects to accept, the labs give priority to items of special national significance such as George Washington's tent, those that are severely deteriorated or have been damaged by flood or fire, and those that will be exhibited rather than stored.

"We also consider the object's significance or visual prominence within a collection," notes Brigid Sullivan Lopez, chief conservator at the northeast lab in Lowell. "A decorative table with flaking veneer in the center of a historic furnished room would get priority over a piece in similar condition that sits off to the side."

Some conservation work involves undoing previous repair efforts, such as removing adhesive tape from paper or replacing old, discolored glue used to mend broken pieces of glass. Mostly, though, conservators strive to undo the ravages of time—or at least slow the rate of deterioration caused by decades of exposure to dust, light, variations in temperature and humidity, and human contact.

LARRY ULRICH

Cannons, such as these shown at Chickamauga and Chattanooga National Military Park, are among the items NPS conservators may repair or restore.

After 37 years on open display at the Jefferson National Expansion Memorial in St. Louis' Gateway Arch, a Sioux war bonnet, for example, is covered in dust and grime. A conservator at the Harpers Ferry ethnographic lab will spend an estimated 70 hours cleaning each of 69 eagle feathers four different times. First, she vacuums off the loose dust, then goes after soot with a special sticky brush. She next uses a piece of polyurethane to create a static charge that grabs more stubborn dust and finally solvents to tackle deeper dirt and stains. To preserve her efforts, she is urging the park to place the bonnet in a case or consider ordering a replica made of turkey feathers.

In the hands of a skilled conservator, even the minutest clues can help ensure a faithful restoration. By examining under the microscope tiny fibers of an early chair covering caught under upholstery tacks, for example, textile conservators can recommend a new fabric that closely resembles the original. To guarantee that new upholstery does no further damage to a furniture frame already weakened by numerous tacks and nails, the Harpers Ferry team

has helped pioneer a technique known as "nonintervention upholstery." The new seat cover looks like tacked upholstery but merely rests on the frame or is fastened underneath with a variety of fasteners. "There are no cuts, no tack holes, and a researcher who wants to examine the piece can easily lift off the new cover and study the frame and what is left of the original seat," explains Burke.

With paper materials, it is especially important to restrict handling of fragile originals without sacrificing access to the information they contain. Here, modern technology comes to the rescue. Paper conservators recently repaired eight maps, some as large as five by 12 feet, depicting the original land parcels that now make up Virginia's Shenandoah National Park. The maps are popular with researchers, as well as with descendants of landowners who want to locate family farms and homesteads, and decades of rolling and unrolling had taken their toll. After painstakingly injecting adhesive under hundreds of tiny folds where paper was flaking off the cotton backing, the conservators shipped the maps off to a Washington, D.C., lab to be digitally photographed.

As a result of this $25,000 project, funded by friends of the park, the important information on Shenandoah's maps is now available both electronically and on enhanced photo reproductions, while the original maps remain in safe storage at the park. Similarly, the original 12,500-page archives of the U.S. Army Seventh Cavalry, which met its doom with Custer at Little Bighorn, have been treated for permanent storage in a facility at Little Bighorn Battlefield National Monument in Montana. The documents will be microfilmed, and the microfilm will be made available to researchers.

Even relatively newfangled materials such as plastics find their way to the conservator's desk. Recently, Gretchen Voeks, conservator at the Western Archeological and Conservation Center, noticed a funny smell and corrosion in the cabinets housing everyday items such as sunglasses, toothbrushes, and vanity

NPS/HARPERS FERRY CENTER (2)

Conservators practice "nonintervention upholstery" to protect objects like this Elizabethan revival chair.

sets that were part of a 1950s-era collection from Faraway Ranch at Chiricahua National Monument in Arizona. When a plastics expert determined that the objects were giving off nitric and acetic acids as part of an inevitable deterioration process, the objects were isolated to prevent damage to the rest of the collection.

Part of the fun of their work, say the conservators, is the sleuthing involved in authenticating an object—or revealing a fake. Consider the case of the Death Valley trunk, discovered just last year. This trunk was thought to have been left in the desert a century and a half ago by Forty-Niners on their way to the California gold fields. But when Voeks analyzed the materials, she discovered that they could not have been produced before 1849. The trunk is in fact an elaborate forgery whose origins remain a mystery.

When it is impractical or impossible to bring an object to the laboratory for treatment, conservators go to the object. Several years ago, four staff members from Harpers Ferry spent a month at the Edison National Historic Site in New Jersey cleaning, lubricating, and applying new coatings to 27 pieces of machinery in the inventor's shop, where, he had bragged, he could fabricate "anything from a locomotive to a ladies watch."

Voeks likewise journeyed to Anacapa Island, part of Channel Islands National Park off the coast of southern California, to disassemble, clean, and polish the bronze on a delicate Fresnel lighthouse lens. This job took six weeks, even with the help of some 20 Park Service personnel, many of whom volunteered their time for the tedious polishing work.

Certainly, one of the most complex and high-profile projects ever undertaken by Park Service conservators was the recovery of original murals in two circular rooms of Grant's Tomb in New York City. In the mid-1990s, when the tomb had fallen into such disrepair that Grant's descendants threatened to move his remains to another location, Congress passed a special appropriation for renovation of General Grant National Memorial. The challenge facing museum conservators from the Northeast Cultural Resources Center was removing several layers of paint applied during a Bicentennial spruce-up without damaging the murals beneath.

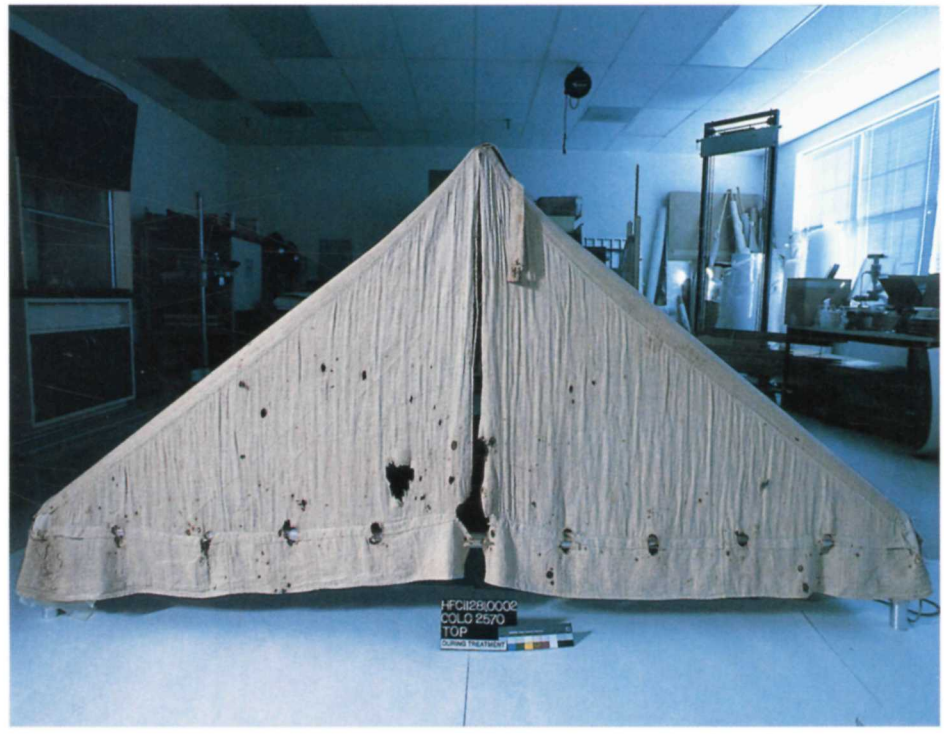
"One problem was that the paint used for the murals was the same medium as the over paint, so any solvent would act on both," says Brigid Sullivan Lopez. "Luckily, the Park Service had also used a very thick primer, so we

were able to soften the outer layer of paint with a solvent gel and scrape it off, then soften the primer with only water and literally peel it away from the murals."

Conservators then removed a discolored varnish, patched holes made when paintings were bolted to the walls during the 1970s, and with the aid of the original artist, then in his 80s, repainted the damaged areas. Total time: six months. Cost: $500,000.

The vast majority of conservation projects do not attract a special congressional appropriation, however, and the demand for improvements far outstrips the National Park Service's meager resources. The agency estimates that it would cost $47.1 million to meet all its current conservation needs. Yet, the annual service-wide budget for cyclic maintenance of park museum collections and operation of the conservation labs is just slightly more than $2 million. Base funding that the labs receive covers only 60 percent to 80 percent of their costs. Fees that the parks or private supporters of a particular site pay the labs for conservation projects make up the difference.

As manager of the largest laboratory, Burke also spends a considerable amount of his time seeking foundation and corporate grants to fund internships that supplement his staff, to equip his new science lab, and to publish exhibit conservation guidelines. His conservators also apply for grants to publish their work or pursue additional training.



NPS/HARPERS FERRY CENTER

A field tent that George Washington used as a traveling headquarters during the Revolutionary War was painstakingly repaired by Park Service employees at Harpers Ferry. The tent will be returned to Colonial National Historical Park.

To get the biggest bang for its buck, the Park Service focuses on improving the conditions under which entire collections are stored and exhibited. "If you spend a lot of money treating one object and put it back into poor environmental conditions, you lose the positive effect of the work you've done," says the agency's chief curator, Ann Hitchcock. "So our priority for the past 20 years has been to correct those conditions, which benefits many objects at once." Indeed, the conservation labs play an important role in advising parks and historic sites on environmental systems and even in designing new display cabinets that are both affordable and more tightly sealed.

But managing objects on exhibit often involves some compromises, Hitchcock notes. "At sites like historic homes, it is impossible to have ideal conditions for many different types of furnishings. Sometimes, we use reproductions for especially sensitive items, such as draperies, and preserve the originals in storage."

For the conservators, finding solutions to scientific and historic problems is clearly a labor of love. "Conservation is endlessly fascinating," says Voeks. "Not only do we get to work with ancient materials; we also get to take them apart, see what they're made of, find out who made them, and see what has happened to them over time. But the real satisfaction comes from knowing that we're increasing their longevity and making them accessible to visitors and researchers for years to come."

NPS/WESTERN ARCHEOLOGICAL AND CONSERVATION CENTER

Conservators take great care to repair documents from the Little Bighorn Battlefield National Monument collection of Seventh Cavalry documents.

PHYLLIS MCINTOSH *lives in the Washington, D.C., area. Her work has appeared in many national publications.*

RUNNING OUT of RANGE

Two separate herds of pronghorn—one of the fastest mammals alive—inhabit the Greater Yellowstone Ecosystem, one in Yellowstone, the other in Grand Teton. Scientists are looking into why Yellowstone's population is at a near-historic low.

BY CONNIE TOOPS

WHAT A GRAND SIGHT it must have been for early explorers to crest a hill in the Yellowstone River Valley and gaze across vast acres of sagebrush inhabited by pronghorn.

These fleet-footed creatures, slightly smaller than deer, often travel in herds. Alert pronghorn continuously scan the horizon, their widely spaced eyes affording vision comparable to using 7x binoculars. When one observes something, others begin to stare. In a nervous response, long white hairs on their rumps flair, flashing a conspicuous warning. A patriarch may snort or paw the ground. Suddenly the entire herd erupts into motion, its movements creating a blur of tan and white as it gallops away.

The days of massive herds of pronghorn have now passed, along with the vast undeveloped areas they once inhabited. But rather than experiencing a steady decline, the population has fluctuated widely over time, dropping and resurging on the order of millions since the mid-16th century. Of particular current concern, however, is that not only is the Yellowstone population now at a near-historic low, but its numbers have not rebounded over the past half-decade. A number of possible reasons are being explored.

The pronghorn has a long and varied history in North America. In 1540, Spanish explorer Coronado noted "stags patched with white" when he traveled from Mexico into the Great Plains. Lewis and Clark collected the first pronghorn specimen, classified in its own unique family, Antilocapridae. The name means "antelope-goat," although pronghorn are unlike African antelopes. Their lineage is exclusively North American, dating back millions of years to elaborately horned ancestors. *Antilocapra americana*, the species

found on Western plains from Mexico to southern Canada, has changed little since the last Ice Age.

According to the North American Pronghorn Foundation (NAPF), which encourages conservation of these animals and their habitat, 30 million pronghorn roamed the West in the early 1800s, making them nearly as numerous as bison. Hunting and development dramatically reduced pronghorn populations to merely 15,000 by 1915. Since then, state and federal wildlife management agencies have fostered a resurgence. One million pronghorn existed in the mid-1980s, the majority living in Montana and Wyoming.

Two separate herds inhabit the Greater Yellowstone Ecosystem—one in Yellowstone National Park, one in Grand Teton National Park. Dr. William C. Edwards, who has carried out research on pronghorns and who teaches at the Yellowstone Association Institute and Teton Science School, believes the Yellowstone herd, now about 200 animals, may have originally numbered as many as a thousand animals. The second herd, now consisting of 300 animals, summers along the upper Snake River in Grand Teton National Park and the Gros Ventre River drainage.

National Park Service (NPS) wildlife biologist Wendy Clark notes that pronghorn adjacent to Yellowstone were eliminated by hunting and habitat conversion by 1920, but 400 to 600 within the park continued to be protected. These were fed to keep them alive during winters until 1932 when additional winter range near Gardiner was annexed. Like elk and bison, some Yellowstone pronghorn were trapped and translocated until the mid-1960s to assist pronghorn recovery elsewhere. Yellowstone's pronghorn have provided a source of reintroduced stock, just as the park's bison population has.

By 1991 the pronghorn population rebounded to about 600. But in the mid-1990s Yellowstone's pronghorn declined again. Since the 1995-96 winter census, the population has held steady at 200 to 250 individuals. Wildlife biologists worry that the pronghorn population may be at an unknown level of long-term risk.

To understand the degree of threats to Yellowstone's pronghorn population, the park will convene a Yellowstone Pronghorn Conservation Assessment Workshop this year. Experts in pronghorn ecology and management will examine the influences of habitat limits, disease, predation, competition, and climate.

One possible explanation for the decreased pronghorn population is a greater threat from predators. Thirty-one gray wolves, for example, were reintroduced into Yellowstone during 1995 and 1996, and 116 currently roam the park.

Have they influenced pronghorn populations? Wendy Clark feels it is too soon to answer, but researchers have identified remains of several fawns and a few adults killed by wolves. Given the presence of so many more elk and deer in the areas that pronghorn inhabit, Clark believes it is highly unlikely that wolves would concentrate solely on pronghorn. Wolves feed as packs and are more likely to prey on larger animals; however, long-term changes in the predator balance between wolves and coyotes could affect pronghorn. According to Edwards, coyotes are the main predators on the pronghorn in Yellowstone.

Any attempt to link the pronghorn decline to increased predation, however, must take into account the fact that pronghorn are born to run. In short sprints, they attain speeds of 55 mph, second only to African cheetahs. Over long distances, pronghorn are unequaled. Their heart and lungs are proportionally larger than related ungulates, pumping hemoglobin-rich blood to specially structured muscles. A huge windpipe helps them gulp five times as much oxygen as similar-sized goats, giving pronghorn the ability to outrun wolves and coyotes on open prairies. Less adept in narrow canyons where predators hide, pronghorn usually avoid areas they cannot see from afar.

Adults in good condition are seldom ambushed, but coyote predation is a fact of life. In late spring many of Yellowstone's pronghorn migrate up the Yellowstone River to summering grounds on the Blacktail Plateau, in Lamar Valley, and occasionally on Specimen Ridge. In those areas, nursery herds composed of six to 12 does use traditional kidding grounds around Tower and Lamar. Mature does usually bear twins. Although the fawns can walk within minutes of their birth, females hide them in brushy cover, returning periodically to nurse. Pronghorn birthing habitat is interspersed with knolls from which females scan their surroundings for predators. Nursery herds are usually mother-sister groups that share in caring for the young. Even with these protections, coyotes sometimes distract a caretaker to steal fawns. It is not unusual for half the young to perish in their first year.

"It is easy to point a finger at coyote

KENNAN WARD

ART WOLFE

Pronghorn compete with bison (left) for grazing range in the Yellowstone ecosystem. Second in speed only to cheetahs, pronghorn can sprint up to 55 mph (above).

predation of fawns. But this is not the classic open habitat of eastern Wyoming and Montana," Clark says. "Although their alertness and vision are remarkable, adult pronghorn predation occurs regularly in Yellowstone. Pronghorn here are hemmed by topographic features such as trees, ridges, and the Yellowstone River that may give coyotes a bit of an edge."

Clark suspects low birth rates and poor nutritional condition may also factor into the depressed population. Thus the park has recently initiated several cooperative studies to assess these other factors.

In February 1999, respected pronghorn researcher Dr. John Beyers and a graduate student from the University of Idaho began a 3.5-year study of pronghorn reproduction and mortality. Thirty does from Gardiner and Mammoth were captured, sampled for disease and genetics, and equipped with radio collars. After fawning, offspring of the radio-collared does are captured and fitted with ear tags containing solar radio transmitters. The study will reveal how long the pronghorn live, where they migrate, and the causes of death.

Researchers were mildly surprised during the first year to find higher winter pronghorn mortality and lower reproductive rates than they anticipated. Blood tests also revealed the presence of antibodies built up because of the presence of *Chlamydia*, which manifests as pinkeye in bighorn sheep. Yellowstone's bighorns experienced a significant die-off from this disease in the early 1980s, although there are no outward signs of infection in the pronghorn population.

In a related study, a graduate student from Montana State University is observing what foods and cover types the collared pronghorn select, especially during critical winter and spring fawning times. The study should reveal whether pronghorn habitat is affected by human disturbance or by elk, deer, and bison grazing. Pronghorn does abort or reabsorb their fetuses if they do not receive enough nutrition. Thus the quality of the range is crucial to winter survival and healthy offspring.

Although pronghorn inhabit mixed sage and grassland, they primarily eat leafy forbs such as sagebrush and rabbitbrush. Bison will burrow their heads below the snow to graze, but pronghorn have difficulty pawing through ice-encrusted snow. Instead, elk and pronghorn head for windswept ridges where tall sage bushes remain partially exposed. According to Edwards, one of the most unpredictable aspects of wildlife management is variation in winter weather.

Yellowstone's pronghorn spend the winter in the Gardiner-Reese Creek area because that is the lowest elevation and least snowy part of the park. In severe winters, this area may be heavily used by elk, bison, deer, and pronghorn, forcing pronghorn onto side canyons outside the park where the animals may be more vulnerable to predation and limited hunting. Directors of the Rocky Mountain Elk Foundation have crafted an agreement with the U.S. Forest Service and the Church Universal and Triumphant, a large landowner in the valley, in which conservation easements and land purchases will provide pronghorn and other wildlife access to traditional winter range adjacent to the park.

MATT KANIA

Another concern that may affect pronghorn decline is their aversion to physical barriers. When ranchers began fencing rangeland, they discovered that pronghorn would not jump over fences. To prevent the animals from getting trapped in pastures, the bottom fence wire must be at least 18 inches above the ground, and the pronghorn will pass underneath. If a predator is pursuing a pronghorn, escape is more difficult.

In 1995 one-half mile of wing fencing was installed adjacent to corrals at Stephens Creek in order to manage Yellowstone bison during severe winters, but it is in prime pronghorn winter range. The fence should, in theory, not be a problem for pronghorn because it has a smooth bottom strand 24 inches above the ground and open gates at 150- to 200-foot intervals. Still, pronghorn feeding near the fence or passing through the gates appear nervous. Since controversial bison round-ups have not taken place in the past three years, some advocate removing the fence.

Dr. Bart O'Gara, former head of the U.S. Fish and Wildlife Service (USFWS) Cooperative Research Unit in Montana and co-author of a classic wildlife management monograph on pronghorn, sees two critical threats to Yellowstone's

GLENN VAN NIMWEGEN

Some researchers think that coyotes, and not the reintroduced gray wolves, are the primary predators of pronghorn.

pronghorn. Their range lies at the upstream limit of historic distribution, where severe winters have great impact, and they are now genetically isolated.

Paradise Valley is a large, open basin that extends north more than 50 miles from Gardiner to Livingston. Historically, Yellowstone's pronghorn passed through the valley to winter at lower elevations and mingle with pronghorn from other Montana herds. In the past century, however, ranching and fences in Paradise Valley have restricted pronghorn movements and cut off the flow of new genes.

O'Gara recalls that about 20 years ago, a small group of Yellowstone's pronghorn left for the winter through Yankee Jim Canyon, a constriction in Paradise Valley where the Yellowstone River churns through a narrow passage north of the park. "The pronghorn never returned," he says. "None of the animals had been that far before, so they had no tradition to rely on. They probably wasted lots of energy looking for food sources. In an established herd, the older ones know where to go."

O'Gara has learned from pronghorn translocation projects that there is safety in numbers. Transplants of a hundred at a time usually survive. "Predators prey on small bands," he says. "When the numbers get low, some of the cohesiveness breaks down, and they don't tend to make it."

Although the pronghorn that inhabit Grand Teton National Park still intermingle with other animals each winter, there is concern about their 150-mile migration route, the longest big-game migration in the lower 48. This herd follows the Gros Ventre River south in autumn, crosses into the upper Green River watershed, and continues south to winter near Farson and Pinedale in west-central Wyoming. In July 1998 Hall Sawyer captured and radio-collared 35 adult females in the Teton herd for a USFWS Wyoming Cooperative Research Unit study. The 100- to 150-mile route requires pronghorn to travel through several bottlenecks, some as narrow as a quarter of a mile. Energy development, expanding subdivisions, and fences pose serious threats to these migration routes, particularly the bottleneck regions. One bottleneck, located west of Pinedale, was recently the site of an archaeological dig where a 6,000-year-old mass pronghorn kill was discovered, suggesting this migration has been intact for thousands of years and that early human hunters took advantage of migration bottlenecks to kill animals. Also, by examining the development of the pronghorn fetal remains, archaeologists determined the kills occurred in late March and early April, which corresponds exactly with the movements of modern-day pronghorn through the bottleneck.

Although numbers in the Teton herd have remained stable or increased slightly since the early 1980s, O'Gara questions its future. Housing developments are encroaching on several corridors, and much of the herd's winter range may be developed soon in the Pinedale Anticline Oil and Gas Project. "Development is moving into formerly wild areas," O'Gara observed. "Bigger homes, more fences—it may not take much development to block the migration route." Perhaps forecasting future challenges, about 30 pronghorn from the Teton herd inexplicably stayed in the Jackson Hole Valley during the winter of 1995-96. The weather was too severe, and they perished.

"People have the mistaken belief that because pronghorn are readily seen, they are in great shape," says Robb Hitchcock, president of the North American Pronghorn Foundation. "That may be an optical illusion. Although populations do have the ability to recover fairly quickly under good conditions, pronghorn are also quite susceptible to large die-offs during droughts or brutal winters."

Pronghorn are gone from 75 percent of their original range, including much of the Great Plains and the Central Valley of California. During the 20th century, the Yellowstone pronghorn declined from nearly 1,000 to about 200. In a rather dire proclamation, a Montana State University researcher predicted that the park's pronghorn have an 18 percent chance of becoming extinct within the next 100 years.

ERWIN & PEGGY BAUER

Although they can walk within minutes of birth and are often hidden in brushy cover, pronghorn fawns are susceptible to predation.

Thankfully, there is still time to modify fences, preserve access to migration routes, and secure winter range. If we can just provide room for them to run, pronghorn survival should be ensured.

CONNIE TOOPS, *a freelance nature writer/photographer and former National Park Service naturalist, last wrote about spring wildflowers for* National Parks.

Lighting the Way

If you are planning a trip to national parks in New England, be sure to include a lighthouse or two.

BY DAVID L. ROBINSON

THE MOAN OF a foghorn, the clang of a bell, and the swatch of light that flashes out from a blackened sea both caution and welcome the mariner. Lighthouses have shown the way to sailors for more than 2,000 years. One of the Seven Wonders of the Ancient World was a lighthouse at Alexandria, Egypt—called the Pharos. Built by slaves about 280 B.C., the 450-foot structure survived for 1,500 years until it was destroyed by an earthquake in the 14th century.

The first lighthouse in this country was erected in 1716 in Boston Harbor on Little Brewster Island, now part of Boston Harbor Islands National Recreation Area. This light was the first of what eventually would be 1,500 lighthouses built throughout the country, although the most in operation at any one time was 850.

Initially, most were concentrated on the East Coast, and 12 were in service when the United States declared its independence in 1776. But eventually lights lined the Gulf and Pacific coasts as well as the shores of the Great Lakes. These citadels have long been associated with the romance of the sea, showing the way to a safe harbor or warning a mariner away from danger. The history of these towers and hundreds like them is rife with heroic rescues, as well as hardships and hermit-like existences.

Much has changed since the days when the keepers would climb the spiral stairs to light the whale oil lamps at sunset and keep them burning until sunrise.

NEW ENGLAND AQUARIUM/KENNETH MALLORY

A view inside the Boston Light, the country's first light station.

Nearly all of the lighthouses today are automated. In some cases, the lights have been taken out of service—replaced by more sophisticated aids to navigation. Some of these lights have been taken over by agencies other than the Coast Guard, such as the National Park Service (NPS), states, local municipalities, preservation groups, such as the American Lighthouse Foundation, or private owners. This has afforded an opportunity for enthusiasts fascinated with these once desolate outposts. Some are interested in the towers' construction, others are intrigued by the tales of shipwrecks, or the more fanciful tales of lines and lifeboats that move themselves during a dark, stormy night.

If you're planning a trip to the national parks in the New England or Atlantic coastal states this summer, you may want to include one or more lighthouses on your itinerary. If you plan to take a tour, you should be able to comfortably climb staircases ranging from 50 to 270 steps.

Following are a few of the more notable (and accessible) lighthouses you'll find along the East Coast.

Boston Light

Little Brewster Island is one of 30 islands in the Boston Harbor Islands

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National Recreation Area. It is also the site of Boston Light, the country's first light station, established in 1716. During the Revolutionary War, this light was destroyed by both the Colonists and the British Army—neither side wanted the other to use it. Boston Light was not rebuilt until 1783, during which time a lighthouse was built in Sandy Hook, New Jersey. The existing Boston Light tower became the second oldest operating tower in the country. It is also the last light staffed by the U. S. Coast Guard, one of 13 members of the Boston Harbor Islands Partnership.

Until recently, shifting tides made the 89-foot tower itself virtually inaccessible to the public. Last summer, a floating dock was installed for visiting boats, and visitors can now tour Boston Light from May through October. It requires a 45-minute tour boat ride to Little Brewster Island, during which you can also observe the nearby Graves and Long Island lighthouses. The round-trip costs $25 and includes admittance to the 76-step lighthouse. The boat ride is offered twice daily.

For information about camping on nearby islands, contact NPS at 617-223-8666. For details on additional hotel accommodations, call the Greater Boston Convention and Visitors Bureau at 888-733-2678.

Nauset Beach Light Station

The Cape Cod National Seashore encompasses 45,000 acres of picturesque beaches, dunes, woodlands, ponds, marshes, and offshore waters. You'll also find several lighthouses, including the Nauset Beach light station, in the town of Eastham.

The Nauset Beach light was first established in 1839. The current tower is one of two towers originally situated in nearby Chatham and was relocated here in 1923. The light tower is easily recognized by its red band, known as a daymark, which helps mariners distinguish the 48-foot lighthouse from others during the day.

Tours of the 76-step lighthouse are held every Sunday from May through October. For specific hours, call 508-240-2612. After a climb up the tower, visitors can take a short walk to a nearby popular swimming beach.

In addition to several camping areas, there are extensive hotel and motel accommodations, including the Anchorage On The Cove Bed and Breakfast, 508-255-1442. For additional information on lodging, call the Cape Cod Chamber of Commerce at 877-332-2732.

Three Sisters

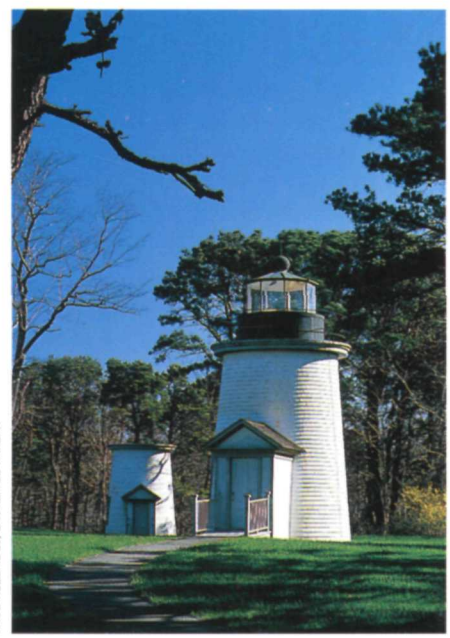
After visiting the Nauset light, you can hike a quarter-mile inland to the Three Sisters. This trio of wooden towers once stood sentry in the general vicinity where Nauset light is currently located. Before the advent of individual light flashes, it was often necessary to build multiple towers so sailors could distinguish them from others in the area. Two of the Three Sisters were removed from service in the early 1900s. The remaining tower served until 1923. According to local historians, the Three Sisters lights were so named because from offshore, they resembled "little ladies in white dresses with black dress hats."

Tours of one of the 40-foot towers are held on Sundays and Tuesdays from May through October. Call Salt Pond Visitor Center at 508-255-3421 for more information.

Cape Cod Light

Cape Cod Lighthouse, also known as Highland Light, is another one of Cape Cod National Seashore's unique attractions. The tower is the oldest (the original tower dates to 1797) and tallest (85 feet) lighthouse on Cape Cod, and it is

The Nauset Beach Light Station, on Cape Cod National Seashore.



PAUL REZENDES; LAURENCE PARENT

One of the Three Sisters at Nauset.

located near the town of North Truro.

Cape Cod light is recognized as the first beacon seen by sailors arriving from Europe. Ship captains realized that once they saw the light, they would be safely in Boston the next day.

In 1996, the 400-ton light was moved from the eroding cliff. It is open seven days a week May to October. For $3, you can hike the 70 steps and enter the lantern room. Call 508-487-1121 for details. The Parker House bed and breakfast is nearby (508-349-3358). For information about campgrounds and other lodging accommodations, call the Cape Cod Chamber of Commerce, 877-332-2732.

Race Point

The Race Point Lighthouse near Provincetown is reached by a 2.5-mile trek along the beach. The original light was constructed in 1816 as an aid to ships navigating around the "knuckles" of the Cape. Despite its warning signals, more than 100 ships ran aground on the beach and offshore shoals during the next 130 years.

Race Point is an ideal stopover for those who want to spend a night on lighthouse grounds. From April through November, the keeper's quarters are used as a hostel where visitors can spend a few nights. Prices range from $130 to $150 per night for two.

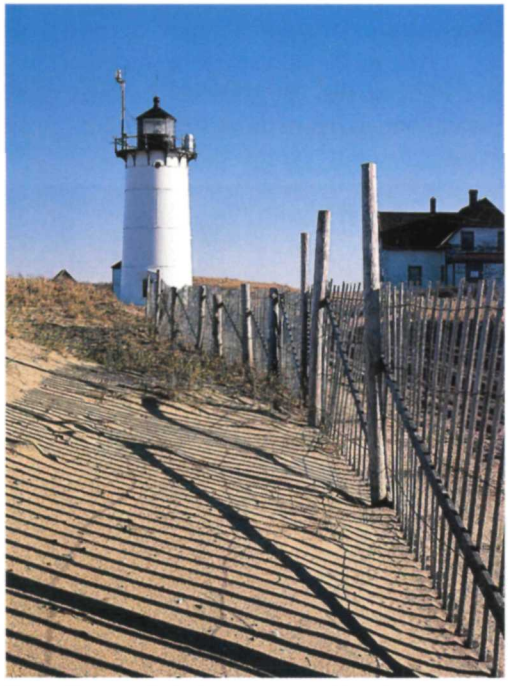
The 45-foot lighthouse itself isn't generally open to the public. However, the onsite hosts will usually guide visitors up the 60-step stairway. This is also a popular whale-watching area.

Call 508-487-9930 to confirm hostel availability and lighthouse accessibility. For information on area lodging, call the Provincetown Chamber of Commerce, 508-487-3424.

Sandy Hook

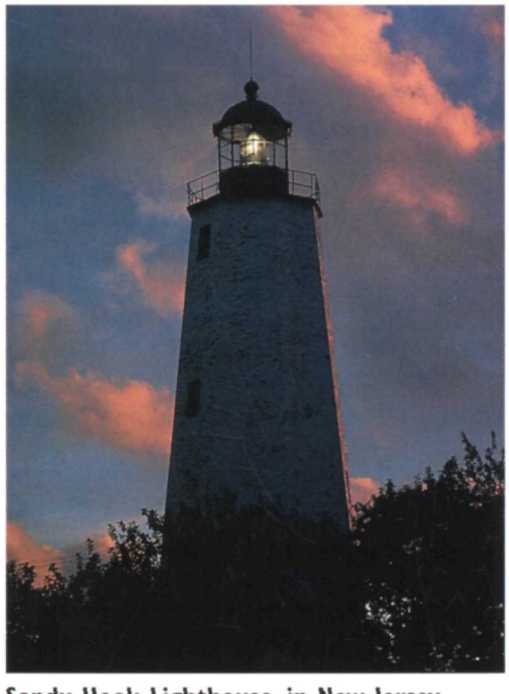
Gateway National Recreation Area includes four sections in the New York City Harbor area in both New York and New Jersey. On the New Jersey side is Sandy Hook Peninsula, the site of the Sandy Hook lighthouse. The Sandy Hook light opened in 1764 and is the oldest operating tower in the United States.

During the American Revolution,



A. BLAKE GARDNER

Race Point Lighthouse, near Provincetown.



CONNIE TOOPS

Sandy Hook Lighthouse, in New Jersey.

the keeper evacuated the station after a battle between American soldiers and the British army. The American soliders attacked the lighthouse in late June 1776. Later, the British army organized loyalist units and used them to guard the lighthouse. They transformed it into a fort.

Following recently completed restoration of the nearly 73-foot lighthouse, guided tours will be held on Saturdays and Sundays, from May through early December. Visitors can watch a brief video tour and then climb the 95-step stairway. Call the visitor center at 732-872-5970 to confirm specific hours and for more information.

Two bed and breakfasts, the Seascape Manor, 732-291-8467, and Water Witch House, 732-708-1900, are located in nearby Highlands, New Jersey, or call the Monmouth County Department of Economic Development and Tourism, 732-431-7470, for suggestions.

Cape Hatteras

The Cape Hatteras lighthouse is one of the best-known lights within the National Park System. Located at Cape Hatteras National Seashore near the village of Buxton, it is the country's tallest tower. The 208-foot lighthouse is also easily recognized by its distinctive black-and-white barber pole striping.

The first tower at Cape Hatteras was constructed in 1870. At the time, the tower was more than a thousand feet from the shoreline; however, coastal erosion forced the Park Service last year to move the tower 2,900 feet from its previous location.

The Cape Hatteras light stands watch over the "graveyard of the Atlantic," the stretch of North Carolina coastline where fierce storms have forced many ships aground on the sandy shoals.

This year the lighthouse is open daily beginning May 26 through Columbus Day. The tower can be reached via a 257-step stairway. Visitors can also tour the keeper's quarters, which contain museum exhibits and a bookstore.

For information on camping within the park, call 252-473-2111. Visitors will find several hotels and other places to stay, including the Cape Hatteras Bed and Breakfast, 800-252-3316. Call the Outer Banks Visitor Bureau for additional details, 800-446-6262.

Many other lighthouses are located in and near national parks. Obtain additional information by visiting the American Lighthouse Foundation's web site at www.lighthousefoundation.org and the National Park Service web site at www.crnps.gov/maritime/maripark.

PAUL REZENDES

Cape Hatteras Lighthouse, before it was moved 2,900 feet west to its current location.

Light Accommodation

If you want to spend the night on lighthouse grounds, several lighthouses offer accommodations, including three in New England, although these are not national park sites.

Isle Au Haut

One of the attractions on the Isle Au Haut in Maine is the lighthouse, which was built in 1907 and is adjacent to The Keeper's House Inn. In addition to getting up close to the 50-foot lighthouse (access to the lighthouse is offered only on special occasions), visitors can ride bicycles around the area and into the nearby village. Visitors can also hike one of the many scenic trails in the park and observe deer, eagles, osprey, and other wildlife.

To reach the lighthouse, guests take a six-mile boat ride from Stonington (two hours south of Bangor). The room rates are $280 to $319 per night, and

J. ANDREW WALSH

The Isle Au Haut Lighthouse in Maine was built in 1907.

lodging includes three gourmet meals.

The Keeper's House is open May 15 through October 31. Call 207-367-2261 for more information.

Rose Island

Located on Rose Island in Narragansett Bay, Rhode Island, this lighthouse has been carefully restored to the way it was at the beginning of the 20th century.

The Rose Island Light offers guests a chance to visit and work. There are two bedrooms in the museum area in addition to the second floor keeper's apartment, which is also for rent. Those wishing to stay in the apartment must be willing to work an hour each day doing record keeping and maintenance. Guests are able to climb to the top of the 35-foot lighthouse.

The Rose Island Light is open year-round. Rates range from $110 to $155 per night for the museum rooms and $900 to $1,200 per week for the apartments. Round-trip boat transportation from Newport costs $10 per person. Guests bring and cook their own food. Call 401-847-4242 for additional information.

West Dennis

The West Dennis (Bass River) lighthouse in Massachusetts was built in 1855 and decommissioned in 1914. Since 1938 it has been part of the Lighthouse Inn, which features 74 rooms and cottages. Located near the city of West Dennis between Hyannis and Chatham, the inn is situated on nine ocean-front acres.

After exploring the lighthouse lantern room, guests can enjoy the swimming pool, tennis court, and dining facilities. In July and August, a special children's program is offered daily.

Rooms are available May through October and range from $135 to $210 a night, depending on the season. Call 508-398-2244 for more information.

For additional information, visit www.bedandbreakfast.com/index.asp and the Lighthouses with Accommodations web site: www.aracnet.com/~jkandik/ accommod.shtml.

NPCA Travel Planner

Angel of the Battlefield

Known for her work with the Red Cross, Clara Barton also championed social justice causes.

BY WILLIAM A. UPDIKE

"I may sometimes be willing to teach for nothing, but if paid at all, I shall never do a man's work for less than a man's pay."

FEMINIST, CIVIL RIGHTS activist, patriot, humanitarian. Clara Barton, whose life and work are interpreted at Clara Barton National Historic Site in Maryland, touched the lives of many people through her work on the battlefield and in the field of social justice.

After laboring as an educator and as a clerk in the United States Patent Office, where, in 1854, she was the only female federal employee, Barton went to Civil War frontlines to aid suffering soldiers. Motivated by patriotic fervor, she declared: "I'm well and strong and young—young enough to go to the front. If I can't be a soldier, I'll help soldiers."

From 1861 to 1865, Barton aided Civil War wounded in Washington, D.C., and at numerous battles, such as Second Manassas (Bull Run), Antietam, Fredericksburg, Wilderness, Spotsylvania, and others. She had numerous close calls with death—bullets flying around her head, tearing through her dresses—as she plodded through the often muddy fields looking for soldiers who needed her help. Reflecting on the horrors of war, she said: "Men have worshipped war till it has cost a million times more than the whole Earth is worth...War is Hell...Only the desire to soften some of its hardships and allay some of its miseries ever induced me... to face its pestilent and unholy breath."

KRISTA SCHLTER; NPS/CLARA BARTON NATIONAL HISTORIC SITE (INSET)

Barton lived at her house in Maryland until she died of pneumonia in 1912.

Soldiers were grateful for her work in the war. "While the shells were bursting in every direction...she staid (*sic*)...I thought that night if heaven ever sent out a homely angel, she must be the one," said army surgeon Dr. James I. Dunn. Exemplifying her tenacious nature, Barton, after seeing Dunn's words published, crossed out the word "homely" and wrote in "holy."

After a nervous breakdown in 1868 and needing to regain her health, Barton traveled to Europe, where she learned of the work of the International Red Cross, which was established as a result of the Geneva Convention of 1864—a treaty that the United States had not signed. She returned to the States in 1873 and worked on support for the American Association of the Red Cross, which was formed in 1881.

Barton also worked for social causes, which included speaking for women's suffrage and for the rights of freed slaves. She once proclaimed: "I must have been born believing in the full right of women to all privileges and positions which nature and justice accord her common with other human beings. Perfectly equal rights—human rights. There was never any question in my mind in regards to this." Barton consulted with the Freedman's Aid Society and with the Senate about personnel decisions for the Freedman's Bureau, worked for the extension of suffrage to all people with the American Equal Rights Association, and formed lifelong connections to civil rights leaders such as Frederick Douglass and Anna Dickenson. When other relief organizations refused to treat African Americans, Barton's Red Cross stepped in.

Ultimately, in 1904, several Red Cross members, and then President Theodore Roosevelt, conspired to remove her from her leadership role, citing age, disorganization, and a lack of professionalism. "The government I thought I loved, and loyally tried to serve," she lamented, "has shut every door in my face." Most likely, Barton would have been heartened to know that this year the Park Service is celebrating the 25th anniversary of the authorization of the first park unit dedicated to a woman.

WILLIAM A. UPDIKE *is editorial assistant for* National Parks *magazine.*

A Dog's Life

While habitat diminishes for the Utah prairie dog, Bryce Canyon works to establish new colonies.

BY ELIZABETH G. DAERR

LOVE THEM OR hate them. There may be few emotions in between regarding the ground dweller known as the Utah prairie dog. Wildlife enthusiasts see them as entertaining, charismatic creatures. Ranchers and farmers almost universally despise them because they damage crops and compete for forage with domestic animals. Historically, agricultural interests have prevailed, and a mass extermination of the critters over many decades, along with habitat alteration, has made them a federally threatened species since 1984.

GEORGE H.H. HUEY

Viewed by some as a pest, the Utah prairie dog has been a target for extermination.

Like other species of prairie dogs, the Utah variety is a member of the squirrel family and lives in colonies, which can range in size from four to five individuals to several hundred. The animals live in a network of burrows and underground tunnels that provide protection from predators such as foxes, eagles, coyotes, and badgers, and they play a key role in the health of the desert grassland and mountain meadow ecosystems. Rabbits, snakes, mice, and other rodents looking for cover on the open plains take over inhabited or abandoned burrows. In addition, prairie dogs' excavation of soil and diet of mostly prairie grasses and some flowering plants regularly rejuvenate vegetation.

Despite their limited range of southwestern Utah, which includes Bryce Canyon National Park, *Cynomys parvidens* numbered about 95,000 individuals in the 1920s. Responding to Western ranchers' anger with the rodents, the federal government led an intensive control program that poisoned thousands of the animals. Private landowners shot, poisoned, gassed, and drowned them. By 1973, a U.S. Fish and Wildlife Service report estimated 3,300 animals remained and that they would be extinct by the year 2000. They were immediately classified as endangered under the Endangered Species Act (ESA) passed that year.

The abrupt reversal of federal policy left many in the West irate. That animosity is still apparent says Keith Day, a biologist with the Utah Division of Wildlife Resources. Generally, rural Utah residents are angered by federal interference in local issues and oppose the ESA, he says. The fact that the prairie dog is seen as a pest simply compounds the problem for the species' recovery team. The team includes universities, the Utah wildlife division, and several federal agencies, including the National Park Service, and is working to maintain stable populations in three recovery units. After these populations have been self-sustaining for five consecutive years, the Utah prairie dog can be taken off the endangered species list. A 1998 count estimated that 5,113 adults remain rangewide—78 percent of which are on private land.

Efforts across the state and in Bryce have focused on relocating animals from private land and finding suitable habitat on federal land. Not all of the relocation attempts have been successful, says Rick Wallen, chief of resource management at Bryce. "Animals have been released in some areas that we thought were good habitat, and they disappear," he said.

Consequently, habitat research continues to be part of the recovery effort. Wallen says that the Park Service is also willing to contribute animals to establish new colonies outside park boundaries if that provides the best habitat. For the first time, the team at Bryce used prescribed burns, which it hopes will rejuvenate mountain meadows dominated by shrubs and scrub brush. The goal is to manage for grasses that the prairie dogs eat.

With continued recovery efforts, Wallen says that the Utah prairie dog should do well at Bryce Canyon National Park. "There's a reasonable expectation that we could improve habitat enough to expect 25 percent to 50 percent more animals in the park over the next five to ten years."

ELIZABETH G. DAERR *is news editor for* National Parks *magazine.*

Access or Excess?

Before we allow some uses at national parks, we must be sure they fit with the park experience.

BY KEVIN COLLINS

LAST OCTOBER, Great Sand Dunes National Monument in Colorado was the site of an unusual snowshoe race across the park's massive sand dunes. The bash was billed as the Tabasco Extreme Heat 6 Desert Snowshoe Scramble. More than 150 participants, many in bizarre costumes, met at the base of the dunes, donned snowshoes and race numbers, and ran or walked up the dunes and back down. Afterward, they had a big party. The *Denver Post* called it "part Lawrence of Arabia, part Chariots of Fire."

Is this event right for a national park? How about hang gliding, rock climbing, snowmobiles, personal watercraft, or so many of the other ways we "use" our parks? Are they appropriate?

The suggestion that we should—or even can—determine which activities are appropriate or compatible with national parks is a sensitive issue. The United States was the first nation to embrace the idea that some places were so naturally or culturally significant that they should be permanently preserved. Even more revolutionary was the notion that these places should be public property, accessible for the use and enjoyment of all.

One hundred and twenty-eight years after the establishment of Yellowstone National Park, we have a magnificent National Park System that stretches from the foggy coast of Maine to the tropical reefs of American Samoa. Hundreds of millions of people visit these parks every year. Most come with the idea of viewing the landscape or hearing historic stories, but others come to climb rocks, float rivers, and hang glide from mountains. The Park Service has the unenviable task of trying to regulate these various, and often competing, interests. That task is literally impossible unless we—the people who so enthusiastically flock to the national parks—are willing to accept some limits.

DOUG MACGREGOR

As a first step, we need to consider that what does not happen in national parks is sometimes the most important thing about them. Millions of Americans have already begun to accept this idea. For example, hunting is an American tradition, but we have accepted, for the most part, that it is not appropriate in national parks. Over the last several years intrusive human-made noise has been recognized as incompatible with many national parks. In March, Congress overwhelmingly passed a law that will regulate tourist flights over national parks. In Florida, Biscayne National Park is developing the first national park "soundscape" to protect its audio landscape. The plan may be unable to save the national park from a proposed airport that would send hundreds of thousands of jetliners overhead every year.

Next, we have to accept that although everyone should be able to enjoy the national parks, we can't all go at once. Federal law requires the National Park Service to set limits on the number of visitors to protect resources and the quality of everyone's visit. Unfortunately, the agency has not done so in more than a handful of places, and most of those are imperfect measurements based on parking lot size and similar infrastructure limitations. Implementing even less than perfect plans, however, has had positive results.

At Denali National Park in Alaska, a bus shuttle system carries visitors into the heart of the park. The absence of unnecessary roads and uncontrolled automobile congestion has preserved

KEVIN COLLINS *is a legislative representative for NPCA and works primarily on appropriate use issues.*

wildlife viewing opportunities in the park. Visitor surveys indicate the experience of seeing grizzly bears, wolves, moose, and caribou up close in their natural setting far outweighs the minor inconvenience or delays encountered by visitors who make bus reservations for their Denali visit.

Separate from the question of how many people can be accommodated while continuing to protect the resources as well as the visitor experience is the issue of what those people do while there.

Some machines, such as PWCs, snowmobiles, and similar motorized recreation vehicles, can be judged relatively easily by the damage they do to the physical resources of the parks. For example, the visible scars left by dirt bikes (motorbikes) and other off-road vehicles easily make the case that these vehicles are not "compatible" with national parks. Similarly, the National Park Service recently concluded that snowmobiles are so highly polluting, disruptive of wildlife, and annoying for other visitors that they should not be used in most national parks.

For some activities, however, the resource damage may be less evident but the action is no more appropriate. This is especially true for the growing variety of extreme recreational sports.

One example, BASE jumping (an acronym for building, antennae, span, and earth) was in the news late last year because of a death at Yosemite National Park in California. The Park Service briefly allowed BASE jumping in Yosemite in 1980 but later prohibited it because of safety concerns. As an ordinary park visitor, however, the question for me is not whether BASE jumping is safe for the participants but whether seeing skydivers plummet from El Capitan should be part of the park experience. Even if BASE jumping can be done with little damage to the park's physical resources, it creates a carnival ride atmosphere completely out of context in the park.

Sandboarding, BASE jumping, personal watercraft, and snowmobiles are all examples of why the National Park Service needs to do a better job of fully evaluating the compatibility of activities before they are allowed in a park. Yellowstone is still suffering today from the casual decision 20 years ago to open the park to snowmobiles. Proponents of all sorts of new "sports" are demanding access to the national parks. Before we let them in the door, we need to be absolutely sure they fit with what the national park experience should be.

At the heart of defining this experience is the question of compatibility. Aldo Leopold tackled this question in regard to our treatment of the larger natural world. In *Sand County Almanac* he wrote, "A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise." We need a "park ethic" that can articulate our ideal relationship with national parks in the same way that the land ethic can serve as a guide for our behavior toward the biological world.

> *Compatible uses preserve the ecological integrity, the natural or historical context, the interpretive or educational opportunities, and the unique experiences contained within units of the National Park System.*

Building on Leopold, this definition might serve to do just that: "Compatible uses preserve the ecological integrity, the natural or historical context, the interpretive or educational opportunities, and the unique experiences contained within units of the National Park System."

The park system would benefit from codification of this ethic in the form of federal regulations that clearly articulate the need for proactive management of a wide range of proposed and existing national park uses. Ample justification exists for adopting such a compatibility policy. The mission of the National Park Service is clear in its 1916 Organic Act: "leave them unimpaired for the enjoyment of future generations."

This prime directive would be reinforced by legislation drafted by Sen. Bob Graham (D-Fla.), the National Park Stewardship Act. This act would prohibit any activity in the national parks that was shown to be incompatible with the preservation of natural, cultural, or historic values.

Some people have looked at the recent restrictions on personal watercraft and snowmobiles and declared that the Park Service is unfairly limiting "access" to the parks. I disagree. The commitment to keeping our national parks open to all people remains as strong as ever. What has changed is a growing acceptance that the national parks were not created to guarantee access for any and all purposes, even if those purposes are totally appropriate in another context.

This distinction—that what's right for one place may be wrong for another—is crucial and one that we have accepted in many other aspects of our lives. We don't put prisons near elementary schools, nuclear plants on earthquake faults, or McDonalds' in National Military Cemeteries. Call it what you will—good public policy, common sense, or plain self-preservation—our society recognizes that some things just don't belong together. Doesn't it make sense to do the same for our national parks?

For more information on snowmobiles, personal watercraft, and other recreational uses, visit our web site at www.npca.org. Look under What We Do, Visitor Use.

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NPCA Notes

BY WILLIAM A. UPDIKE

Active Month for Activists

▶NPCA members and activists have been getting the word out that national parks are important, and a number of them are in danger. Hundreds of letters have been sent regarding the Yellowstone winter use plan as well as specific comments regarding the Park Service intent to phase out snowmobile use in Yellowstone and Grand Teton national parks (see Park News, May/June 2000).

The Park Service received approximately 46,500 letters. According to the Yellowstone public affairs office, 44 percent of the letters supported Alternative E, which advocated for continuing scientific research about the effects of snowmobiles before any action is taken, and 45 percent supported the Citizen's Solution, which has become revised Alternative G—a strategy that would ban snowmobiles except for management purposes by the winter of 2002. Snowcoaches would be provided for visitor travel within the park. Another 6 percent supported a no-change policy.

Thanks to the NPCA Pacific Regional Office liaison work with the long-distance telephone company Working Assets, the White House received more than 5,900 letters and calls urging the president to veto the current Ivanpah airport legislation. The legislation would authorize the sale of Bureau of Land Management land for the construction of an airport serving Las Vegas, Nevada. The proposed facility would be near Mojave National Preserve and would affect park air and sound quality, as well as wildlife.

On Earth Day 2000, NPCA garnered 700 signatures on a petition that supports the restoration of the Everglades ecosystem, and 1,000 signatures in favor of banning snowmobiles in the core of Denali National Park as well as protesting the proposed building of a railroad through the same park.

NPCA OFFERS NATIONAL PARKS PASS

NPCA members planning to visit national parks this summer can save money and support the parks at the same time! NPCA is offering the brand new National Parks Pass. The Pass, which is good for one year from the month of purchase, allows holders to enter free of charge any unit of the National Park System that charges an entry fee. As a special benefit to members, NPCA covers the cost of shipping and handling. At $50, the Pass is a great value for the tens of millions of individuals and families who visit the National Parks each year. More than 80 percent of revenue from the purchase of a pass goes directly to the parks to support their programs. Call 1-800-628-7275 to order, or visit our web site at www.npca.org.

Famous Composer Creates Park Tribute

▶The Cleveland Orchestra will perform the world premiere of a tribute to the Cuyahoga Valley National Recreation Area (CVNRA) composed by Oscar and Grammy Award-winning composer James Horner on Sunday, July 30, at the Blossom Music Center, located within the park.

Horner won two Academy Awards in 1998 for Best Song and Best Score, two Golden Globes, and three Grammy Awards, including record of the year and song of the year, for his music from *Titanic*.

CVNRA sits on 30,000 acres along 22 miles of the Cuyahoga River between Cleveland and Akron.

NPCA Gives Out Douglas Award

▶For their work in protecting the quiet skies above Rocky Mountain National Park (see "Park Heroes," May/June 2000), the League of Women Voters in Estes Park received NPCA's 2000 Marjory Stoneman Douglas Award on May 24. The Colorado group worked to get a law passed that limits flightseeing over Rocky Mountain.

National Parks Receives Award

▶*National Parks* magazine received the 2000 SNAP EXCEL Silver Award in the Magazines, Editorial, category for the T.H. Watkins Forum "Call It Silence" (September/October 1999). The SNAP EXCEL awards are given out by the Society of National Association Publications. T.H. Watkins, who dedicated his life to conservation issues, passed away this year. This award is a tribute to his life's work.

Give This Bear A Future

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JOIN NPCA'S **TRUSTEES FOR THE PARKS** TODAY

You can keep the national parks safe for this bear and other wildlife who make the parks their home. As a **Trustee for the Parks** you can make a difference by taking a leading role in preserving our natural heritage for future generations.

Make a gift of $1,000 or more, and you will join a group of inspired individuals that NPCA officers turn to for counsel as well as material support. Your tax-deductible donation will help fund NPCA's many legislative, research, educational, and grassroots programs—all to protect and enhance our national parks.

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To become a **Trustee for the Parks**, complete the coupon and return it with your check of $1,000 or more (payable to: NPCA). To donate by credit card, or a gift of stock, contact Jennifer Bonnette at 800-NAT-PARK (628-7275 ext. 243) or by e-mail at jbonnette@npca.org. For more information, complete and return the coupon to NPCA at the address provided.

*Join by 9/15/00 and receive a National Parks Pass (a $50 value) which provides you and your guests FREE entry to all 379 national park sites for a full year! The National Park Foundation receives a contribution from NPCA to benefit the National Park Service in return for each pass.

Photo credit: Bear in Water by Keenan Ward

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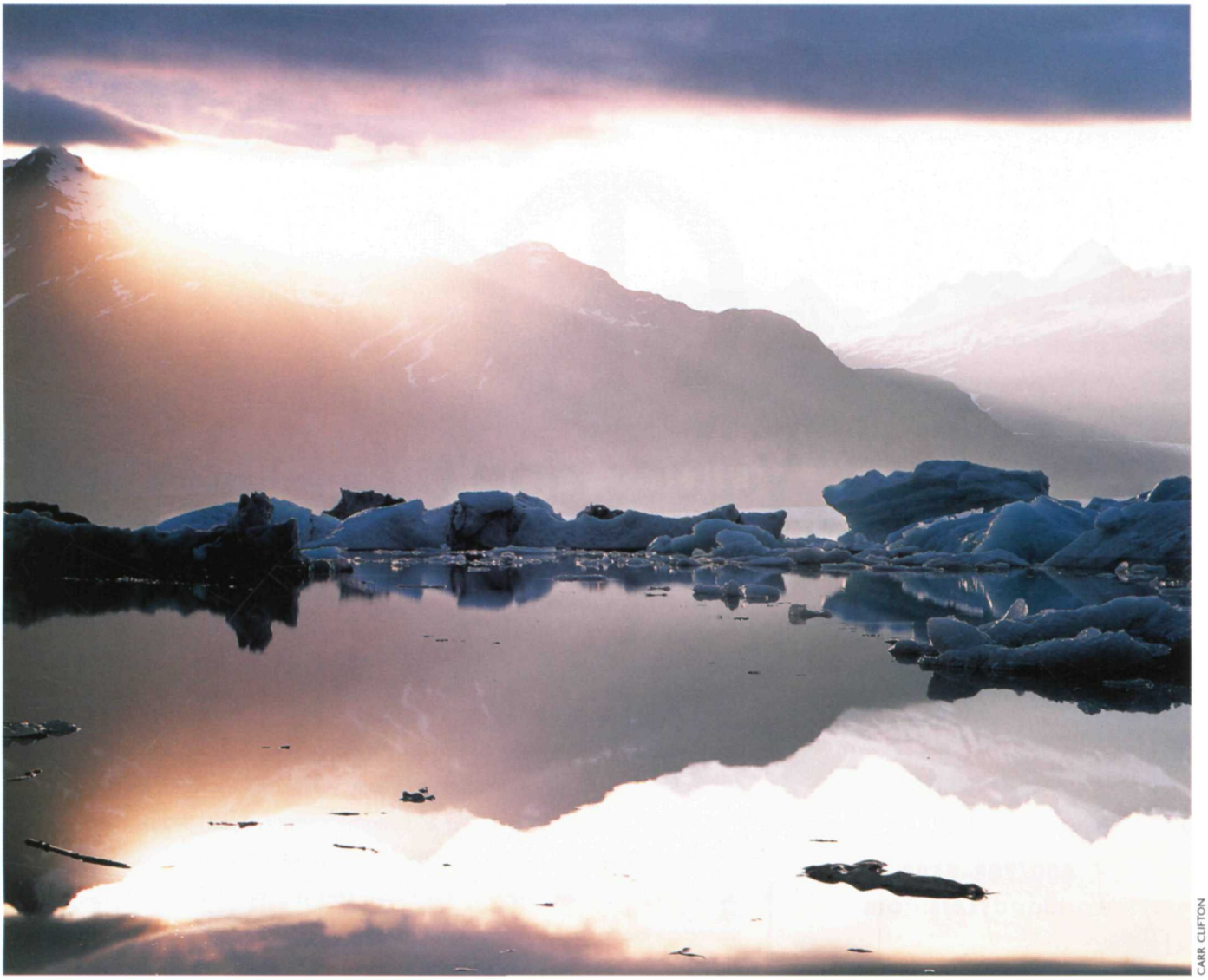
Retreating Ice

Designated as a national park and preserve in 1980 by a legendary conservation act, this park is also a World Heritage site and Biosphere Reserve.



CARR CLIFTON

MORE THAN 220 bird species—25 percent of all species in North America—have been recorded in this park. Marine waters make up nearly one-fifth of the park. Many of the unusual geological features found in the park were formed during the Little Ice Age that began 4,000 years ago and reached its peak in 1750. In 1794, Captain George Vancouver was inhibited from entering the interior of the modern-day park because ice covered what is now navigable water. Have you visited this park? Do you know which one it is? [ANSWER ON PAGE 10.]

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